



**MINE DEVELOPMENT ASSOCIATES**  
MINE ENGINEERING SERVICES

Report Date: September 7, 2018  
Effective Date: July 23, 2018

**TECHNICAL REPORT ON THE BLACK PINE GOLD PROJECT  
CASSIA COUNTY, IDAHO, USA**

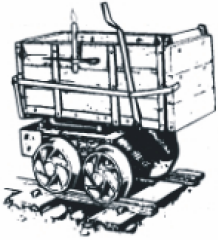


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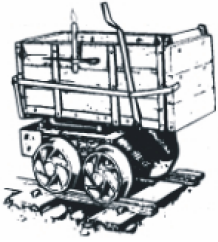


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Appendix A:	List of Liberty Gold’s Unpatented Federal Lode Mining Claims, Black Pine Gold Property, Cassia County, Idaho
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#### **1.0 SUMMARY (ITEM 1)**

Mine Development Associates (“MDA”) has prepared this technical report on the Black Pine gold project in Cassia County, Idaho, for Liberty Gold Corp. (“Liberty Gold”), which is listed on the Toronto Stock Exchange (LGD). This report has been prepared in accordance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators’ National Instrument 43-101 (“NI 43-101”), Companion Policy 43-101CP, and Form 43-101F1, as amended.

#### **1.1 Property Description and Ownership**

The Black Pine property consists of a contiguous block of 400 unpatented federal lode mining claims within Cassia County, Idaho that occupy a combined area of 3,713 hectares. The approximate geographic center of the property is 42.082°N latitude and 113.047°W longitude. Annual claim-maintenance fees are the only federal payments related to unpatented mining claims, and these fees have been paid in full through September 1, 2019. County recording fees are also required annually. Liberty Gold’s annual claim holding costs are estimated to be \$62,243 in 2019.

Liberty Gold is the 100% owner of the Black Pine property, having purchased 345 of the unpatented claims from Western Pacific Resources Corp. (“Western Pacific”) through an agreement dated June 15, 2016. Under this agreement Western Pacific received \$800,000 in cash, a 0.5% net smelter royalty (“NSR”) on production from the 345 unpatented claims, and 300,000 common shares of Liberty Gold. Western Pacific subsequently assigned the 0.5% NSR to Deer Trail Mining Company, LLC. Liberty gold expanded the property by staking 55 unpatented claims in October 2016. Mineral production from the entire property is subject to the Idaho Mine License Tax, equivalent to 1.0% of “ores mined or extracted and royalties received from mining”.

According to its environmental experts, Liberty Gold is liable only for disturbance incurred as part of Liberty Gold’s exploration activities, or if Liberty Gold causes disturbance of the historical leach pad or other designated areas.

#### **1.2 Exploration and Mining History**

Numerous prospects and small mines in the Black Pine Mountains exploited base- and precious-metal deposits commencing in the late 1800s and extending into the early 1900s, when minor amounts of zinc, silver, and mercury were produced. Gold was discovered in the late 1930s or early 1940s at the Tallman mercury mine, located within the current Black Pine project, and a small open pit was operated at

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Tallman from 1949 to 1955 with total production reported to be 109,000 tonnes with an average gold grade of 5.14 g Au/t.

From 1963 through mid-1990, Newmont Mining, Kerr Addison Mines Ltd, Gold Resources Inc. (“Gold Resources”), Permian Exploration Account, ASARCO, Pioneer Nuclear Inc., Pegasus Gold Corp. (“Pegasus”), Inspiration Resource Corp., and Noranda Exploration, Inc. (“Noranda”) explored various portions of the Black Pine property. During this period, extensive soil-sample geochemical grids were completed and a total of 66,681 meters are known to have been drilled in 775 drill holes. Approximately 99% of the holes and meters were drilled using reverse-circulation (“RC”) and conventional rotary methods, with seven of the holes drilled using diamond-core methods.

In 1986 through 1989, Noranda completed 536 of the holes mentioned above and discovered and delineated several zones of disseminated, sedimentary-rock-hosted gold mineralization. Noranda then produced a feasibility study in 1990 prior to selling the property to Pegasus in June 1990. Pegasus put the property into production in late 1991 as an open-pit run-of-mine (“ROM”) heap-leach operation that closed in 1997. During this period, Pegasus also drilled 1,082 RC holes and 16 core holes, for an aggregate total of 117,602 meters.

Approximately 26.5 million tonnes of waste rock and 31 million tonnes of ore were mined by Pegasus between 1991 and 1997, with 434,800 ounces of gold produced at an average gold recovery of 65%. The heap-leach pad was rinsed and reclaimed after production ceased.

The property was idle from 1999 to 2009. Western Pacific acquired the property by staking in 2009, carried out geophysical surveys, and drilled 35 RC holes prior to vending the property to Liberty Gold in 2016.

Since acquiring the project, Liberty Gold has undertaken extensive data compilation and analysis, collected and analyzed 126 surface rock-chip samples, and drilled 13 RC holes for a total of 2,077 meters.

### **1.3 Geology and Mineralization**

As presently understood, the Black Pine property geology is comprised of a lower structural plate that includes the Jefferson Formation and Manning Canyon Shale, a middle plate characterized by limestone and dolomite units of the Oquirrh Group, and an upper plate predominantly consisting of siltstones and sandstones of the Oquirrh Group. Lithologic contacts within the lower plate are reportedly sheared, and middle plate units are complexly structurally interleaved. Middle plate strata are considerably more deformed than the upper and lower plates.

The middle plate, which hosts the gold mineralization of interest, has a structural thickness ranging from approximately 200 to 400 meters. At least two major deformational events are evident, manifested by thrust faults and tight to open folds, and these are overprinted by younger low- to high-angle normal faults. Gold is distributed throughout the middle structural plate, with higher-grade mineralization occurring within favorable stratigraphic units, such as calcareous siltstones, as well as along fold closures and variously orientated moderate- to high-angle faults.



The Black Pine gold mineralization can be best classified as sedimentary rock hosted, Carlin-style mineralization. Deposits of this type are characterized by finely disseminated gold that occurs primarily in silty, calcareous, and sometimes carbonaceous marine sedimentary rocks.

#### **1.4 Metallurgical Testing and Mineral Processing**

Pegasus production records indicate that the average gold recovery by ROM heap leaching from 1991 through 1997 was 65%. The highest annual average recovery reported was 80% in 1993, and the lowest was 54% in 1994. Although the Pegasus mining operation proved that ROM heap leaching was economically viable, results from historical metallurgical studies conducted prior to the initiation of mining in 1991 by Pegasus suggest recoveries may increase with decreasing particle size. If future testing confirms this, and the project advances to a stage that warrants economic evaluation, the tradeoff between the cost of crushing and the associated increase in gold recovery will need to be assessed. Another metallurgical factor that is worthy of future investigation is potentially preg-robbing carbonaceous material, which occurs locally in the walls of some of the historical open pits.

#### **1.5 Conclusions and Recommendations**

The Black Pine project data has been reviewed and judged to be acceptable as used in this report, and the authors are unaware of any significant risks or uncertainties that could be expected to affect the reliability of the exploration information presented in this report.

Although a significant amount of the gold mineralization identified by historical drilling was mined by Pegasus, unmined mineralization defined by historical drilling remains both lateral to and below the mined extents of the open pits. Pre-mining gold-in-soil anomalies support the potential of this unmined mineralization and significantly extend the potential, especially in areas with little to no historical drilling. Historical operators clearly utilized the soil data in drill targeting, with obvious success, which increases the relevance of the insufficiently tested areas of the soil anomaly.

A Phase 1 work program that includes drilling and subsequent resource estimation is recommended to confirm, refine, and test targets defined by the historical drilling and soil data. If results of the Phase 1 program are sufficiently positive, a Phase 2 program is recommended that is comprised of further drilling, metallurgical testing, updated resource estimation, and the completion of a preliminary economic assessment. The estimated costs of the recommended work programs, more than half of which are dedicated to drilling, are summarized in Table 1.1.





**Table 1.1 Recommended Black Pine Project Budget**

<b>Item</b>	<b>Phase 1</b>	<b>Phase 2</b>
RC and Core Drilling (incl. access roads and drill pads, water, surveys, etc.)	\$1,030,000	\$2,700,000
Assaying and Geochemistry	\$270,000	\$750,000
Geology, Soil and Rock Sampling	\$50,000	\$50,000
Direct Salaries and Expenses	\$185,000	\$500,000
Land Holding Costs	\$90,000	\$100,000
Permitting and Environmental	\$200,000	\$150,000
Metallurgy	\$0	\$200,000
Resource Estimation	\$120,000	\$120,000
PEA	\$0	\$210,000
Administrative	\$75,000	\$200,000
<b>Total</b>	<b>\$2,000,000</b>	<b>\$5,000,000</b>



## **2.0 INTRODUCTION AND TERMS OF REFERENCE (ITEM 2)**

Mine Development Associates (“MDA”) has prepared this Technical Report on the Black Pine project, located in Cassia County, Idaho, for Liberty Gold Corp. (“Liberty Gold”), which is listed on the Toronto Stock Exchange (LGD). Liberty Gold holds its interest in the Black Pine project through its wholly-owned subsidiary, Pilot Gold (USA) Inc. (“Pilot Gold”), a Nevada, USA Corporation. This report has been prepared in accordance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators’ National Instrument 43-101 (“NI 43-101”), Companion Policy 43-101CP, and Form 43-101F1, as amended. For the purposes of this report, Liberty Gold Corp. and its subsidiaries are referred to interchangeably as “Liberty Gold”.

Liberty Gold is the 100% owner of the Black Pine property, having purchased the property from Western Pacific Resources Corp. (“Western Pacific”) through an agreement dated June 15, 2016. Under this agreement Western Pacific received \$800,000 in cash, a 0.5% net smelter royalty (“NSR”), and 300,000 common shares of Liberty Gold.

### **2.1 Project Scope and Terms of Reference**

The purpose of this report is to provide an updated technical summary of the Black Pine gold project in support of securities exchange reporting. The Black Pine project was the site of open-pit mining and cyanide heap-leach processing from 1991 to 1998. The scope of this report includes descriptions of the general setting, geology, project history, exploration activities and results, methodology, quality assurance/quality control, interpretations, drilling programs, and metallurgy, as well as the interpretations, conclusions, and recommendations of the authors. References used in the preparation of this report are cited in the text and listed in Section 27.0. In particular, this report incorporates information and descriptions drawn from a report for Western Pacific by Shaddrick (2013) entitled “*Technical Report on the Mineral Gulch project, Cassia County, Idaho, USA*”. Western Pacific referred to the Black Pine project as the Mineral Gulch project.

This report has been prepared under the supervision of Michael M. Gustin, Senior Geologist for MDA. Mr. Gustin is a Qualified Person under NI 43-101 and has no affiliation with Liberty Gold except that of independent consultant/client relationship. Dr. Moira Smith, a Qualified Person under NI 43-101, provided the initial compilation of Sections 4 through 13 of this report. As the Vice President, Exploration and Geoscience of Liberty Gold, Dr. Smith has visited the property on numerous occasions, and provided most of the detailed geologic descriptions, as well as the geological model, described in this report. Dr. Smith is not independent of Liberty Gold under NI 43-101. Mr. William A. Lepore, a Qualified Person under NI 43-101, compiled Sections 9 through 11 and contributed to Sections 6 and 7, compiled historical data, and supervises the current project activities as of the Effective Date of this report. Mr. Lepore is an employee of Liberty Gold and is not independent under NI 43-101. Mr. Gerald Heston, an employee of Liberty Gold, compiled the mineral tenure and the environmental and permitting information contained in Section 4.2 through Section 4.6.

Mr. Gustin visited the Black Pine property along with Dr. Smith and Mr. Lepore on May 2<sup>nd</sup>, 2018. This site visit included geologic overviews of the project, detailed inspections of exposures in most of the historical open pits, and the verification of certain drill-hole locations. Additional time the day before



and after the site visit were spent reviewing the digital drill data in 3D on a computer and reviewing other historical data at Liberty Gold's Elko office.

This report is based almost entirely on data and information derived from work done by historical operators and Liberty Gold. Mr. Gustin has reviewed much of the available data, visited the project site, and has made judgments about the general reliability of the underlying data. Where deemed either inadequate or unreliable, the data were either eliminated from use or procedures were modified to account for lack of confidence in suspect information. Mr. Gustin has made such independent investigations as deemed necessary in his professional judgment to be able to reasonably present the conclusions, interpretations, and recommendations presented herein.

The Effective Date of this technical report is July 23, 2018.

## **2.2 Frequently Used Acronyms, Abbreviations, Definitions, and Units of Measure**

In this report, measurements are generally reported in metric units unless original Imperial units are deemed to be best reported as-is. Where information was originally reported in Imperial units and converted to metric for the purposes of this report, conversions have been made according to the formulas shown below.

Currency, units of measure, and conversion factors used in this report include:

### **Linear Measure**

1 centimeter = 0.3937 inch

1 meter = 3.2808 feet = 1.0936 yard

1 kilometer = 0.6214 mile

### **Area Measure**

1 hectare = 2.471 acres = 0.0039 square mile

### **Capacity Measure (liquid)**

1 liter = 0.2642 US gallons

### **Weight**

1 tonne = 1.1023 short tons = 2,205 pounds

1 kilogram = 2.205 pounds



**Currency** Unless otherwise indicated, all references to dollars (\$) in this report refer to currency of the United States.

**Frequently used acronyms and abbreviations that may appear in this report**

AA	atomic absorption spectrometry
acre	acre = 0.405 hectares
Ag	silver
Au	gold
As	arsenic
Bi	bismuth
BLM	United States Department of the Interior, Bureau of Land Management
°C	centigrade degrees
Cd	cadmium
CIL	carbon-in-leach
cm	centimeter = 0.3937 inch
core	diamond drill core
CSAMT	controlled-source audio-frequency magneto-telluric geophysical surveying
DEM	digital elevation models created from terrain elevation data
g/t	grams per tonne (1 g/t = 1 ppm = 0.029167 oz/ton)
GIS	geographic information system
GPS	global positioning system, a satellite-based navigation system
ha	hectare = 2.471 acres
Hg	mercury
ICP/MS	inductively coupled plasma mass spectrometry analytical technique
In	indium
IP	induced-polarization geophysical surveying
kg	kilogram = 2.205 pounds
kV	kilovolt = 1000 volts
l	liter = 1.057 US quart
m	meter
Ma	million years old
µm	micron = one millionth of a meter
Mg	magnesium
mm	millimeter
Mo	molybdenum
NV	Nevada
oz	troy ounce (1 troy ounce = 34.2857 g Au)
Pb	lead
ppm	parts per million (1 ppm = 1 g/t)
ppb	parts per billion (1,000 ppb = 1 ppm)
RC	reverse-circulation drilling method
SEM	scanning electron microscope
Sb	antimony



t	metric ton = 1.1023 short tons
Te	tellurium
Tl	thallium
ton	short ton
U.S.	United States
USGS	United States Geologic Survey
VLF	very low frequency geophysical surveying
W	tungsten
Zn	zinc
3D	three-dimensional



### **3.0 RELIANCE ON OTHER EXPERTS (ITEM 3)**

Mr. Gustin is not an expert in legal matters, such as the assessment of the validity of mining claims, mineral rights, and property agreements in the United States or elsewhere. Furthermore, Mr. Gustin did not conduct any investigations of the environmental, social, or political issues associated with the Black Pine project, and he is not expert with respect to these matters. Mr. Gustin has therefore relied fully upon information and opinions provided by Liberty Gold and its consultants with regards to the following:

- Section 4.2, which pertains to land tenure, was prepared by Liberty Gold in consultation with Michael Perry, a Nevada Consulting Landman who reviewed the legal status of the claims purchased from Western Pacific;
- Section 4.3, which pertains to legal agreements and encumbrances, was prepared by Mr. Gerald Heston, a Liberty Gold employee responsible for maintaining the property in good standing;
- Section 4.4, which pertains to environmental liabilities, was summarized by Liberty Gold from documents prepared by Stantec Consulting Services Inc. (Brown, 2016); and
- Section 4.5, which pertains to environmental permits and licenses, was prepared by Gerald Heston, a Liberty Gold employee responsible for permitting at Black Pine.

Mr. Gustin has fully relied on Liberty Gold to provide complete information concerning the pertinent legal status of Liberty Gold and its affiliates, as well as current legal title, material terms of all agreements, and material environmental and permitting information that pertains to the Black Pine project.



#### 4.0 PROPERTY DESCRIPTION AND LOCATION (ITEM 4)

Mr. Gustin is not expert with respect to land, legal, environmental, and permitting matters and expresses no opinion regarding these topics as they pertain to the Black Pine gold project. Subsections 4.2, 4.3, 4.4, and 4.5 were prepared by Liberty Gold and its consultants.

Mr. Gustin does not know of any significant factors or risks that may affect access, title, or the right or ability to perform work on the property, beyond what is described in this report.

#### 4.1 Location

The Black Pine gold project is located in Cassia County, Idaho approximately 29 kilometers northwest of the town of Snowville, Utah, the nearest substantial community, and 13 kilometers north-northeast of Curlew Junction, the intersection of Utah State Highways 30 and 42 (Figure 4.1). The approximate geographic center of the Black Pine property is 42.082°N latitude and 113.047°W longitude.

**Figure 4.1 Location of the Black Pine Gold Project**  
(from Liberty Gold, 2018; north is up)

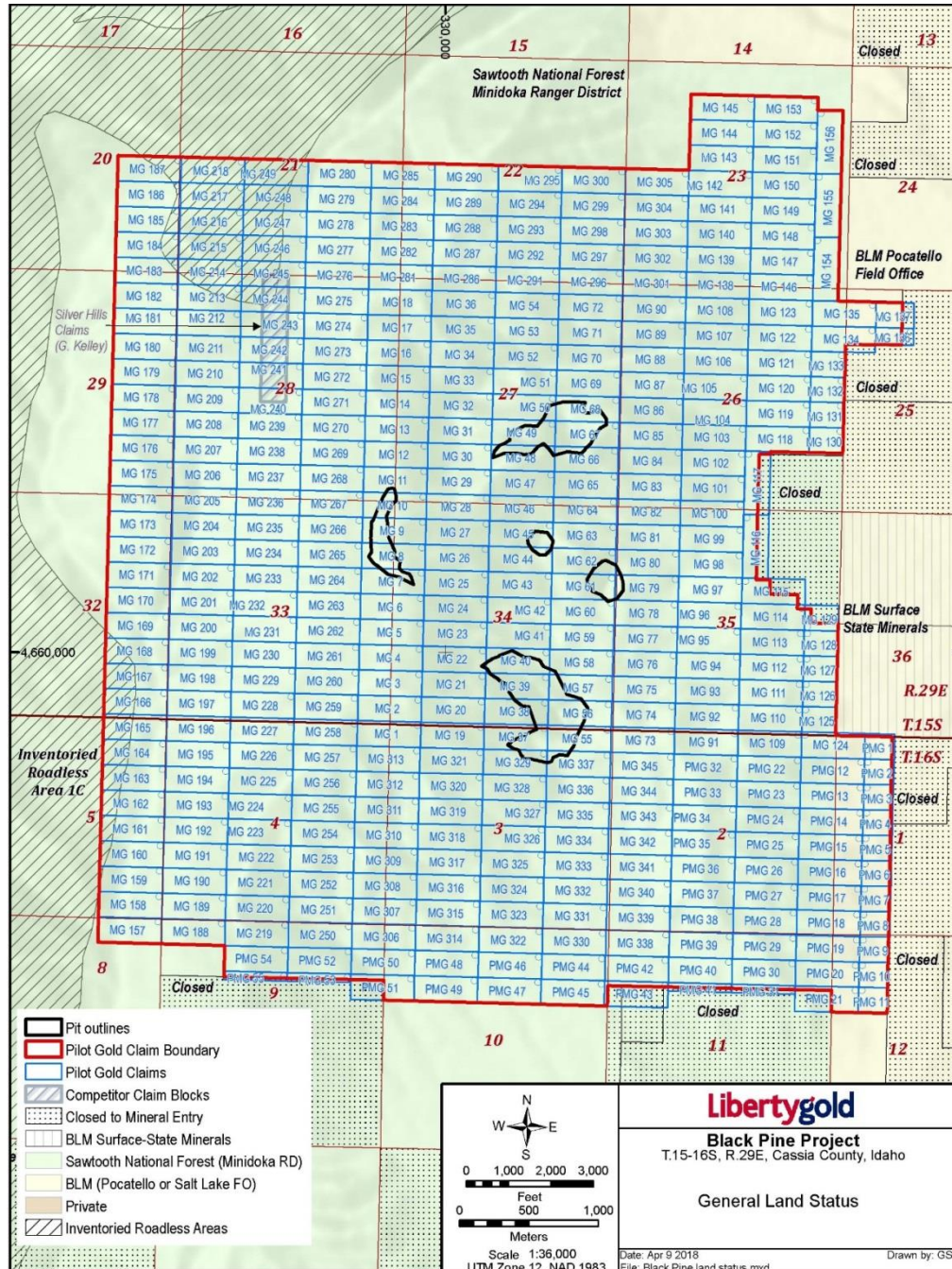




## 4.2 Land Area

The Black Pine property consists of a contiguous block of 400 unpatented federal lode mining claims, all within Cassia County, Idaho, as shown in Figure 4.2. The claims occupy a combined area of 3,713 hectares as of the Effective Date of this report.

**Figure 4.2 Black Pine Property Map**  
(from Liberty Gold, 2018)







The Black Pine property included a total of 345 unpatented federal lode mining claims as of the date of acquisition by Liberty Gold. In October 2016, an additional 55 claims were located by Liberty Gold along the southeast margin of the original claim block, bringing the total to 400 claims (Figure 4.2; Appendix A). The unpatented claims lie in portions or all of Sections 20, 21, 22, 23, 25, 26, 27, 29, 29, 32, 33, 34, and 35 of T15S, R29E, and in Sections 1, 2, 3, 4, 5, 8, 9, 10, 11 and 12 of T16S, R29E, Boise Meridian. A small inlier of senior, unpatented third-party claims is located in the northwestern part of the property (Figure 4.2).

The unpatented claims are monumented with 10-centimeter by 10-centimeter wooden posts bearing metal tags, which meet Idaho state regulations. Liberty Gold represents that the list of unpatented claims in Appendix A is complete, accurate, and valid as of the Effective Date of this report.

Ownership of the unpatented mining claims is in the name of the holder (locator), subject to the paramount title of the United States of America. The majority of the claims are under the administration of the U.S. Forest Service (“USFS”). Twenty-six claims in the eastern portion of the property lie partly or entirely within lands administered by the U.S. Bureau of Land Management (“BLM”). Under the Mining Law of 1872, which governs the location of unpatented mining claims on Federal lands, the locator has the right to explore, develop, and mine minerals on unpatented mining claims without payments of production royalties to the U.S. government, subject to the surface-management regulation of the USFS and the BLM. In recent years, there have been unsuccessful efforts in the U.S. Congress to change the 1872 Mining Law to include, among other items, a provision for production royalties payable to the U.S. government. Annual claim-maintenance fees are the only federal payments related to unpatented mining claims, and these fees have been paid in full through September 1, 2019. County recording fees are also required annually. Liberty Gold’s annual holding costs for the Black Pine unpatented mining claims, exclusive of lease fees, were \$62,243 in 2018 and will be \$62,243 in 2019 (Table 4.1). The unpatented claims do not expire as long as the federal and county fees are paid.

**Table 4.1 Annual Claim Holding Costs for the Black Pine Property**

Annual Fee Type	2018	2019
Unpatented BLM Claim Fees	\$ 62,000.00	\$ 62,000.00
County Recording Fees	\$ 242.50	\$ 242.50
<b>Total Annual Claim Fees</b>	<b>\$ 62,242.50</b>	<b>\$ 62,242.50</b>

As shown on Figure 4.2, some federal lands to the east and south of the project are closed to locatable mineral entry under the Bankhead-Jones Farm Tenant Act of 1937, Pub. L. No. 75-10, 50 Stat. 522 (codified as amended at 7 U.S.C. §§ 1010-1013a (2006)). Past operators have obtained Hardrock Prospector Permits allowing for gold and silver mining activities on Bankhead-Jones Act lands. However, recent rulings by the U.S. Government have restricted mining activities on these lands to energy minerals (e.g. uranium) on Bankhead-Jones Act lands. Whether a path exists for Liberty Gold to explore for gold on these lands, which are not part of Liberty Gold’s landholdings, remains an open question and requires more research.



### **4.3 Agreements and Encumbrances**

Liberty Gold obtained its interest in the Black Pine property by way of an agreement with Western Pacific dated June 15, 2016. Under this agreement, Western Pacific received consideration of \$800,000 in cash, a grant of a 0.5% NSR to Western Pacific, and 300,000 common shares of Liberty Gold. As a result of this transaction, Liberty Gold is the 100% owner of the Black Pine property.

Western Pacific assigned the 0.5% NSR to Deer Trail Mining Company, LLC. This royalty applies to production from the original 345 claims obtained by Liberty Gold from Western Pacific. Mineral production from the entire property is subject to the Idaho Mine License Tax, equivalent to 1.0% of the value of “ores mined or extracted and royalties received from mining”.

Surface rights for access, exploration, and mining of the unpatented claims are fully held by Liberty Gold under the Mining Law of 1872, subject to surface-use regulations under applicable Federal and State environmental law (see Section 4.5).

### **4.4 Environmental Liabilities**

Liberty Gold retained Stantec Consulting Services Inc. (“Stantec”) to review information regarding potential environmental liabilities or concerns, the results of which are documented in a report by Brown (2016). According to Stantec, Liberty Gold is liable only for disturbance incurred as part of Liberty Gold’s exploration activities, or if Liberty Gold causes disturbance of the historical leach pad or other designated areas.

The historical heap-leach pad, which lies partially within the Black Pine property, was reclaimed prior to Liberty Gold’s acquisition of the property (Figure 4.3). Pegasus stopped adding cyanide solution to the heap-leach pad in 1998. Since then, the USFS has been capturing runoff water at the base of the heap leach in buried concrete vaults, treating it with zero-valent iron, and delivering the treated water to a 40.5-hectare land-application area downhill from the leach pad. Water is sampled monthly during the land-application period and soils are analyzed every other year. The heap leach has ongoing issues with cyanide and elevated levels of nitrate and arsenic. The USFS provides annual water-quality monitoring reports to the Idaho Department of Environmental Quality (“IDEQ”, <http://www.deq.idaho.gov/>). The heap leach and land-application area are fenced off. A local rancher monitors the equipment and precipitation.

The USFS holds a \$1.5 million bond from Pegasus, and the interest on this bond covers the cost of the ongoing water-monitoring program. This bond is expected to cover any future issues with the previous operations.



**Figure 4.3 View of the Reclaimed Black Pine Mine Heap-Leach Pad, Looking East**  
(from Liberty Gold, 2017)



#### 4.5 Environmental Permitting

With the exception of claims along the eastern border of the property, which are on land administered by the BLM, all exploration work on unpatented claims is permitted under an existing Plan of Operations (“PoO”) approved by the USFS. This PoO” (#2011-030938-B) was granted to Western Pacific by the USFS on June 2, 2011 and subsequently amended on May 30, 2012. A cash bond totaling \$67,300 was posted with the USFS to cover potential reclamation costs. PoO 2011-030938-B was transferred to Pilot Gold (USA) Inc. in 2016 and assigned a new number (#2016-063179), and the bond amount was increased to \$206,400. PoO #2016-063179 authorizes 33.12 acres of disturbance (13.4 hectares). A total disturbance of 5.4 hectares was created by Western Pacific and Liberty Gold, of which 2.3 hectares have been reclaimed. As of the Effective Date of this report, there is an estimated total unreclaimed disturbance of 3.1 hectares, leaving 10.3 hectares of disturbance available for Liberty Gold’s exploration activities.

A new Plan of Operations (#2017-072046) was submitted to the USFS on May 11, 2017. Approval is expected in late 2018. If approved, the new PoO will allow disturbances for drilling in most of the area surrounding the historical mined pits. As of September 04, 2018, the Environmental Assessment had been completed and a Finding of No Significant Impact was issued by the USFS, with the PoO currently in a mandated 45 day “objection” period.



There are no unique biological or cultural issues currently identified within the project area (2013 written communication from Heide Torrealday, USFS). Mitigation/avoidance procedures for such things as sage-grouse mating periods, mule-deer habitat, sensitive plant species, and introduction of noxious-weed species are stipulated in the approved PoO and were taken into consideration in the PoO that is currently under review. At present, drilling is restricted to the months between June 15 and December 15 to account for mule-deer winter range and sage-grouse mating periods. However, fewer restrictions are anticipated in the pending PoO.

#### **4.6 Water Rights**

Several water wells are located immediately east of the property on BLM land. In accordance with Idaho Code 42-202A, Pilot Gold has filed for and was granted a temporary water right with the Idaho Department of Water Resources (“IDWR”). Water would be used for drilling and dust suppression. The water use is a short-term consumptive use not to exceed 5-acre feet annually. The use of water for mining or exploration is considered a beneficial use approved by IDWR. A currently unused but historically robust production well called the Black Pine mine well was used for process water during mining operations, producing upwards of 860-acre feet annually.



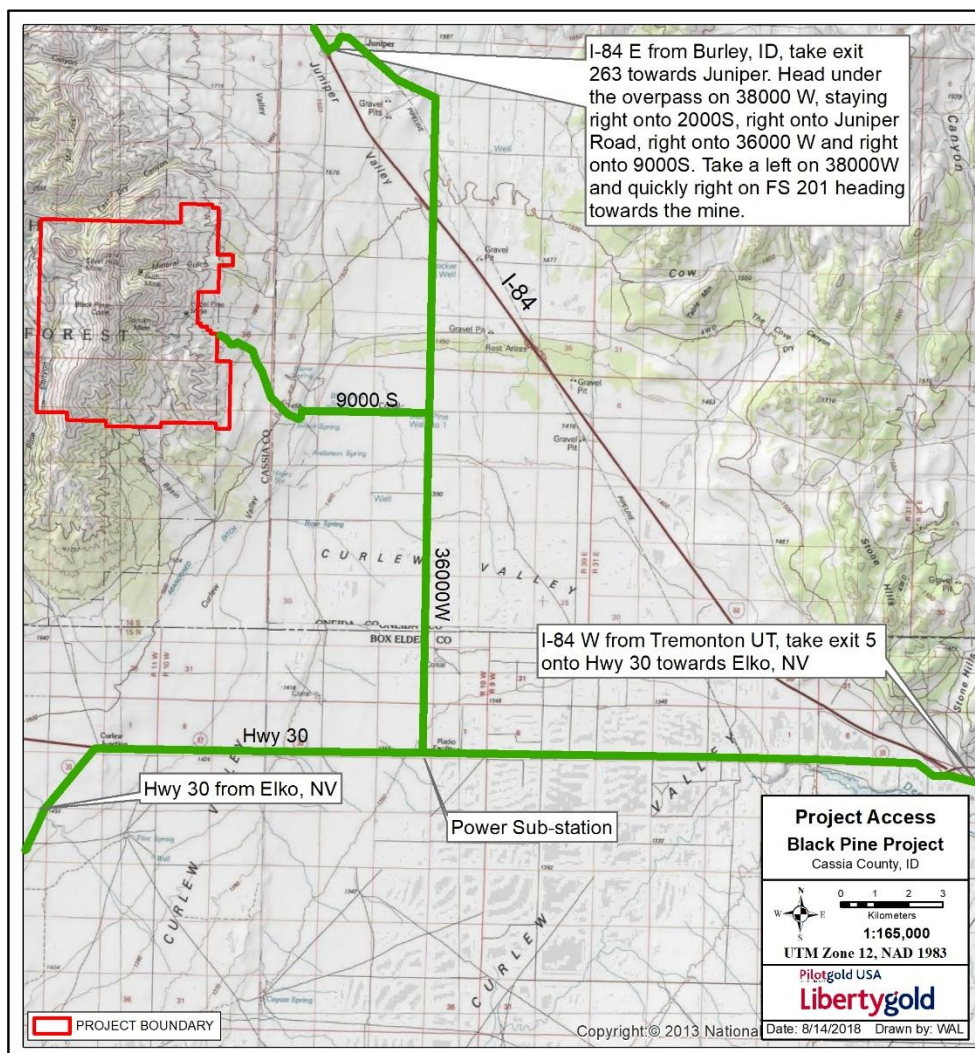
## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY (ITEM 5)

The information summarized in this section is derived from publicly available sources, as cited. Mr. Gustin has reviewed this information and believes this summary is materially accurate.

### 5.1 Access to the Property

The Black Pine project is located approximately 10 kilometers west of U.S. Interstate Highway 84 (“I-84”) and access is available from I-84 and Utah State Highway 30 (Figure 4.1 and Figure 5.1) via improved gravel roads (County Road 36,000W and County Road 9,000S). These connect with Forest Route 201, a USFS-maintained gravel road, for 4.0 kilometers to the property entrance. The property can also be accessed from the north and I-84 via County Road 38,000W, an improved gravel road.

**Figure 5.1 Black Pine Project Access Map**  
(from Liberty Gold, 2018)





There are a number of locked gates within the property; permission to enter and keys must be obtained from Liberty Gold or the USFS.

A number of major population centers with commercial air service are located in the region surrounding the Black Pine project. The cities of Twin Falls, Idaho and Salt Lake City, Utah are located about 175 kilometers to the northwest and 190 kilometers to the southeast, respectively. Elko, Nevada is located approximately 300 kilometers southwest of the project, and Boise, Idaho is 340 kilometers to the northwest (Figure 4.1).

## **5.2 Climate**

The climate in the project area and the surrounding region is of the continental, intermontane type. Temperatures and precipitation can vary widely from the high-desert valleys directly east of the property to the crest of the Black Pine Mountains west of the property. Annual precipitation is approximately 25 centimeters, with significant variations dependent on elevation. In the valleys, summer temperatures commonly range from 15°C to over 40°C. Winter temperatures generally vary from -10°C to 10° C, but they can occasionally drop to -20°C. Winter snowfall at the higher elevations can impede access from late November through late April unless snow removal equipment is deployed. Mining can be conducted year-round, but exploration activities can be impacted by winter snow storms.

## **5.3 Physiography**

The Black Pine property straddles the eastern margin of the northerly-trending Black Pine Mountains. Elevations within the property range from a low of 1,650 meters along the eastern edge, to a maximum of approximately 2,440 meters in the western part of the property. The topography is moderately steep over much of the area. There are no perennial streams; all watersheds in the property eventually drain into the Great Salt Lake basin, located to the south. Vegetation in the lower elevations of the project area consists mainly of grasses and sagebrush. In the higher elevations, increased moisture allows juniper, piñon, and mountain mahogany to flourish. A recent wildfire has denuded much of the range and only a few scattered patches of trees remain within the property.

## **5.4 Local Resources and Infrastructure**

The small agricultural community of Snowville, Utah is the nearest town to the project, about 30 kilometers to the southeast. Basic lodging, fuel, and some supplies are available. Burley, Idaho, the Cassia County seat, is located 80 kilometers to the northwest, and Tremonton, Utah is located an equal distance to the southeast. Both are full-service communities with availability of food, lodging, fuel, banking, telecommunications, and other project needs. Heavy equipment and operators are available from numerous local contractors. Drilling, engineering, and heavy-equipment services are available in Salt Lake City and Elko, as is skilled labor for mining and construction.

Grid electrical power is available from a major power line about 10 kilometers east of the project. Water for exploration drilling needs is available from several wells on BLM land immediately east of the property. Several water wells are located immediately east of the property on BLM land. The closest well to the project area is drilled in the southeast quarter of the northeast quarter of Section 36, with water encountered just below 5,000 feet (1,524 meters) in elevation (USDA Forest Service, 1993).



## 6.0 HISTORY (ITEM 6)

The information summarized in this section has been extracted and modified from Hefner et al. (1991), Shaddrick (2013), and unpublished company files, as well as other sources as cited. Mr. Gustin has reviewed this information and believes this summary is materially accurate.

### 6.1 Exploration History

The Black Pine Mountains were first explored in the 1880s (Sawyer et al., 1997). Numerous prospects and small mines exploited base- and precious-metal deposits through the late 1800s and early 1900s, when minor amounts of zinc, silver, and mercury were produced. Gold was discovered in the late 1930s or early 1940s at the Tallman mercury mine, located on the current Black Pine project. The Virmyra Gold Mining Company operated a small open pit from 1949 to 1955 according to Prochnau (1985). Total production was reported to be 120,000 tons with an average gold grade of 5.14 g Au/t (Hefner et al., 1991).

Modern exploration of the Black Pine project area began in the 1960s. Relatively little information is currently available concerning exploration work done in the 1960s to 1981. Much of what is known of that period is based on a summary in Threlkeld (1983) and archival material as follows:

**1963 - 1964:** Newmont Mining (“Newmont”) carried out geologic mapping and surface geochemical sampling, which culminated in the drilling of 17 holes. Newmont terminated their involvement with the property in 1964 at approximately the same time as the Carlin deposit was discovered in Nevada.

**1974 - 1975:** Newmont Mining reacquired the property and drilled 20 holes. At least three of the holes encountered gold grades  $>1.71$  g Au/t. Newmont also carried out soil geochemical surveys, as well as induced potential (“IP”) and ground magnetic surveys over the Tallman mercury mine area. The geophysical work was done on NW-SE lines and detected a broad area of IP chargeability highs beneath the Tallman Pit area. Newmont terminated their second involvement with the property in 1975.

**1975:** Kerr Addison Mines Ltd. took rock samples from unknown locations on the property and submitted them for Cu, Zn, and Au analyses.

**1974 - 1976:** Gold Resources Inc. (“Gold Resources”) and Permian Exploration Account (“Permian”) held claims over a portion of the property and collected numerous rock and soil samples. Liberty Gold has historical records that indicate Gold Resources drilled 16 holes during this time period. Kermadex also staked claims and carried out soil sampling in the region during this time, but little else is known of their work or results.

**1977 - 1978:** ASARCO leased the property from Gold Resources and Permian and carried out grid-based soil sampling, geological mapping, and geophysical surveys. The geophysics consisted of ground-based gravity, VLF, and IP surveys on two lines. A shallow conductor attributed to either disseminated sulfides or graphitic material was detected



with the IP and VLF, but the gravity response was minimal (Paterson, 1979). ASARCO drilled 34 “percussion” holes before terminating their interest in 1978.

**1979 - 1981:** Pioneer Nuclear Inc. (“Pioneer”) acquired the property in 1979. Pioneer carried out soil sampling and drilled 23 holes in 1979, of which 13 holes encountered gold grades >0.51 g Au/t. In 1980 and 1981, Pioneer drilled five holes in and around the historic Tallman pit.

**1983 - 1986:** Permian and Pegasus formed a joint venture and drilled 88 holes at the property during 1983, and an additional 36 reverse-circulation rotary (“RC”) holes and one core hole in 1984. Pegasus re-assayed samples from selected Pioneer holes in 1985 and defined the Tallman and Tallman NE gold deposits to a significant extent with their drilling.

**1986:** Inspiration Resource Corp. (“Inspiration”) took soil samples across several lines of existing soil grids, likely as due-diligence confirmation sampling, as there doesn’t appear to have been a joint venture agreement between Inspiration and Permian.

**1986 - 1990:** In 1986, Noranda Exploration, Inc. (“Noranda”) acquired the property from Permian. Over four years, Noranda carried out an extensive exploration and drilling program, including soil and rock sampling, detailed geological mapping, and stratigraphic studies. In 1987, Noranda contracted TerraSense Inc. to complete an airborne magnetic survey over a significant portion of the Black Pine Mountains that included the current property. These data have not yet been digitized and interpreted by Liberty Gold. Noranda drilled a total of 533 RC and conventional rotary holes, as well as three core holes for metallurgical testing samples.

On the basis of this work, Noranda discovered most of the gold zones that were later mined by Pegasus. Noranda produced a feasibility study in 1990 and sold the property to Pegasus in June 1990.

**1990 - 1998:** Pegasus put the property into production in late 1991 as an open-pit heap-leach operation. Pegasus did not build the mine as designed in the Noranda feasibility study, however, choosing to load the leach pads with run-of-mine (“ROM”) mineralized material instead of crushing it. Pegasus drilled 1,098 holes from 1990 through 1997. Soil samples were collected from grids along the southern range front and north of Mineral Gulch, and an extensive rock-sampling program was carried out. 3D deposit models were created based on domains of exploration drill-hole and blast-hole assays, without taking detailed geology into account. Mining ceased in late 1997, and the last gold was recovered from the heap in 1998.

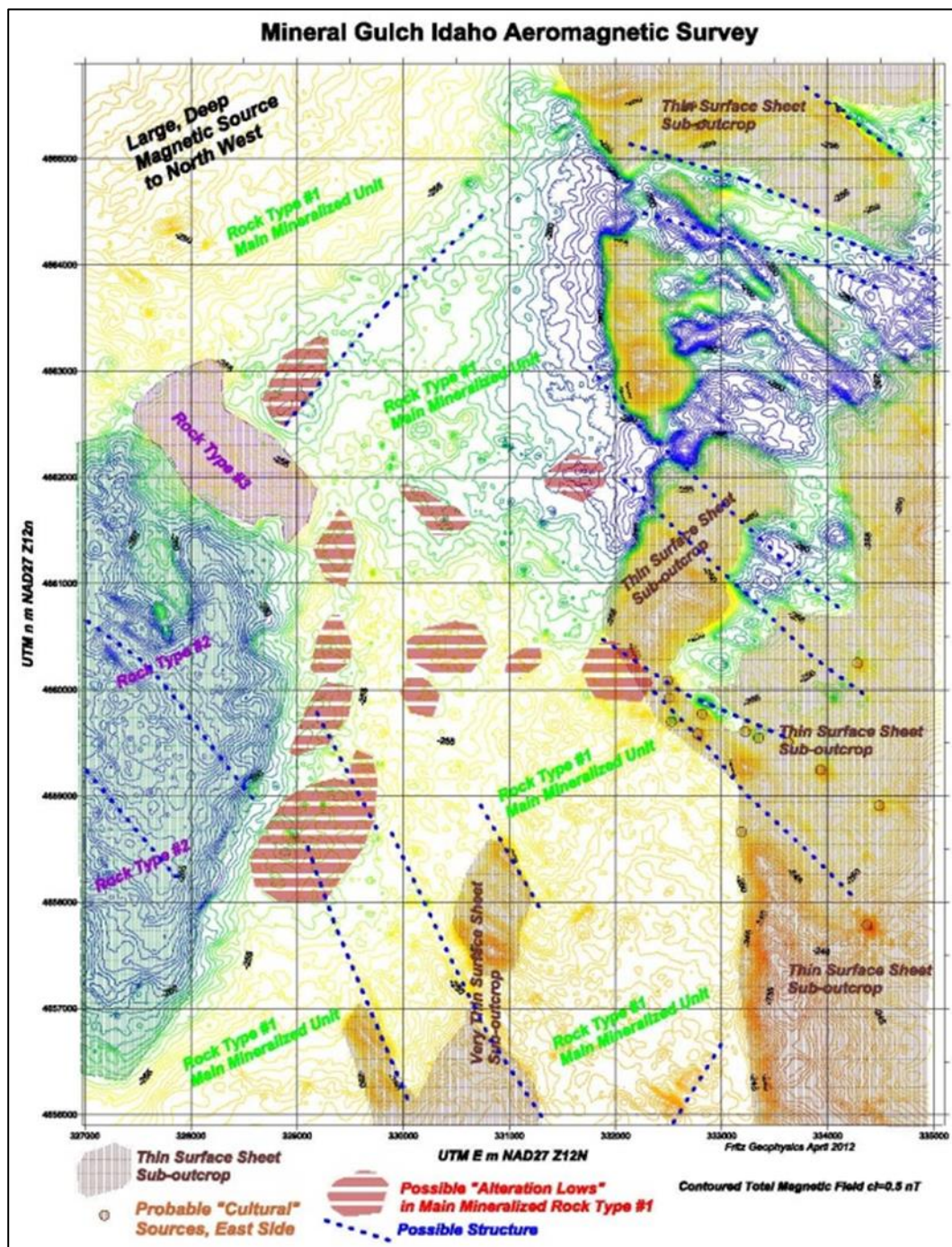
**1999 – 2009:** The property was idle from 1999 to 2009. Western Pacific acquired the property by staking in 2009.





**2011 - 2012:** Western Pacific contracted 82 line-kilometers of gravity and 20 line-kilometers of ground magnetic surveys, and also drilled a total of 35 RC holes. This was followed by an aeromagnetic survey in 2012 of 1,842 line-kilometers flown by EDCON-PRJ, Inc. and interpreted by Fritz Geophysics. (Fritz, 2012; Figure 6.1).

**Figure 6.1 2012 Total Field Airborne Magnetic Map, Black Pine Area**  
(from Fritz, 2012)





## **6.2 Historical Geological Mapping**

The regional to district-scale geology of the Black Pine project area is illustrated by the 1:50,000 scale U.S. Geological Survey (“USGS”) map of the Strevell 15-Minute Quadrangle, Cassia County, Idaho by Smith (1982). Noranda geologists and consultants produced the most comprehensive geological map of the Black Pine property (Ohlin, 1988). Later mapping by Pegasus did not appear to improve upon the Noranda maps, even with the additional excellent exposures afforded by the open pits.

Pit-geology maps generated by Willis (2011) for Western Pacific were imported into the Liberty Gold database and draped onto topography using Leapfrog software, which allowed Liberty Gold to conclude that the 2011 pit maps correlate well with down-hole lithology data.

Liberty Gold possesses numerous scanned maps from historical operators, mostly of limited scope, but, with the exception of the Noranda map, none have been integrated into the database as of the Effective Date of this report.

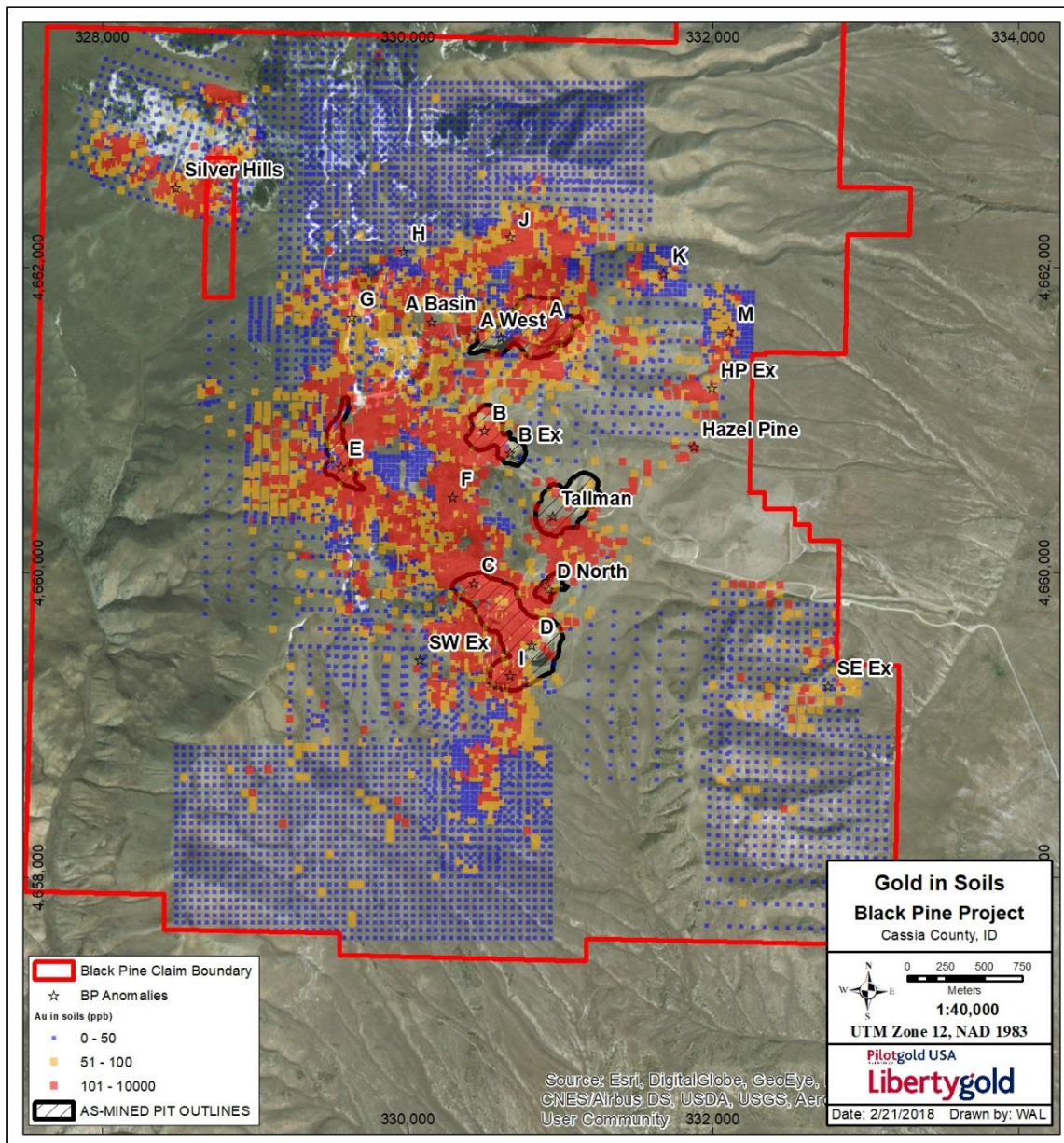
## **6.3 Historical Soil Sample and Stream Sediment Data**

Liberty Gold has compiled and digitized geochemical data from 10,560 soil samples collected and analyzed by at least three historical operators, including Noranda, Pegasus, and Western Pacific (Figure 6.2). Relatively little is known about the soil-sampling methods used by operators prior to 2011. Soil sampling was primarily grid-based, with sample spacings ranging from ~15 to ~120 meters. There are also numerous scanned maps of earlier soil grids, of limited extent, from nearly every historical operator, including Gold Resources, Newmont, Kermadex, Inspiration, Permian, Asarco, Pegasus (pre-Noranda), and Pioneer, but none of these have been geospatially registered and digitized by Liberty Gold. Comparison of the Pegasus-era soil data with scanned maps of Noranda-era compiled soil samples indicates that Pegasus likely only added small soil grids to the north of Mineral Gulch and south from the South East Extension zone.

Western Pacific contracted two soil surveys. The northern grid (1,195 samples) was collected by contractors Rangefront Consulting LLC of Elko, Nevada, and the southern grid (1,300 samples) was collected by contractors North American Exploration of Salt Lake City, Utah. The work was done under the supervision of Western Pacific’s qualified person. Samples were collected on 50- by 50-meter grids with locations established by handheld Global Positioning System (“GPS”) units. Soil material was taken from the “B” horizon, where present, and omitted in areas of exposed rock.



**Figure 6.2 Historical Gold-in-Soil Samples at Black Pine**  
(from Liberty Gold, 2018)



Note: letters refer to historical pit names and historical gold anomalies (shown with small stars)

The soil samples compiled by Liberty Gold delineate a strong gold-in-soil anomaly, with 4,523 samples that assayed >50 ppb Au and 2,756 samples that assayed >100 ppb Au. These samples principally form a broad, diamond-shaped anomaly over the historical mine area, of approximately four kilometers north-south by about three kilometers in an east-west direction (Figure 6.2). It is clear that soil geochemistry played a critical part in determining historical exploration targets, owing to this excellent correlation between elevated gold-in-soils and the locations of historical deposits and pits, as well as its correlation with historical drilling targets. Several gold-in-soil anomalies have not yet been drill tested at Black Pine, however, and are high-priority drill targets for Liberty Gold.



Stream-sediment surveys were carried out by some operators, but Liberty Gold has not yet digitized and evaluated the data.

#### **6.4 Historical Rock-Chip Geochemistry**

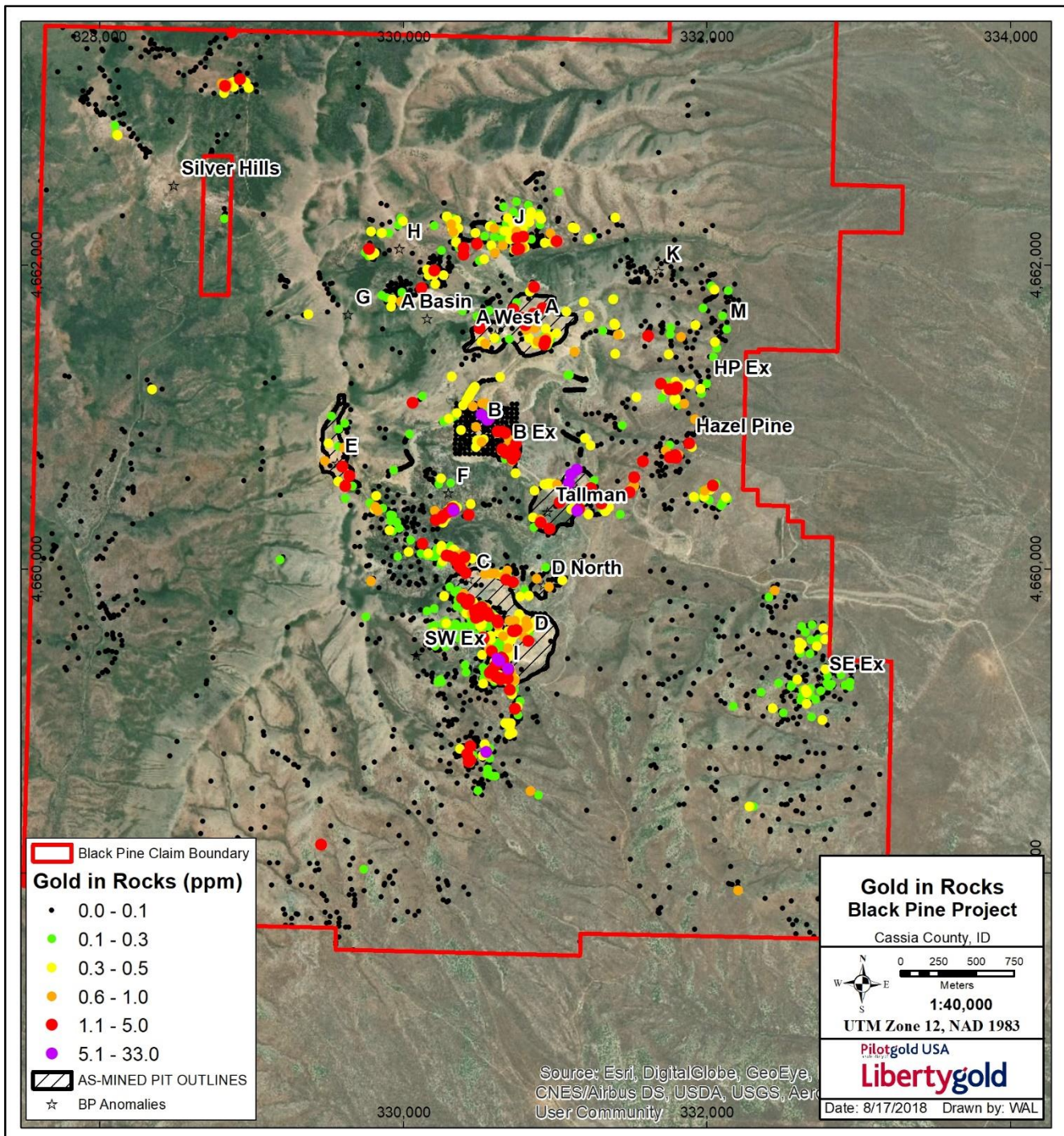
A large number of historical surface rock samples have been taken over the course of exploration of the Black Pine property. A historical electronic database with 5,296 samples across the Black Pine Mountains was recovered from Pegasus' project archives, including 3,728 that were taken within the current property boundary. However, examinations of historical maps indicate the Pegasus rock-chip database is missing significant data from Noranda sampling campaigns and also appears to be lacking rock samples from pre-Noranda operators. Liberty Gold is in the process of compiling and digitizing the Noranda and earlier rock sample data.

Western Pacific collected 328 rock chip samples, primarily focused on existing pits and road cuts, and intended to verify and expand the known mineralization indicated by the historic exploration and mining data (Shaddrick, 2013). Liberty Gold is only in possession of the location and geochemical data for 248 of these samples, 246 of which were taken within the current property boundary.

Of the 3,974 historic samples in the digital database taken within Liberty's property boundary, 1,094 returned gold values in excess of 0.1 g Au/t, 147 were in excess of 1.0 g Au/t, and 14 samples assayed greater than 5.0 g Au/t. The presently compiled historical gold results from rock samples are shown in Figure 6.3.



Figure 6.3 Gold in Historical Gold Rock Samples  
(from Liberty Gold, 2018)



Note: letters refer to historical pit names and historical gold anomalies (shown with small stars).



## 6.5 Historical Resource and Reserve Estimates

A number of resource and reserve estimates were carried out by historical operators, only a few of which are summarized herein, and most of the mineralized materials included in these historical estimates has since been mined. The classification terminology is presented as described in the original references. It is not known if this terminology conforms to the meanings ascribed to the Measured, Indicated, and Inferred mineral resource classifications, or the Proven and Probable reserve classifications of the Canadian Institute of Mining, Metallurgy and Petroleum’s “CIM Definition Standards - For Mineral Resources and Reserves, Definitions and Guidelines” (“CIM Standards”). All of the estimates were originally reported in Imperial units of measure, and these units are retained for historical accuracy.

Prochnau (1985) carried out a “reserve estimate” for Noranda in the course of evaluating the Black Pine property for potential acquisition. The Tallman Pit area was divided into three zones (Tallman Pit, South Ore Body and North Ore Body). Using a polygonal estimate with a cutoff grade of 0.03 oz Au/ton, a tonnage factor of 13 ft<sup>3</sup>/ton, and no dilution, Prochnau (1985) estimated reserves of 434,000 tons at a grade of 0.068 oz Au/ton. Other key assumptions, parameters and methods used to prepare this estimate are not known to the authors. The classification of these reserves differs from the CIM Definition Standards, but the extent and nature of these differences is not known to the authors. The authors are not aware of what work needs to be done to upgrade or verify this historical estimate as current mineral resources or mineral reserves. This estimate is relevant only for historical interest and the authors have not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves. Liberty Gold is not treating this historical estimate as current mineral resources or mineral reserves, and the estimate should not be relied upon.

Noranda outlined “reserves” in all categories, as summarized in Table 6.1 (Noranda, 1989).

**Table 6.1 Mid-1989 Noranda “Reserves”**

Deposit	Classification	Tons	Grade (opt)	Gold (ounces)
Tallman, A, B	Proven	5,357,000	0.040	163,200*
Tallman, A, B	Probable	1,016,000	0.040	30,900*
C, D, E	Drill Indicated	3,597,000	0.057	155,900*
A-west	Proven**	2,753,000	0.025	68,800*
G, A-south, J	Drill Indicated	2,381,000	0.035	62,800*
Total		15,094,000	0.040	481,600*
Total in-ground				633,700

\* = recoverable

\*\* = “sub-economic”

The key assumptions, parameters and methods used to prepare these estimates are not known to the authors. The classification of these reserves differs from the CIM Definition Standards, but the extent and nature of these differences is not known to the authors. The authors are not aware of what work needs to be done to upgrade or verify this historical estimate as current mineral resources or mineral reserves. This estimate is relevant only for historical interest and the authors have not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves. Liberty Gold is



not treating this historical estimate as current mineral resources or mineral reserves, and the estimate should not be relied upon.

### 6.5.1 Pegasus Historical Reserve Estimates

Pegasus produced a number of estimates of “reserves” from 1991 through 1996 as summarized in Table 6.2. The key assumptions, parameters and methods used to prepare these estimates are not known to the authors. The classification of these reserves differs from the CIM Definition Standards, but the extent and nature of these differences is not known to the authors. The authors are not aware of what work needs to be done to upgrade or verify these historical estimates as current mineral resources or mineral reserves. These estimates are relevant only for historical interest and the authors have not done sufficient work to classify the historical estimates as current mineral resources or mineral reserves. Liberty Gold is not treating these historical estimates as current mineral resources or mineral reserves, and these estimates should not be relied upon.

**Table 6.2 1990s Pegasus Historical Reserve Estimates**

Area	1991		1992		1993		1994		1995		1996	
	ounces	oz Au/ton	ounces	oz Au/ton	ounces	oz Au/ton	ounces	oz Au/ton	ounces	oz Au/ton	ounces	oz Au/ton
Tallman Pit	68,487	0.023										
B Pit	88,731	0.036	47,826	0.048	18,876	0.036						
A Pit	181,345	0.019	181,345	0.02	249,840	0.018	49,667	0.19				
E Pit			67,655	0.07	58,770	0.057	50,981	0.072				
B Extension			39,471	0.023	25,106	0.026						
C/D			125,600	0.022	61,600	0.027	155,700	0.016	94,768	0.015	6,539	0.014
A Basin			50,500	0.03								
J Anomaly					20,300	0.025						
I Pit									21,410	0.014		
NE Tallman											26,320	0.017
<b>Internal Documents</b>	<b>338,563</b>	<b>?</b>	<b>336,297</b>	<b>0.026</b>	<b>415,809</b>	<b>0.02</b>	<b>256,358</b>	<b>0.019</b>	<b>116,178</b>	<b>0.015</b>	<b>32,859</b>	<b>0.0165</b>
Annual Report			336,297	0.026	346,000	0.018	256,000	0.019	116,000	0.015	29,959	0.017
Mineralized Material*	271,839	0.023	242,878	0.022	32,950	0.023	41,000	0.016			24,702	0.0135
<b>Mineralized Material* + Addl. Mineralized Material**</b>	<b>271,839</b>	<b>0.023</b>	<b>242,878</b>	<b>0.022</b>	<b>32,950</b>	<b>0.023</b>	<b>421,000</b>	<b>?</b>	<b>420,417</b>	<b>0.013</b>	<b>443,802</b>	<b>0.013</b>
<b>All Mineralization</b>	<b>610,402</b>		<b>579,175</b>		<b>448,759</b>		<b>677,358</b>		<b>536,595</b>		<b>476,661</b>	

\*Mineralized Material defined as "within a floating cone or whittle pit that is not included in the current mine plan, or that needs better sampling to better define the zone."

\*\*Additional Mineralization defined as "all material within the computer block model at the measured/indicated level of geologic confidence but outside the current defined pits used for reserve definition. At Black Pine, some of this mineralization is surrounding mined-out pits and has a very low chance of becoming a future reserve." (Pegasus Gold Interoffice Memorandum, January 23, 1997)

In February 1997, late in the Black Pine mine life, “reserves” were estimated to be 1.8 million tonnes with a grade of 0.58 g Au/t, with “additional mineralized material” that totaled 1.7 million tonnes at a grade of 0.46 g Au/t (Metals Economics Group Report, 2012, quoting a 2/19/97 Pegasus press release). Key assumptions, parameters, and methods used in this historical estimate are not known to the authors. The classification of these reserves differs from the CIM Definition Standards, but the extent and nature of these differences is not known to the authors. The authors are not aware of what work needs to be done to upgrade or verify this historical estimate as current mineral resources or mineral reserves. This estimate is relevant only for historical interest and the authors have not done sufficient work to classify



the historical estimate as current mineral resources or mineral reserves. Liberty Gold is not treating this historical estimate as current mineral resources or mineral reserves, and the estimate should not be relied upon.

## 6.6 Past Production

The Silver Hills, Ruth, Mineral Gulch, and Hazel Pine mines, all within the current property boundary, were located along the eastern edge of the Black Pine Mountains and operated between approximately 1915 and 1920, with the Silver Hills mine producing until 1932. Production was mostly on the order of a few tens to hundreds of tonnes from veins containing quartz, tetrahedrite, sphalerite, jamesonite, pyrite, and oxides of copper, zinc, antimony and iron (Anderson, 1931; Brady, 1984).

According to Prochnau (1985), the Virmyra Mining Company operated the Tallman pit from 1949 through 1955. Gold production from this operation was estimated to be 109,000 tonnes with an average gold grade of 5.14 g Au/t (Hefner et al., 1991). The ore was treated by cyanide vat leaching. The tailings from this operation contained an estimated 0.026 oz Au/ton (0.89 g Au/t), indicating recoveries of approximately 80% (Prochnau, 1985).

After acquiring the Black Pine property from Noranda in mid-1990, Pegasus constructed a cyanide heap-leach pad and gold recovery plant and began extraction of mineralized material from the Tallman pit in October 1991 (Pegasus 1993 Annual Report). The first gold was poured on January 9, 1992. Pegasus subsequently mined five additional pits through 1997. Material was mined from the open pits at a rate of approximately 37,000 tons (33,600 tonnes) per day and ROM ore was placed on a multiple-lift, valley-fill leach pad. Gold was recovered using carbon adsorption and doré bars were produced after solvent electrowinning. Approximately 26.5 million tonnes of waste rock and 31 million tonnes of ore were mined between 1991 and 1997 (Sawyer, undated).

Mining ceased at Black Pine in late 1997 and the heap-leach pad was subsequently rinsed and reclaimed (Sawyer, undated; Powell, 2012a). Table 6.3 summarizes the production reported by Pegasus in annual reports and SEC filings, which differ slightly from similar information found in other reports (e.g. Pegasus internal reports, Intierra website, Sawyer, undated).

**Table 6.3 1990s Production Summary of the Black Pine Mine**

(metric tonnes and grams)

	1992	1993	1994	1995	1996	1997	1998	Totals
*ROM Ore mined (tonnes 000's)	2,850	3,270	5,810	7,050	8,730	2,650	-	30,360
*Stripping ratio	-	1.3	1.16	1.16	0.98	2.43	-	1.13
*Average gold grade (g/t)	0.55	0.82	0.69	0.72	0.52	0.55	-	
*Gold recovery percentage	-	80%	54%	59%	60%	61%	-	
**Ounces of gold to heap leach	109,080	88,438	130,270	164,316	147,186	26,320		665,610
*Ounces of gold recovered	48,700	66,100	65,700	108,500	87,900	44,100	13,800	434,800
Calculated gold recovery								65%
*Ounces of silver recovered	14,900	28,600	39,100	59,300	31,000	16,200	-	189,100

\*from Pegasus Gold Annual Reports, SEC Form 10-K filings, and BPMI closure report by Sawyer et al.

\*\*from Pegasus Gold internal yearly production statements





## **7.0 GEOLOGIC SETTING AND MINERALIZATION (ITEM 7)**

The information presented in this section of the report is derived from multiple sources, as cited. Mr. Gustin has reviewed this information and believes this summary accurately represents the Black Pine project geology and mineralization as it is presently understood.

### **7.1 Regional Geology**

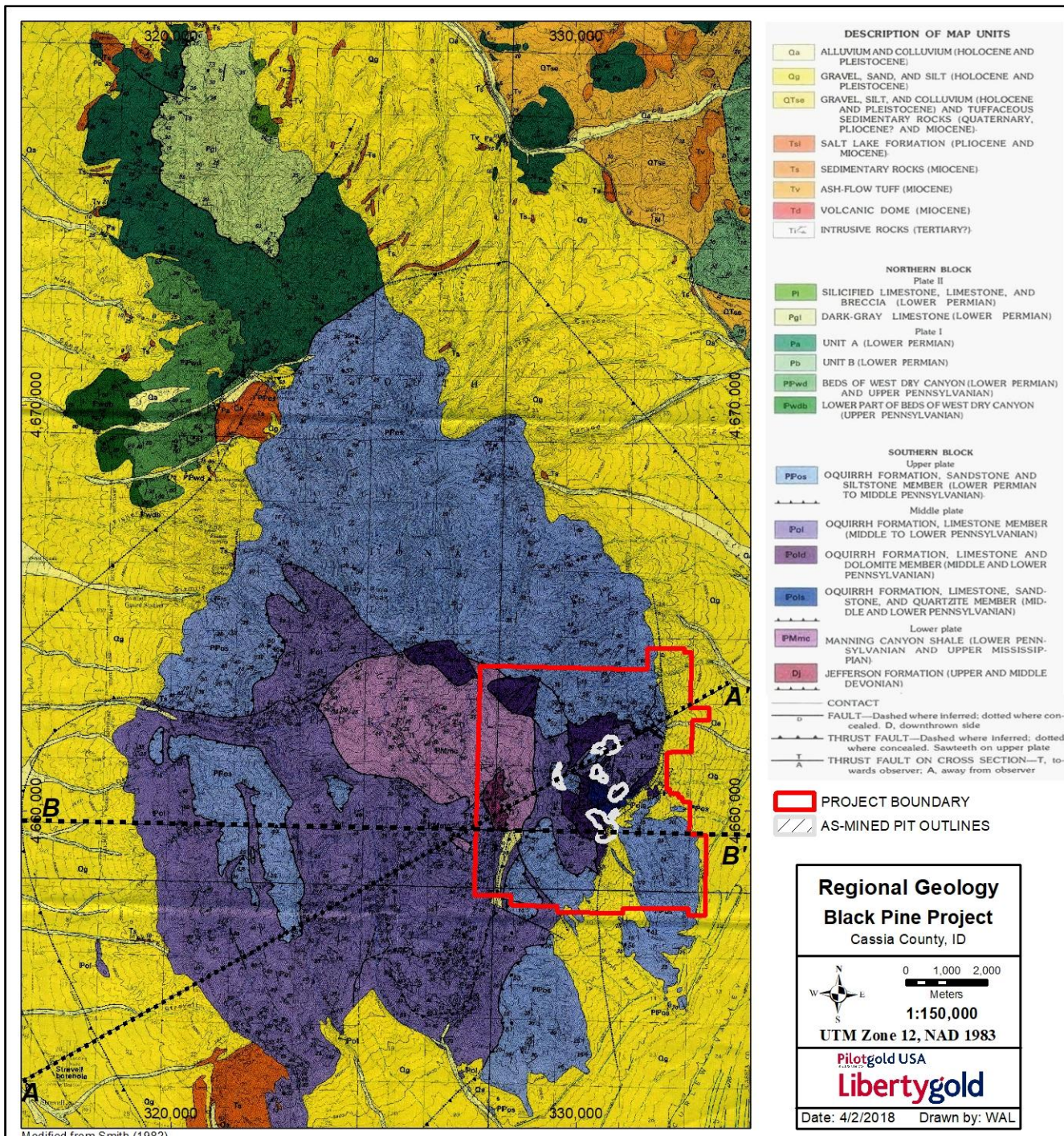
The Black Pine property is located in the northeastern portion of the Basin and Range physiographic province, near the late Proterozoic rifted continental margin of North America. Rifting was followed by late Proterozoic and early Paleozoic subsidence, and accumulation of a thick sequence of continental margin siliciclastic and carbonate rocks ranging from near-shore sandstone and shale, to offshore carbonate reef and lagoonal deposits. Beginning in the middle of the Paleozoic era, plate collisions from the west led to a series of intra-plate contractional orogenic events, starting with the emplacement of the Roberts Mountains allochthon (“RMA”) in Late Devonian and Early Mississippian time. Although the RMA is located to the west of the Black Pine Mountains, it shed siliciclastic material into a foreland basin that stretched across much of what later became the eastern Great Basin, defined as the hydrographic region across the western United States that has no hydrologic connectivity to the ocean, including portions of Nevada, Oregon, Utah, California, Idaho, and Wyoming. Subsequently, the Pennsylvanian-age Humboldt orogeny (Theodore et al., 1998), caused folding of the rocks in the Black Pine area. In the Middle to Late Jurassic epochs, much of the area along the Nevada-Utah border was affected by an orogenic event known as the Elko orogeny, characterized by thrusting and attenuation faulting, with local areas of low-grade metamorphism (Thorman and Peterson, 2004). Later, the mid-Cretaceous Sevier orogeny caused widespread, primarily thin-skinned, east-vergent folds and thrust faults throughout the eastern Great Basin. There is some evidence that the Laramide orogeny may also have affected this region in the Late Cretaceous epoch.

In the Paleocene, contractional deformation gave way to extensional deformation across the Great Basin. Throughout most of the Cenozoic, extension involved low-angle normal faults, with up to 100 kilometers of offset, which has resulted in the exposure of high-grade metamorphic rocks on the surface. Listric normal faults associated with these low-angle normal faults tilted strata as young as Miocene in age, generally in an eastward direction. The latest manifestations of extension are “Basin and Range” style block faults that divide the Great Basin into its characteristic horsts and grabens.

The Black Pine Mountains are predominantly underlain by Devonian to Permian sedimentary rocks, some of which are weakly metamorphosed. These occur in two major structural blocks, separated by a fault which transects the range from southwest to northeast (Figure 7.1). The southern block, which includes the Black Pine project, consists largely of structurally interleaved members of the Permo-Pennsylvanian Oquirrh Group, including limestone, sandstone, dolomite, and siltstone. The Oquirrh Group is a regionally significant unit that hosts mineralization elsewhere in the northeastern Great Basin, for example, in the Bingham Canyon District (Shaddrick et al., 1991; Hintze, 1991). It is described in more detail below.



**Figure 7.1 Generalized Geological Map of the Black Pine Property**  
(modified from Smith, 1982; dashed black lines are cross sections shown in Figure 7.2)

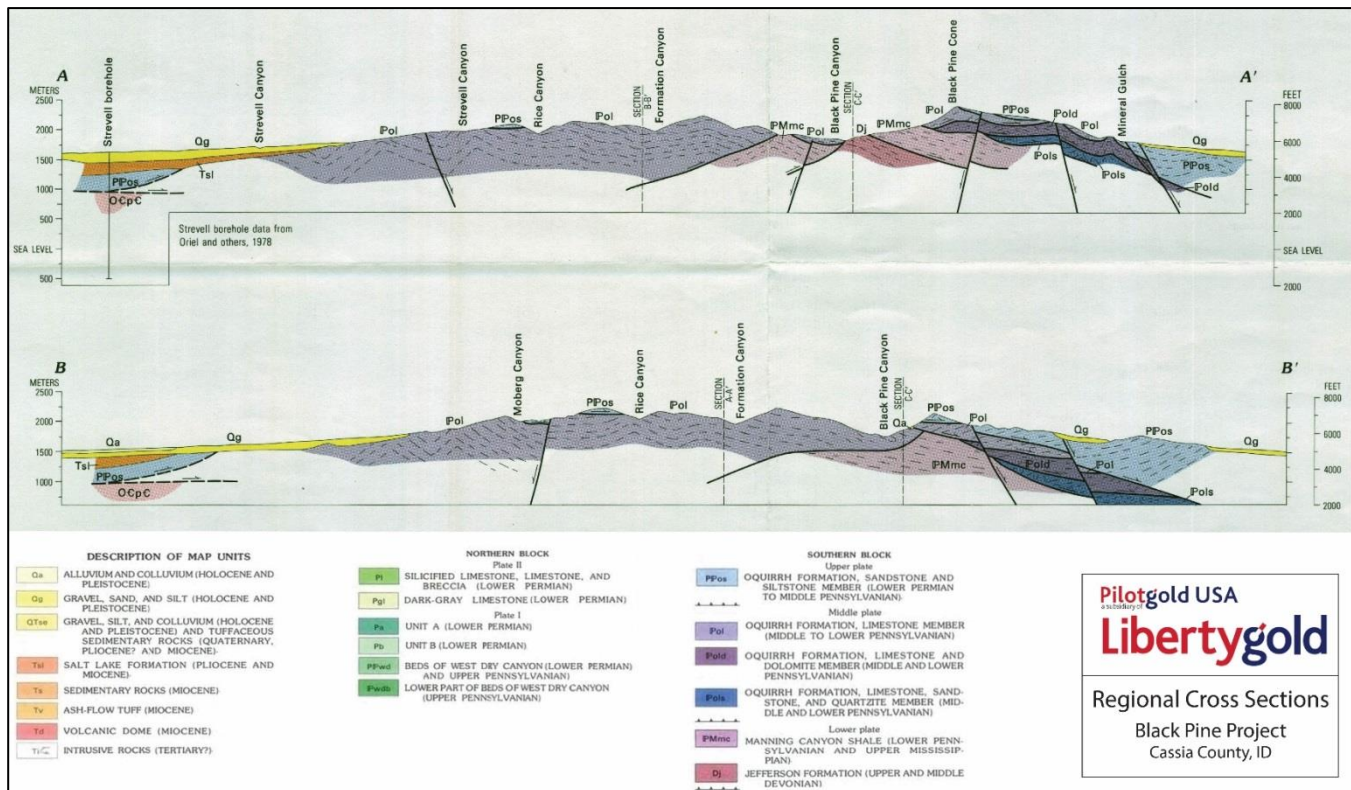


The southern block can be divided into three structural plates, bounded by low angle faults (Figure 7.1 and Figure 7.2). The lowest plate comprises the Devonian Jefferson Formation and the Upper Mississippian-Lower Pennsylvanian Manning Canyon Shale, which were deposited in the Antler



foreland basin. The middle plate consists of structurally interleaved members of the Oquirrh Group, including limestone and minor dolomite, variably calcareous sandstone, and siltstone and quartzite, and it is of primary interest as a host rock for gold mineralization. The upper plate consists primarily of sandstone and siltstone of the upper portion of the Oquirrh Group. The lowermost plate is believed to structurally overlies a basement of weakly metamorphosed rocks of suspected Cambro-Ordovician age (Smith 1982; Figure 7.2).

**Figure 7.2 Schematic Cross Sections through the Black Pine Mountains**  
(lines of sections shown in Figure 7.1; modified from Smith, 1982)



The northern block is comprised of two thrust plates. The lower thrust plate consists of four informally-named stratigraphic units, ranging from Late Pennsylvanian to Early Permian in age, probably corresponding to the upper portion of the Oquirrh Formation. The upper plate consists of limestone and silicified limestone of Early Permian age.

Igneous rocks are not abundant in the Black Pine Mountains. The Paleozoic rocks have been intruded by a few small, altered, intermediate to mafic dikes and sills. Tertiary ash-flow tuff and a rhyolitic flow-dome overlie the Paleozoic rocks outside the property (Smith, 1982; Brady, 1984).

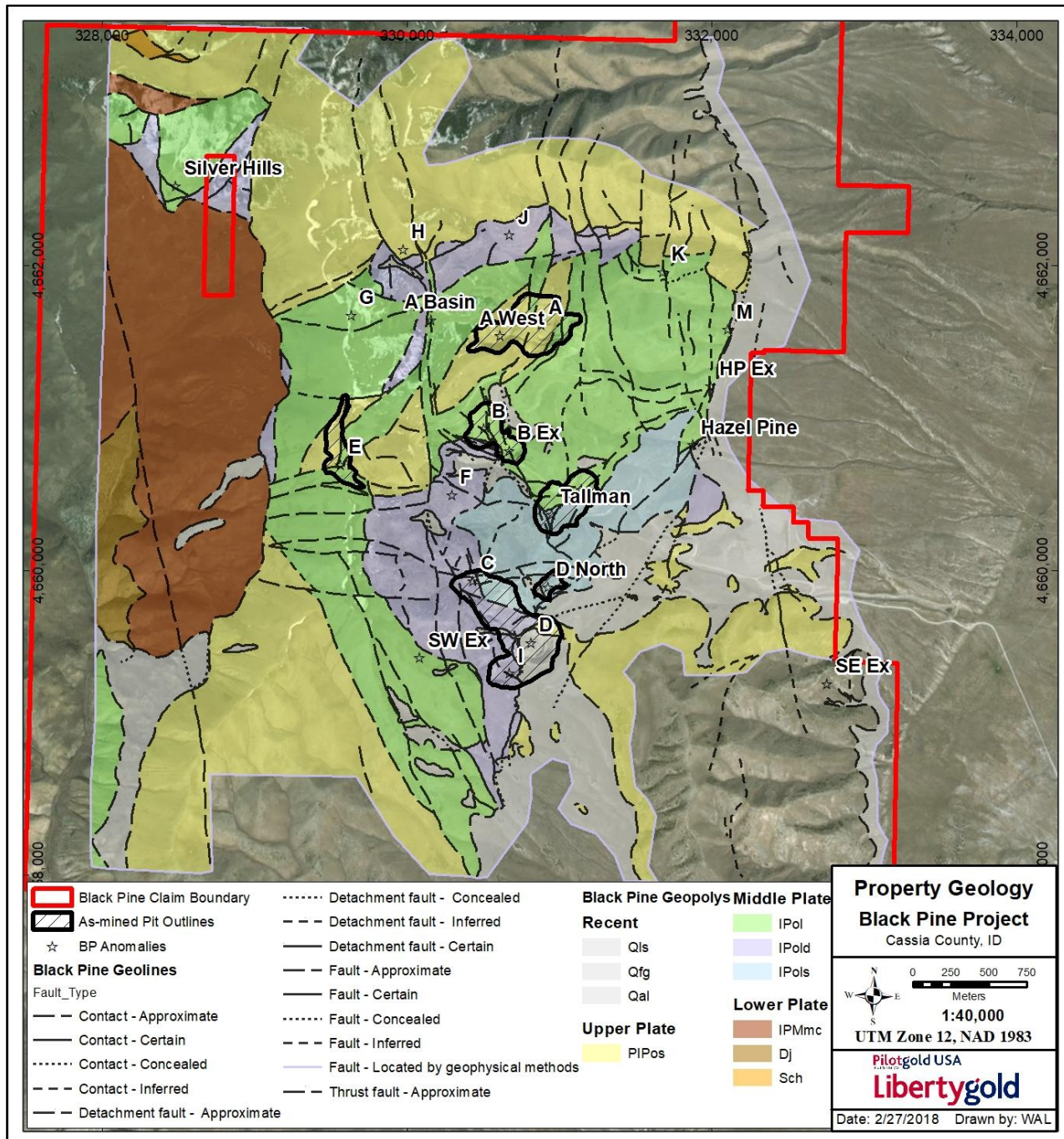
## 7.2 Property Geology

The Black Pine property is located within the southern structural block of the Black Pine Mountains where exposures consist of the lower plate units of the Jefferson Formation and Manning Canyon Shale,



along with middle and upper plate units of the Oquirrh Formation, including weakly metamorphosed limestone and dolomite, silty and sandy limestone, calcareous sandstone and siltstone, quartzite, and shale (Figure 7.3).

**Figure 7.3 Geologic Map of the Black Pine Mine Area**  
(from Liberty Gold, 2018)

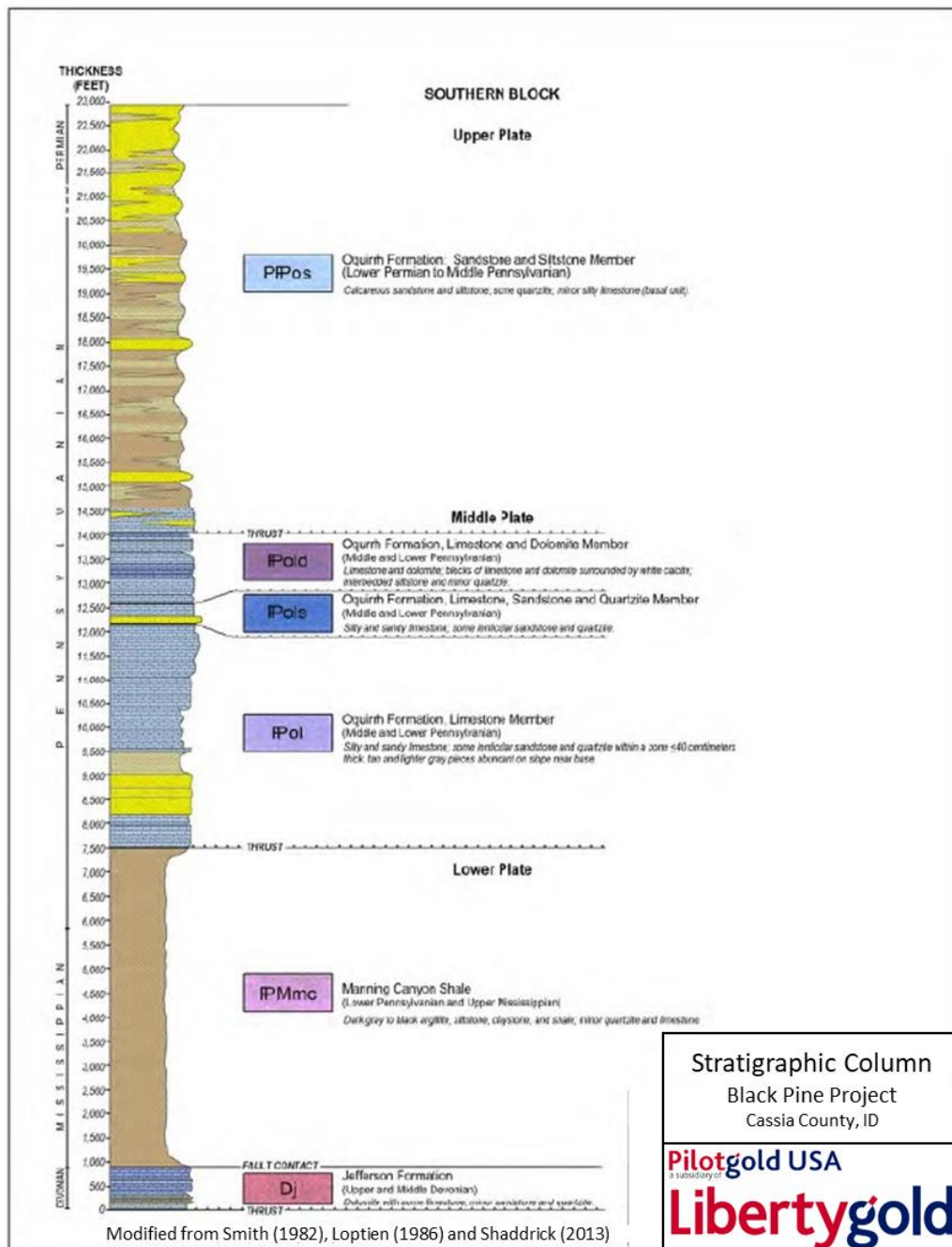


Note: "BP Anomalies" shown by small stars are historically named zones of anomalous gold mineralization, some of which have been partially mined.



The pre-Cenozoic strata shown in Figure 7.3 are strongly folded and cut by faults. All contacts between formations and units are interpreted or observed to be fault contacts (Smith, 1982), making construction of a true stratigraphic sequence for the project area problematic, although fossil data do constrain ages of the units (Smith, 1982, 1983). Figure 7.4 shows one possible reconstruction of a stratigraphic sequence (after Loptien, 1986), which includes a tectonostratigraphic section showing likely older over younger thrust-fault contacts between middle plate units.

**Figure 7.4 Stratigraphic Column for the Black Pine Project Area**  
(from Liberty Gold, 2018)





### 7.2.1 Stratigraphy

The stratigraphy in the project area records the transition from the top of the Devonian shelf and platform, through foreland-basin sedimentation associated with the mid-Paleozoic Antler orogeny, to basin and platform conditions that persisted throughout much of the late Paleozoic era.

**Jefferson Formation (Dj):** The Jefferson Formation is the oldest stratigraphic unit exposed in the project area. It is Devonian in age, and consists of dolostone with minor sandstone and quartzite, representing very shallow water to intertidal conditions on the inner shelf, with some contribution of siliciclastic material from highlands to the east. It is found in the lower structural plate in the lowest-elevation areas in the western part of the property.

**Manning Canyon Shale (IPMmc):** The Manning Canyon Shale consists of up to 2,000 meters of recessive-weathering, dark grey to black argillite, and siliceous shale and siltstone with minor quartzite and limestone. It is Late Mississippian in age in the Black Pine area. The Manning Canyon Shale formed in response to emplacement of the Roberts Mountains allochthon over areas to the west, reflecting foreland-basin sedimentation. It is present in the lowest structural plate in the western part of the property and is recessive weathering.

### Oquirrh Group

The Oquirrh Group represents sedimentation over a long period of time into a shallow basin and platform setting. Rocks assigned to the Oquirrh Group are present over much of the northwestern part of Utah and locally into southern Utah. In more well-studied portions of the Oquirrh Group, thicknesses and rock types vary significantly in different mountain ranges, as well as between thrust sheets. In general, however, it consists of a lower Pennsylvanian unit dominated by limestone, a middle Pennsylvanian unit that is a mixture of quartz sandstone, shale, and limestone, and an upper Pennsylvanian unit dominated by quartz sandstone. These have been divided into a number of formations and members, depending on location.

The Oquirrh Group may be up to 5,000 meters thick in the Black Pine area, although interleaving and attenuation of the section by low-angle faults makes stratigraphic analysis difficult. Smith (1982), Loptien (1986), and Ohlin (1989) divided the Oquirrh Group into four informal members, three in the middle structural plate and one in the upper plate, summarized broadly from Ohlin (1989) as follows:

**Pol - Limestone Member:** The Limestone Member of the Oquirrh Group is the thickest and most widespread of the three members of the middle structural plate. It is interpreted as the upper member of the middle plate and consists of platy, silty limestone and siltstone, which generally does not form ledges, but this unit may be overturned (Smith, 1982) or may be stratigraphically continuous with the underlying Pold (Hefner et al., 1991). It is distinguished from the middle member of the middle plate by the first appearance of siltstone or sandy siltstone with interbedded limestone lenses. Massive limestone and silty-sandy limestone and calcareous sandstone are present as lenses and form resistant outcrops. Close to the contact with the upper plate, a distinctive zone of phyllite or phyllic alteration is present.



***Pol*** – *Limestone and Dolomite Member*: This middle member of the middle structural plate is characterized by thick-bedded, cliff-forming silty limestone (calcarenite) and minor dolomite, limestone breccia, and minor sandstone. The breccia of angular limestone clasts with a limestone or white calcite matrix is thought to be tectonic in origin. Sandy beds are common in the upper part of the member and become more common in the northern part of the property. Some workers believe that the contact with the overlying upper member is conformable, even though it is commonly faulted (Hefner et al., 1991); others believe that the contact is not conformable (Smith, 1982). The basal contact of the middle member with the lower member is interpreted to be a fault.

***Pols*** – *Limestone, Sandstone and Quartzite Member*: This unit also consists of dominantly siltstone and lesser silty and sandy limestone, with some lenticular beds of sandstone and quartzite. Several major lenses of calcareous sandstone and quartzite are present in the vicinity of the Tallman pit and overly mineralized silty limestone and sandstone. Wavy bedding, crossbedding, and ripple marks characterize the limestone (Smith, 1982; Ohlin, 1989). The age is also given as Early to Middle Pennsylvanian.

***PPos*** – *Sandstone and Siltstone Member*: This unit, present in the upper structural plate, consists of poorly sorted, quartz-rich calcareous sandstone and siltstone, with minor silty limestone lenses, especially at the base. It is brownish-weathering and relatively distinctive due to its structural position and relative lack of limestone, and it appears to correlate with the upper sandstone-dominated formations in the Oquirrh Group in more well-studied areas to the south. Breccia zones and fracturing are common. It is assigned an age of Middle Pennsylvanian to Early Permian.

Given that the rock descriptions and ages are overlapping, and the rocks are complexly interleaved along faults in and between the middle and upper structural plates (see Section 7.2.2), it is not clear how useful these divisions are. They may represent age-equivalent packages of rock that were subsequently brought into juxtaposition by faulting (Shaddrick, 2013).

## **Cenozoic Intrusive Rocks**

Narrow dikes and sills of andesite have intruded the Paleozoic rocks in the Black Pine project area. They are typically up to a meter in width and contain phenocrysts of feldspar, hornblende, and biotite. Alteration typically consists of chlorite, sericite, and pyrite with some clay. At surface and in drill holes, the dikes are typically strongly oxidized to a deep orange-brown color and strongly sericitized. In some drill intervals, they have a light-grey color, contain chlorite and brassy disseminated pyrite, and are associated with clear quartz veins. The dikes are only rarely mineralized.

## **7.2.2 Structural Geology**

As mentioned above, there are three stacked structural plates at the Black Pine property: a lower plate, comprising the Jefferson Formation and Manning Canyon Shale; a middle plate comprising the **Pol**, **Pol** and **Pols** units of the Oquirrh Group, and an upper plate consisting of the **PPos** member of the Oquirrh Group. It has been reported that lithologic contacts within the lower plate are sheared, and strata in the middle plate are very complexly structurally interleaved. The middle plate in the project area is approximately 200 to 400 meters in thickness, decreasing to the east. Rocks of the middle plate show evidence of at least two major deformation events, including thrust faults and folds, overprinted by low- to high-angle normal faults.



The contractional event is evident as 10s of meters-scale folds, ranging from recumbent folds in less competent beds, such as calcareous siltstone, to inclined and more open folds in more competent massive limestone beds (Figure 7.5, Figure 7.6, Figure 7.7, Figure 7.8, and Figure 7.9). Low-angle faults with reverse motion (drag folds, etc.) are also present. This deformation is likely associated with the Late Cretaceous Sevier orogeny, which affected rocks throughout the Great Basin. The recumbent to inclined folds appear to be overprinted by open to tight upright folds with chevron geometry. Folding appears to exert significant control on mineralization, as seen in B Extension, C, and E pits.

The normal faults in the project area are more brittle in nature and overprint the earlier deformation. Manifestations of normal faults range from semi-ductile shears to large faults with milled breccia zones (Figure 7.5). Orientations vary from low- to moderate-angle faults bounding the upper and lower contacts of the middle structural plate, to moderate- to high-angle, intra-plate faults in a variety of orientations, including northwest- to north-striking and north-dipping, and northeast-striking and southeast-dipping. These faults appear to exert significant control on mineralization, as seen in the Tallman NE Extension, B Extension, and E pits (Figure 7.5, Figure 7.6, and Figure 7.7)

A schematic cross section illustrating the complex geometry of the middle plate is shown in Figure 7.10.

### **7.3 Alteration and Mineralization**

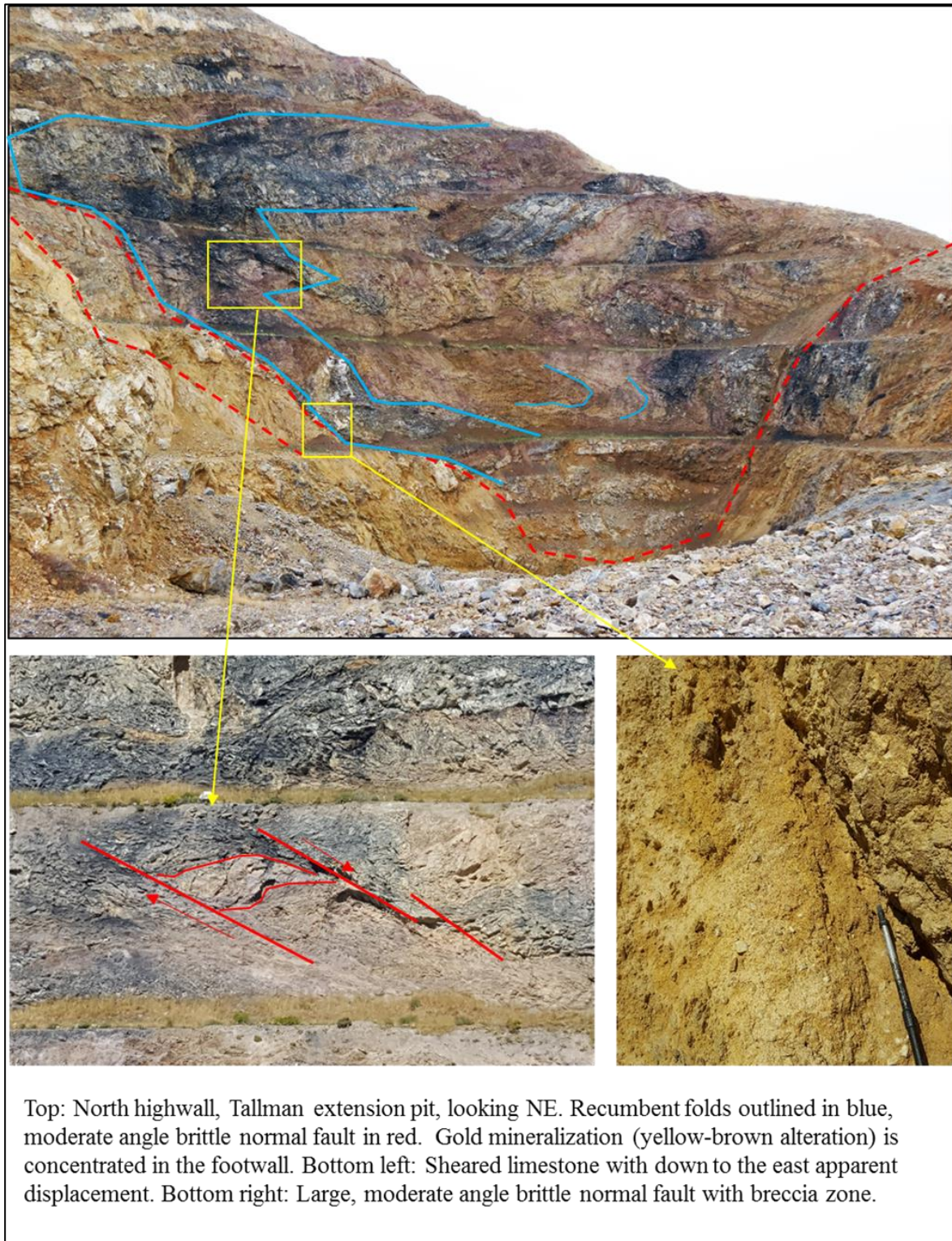
Gold mineralization, consisting of finely-disseminated, micron- and submicron-size gold particles, is located in calcareous shale and siltstone, as well as fault and dissolution breccias, in the Oquirrh Group middle plate, particularly where these favorable stratigraphic units intersect, or lie along, large normal faults. Gold was likely hosted within the lattice of arsenical pyrite rims on pyrite grains, but the mineralized rocks are now thoroughly oxidized, such that gold is present as “free” gold, associated with goethite, hematite, limonite, scorodite, barite, and silica. Gold-bearing rocks are typically strongly decalcified, with areas of weak to moderate silicification (jasperoid). Areas of calcite veining or calcite-cemented breccias are common, probably as a result of decalcification. Lenses of carbonaceous material, either remobilized or concentrated by decalcification, are locally present.

Reflected-light microscopy has shown native gold occurs in quartz and calcite veins, in hematite pseudomorphs after pyrite, and along grain boundaries (Hefner et al., 1991). In (rare) unoxidized material, an electron microscope is required to detect the gold grains, which are commonly less than 0.5 microns in diameter (Brady 1984). Gold is disseminated in clay or silt matrix of clastic rocks and micrite groundmass of limestone. Carbon is present as both graphite and organic matter; gold is associated with organic matter in both clastic and carbonate sedimentary rocks.





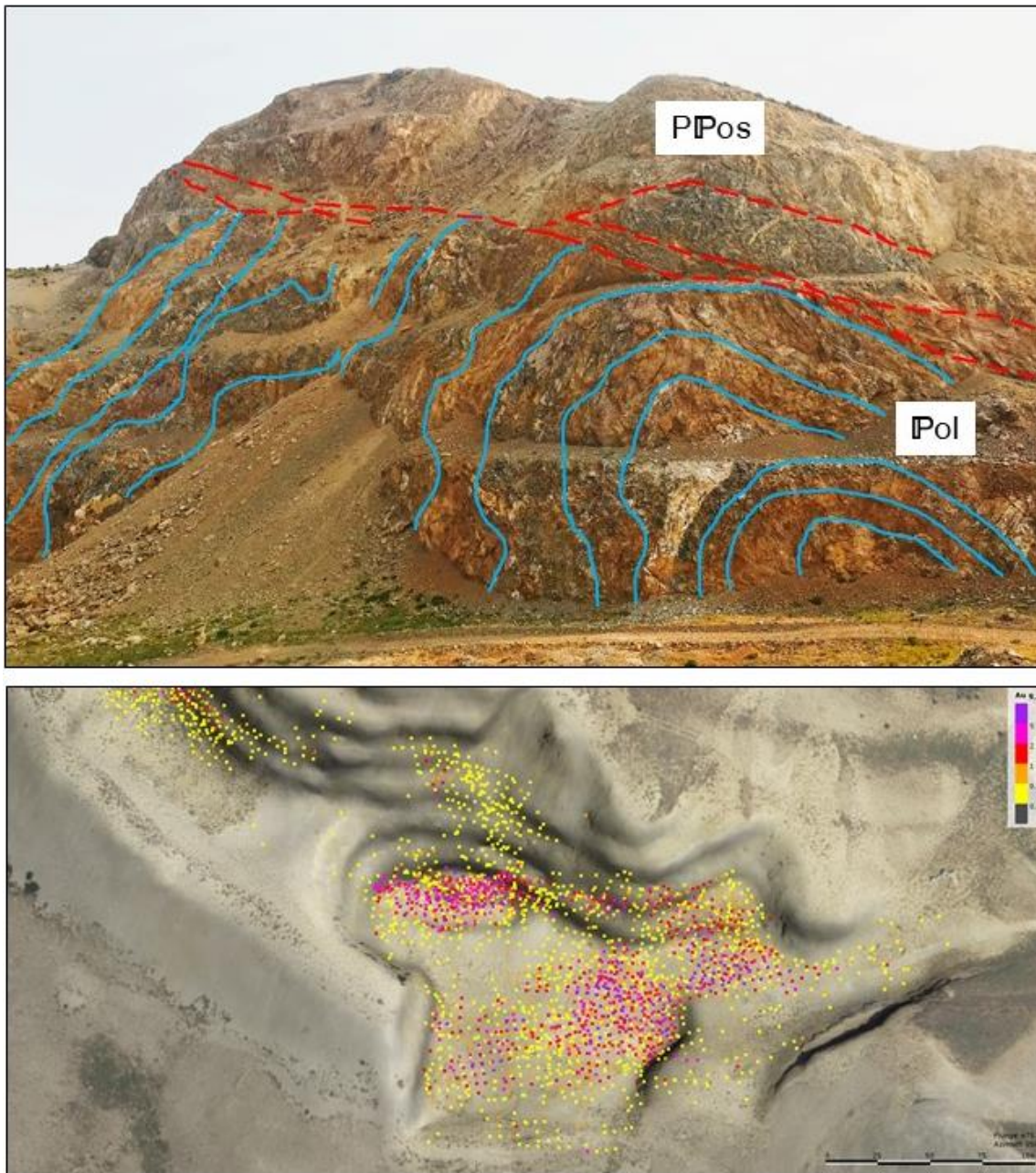
**Figure 7.5 Structures in the Tallman NE Extension Pit**  
(from Liberty Gold, 2018)



Top: North highwall, Tallman extension pit, looking NE. Recumbent folds outlined in blue, moderate angle brittle normal fault in red. Gold mineralization (yellow-brown alteration) is concentrated in the footwall. Bottom left: Sheared limestone with down to the east apparent displacement. Bottom right: Large, moderate angle brittle normal fault with breccia zone.



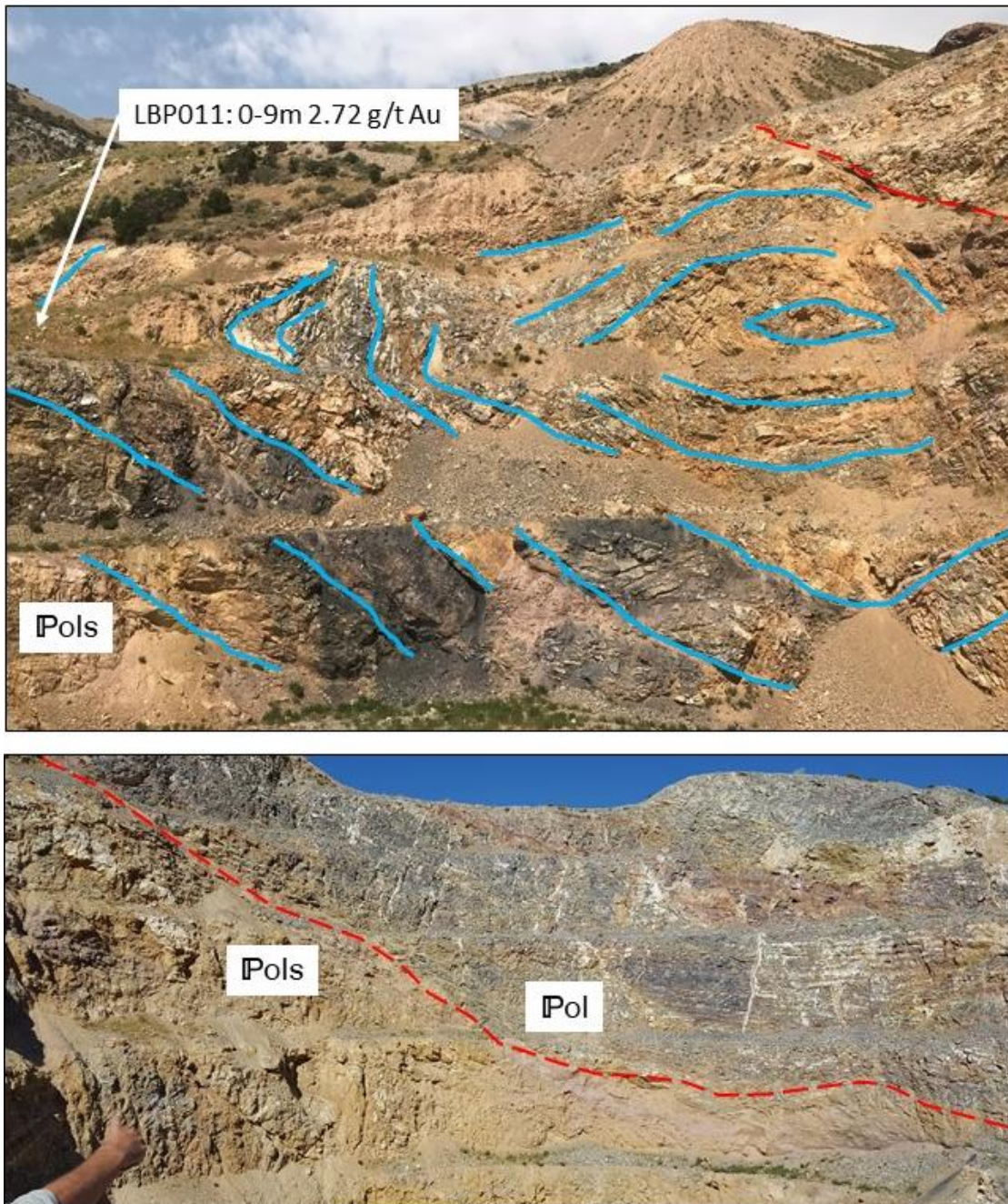
**Figure 7.6 Structures in the E Pit**  
(from Liberty Gold, 2018)



Top: E Pit, looking north. A large, low angle brittle normal fault (red dashed line) roughly separates upper plate sandstone (PPOS) in the hangingwall from middle plate limestones in the footwall. Middle plate intercalated limestone and siltstone beds of POL are folded and overturned in an approximately northeast-vergent recumbent fold (blue traces). Steep, sheared silty limestone bedding in the overturned hinge of the fold may localize high grade gold mineralization along possible flexural slip planes (lower image, looking down at blast hole data in Leapfrog). The mineralized fault contact can be seen in the blast hole data extending along with pit highwall.



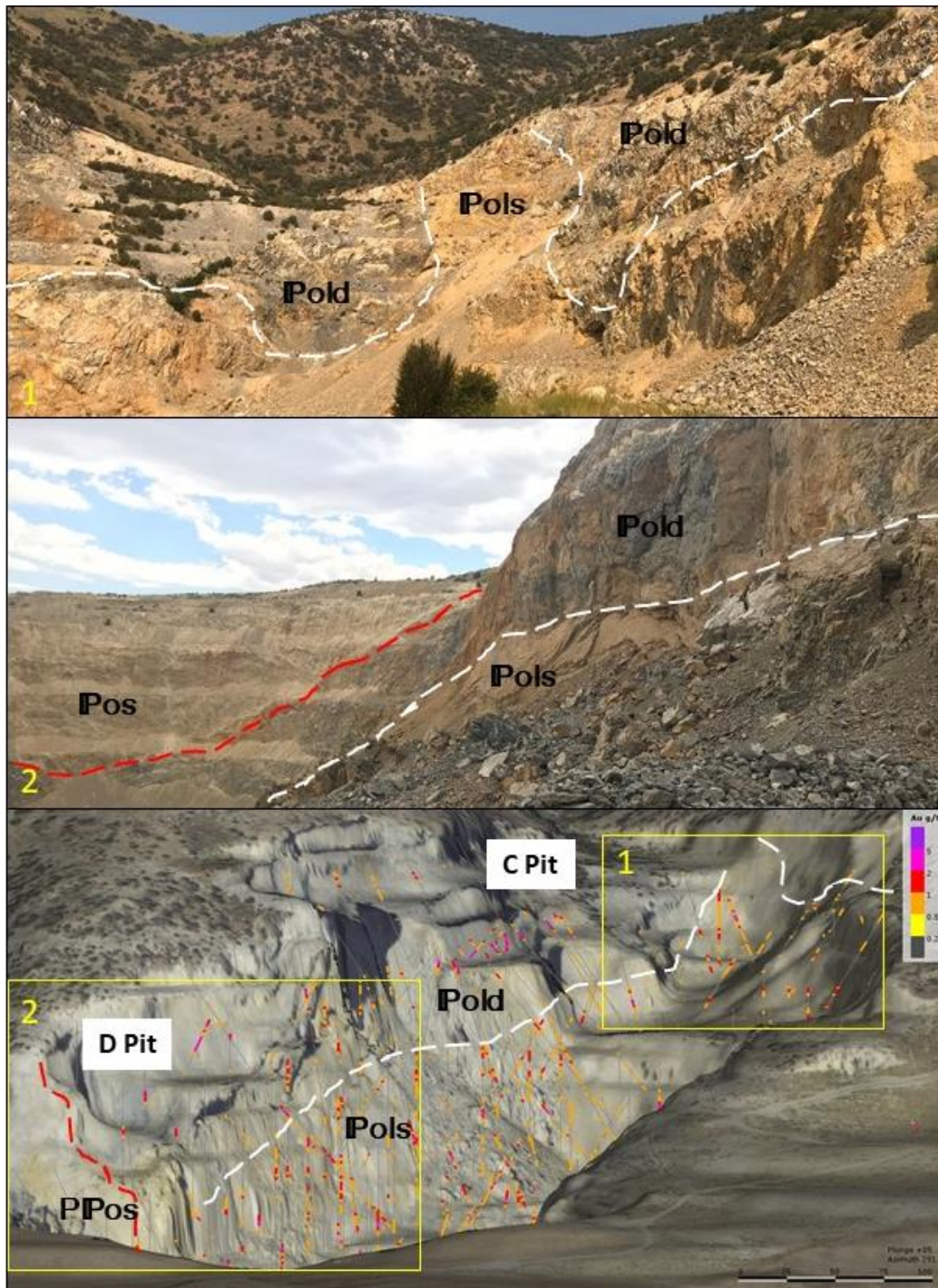
**Figure 7.7 Structures in the B Extension Pit**  
(from Liberty Gold, 2018)



Top: B Extension Pit, looking northwest. A large, east-vergent, recumbent fold (blue traces), apparently with a curved hingeline in lower plate silty limestones. Liberty drillhole LBP011, collared into the fold hinge and drilled 9 metres of 2.72 g/t Au from surface. Bottom: looking northeast. A large, moderate angle brittle normal fault (of the same fault zone as is seen in the Tallman Pit) separates weakly or non-mineralized, largely undeformed upper member IPol limestone in the hangingwall from strongly folded mineralized lower member IPols material in the footwall.



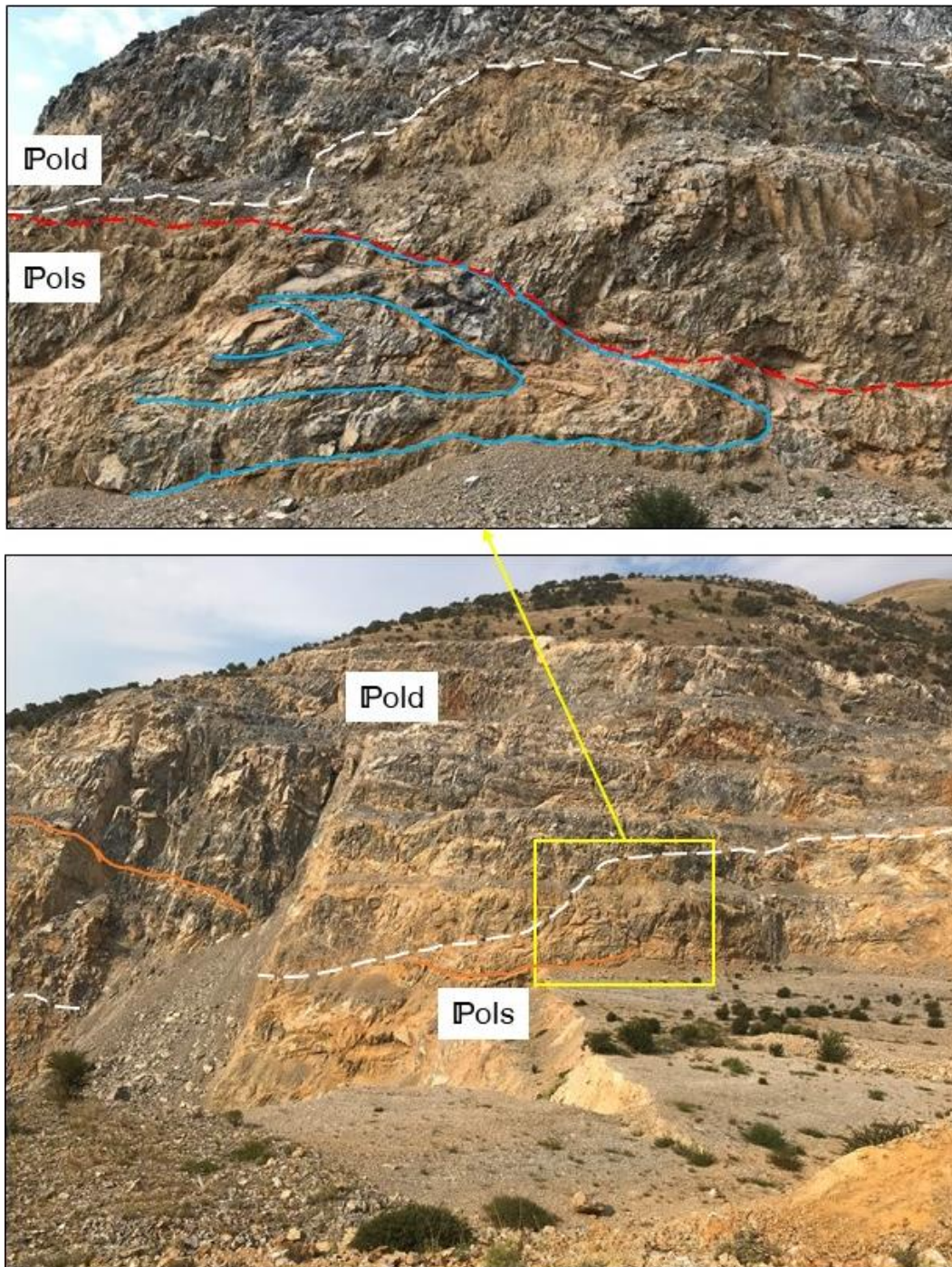
**Figure 7.8 Structures and Stratigraphy in the C/D Pit**  
(from Liberty Gold, 2018)



Top: C Pit, looking west. Strongly faulted contact between middle member **Pold** and lower member **Pols**. Middle: C/D Pit, looking east. Brittle normal fault with Upper Plate **PPos** sandstone overlying middle member limestone. Lower: C/D Pit, looking west. Leapfrog image of >0.5 g/t Au drill assays. Lower member **Pols** and fault contact are strongly mineralized.



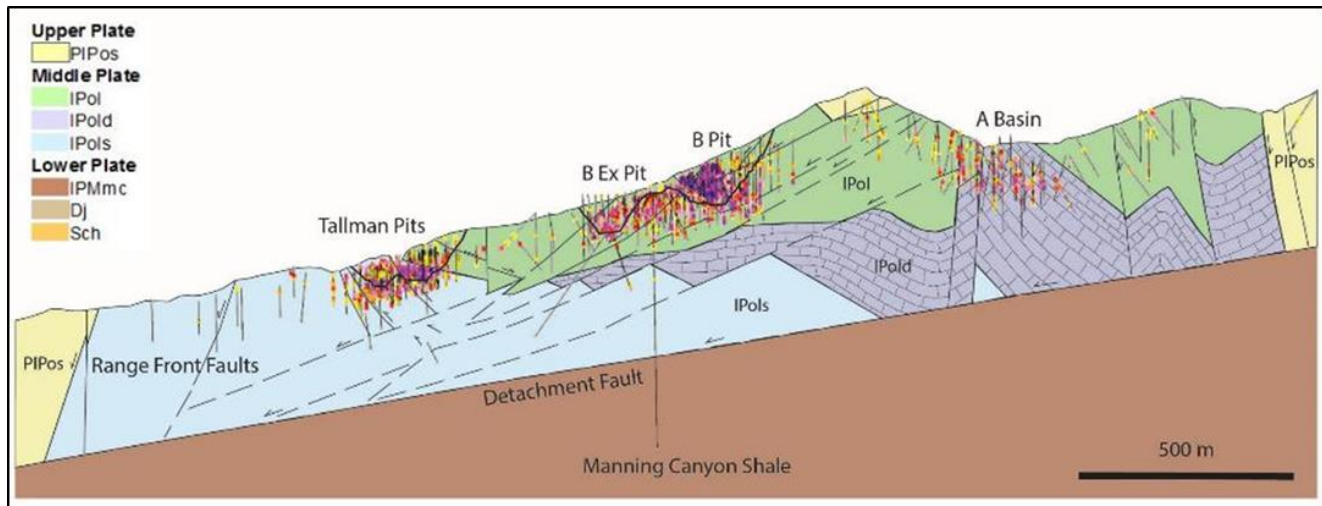
**Figure 7.9 Structures and Stratigraphy in the C/D Pit**  
(from Liberty Gold, 2018)



C Pit, looking southwest. A tight recumbent west-vergent fold of intercalated silty limestone and limestone beds in the lower member Pold unit directly beneath steeply west-dipping dark grey and white limestone beds of the middle member Pold unit. Intrusive sills along and cutting bedding in both units (orange trace).



**Figure 7.10 Schematic Cross Section of Middle Structural Plate**  
(looking south; modified from Loiptien, 1986)



Silver and base-metal mineralization was historically mined on a small scale prior to the 1940s. These occurrences were located at Hazel Pine and along the Range Front, Anomaly K, northwest of the A Basin, northwest of D Pit, and in the Silver Hills (Figure 7.3). This type of mineralization is associated with steep faults, brown iron-oxide-stained hematitic silicification and quartz veins (Ohlin 1988). Host rocks are typically thick-bedded limestone with massive white calcite replacement beds. Liberty Gold has sampled stockpiles from historic mining containing >10% Zn in iron-oxide-cemented breccia.

Geochemically, gold shows an association with the typical Carlin pathfinder trace elements of arsenic, antimony, mercury, thallium, and tellurium, which are all elevated in the presence of elevated gold. However, while some samples with high gold grades do have a correspondingly high arsenic or antimony values, these elements do not always correlate strongly and sometimes even correlate negatively, possibly a result of mobility of the elements in the supergene environment. A correlation matrix between 196 Western Pacific rock samples containing greater than 0.1 g Au/t and a suite of pathfinder elements (Figure 7.11) shows strong positive linear correlations between gold and tellurium and mercury, and weak to nearly negative correlations with arsenic, thallium, and antimony, typically strong Carlin-style pathfinder elements. There are no recognized alteration or spatial patterns to these positive or negative correlations between gold and the trace elements. Silver-copper-lead-zinc mineralization has a strong correlation with arsenic, antimony, mercury, and selenium.

### 7.3.1 Location of Mineralization – Historical Pits and Vicinity

During the historical Pegasus mining operation, gold-mineralized material was extracted from six pits, namely the Tallman pit, the B/B Expansion pit, A pit, E pit, I pit, and the C/D pit (Figure 7.3). Gold is distributed throughout the middle structural plate, but higher grades are focused in more favorable stratigraphic units, such as calcareous siltstones, and in association with moderate- to high-angle faults. Favorable faults are brittle in nature and strike northwest in the Tallman, B, C, D, and E pits. Others strike northeast in the Tallman, C, D, A, and I pits and north in the E pit. Gold appears to be



concentrated along and in the immediate footwall of some of these faults, where less favorable massive limestone or sandstone are present in the hanging wall (Tallman NE and B Ex pits).

**Figure 7.11 Geochemical Correlation Matrix, Western Pacific Rock Samples**

(from Liberty Gold, 2018)

	Au_ppm	Ag_ppm	As_ppm	Ba_ppm	Bi_ppm	Cu_ppm	Hg_ppm	Pb_ppm	Sb_ppm	Se_ppm	Te_ppm	Tl_ppm	Zn_ppm
Au_ppm	1												
Ag_ppm	0.091551	1											
As_ppm	0.060897	0.493674	1										
Ba_ppm	0.003071	0.018412	0.224036	1									
Bi_ppm	0.122897	0.347287	0.197763	-0.01835	1								
Cu_ppm	0.021012	0.60973	0.451409	0.212767	0.291678	1							
Hg_ppm	0.143596	0.897084	0.49866	0.042583	0.362224	0.615509	1						
Pb_ppm	0.035129	0.870868	0.363792	-0.08477	0.346006	0.217	0.814952	1					
Sb_ppm	0.000633	0.390416	0.75616	0.035793	0.296067	0.391652	0.398617	0.295147	1				
Se_ppm	0.070144	0.724115	0.305831	-0.08137	0.41379	0.210181	0.738455	0.820676	0.226651	1			
Te_ppm	0.483068	0.120105	-0.04754	-0.18661	0.224639	-0.01424	0.155856	0.141609	0.132617	0.153725	1		
Tl_ppm	-0.00185	0.000534	0.256267	0.13361	0.06876	0.036785	0.04682	0.030195	0.364013	-0.04943	-0.01559	1	
Zn_ppm	0.033743	0.69413	0.558543	0.137602	0.182855	0.528806	0.737174	0.578882	0.346587	0.598934	-0.06568	-0.03001	1

Gold is present in a large number of historical drill holes in unmined areas, particularly in areas adjacent to the historical open pits as shown in Figure 7.12. A list of historical drill holes with unmined gold intervals is presented in Appendix B. Figure 7.13 depicts gold in grade shells using a 0.3 g Au/t cutoff and 25-meter buffers around unmined gold in historical drill hole intervals. As indicated in Figure 7.13, gold mineralization remains *in-situ* beneath and peripheral to the historical pits, which presents an opportunity for defining and extending mineralization in these areas. In particular, historical “reserves” disclosed in Section 6.5 were defined to the north and west of the A pit, but these areas were never mined. Examples of areas where gold mineralization is open down-dip of mined areas are shown in Figure 7.14.

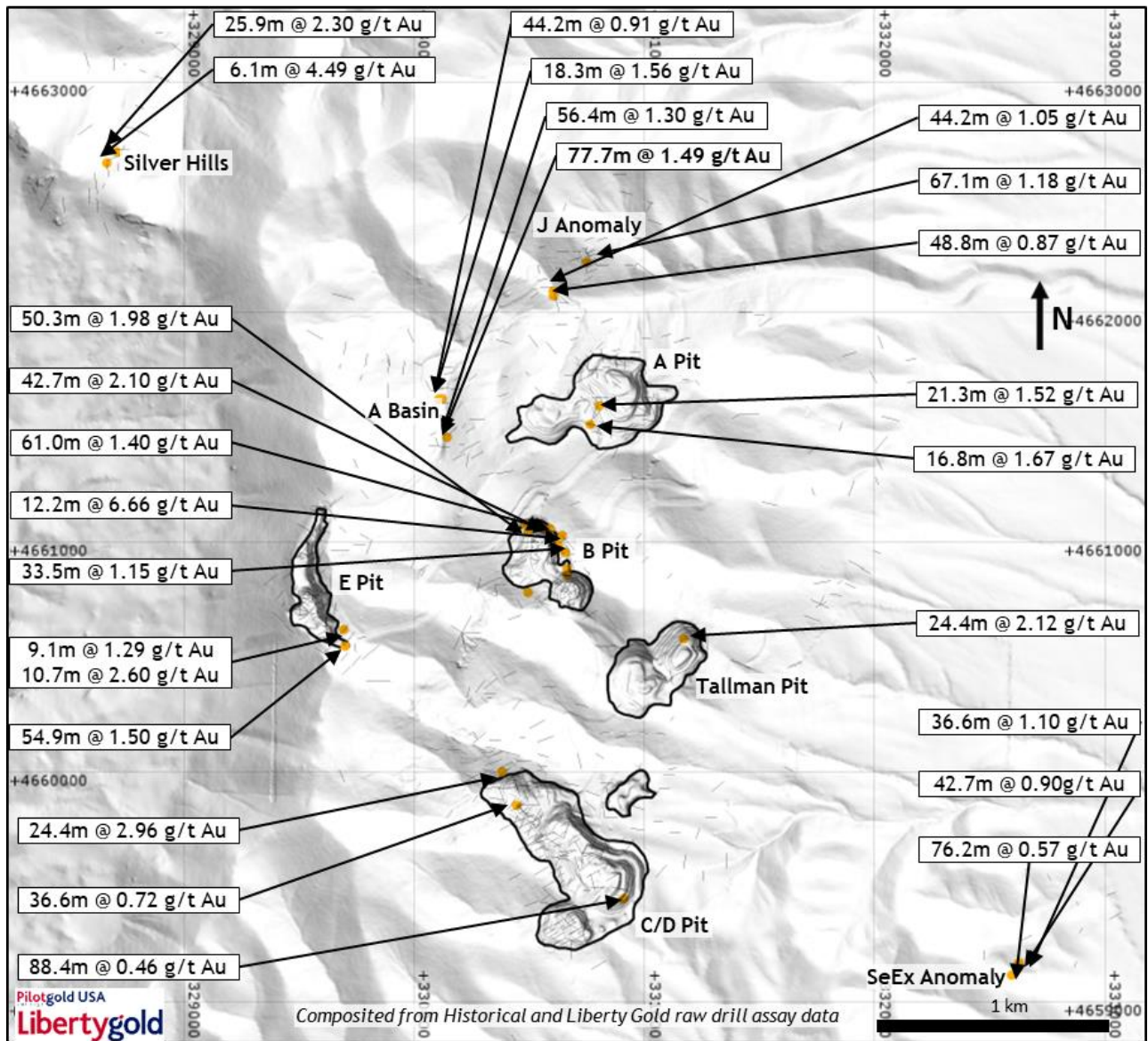
### 7.3.2 Gold Mineralization and Soil Anomalies

Several drilled targets outside of the mined pits are also present, including the “J” anomaly on the north side of Mineral Gulch, and the SE Extension anomaly along the eastern edge of the property. All are open to expansion through further drilling. The possibility for discovering additional gold zones is also present in extensive, largely untested soil geochemical anomalies throughout the property (Figure 7.15). One of the largest is the F Trend anomaly that extends northwest from the C/D pit for approximately 1.0 kilometers to the south end of the E pit and for nearly 1.0 kilometers between the B pit and the northwest end of the C/D pit. Large soil anomalies are also present to the west of the I pit (SW Ex Anomaly), between the B pit and the northwest end of the C/D pit, northeast of the E pit, and the H anomaly west-southwest of the J anomaly (Figure 7.15). Very little drilling, to no drilling, has been carried out in these areas.



**Figure 7.12 Unmined Gold in Drill Holes Adjacent to Historical Pits**

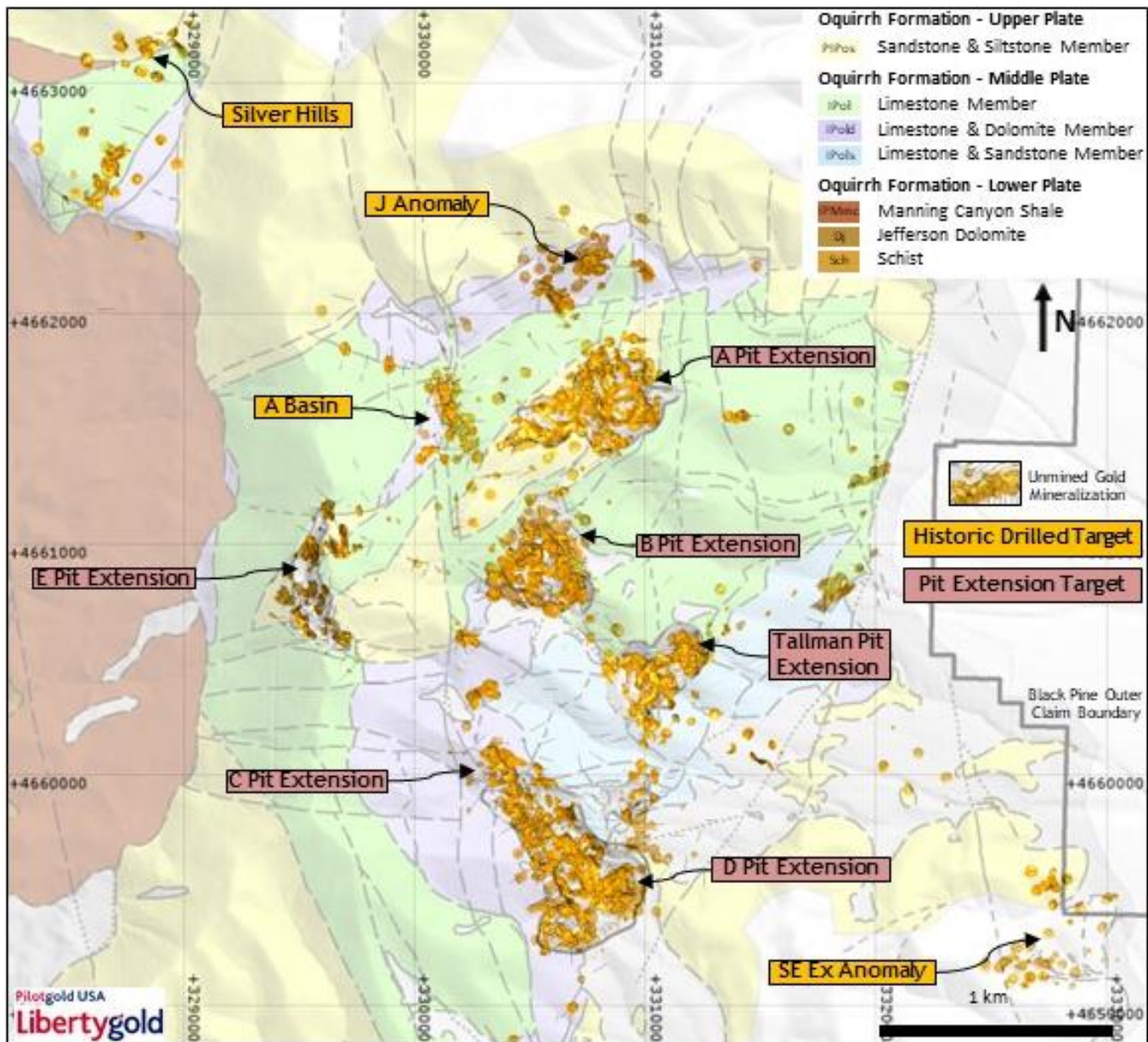
(from Liberty Gold, 2018; grey lines are drill hole traces)







**Figure 7.13 Black Pine Unmined Gold Grade Shells >0.3 g Au/t**  
(from Liberty Gold, 2018)



Note: Leapfrog mineralization models are for illustrative purposes and largely unconstrained by a robust geologic model. The intended purpose is to illustrate the relative position of gold mineralized zones to historic mining and topography. Models are subject to change with ongoing study.



**Figure 7.14 Examples of Open Mineralization Remaining Adjacent to Pits**  
(from Liberty Gold, 2018)

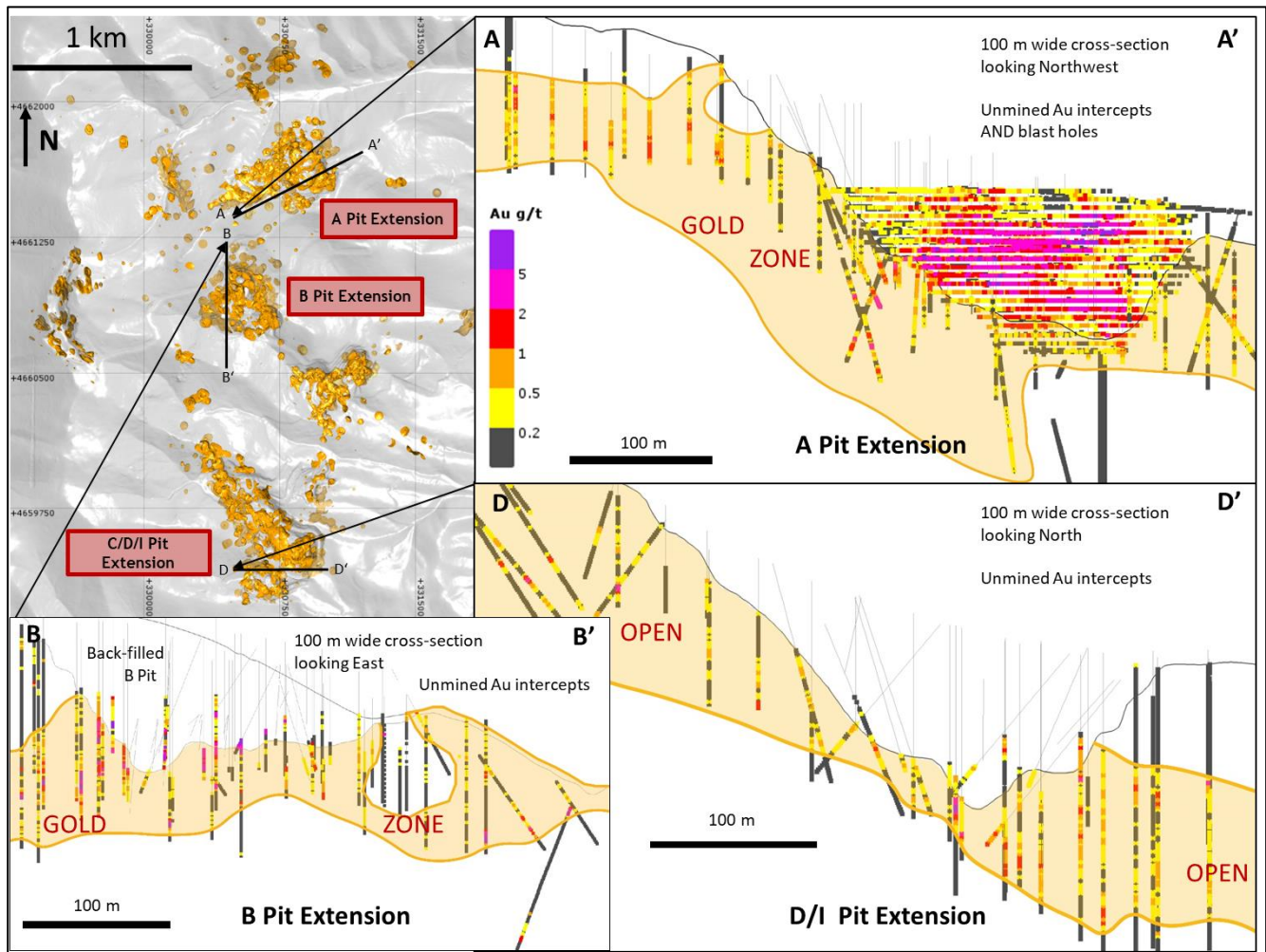
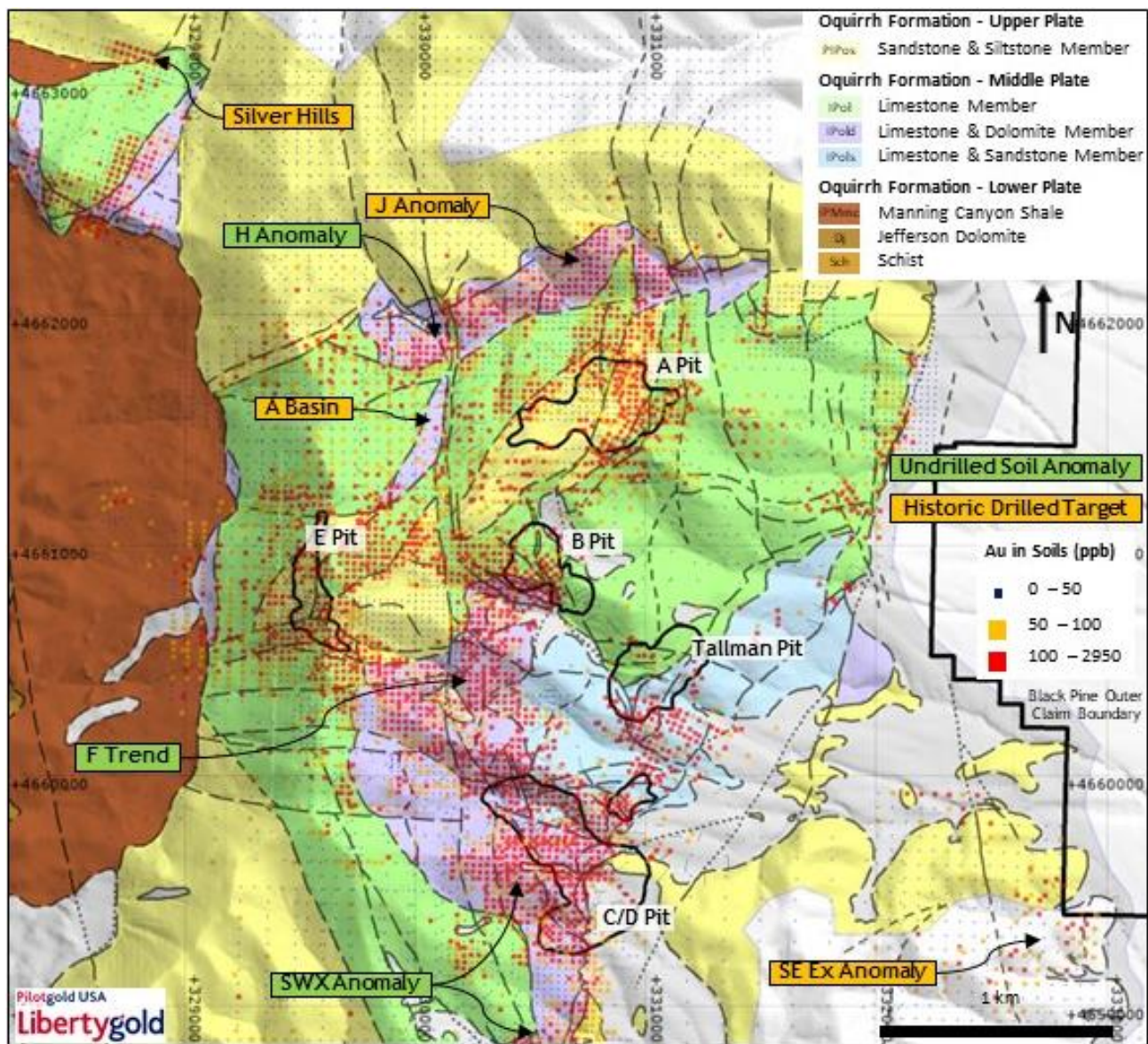




Figure 7.15 Gold-in-Soil Anomalies Drill Target Map  
(from Liberty Gold, 2018)





## 8.0 DEPOSIT TYPES (ITEM 8)

Black Pine mineralization is best described to be in the class of sediment-hosted Carlin-type gold deposits (“CTGDs”). While CTGDs are not unique to the eastern Great Basin, they exist in far greater numbers and total resource size in northern Nevada than anywhere else in the world. They are characterized by concentrations of very finely disseminated gold principally in silty, carbonaceous, and calcareous marine sedimentary rocks. The gold is present as micron-size and smaller disseminated grains, often internal to iron-sulfide minerals (arsenical pyrite is most common), or with carbonaceous material in the host rock. Free particulate gold, and particularly visible free gold, is not a common characteristic of these deposits. The term “Carlin-style” is often used to describe gold deposits that exhibit most of the characteristics of a Carlin-type deposit, but that are not located on one of the major trends.

CTGDs in the Great Basin have some general characteristics in common, although there is a wide spectrum of variants (Cline et al., 2005). Anomalous concentrations of silver, arsenic, antimony, and mercury are typically associated with the gold mineralization. Elevated concentrations of thallium, tungsten, tellurium, and molybdenum can also be present in trace amounts. Alteration of the gold-bearing host rocks is typically manifested by decalcification, often with the addition of silica, fine-grained disseminated pyrite and marcasite, remobilization and/or the addition of carbon, and the deposition of late-stage barite and/or calcite veins. Small amounts of white clay (illite) are generally present. Decalcification of the host produces volume loss, with incipient collapse brecciation that enhances the pathways of the mineralizing fluids. Due to the small size of the gold grains, CTGDs generally do not have coarse-gold assay issues common in many other types of gold deposits.

Deposit configurations and shapes are quite variable. CTGDs are typically somewhat stratiform in nature, with mineralization largely confined within specific favorable stratigraphic units. Fault and solution-collapse breccias can also be primary hosts to mineralization (Figure 8.1).

The gold mineralization identified at Black Pine shares many of the characteristics of CTGDs, including:

- Stratigraphic control of mineralization, primarily in silty limestone units within the Pennsylvanian Oquirrh Group;
- Structural control in and adjacent to low-angle and high-angle normal faults, and in tectonic, collapse, and hydrothermal breccias;
- Geochemical association with elevated arsenic, mercury, antimony, and thallium, as well as silver and tellurium; base metals are elevated around the north and east sides of the system; and
- Gold is very fine grained, disseminated, and associated with decalcification, silicification and/or jasperoid, and clay, as well as pyrite, arsenical pyrite, and arsenopyrite and their oxidized variants.

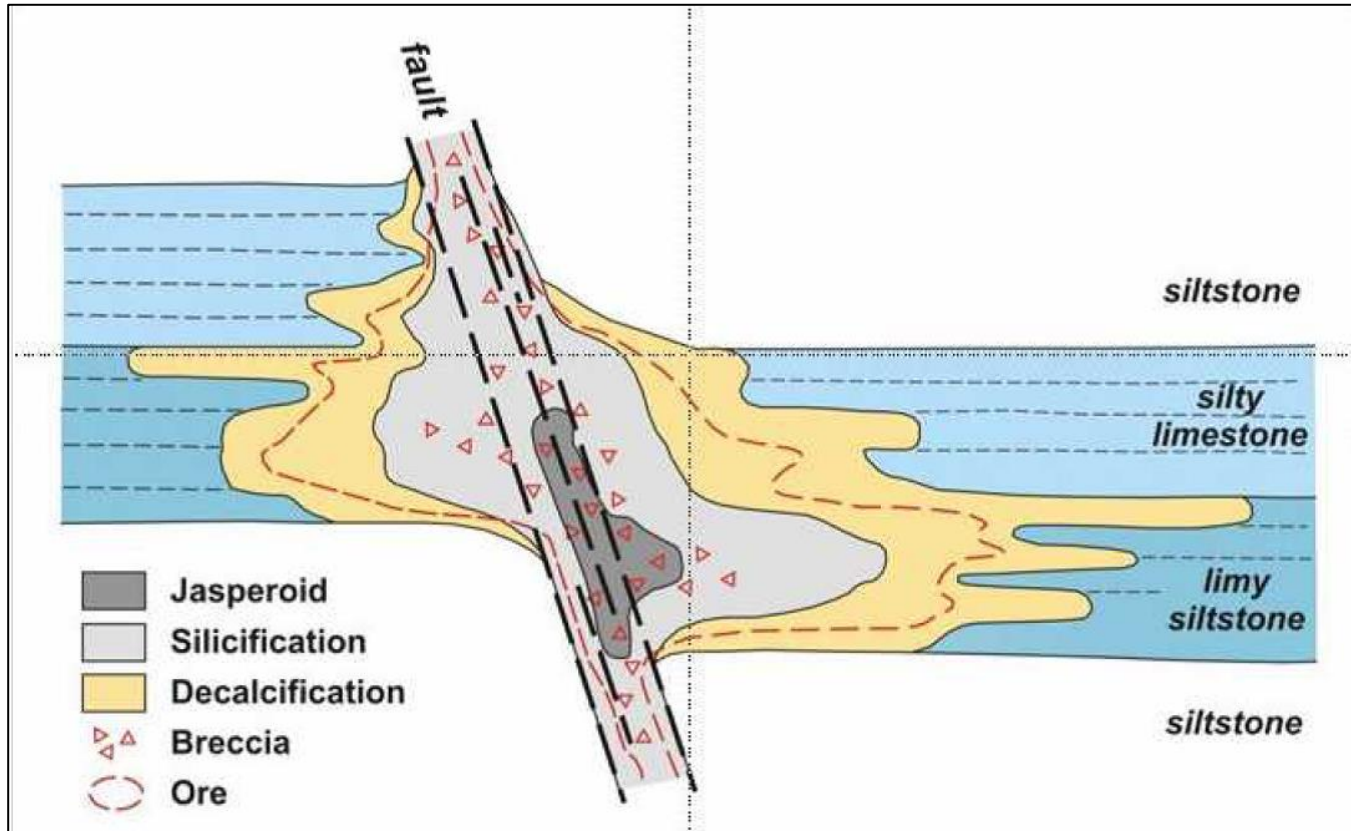
The Black Pine gold deposits also have characteristics that differ from typical CTGDs. The general location of the project is outside the major gold deposit trends in Nevada. There are multiple silver-lead-zinc occurrences within the Black Pine property, although the temporal association with the gold



mineralization is not clear. Some workers have suggested the silver-lead-zinc mineralization is part of a vertical zonation, now juxtaposed laterally by extensional faulting (Ohlin, 1988).

**Figure 8.1 Cross-Section Model of a Carlin-Style Sediment-Hosted Gold Deposit**

(from Robert *et al.*, 2007)





## **9.0 EXPLORATION (ITEM 9)**

This section summarizes exploration work carried out by Liberty Gold at the Black Pine project. Mr. Gustin has reviewed this information and believes it accurately represents relevant work completed by Liberty Gold at the Black Pine project.

### **9.1 Historical Data Compilation and Project Database Construction**

Liberty Gold inherited several historical data packages from Western Pacific Resources. The historical database upon which Western Pacific based their exploration program contained primarily exploration and development data up to the 1989 sale of the project to Pegasus, including compiled digital and hardcopy records of surface rock and soil samples, geological mapping, exploration drill-hole locations, assays, surveys, geological logs, and copies of drill assay certificates. Also included were various internal and external memoranda and reports.

After the purchase of Black Pine from Western Pacific, a hard drive was conveyed to Liberty Gold containing .zip files created during the Pegasus mining operation, with file stamps dating principally from 1990 to 1997. The data comprises numerous Surpac, PC EXPLOR, PC MINE and Gemcom project files, mine topography, and permitting design CAD files from throughout the mine life, as well as bench, road, and topographic survey files. Gemcom extraction files were recovered containing rock and soil sample databases and a compiled drill-hole database. This drilling database contains drill-hole location and orientation data, gold and silver assays, lithological data, and carbon analyses for all historical drilling on the property, notably including 1,098 Pegasus drill holes. Blast-hole data for the E pit, A pit, and some of the C, D, I, and D-north pits have been recovered. File recovery efforts remain ongoing as of the Effective Date of this report. Very few hard copy files from the Pegasus operation have been recovered.

Liberty Gold's compilation and verification efforts as of the Effective Date of this report include:

- Assembly and verification of raw data export files of drill-hole data into a coherent Access database. Pegasus data files without column headers were re-organized and verified using assay certificates and drill logs from pre-1990 drill-hole data. Assay data reported in troy ounces per short ton were converted to grams per metric tonne using a conversion factor of 34.286. Laboratory assay certificates and drill logs were available for most Noranda holes and some earlier holes, and these were used to validate down-hole assays. Down-hole lithological and alteration data were obtained from the same raw files, which included a primary lithological unit abbreviation and a secondary lithology or alteration, sometimes including presence of carbon. As of the Effective Date of this report, the Liberty Gold drill-hole database contains data from a total of 1,874 historical drill holes.
- Conversion of historical mine-grid coordinates into the UTM NAD 83, Zone 12 coordinate system. Historical drill-hole collar coordinates, surface-sample locations, and topographic information were transformed using Western Pacific and 2010 Olympus aerial-survey data. The horizontal error ranged from less than 1 meter near the grid origin (near the C/D pit,) to 1.0 meters about 1 kilometer away, to 3.0 meters at the far edges of the project. This error range was determined by using 11 historical mine-grid control points that were found in the field and



subsequently surveyed in UTM coordinates by Olympus Aerial Surveys, Western Pacific, BLM, and Liberty Gold. These survey results were then compared to the UTM locations of the control points as determined by the same transformation applied to the historical drill-collar locations.

- Verification of historical collar locations and surface samples after coordinate transformation. Air-photo disturbance images from 1992 and 1998, georeferenced drill-hole maps from Noranda, and CAD maps from Pegasus were used to validate drill-collar locations following the coordinate transformation. This led to the identification of only two drill holes that were mis-located, and the locations of these holes were corrected. Noranda road-cut rock samples from in the lower F zone and J anomalies were adjusted following coordinate transformation, with their correct locations apparent from sample distributions relative to present-day reclaimed road alignments and historical aerial photos, as well as geo-referenced sample maps.
- Creation of an as-mined bedrock surface topography through clipping and merging pre-mine topography beneath dumps. As-built pit topographic maps were merged, and as-mined pit topography maps were created by digitizing bench surveys in ArcGIS 3D. A pre-mining topographic surface was also created. For the as-mined topography compilation, CAD files in the local mine grid were imported into an ArcGIS Geodatabase using the coordinate transformation, and elevations in feet were converted to meters. Historically surveyed, as-mined topographic maps for the Tallman, B pit, I pit, and D-north pits, all currently partially back-filled, were used to create the as-mined topography. A 2010 Orthophoto digital elevation model (“DEM”) was to create the as-mined topography for the Tallman NE, B Extension, A, and C/D pits, as these pits were for the most part not backfilled. Pit-wall failures or partial back filling occurred in the E, C/D, and A-West pits. Portions of historical topographic data, consisting of either pit designs corroborated with blast-hole data or digitized bench surveys, were used to reconstruct an accurate as-mined bedrock surface for these pits.
- Recovery and compilation of surface geochemical data (soil and rock samples) from Pegasus database exports. Verification of soil-sample locations included comparisons to georeferenced maps of original soil grids and rock-sample locations, where available. As of the Effective Date of this report, a total of 10,560 soil samples and 4,802 rock samples within the Liberty Gold property boundary have been attributed with coordinates and gold assay data.
- Geologic map compilation. Surface geological maps created by Noranda were not updated significantly during the Pegasus operations. The Noranda map by Ohlin (1989) is still the best available historical property-scale geological map. Registration, digitization, and spot checking of Ohlin’s map have been performed. Pit maps by Willis (2011) for Western Pacific have been registered and transformed into UTM NAD83, but these have not been used or extensively field-checked, although the mapping correlates well with down-hole lithology. USGS mapping by Smith (1982) provides geological information on a regional scale. These maps are gradually being amalgamated into a single geological map for the entire property, as the pit maps provide geological information that was not available prior to mining.



- **Recovery of blast hole data.** As of the Effective Date of this report, a database of 61,704 blast-hole data points has been recovered, verified, and assembled. The blast holes are from E pit (12,987 - complete), A pit (36,398 – partial), C/D pit (7,418 – partial), and I pit (4,901 – partial). Also recovered are 63,861 blast-hole intervals from C/D pit with corrupted coordinates (currently unusable). Liberty Gold believes that there are more blast-hole data contained within the data files, and recovery efforts remain ongoing. Comparison of the complete set of blast-hole data and exploration drill-hole assays within the E pit demonstrates the importance of the data density provided by the blast holes in modeling the complex, strongly structurally controlled gold mineralization at Black Pine.

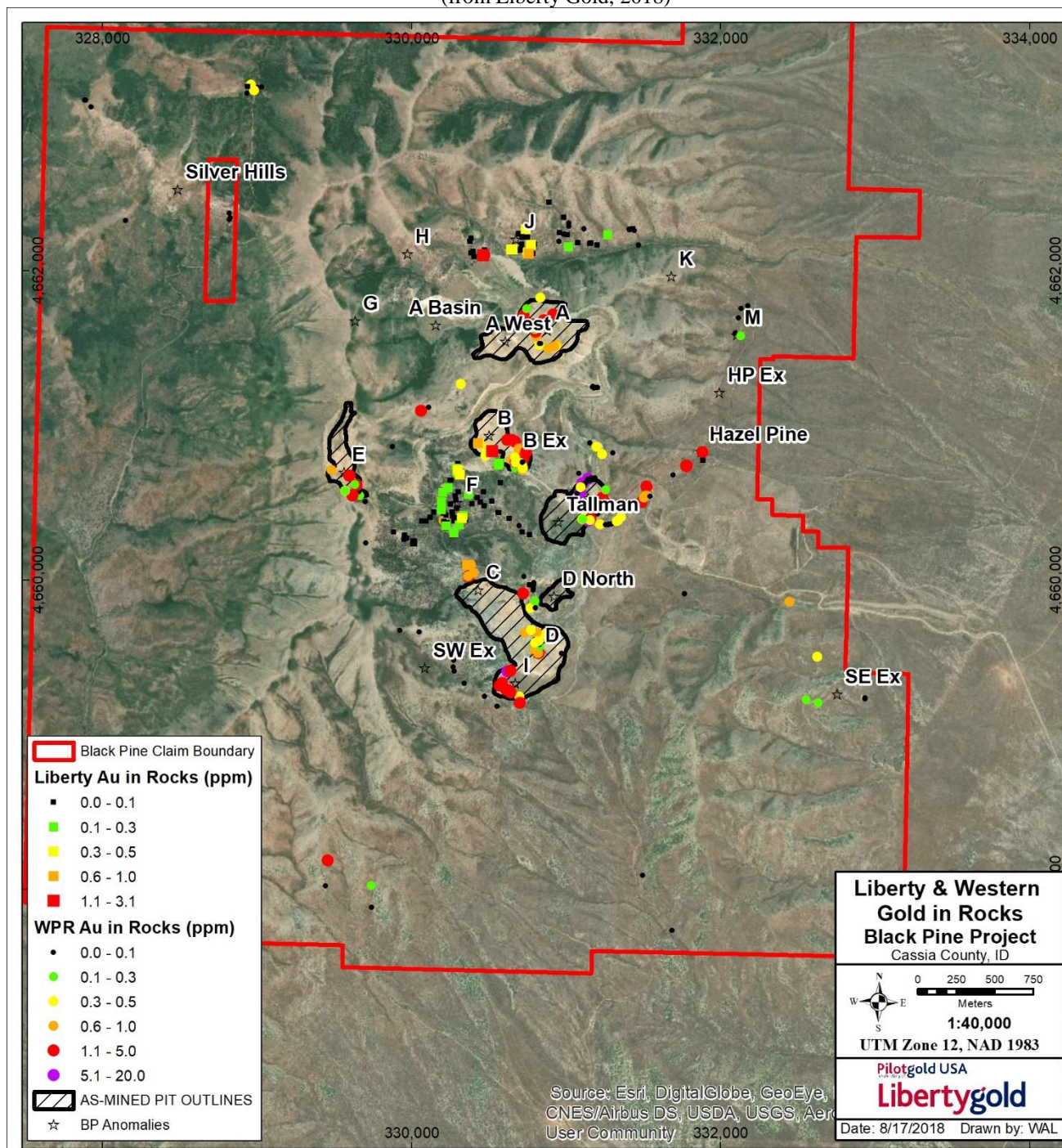
## **9.2 Liberty Gold Rock Sampling**

Liberty Gold has carried out a limited surface rock-sampling program to characterize mineralization and alteration on the Black Pine property on underexplored gold-in-soil anomalies beyond the limits of historical pits. In 2017 and 2018, 126 rock samples were collected throughout the property, primarily as grab samples (Figure 9.1). Gold assays of the samples ranged from below detection limit to a high of 3.01 g Au/t. In addition, Liberty Gold spot-checked many of the Western Pacific rock-chip sample sites. Liberty Gold believes the rock-chip sampling indicates gold is most closely associated with oxidation, decalcification, and argillization, primarily in deformed silty limestones and faults.





**Figure 9.1 Gold in Liberty Gold and Western Pacific Resources Rock Samples**  
(from Liberty Gold, 2018)



Note: letters refer to historical pit names and historical gold anomalies (shown with small stars).



### **9.3 Three-Dimensional Modeling**

Liberty Gold has created a three-dimensional geological model for the Black Pine property to aid in drill targeting and future resource estimation. The model is subject to revision as new data becomes available.

### **9.4 Summary Statement**

The authors have not analyzed the sampling methods, sample quality, sample representativity, or possible presence of bias related to the Black Pine surface samples at the Black Pine project because these data are far superseded in relevance by the available drill data. Drill procedures and results are described in Section 10.0.



## 10.0 DRILLING (ITEM 10)

This section summarizes the drilling carried out in the Black Pine property by historical operators and by Liberty Gold. The information presented in this section of the report is derived from multiple sources, as cited. Mr. Gustin has reviewed this information and believes this summary accurately represents drilling completed by Liberty Gold and the historical operators at the Black Pine project.

### 10.1 Summary

Liberty Gold has compiled information for a total of 193,577 meters drilled in 1,921 holes within the Black Pine property as summarized in Table 10.1. Thirteen of these holes were drilled in 2017 by Liberty Gold and the balance were drilled by historical operators. Approximately 99% of the holes and meters were drilled using conventional rotary and RC methods, and 23 of the holes were drilled using diamond-core methods, but there is no data currently available for the 34 conventional rotary or RC holes drilled by ASARCO in 1977. Other than the core holes, many of the historical holes lack explicit designation as to the type of drilling method, specifically conventional rotary versus RC. In many cases, these are assumed to be RC holes, but it is likely that some are conventional-rotary holes, especially the older holes. In addition to the 34 ASARCO holes that lack all data, Liberty Gold has no assay data for two Newmont holes drilled in 1964 (P16-64 and P17-64).

**Table 10.1 Summary of Black Pine Project Drilling**

Company	Year	Rotary & RC Holes		Core Holes		Totals	
		Holes	Meters	Holes	Meters	Holes	Meters
Newmont	1964, 1974	37	3,091			37	3,091
Gold Resources - PEA	1974 - 1976	13	1,080	3	135	16	1,215
ASARCO	1977	34	no data			34	no data
Pioneer Nuclear	1979 - 1981	28	2,442			28	2,442
PEA - Pegasus	1983 - 1984	123	8,245	1	76	124	8,321
Noranda	1986 - 1989	533	51,454	3	158	536	51,612
Pegasus	1990 - 1997	1,082	116,448	16	1,154	1,098	117,602
Western Pacific	2011	35	7,217			35	7,217
<i>Historical Total</i>		<i>1,885</i>	<i>189,977</i>	<i>23</i>	<i>1,523</i>	<i>1,908</i>	<i>191,500</i>
Liberty Gold	2017	13	2,077			13	2,077
<b>Totals</b>		<b>1,898</b>	<b>192,054</b>	<b>23</b>	<b>1,523</b>	<b>1,921</b>	<b>193,577</b>

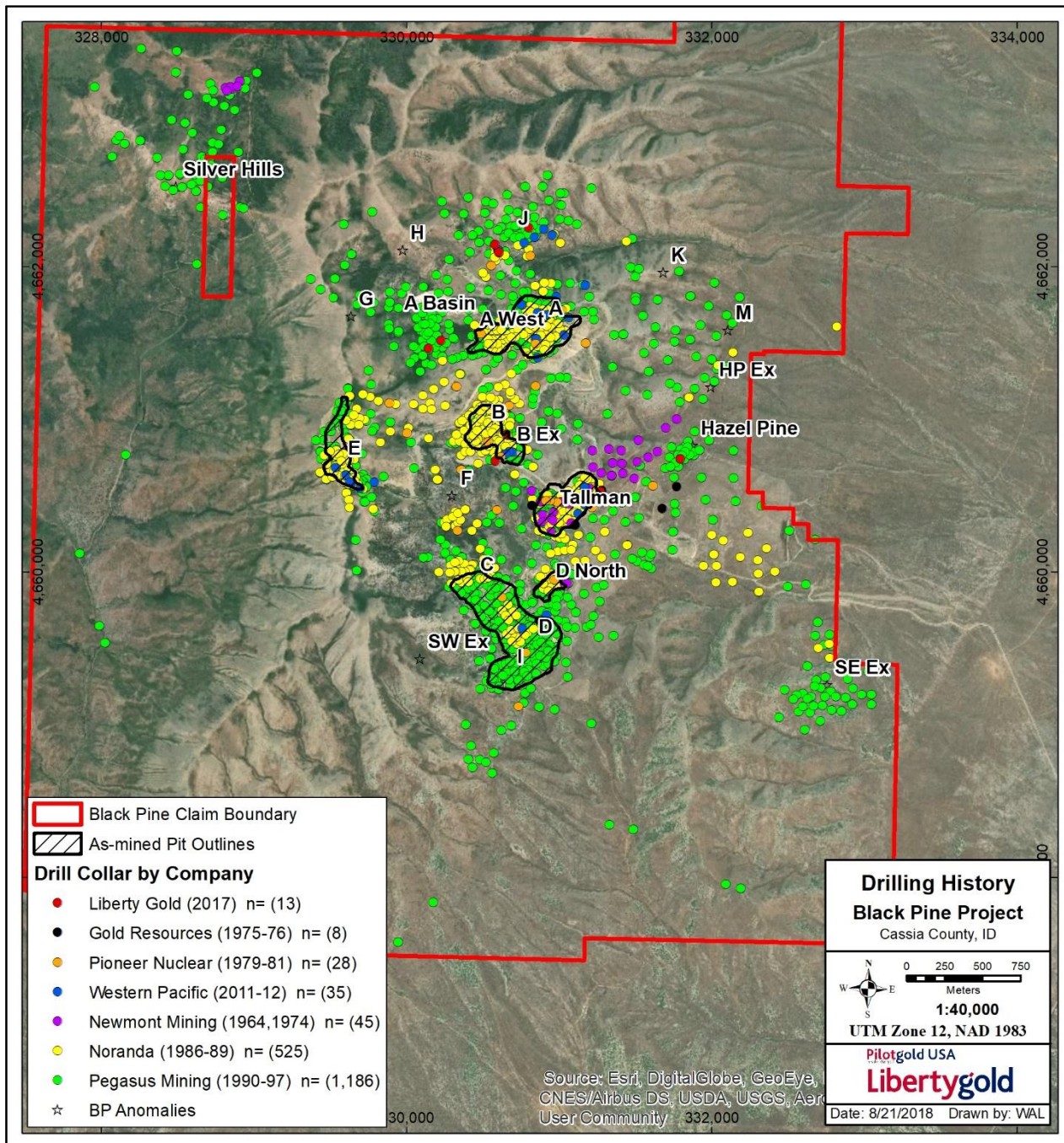
The majority of the historical holes were drilled vertical, or within 10° of vertical; roughly one-third have been drilled as angled holes, including 676 holes drilled at angles shallower than -75°. The geometry of gold mineralization at Black Pine varies considerably from shallowly- to steeply-dipping mineralized stratigraphic units and faults, and historical operators appear to have generally designed drill holes to intersect mineralization as obliquely as possible. There are some holes that are poorly-oriented with respect to mineralization, especially in cases of vertically-oriented holes that intersected mineralization controlled by high-angle structures or steeply dipping stratigraphy. These are overwhelmingly in areas of dense delineation drilling around mined orebodies. In these cases, down-



hole lengths of gold intersections can significantly exaggerate true thickness. All of the Liberty Gold holes were drilled at angles shallower than 75°.

Figure 10.1 shows the locations of drill-hole collars within the Black Pine property.

**Figure 10.1 Map of Black Pine Drill Holes**  
(from Liberty Gold, 2018)





## 10.2 Historical Drilling

The authors are not aware of the details regarding the drilling contractors, drilling methods, sampling procedures, collar-survey methods, and types of drill rigs utilized in the historical Black Pine drilling programs other than those summarized below, although on-going data discovery may uncover new information.

The historical drilling discovered and defined gold mineralization that was eventually mined from seven historical open pits. These pits produced about 435,000 ounces of recovered gold from a little more than 30 million tonnes of ore between 1991 and 1997. The pits lie within mineralized zones of various sizes, and only a portion of each mineralized zone was mined (Figure 10.2). Table 10.2 summarizes the size, average drilled grade, highest-grade drill-hole assay, and best gold intersection in terms of grade x thickness from each of the mined mineralized zones.

**Table 10.2 Summary of Mined Gold Zones and Drill Highlights**

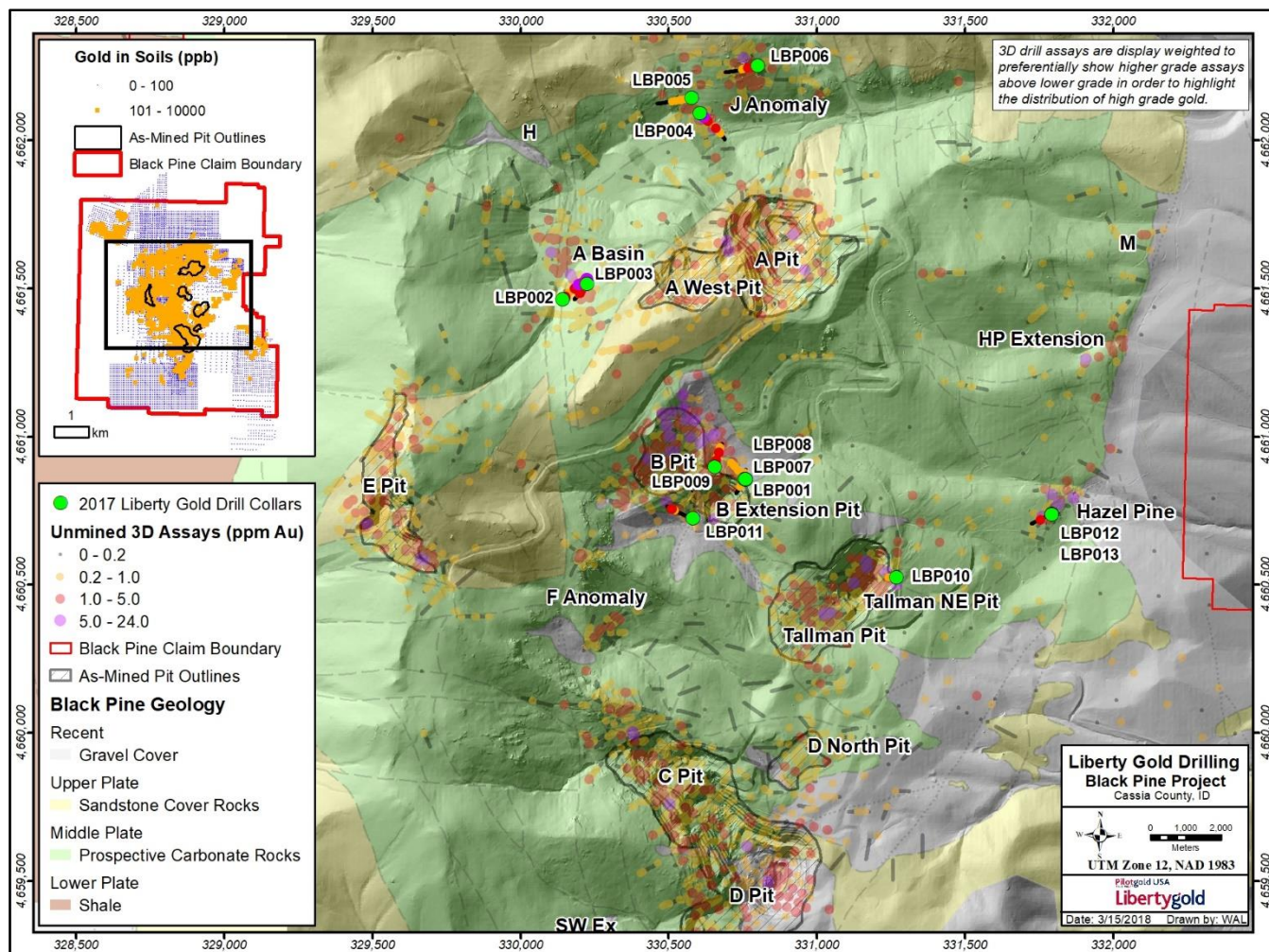
Gold Zone	Length	Width	Depth	Avg Mined Grade (g Au/t)	Highest-Grade Drill Assay (g Au/t over 1.5 m)	Highest Grade x Thickness Intercept*
E	575	100	75	1.5	46.7	19.81 m @ 16.09 g/t Au
B	350	300	100	1.38	38.26	73.16m @ 3.24 g/t Au
A	650	350	100	0.6	8.57	96.0 m @ 1.03 g/t Au
Tallman	350	200	120	0.9	11.31	50.3m @ 1.76 g/t Au
C/D	800	250	100	0.58	25.27	103.6m @ 0.83 g/t Au

\* Intervals reported at 0.2 g Au/t cutoff and maximum 5 meters of internal waste

Several additional zones were identified by the drilling but were not mined, such as the A Basin, J Anomaly, and SE Ex Anomaly (Figure 10.2).



Figure 10.2 Historical Pits and Unmined Gold in Drill Intervals  
(from Liberty Gold, 2018)



### 10.2.1 Newmont 1964 and 1974

Newmont drilled 17 rotary holes of uncertain type (RC or conventional rotary) in the area of the historic Tallman mine in 1964 and collected drill-chip samples over 1.52-meter (5-foot) intervals. Drilling was carried out by Sprague and Henwood, Inc. with 14.3-centimeter tricone and 12.1-centimeter hammer bits. Some or all of these holes were drilled with a truck-mounted Portadrill No. 753. Drilling was done both wet and dry; difficult drilling conditions were commonly noted. Newmont concluded the results of the drilling program, “did not indicate sufficient strength of mineralization to encourage us to look further for an orebody” (Hardie, 1964) and terminated its interest in the property.

Newmont reacquired the property and in 1974 drilled 20 rotary and/or percussion holes of uncertain type. Eklund Drilling (“Eklund”) of Elko, Nevada was the contractor and samples were collected over 1.52-meter intervals. Drilling was carried out to the northeast of the historic Tallman mine, exploring for a possible extension or offset of mineralization. An unknown quantity of drill-hole collar locations, but greater than five, were later surveyed by Desert West Land Surveys at the direction of Noranda.



### **10.2.2 Gold Resources and Permian 1974-1976**

A total of 13 RC or rotary holes and three core holes, for a total of 1,215 meters, were drilled by Gold Resources and Permian. Udy Core Drilling of Leadore, Idaho carried out the core drilling and Drilling Services International carried out the RC drilling for Gold Resources and Permian, but no other information is available.

### **10.2.3 ASARCO 1977**

ASARCO drilled 34 “percussion” holes, mostly at the G anomaly in the area of the top of Black Pine Cone Peak, with several holes west of Anomaly A and into A Basin. ASARCO abandoned their interest in the property in 1978. No other information is available.

### **10.2.4 Pioneer Nuclear 1979-1981**

Pioneer Nuclear drilled 28 RC drill-holes for a total of 2,442 meters in 1979 through 1981, of which 13 holes intersected gold grades in excess of 0.55 g Au/t in at least one sample interval. Samples were collected variably on 1.52 to 3.05-meter intervals. An unknown number of collar locations were later surveyed by Desert West Land Surveys at the direction of Noranda.

### **10.2.5 Permian and Pegasus 1983-1986**

The Permian Pegasus joint venture drilled 88 holes in 1983. At least some of the holes were sampled over 6.1-meter intervals. In 1984, 35 RC holes were drilled with sampling on 1.52-meter intervals. One core hole was also drilled. Drilling was carried out principally on the B anomaly, defining gold mineralization that would later be mined in the B and B Extension pits. Drill-hole collar locations were surveyed by plane table by Ron Willden, with an unknown quantity of collar locations later surveyed by Desert West Land Surveys of Burley, Idaho, at the direction of Noranda.

### **10.2.6 Noranda 1986-1990**

Noranda drilled 533 RC holes and three metallurgical core holes over four years, for a total of 51,612 meters (Table 10.1). Typically, one or two truck- or track-mounted RC drill rigs were utilized, depending on access-road conditions. Some holes were drilled dry and others were drilled with water injection.

Boyles Bros. Drilling Company of Salt Lake City was the drilling contractor in 1987 for PQ-size core drilling. Eklund was the contractor for most of the 1988 drilling, with some RC drilling by Hard Rock Mineral Drilling Company of Fort Collins, Colorado at the end of the year. Dateline Drilling Inc. (“Dateline”) of Missoula, Montana provided some RC drilling in early 1989, followed by Modern International Inc. of Elko, Nevada, who used a track-mounted RC rig used for most of their 1989 drilling.

The locations of Noranda and some earlier holes were surveyed by Desert West Land Surveys of Burley, Idaho using a Lazer Theodolite survey instrument; Grey Eagles Surveys also surveyed some collars.



### **10.2.7 Pegasus 1990-1997**

Pegasus drilled 57 holes in 1990, 88 holes in 1991, 243 holes in 1992, 284 holes in 1993, 244 holes in 1994, 103 holes in 1995, 73 holes in 1996, and six holes in 1997, for a total of 117,602 meters. All were drilled with RC methods, with the exception of 16 core holes (Table 10.1). Samples were collected over 1.52-meter intervals and assayed at the Black Pine mine laboratory. Little information is available about drill contractors used by Pegasus. Dateline and Hackworth Drilling Inc. of Elko, Nevada drilled the RC holes in 1992 and 1993. In 1995, O’Keefe Drilling Company of Elko, Nevada drilled wet RC holes using 14.0-centimeter hammer bits and 13.7-centimeter tricone bits.

### **10.2.8 Western Pacific 2011-2012**

Western Pacific drilled 35 RC holes in two campaigns, for a total of 7,217 meters. Drill logs are available for holes 1 to 31, but logs for holes 32 to 35 are missing from the data files. Holes 36, 37, and 38 were not logged. After completion of the holes, the collars were marked with stamped brass tags fastened onto a steel wire, and their locations were surveyed by an unknown method.

The drilling was conducted by Envirotech Drilling LLC of Winnemucca, Nevada. All drill samples were collected at the rig using a wet splitter.

### **10.3 Liberty Gold Drilling 2017**

In late 2017, Liberty Gold drilled 13 RC holes for 2,077 meters at five target areas (B Pit Extension, Tallman Pit NE, A Basin, J Anomaly, and Hazel Pine mine). The primary purposes of this drilling were to validate drilling carried out by previous operators and to familiarize Liberty Gold with the both mineralized and unmineralized rock. As such, drill sites were either immediately adjacent to historic pits or at established target areas (Figure 10.1). The 2017 holes were drilled from sites permitted under Western Pacific’s 2012 Plan of Operations. These sites were designed without the benefit of knowledge of over 1,300 historical drill holes, the data from which were obtained later. Consequently, sites were not always optimally located relative to drill targets. Hole LBP012 was lost in underground mine workings at a depth of 13.2 meters and redrilled. All drill holes were inclined at angles ranging from -45° to -80°.

The 2017 drilling contractor was Boart Longyear of Elko, Nevada. A track-mounted Foremost MPD 1500 drill rig was utilized with 14.0-centimeter center-return bits. All drilling was done with water injection. Drill cuttings were split and sampled over 1.52-meter intervals using a rotating wet “cyclone” vane-type splitter. The split samples fell directly into pre-labeled water-permeable cloth sample bags that were sealed. Excess water drained from the sample bags as they sat at the drill sites. Sample weights were generally in the range of about five to 10 kilograms after drying.

Significant results from the drilling program are summarized in Table 10.3. Representative maps and cross sections are shown in Figure 10.3 through Figure 10.8.





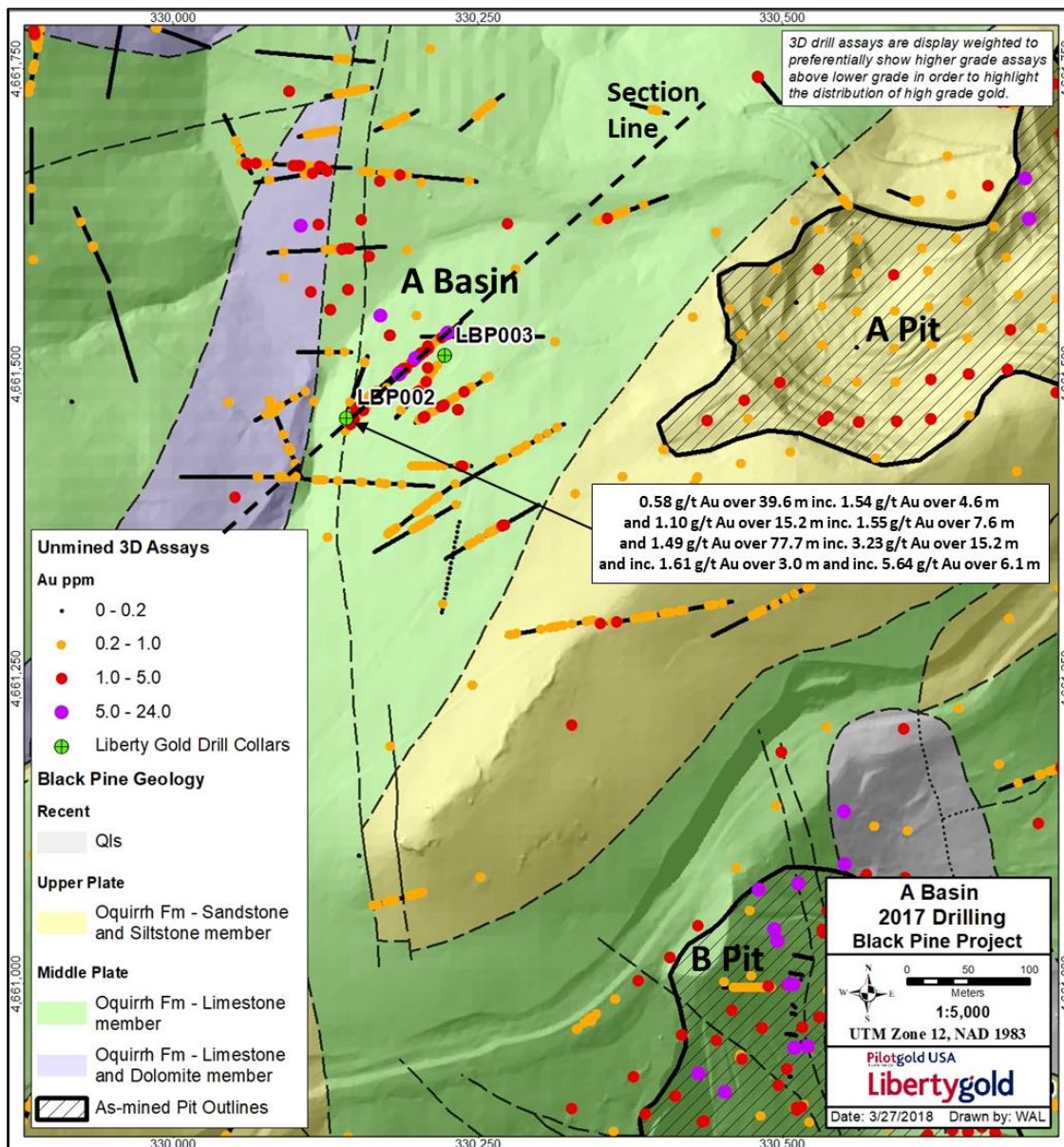
**Table 10.3 Significant Results from Liberty Gold 2017 RC Drill Program**

Hole ID (Az, Dip) (degrees)	From (m)	To (m)	Intercept (m)	Au (g/t)	Au Cut Off	Hole Length (m)	Target	
LBP001 (200, -70)	No Significant Values					182.9	North B Ex Pit	
LBP002 (45, -50)	6.1	45.7	39.6	0.58	0.2	211.8	A Basin	
including	19.8	24.4	4.6	1.54				
and	88.4	103.6	15.2	1.10	0.2			
including	89.9	97.5	7.6	1.55	1			
and	111.3	189.0	77.7	1.49	0.2			
including	118.9	134.1	15.2	3.23				
including	146.3	149.4	3.0	1.61	1			
including	181.4	187.5	6.1	5.64				
LBP003 (217, -70)	51.8	56.4	4.6	0.29	0.2	199.6	A Basin	
and	57.9	85.3	27.4	0.53	0.2			
including	74.7	76.2	1.5	1.21	1			
and	96.0	111.3	15.2	0.61	0.2			
including	103.6	106.7	3.0	1.53	1			
LBP004 (130, -45)	0.0	7.6	7.6	0.38	0.2	190.5	J Anomaly	
and	10.7	35.1	24.4	0.96				
including	29.0	30.5	1.5	6.18				1
and	51.8	61.0	9.1	1.03				0.2
including	51.8	57.9	6.1	1.28				1
and	111.3	126.5	15.2	0.54				
LBP005 (255, -45)	4.6	13.7	9.1	0.72	0.2	184.4	J Anomaly	
including	6.1	7.6	1.5	2.65	1			
and	15.2	18.3	3.0	0.47				
and	44.2	53.3	9.1	0.42	0.2			
and	79.2	83.8	4.6	0.38				
LP006 (260, -45)	24.4	32.0	7.6	1.80	0.2	163.1	J Anomaly	
including	24.4	29.0	4.6	2.77	1			
and	44.2	62.5	18.3	0.60	0.2			
including	47.2	48.8	1.5	1.14	1			
and	71.6	77.7	6.1	0.25	0.2			
LBP007 (0, -80)	76.2	79.2	3.0	0.79	0.2	172.2	North B Ex Pit	
LBP008 (320, -60)	73.2	79.2	6.1	0.21	0.2	160.0	North B Ex Pit	
and	114.3	121.9	7.6	0.36	0.2			
LBP009 (15, -57)	15.2	48.8	33.5	0.52	0.2	178.3	North B Ex Pit	
including	25.9	29.0	3.0	1.41	1			
including	45.7	47.2	1.5	1.12	1			
and	67.1	76.2	9.1	0.45	0.2			
and	96.0	120.4	24.4	0.69	0.2			
including	96.0	97.5	1.5	2.95	1			
including	100.6	103.6	3.0	1.10	1			
and	135.6	143.3	7.6	0.35	0.2			
LBP010 (275, -72)	88.4	93.0	4.6	0.31	0.2	150.8	North B Ex Pit	
LBP011 (292, -46)	0.0	10.7	10.7	2.37	0.2	152.4	South B Ex Pit	
including	0.0	9.1	9.1	2.72	1			
and	106.7	121.9	15.2	0.65	0.2			
including	117.3	121.9	4.6	1.38	1			
LBP012 (290, -67)	No Significant Values					13.2	Hazel Pine	
LBP013 (243, -45)	62.5	65.5	3.0	0.81	0.2	117.3	Hazel Pine	
including	62.5	64.0	1.5	1.40	1			



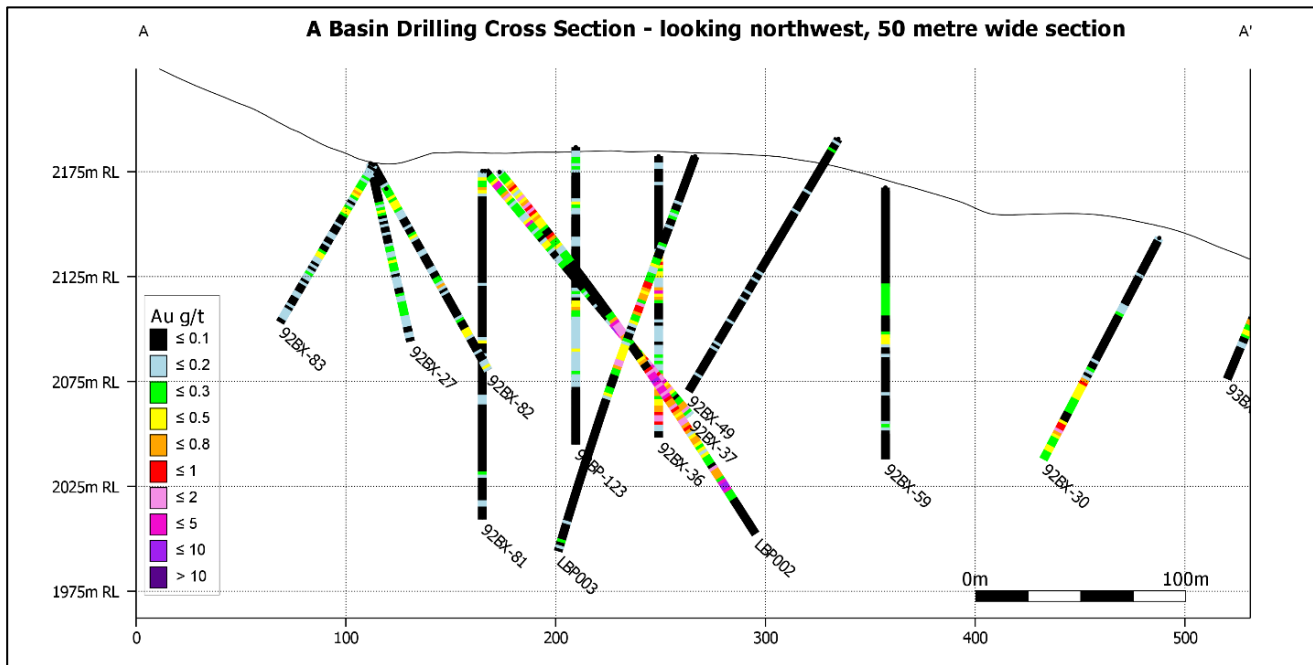
Two holes were drilled in the A Basin target (Figure 10.3). Hole LBP002 was a twin of Pegasus hole 92BX-37, which returned 56 meters of 1.3 g Au/t and 16.7 meters of 0.95 g Au/t, and the hole bottomed in mineralization. LBP002 intercepted comparable drilled widths and grades of gold mineralization in the upper twinned section, then penetrated oxidized gold mineralization approximately 50 meters deeper than the bottom of 92BX-37, with a lower intercept of 77.7 meters of 1.49 g Au/t into an untested area (Figure 10.4 and Table 10.3). This confirmed the potential for significant mineralization beneath and around historical shallowly-drilled bodies of gold mineralization at Black Pine. LBP003 drilled back across the A-Basin structure and intercepted widths and grades of gold mineralization comparable to surrounding historical holes.

**Figure 10.3 A Basin Map with 3D Assays for 2017 Holes**  
(from Liberty Gold, 2018)





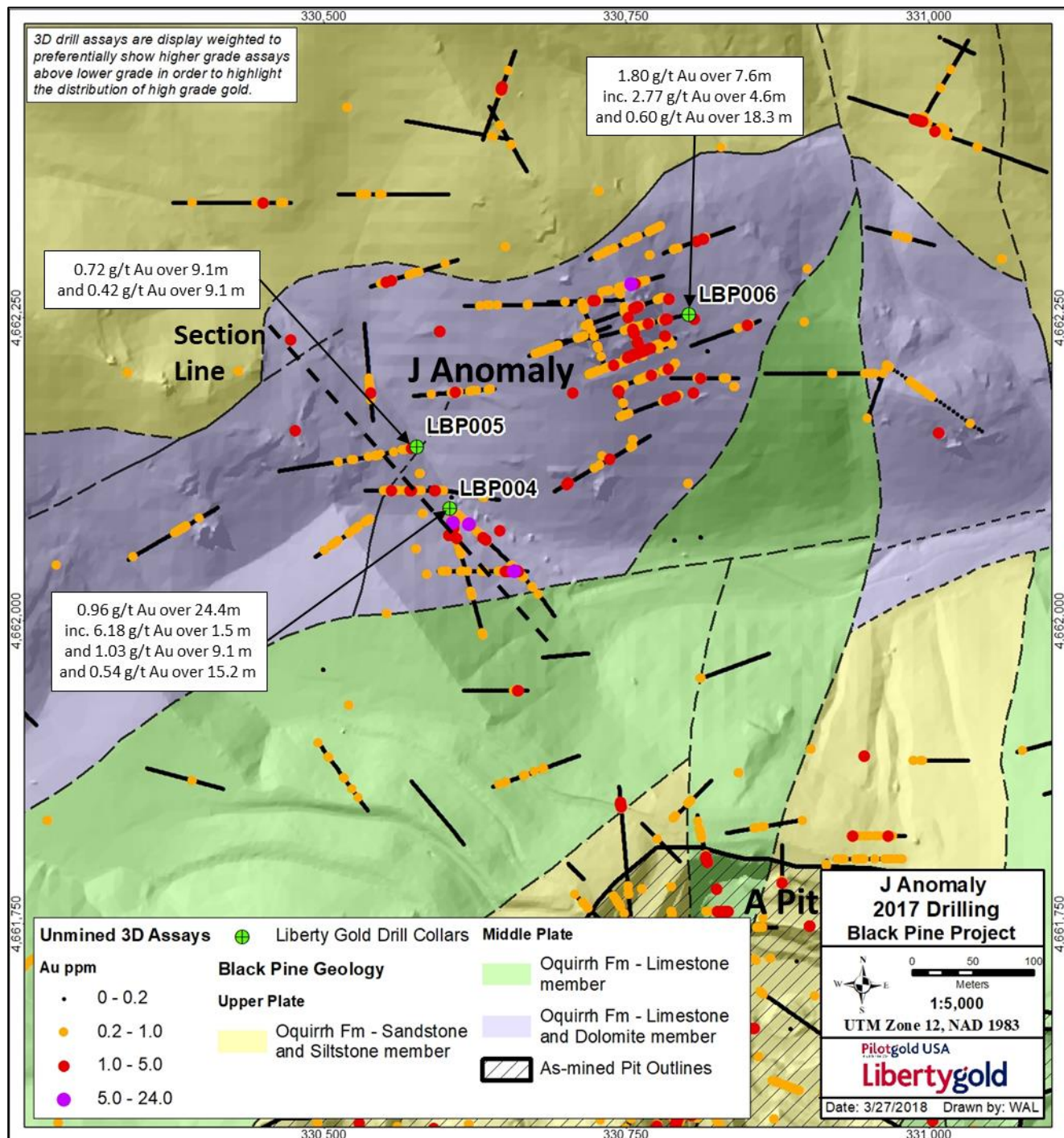
**Figure 10.4 A Basin Cross Section with 2017 Holes, Looking NW**  
(from Liberty Gold, 2018)



Three holes were drilled into the J anomaly (Figure 10.5 and Figure 10.6). Hole LBP004 was drilled obliquely down a mineralized bed, intersecting multiple zones along its length (Table 10.3). If the historical data were in-hand at the time of permitting, the hole would have been located to the south to drill higher in the sequence and thereby remain within the mineralized zone for longer drilled distance down-dip of gold mineralization intersected in 92BX-14 (historical intercept of 35m of 1.79 g/t Au; Figure 10.5).

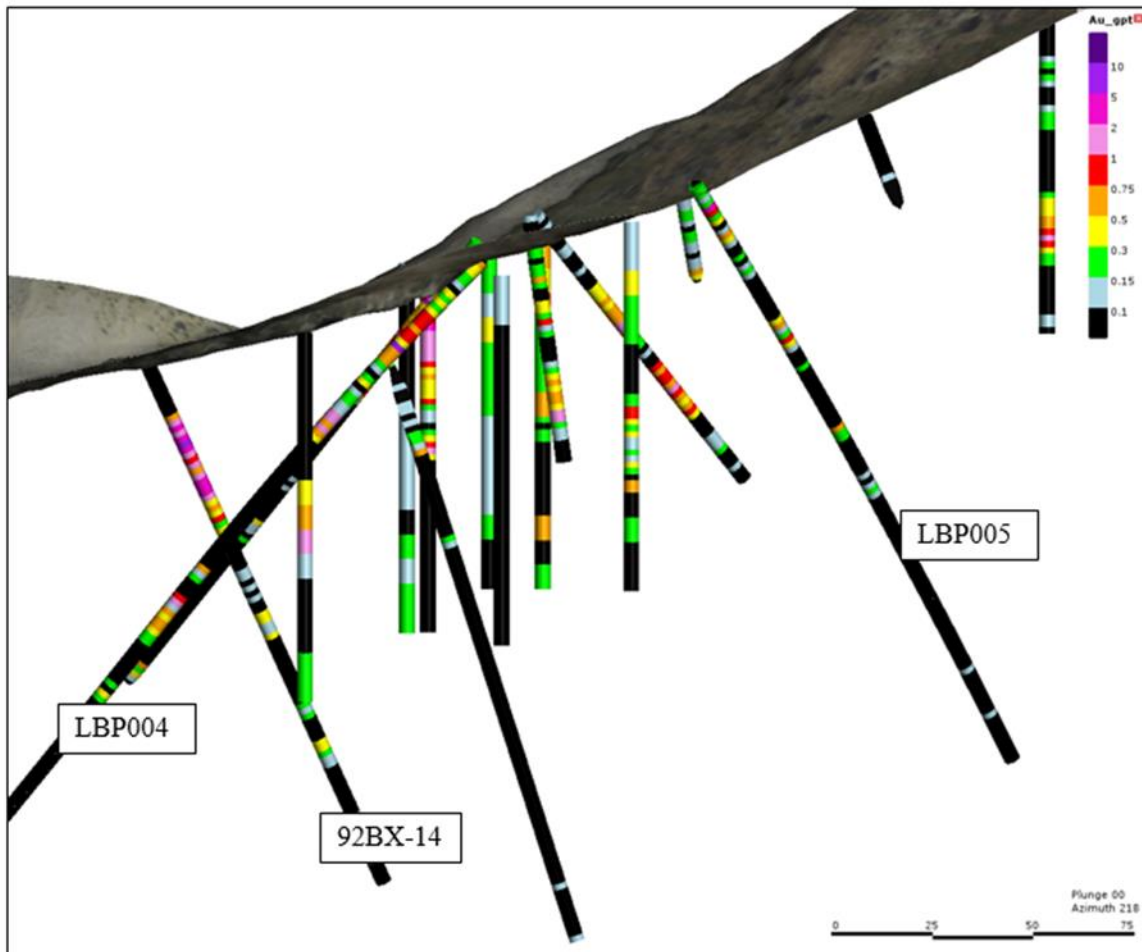


**Figure 10.5 J Anomaly Map with Assays for 2017 Holes**  
(from Liberty Gold, 2018)





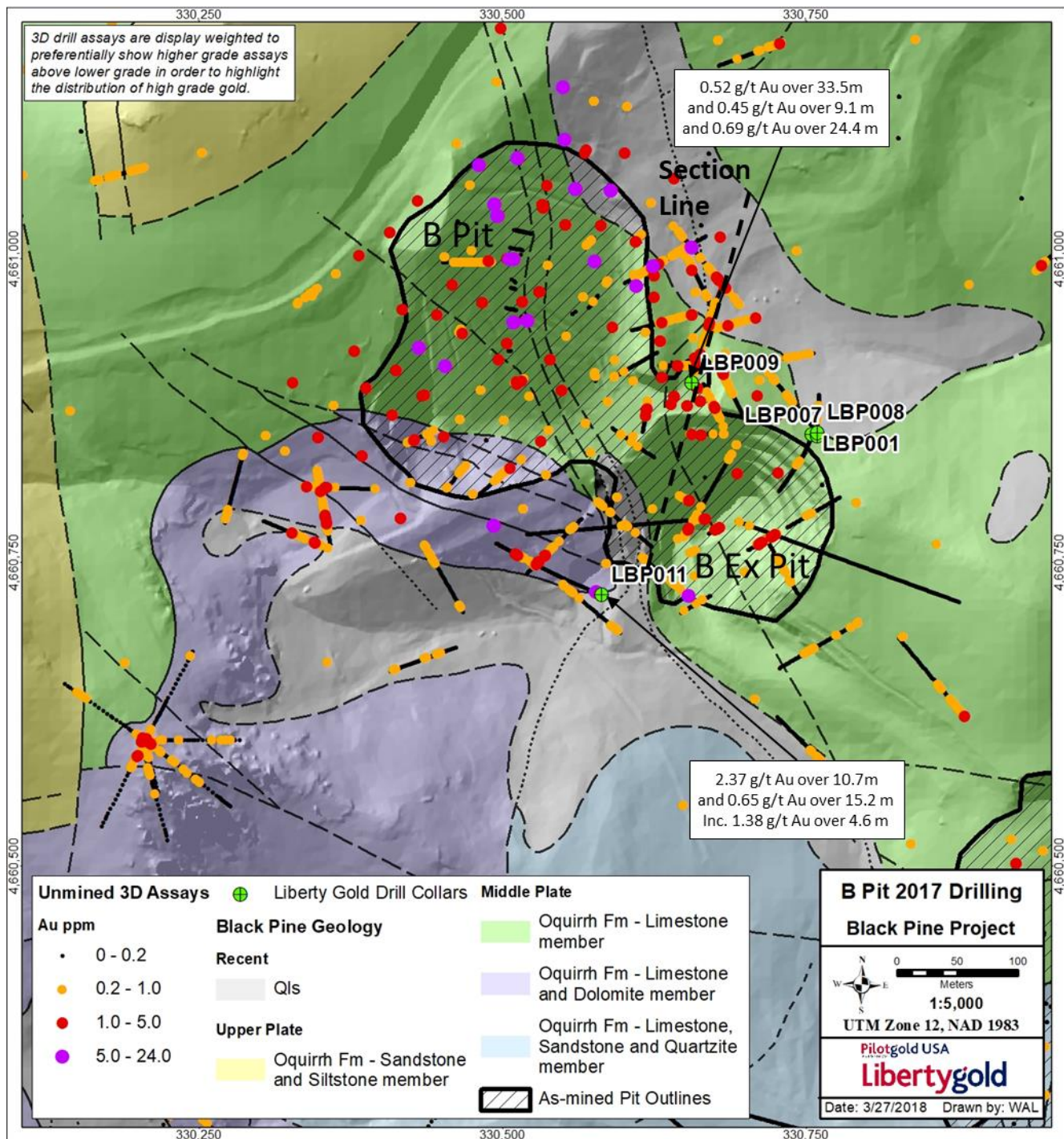
**Figure 10.6 J Anomaly Cross Section with 2017 Holes, Looking SW**  
(from Liberty Gold, 2018)



Five holes were drilled around the B and B Extension pits testing for the possible northeastern extension of mineralization in the B Extension pit (Figure 10.7 and Figure 10.8). Long intercepts of moderate gold grades were intersected in hole LBP009 (Table 10.3), but the other holes did not intersect significant grades.

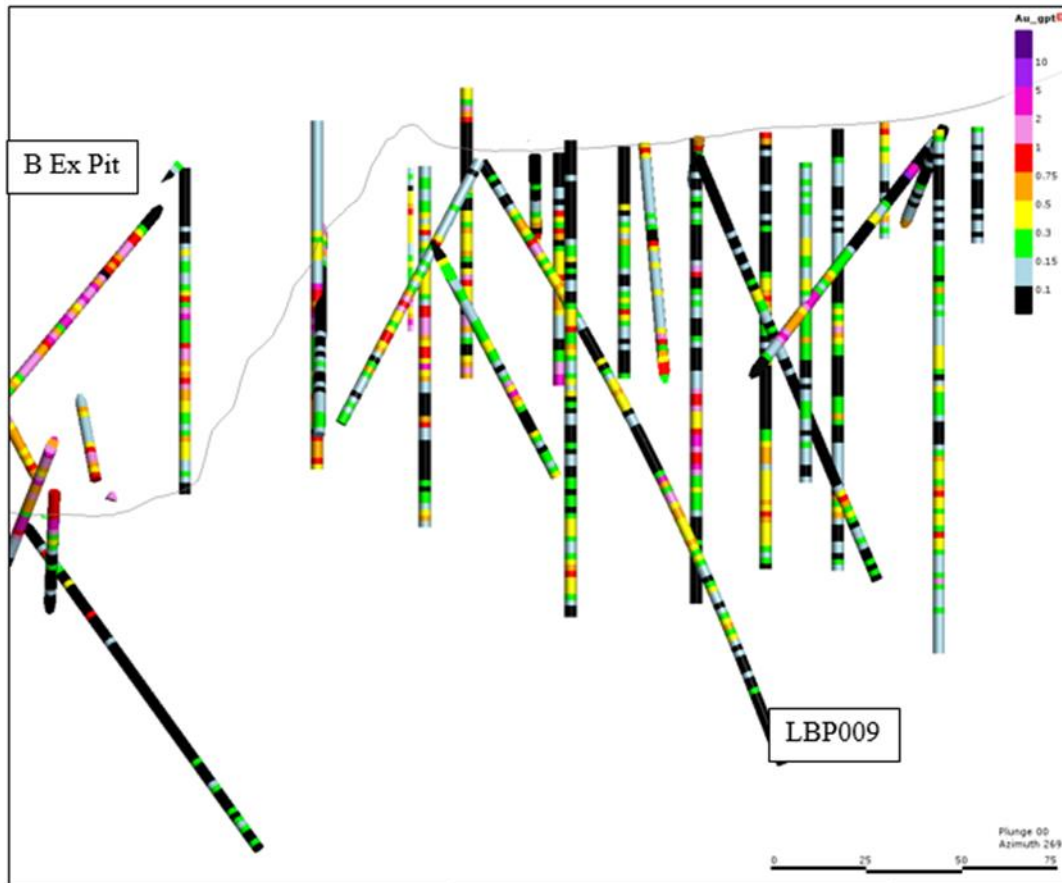


**Figure 10.7 B and B Extension Pit Map with Assays for 2017 Holes**  
(from Liberty Gold, 2018)





**Figure 10.8 B Extension Pit Cross Section with 2017 Holes, Looking NW**  
(from Liberty Gold, 2018)



#### 10.4 Drill-Hole Collar Surveys

The limited information available on the surveys of historical drill-collar locations is summarized in Section 10.2. For the 2017 drill collars, locations were initially marked in the field by Liberty Gold personnel using a Trimble GeoXH hand-held GPS receiver with differential correction accuracy of 0.5-meters horizontally and 1.0-meter vertically. Drill holes were abandoned in accordance with the State of Idaho Rules for Exploration Operations and Required Reclamation (IAR 20.03.02.06) as well as Sawtooth National Forest policies. After completion of the holes, the collars were marked with stamped brass tags fastened to a steel wire, and their locations were surveyed by Liberty Gold personnel using a Trimble GeoXH GPS receiver.

#### 10.5 Down-Hole Surveys

No information is available regarding down-hole surveys conducted during drilling by historical operators, which is not unusual considering exploration practices during the period of the historical drilling and the shallow depths of most of the holes.



For Liberty Gold’s 2017 drilling, down-hole deviation surveys were carried out by International Directional Services (“IDS”) of Elko, Nevada. IDS utilized a truck-mounted surface-recording gyro (“SRG”) survey instrument for some holes, and a north-seeking gyro (“NSG”) instrument for other holes. Readings were taken at the bottom, top, and at 15.2-meter intervals along the lengths of each hole.

## 10.6 Newmont Evaluation of Drill Sampling

As a check on sampling procedures, Newmont collected coarse and fine materials that were not captured in the rotary or RC drill samples sent for assay (Hardie, 1964). These coarse and fine materials from 530 feet of drilling from seven of the 17 holes drilled in 1964 were sampled at the same five-foot intervals as the drill samples sent for assay. The fine materials consisted of “*dust-sized particles caught in the cyclone dust collector*”, while the coarse materials were comprised of “*particles caught between the dust collector and the sample collector.*” The fines and coarse samples were sent along with the standard drill samples to Union Assay Office, Inc. of Salt Lake City, Utah (“Union Assay”) for gold assay. The results of Newmont’s study are described in an untitled, anonymous memo and summarized in Table 10.4.

**Table 10.4 Summary of Black Pine Project Drilling**

Hole ID	From	To	Original	Fines	Coarse
BP-5	285	330	0.011	0.007	0.008
BP-6	80	100	0.007	0.007	0.006
BP-8	250	300	0.022	0.027	0.021
BP-11	30	95	0.016	0.015	0.017
	110	185	0.009	0.008	0.006
	210	240	0.013	0.010	0.011
BP-13	55	70	0.030	0.039	0.034
BP-14	50	120	0.027	0.029	0.028
BP-15	100	260	0.003	0.005	0.004

Newmont noted that both the fines and coarse materials that were collected to check the sampling methodology are representative of only small quantities of material that are not sampled relative to the original samples. Newmont further commented that the results of the study indicate that no serious downgrading or upgrading in gold grades are indicated, and therefore the original samples were sufficiently representative, in terms of gold grade, of the full volume of cuttings that were returned to the surface.

## 10.7 Summary Statement

The predominant down-hole length of the drill samples in the project database is 1.52 meters (5 feet), with 96 percent of the total of 114,816 sample intervals with gold analyses in the project database having this length. The remaining sample intervals are 3.05 meters (10 feet) and 6.1 meters (20 feet) (<2% each), with the remainder having varied lengths. While auditing of the project database has revealed that some five-foot intervals in the database are actually derived from 20-foot sample intervals,





so that the true percentage of five-foot samples is less than stated and the percentage of 20-foot samples is greater (see Section 12.1.3), the true sample lengths are generally considered appropriate for the style of mineralization at Black Pine.

While historical drill-hole collar survey data are limited, Liberty Gold has carefully checked the transformed database locations against historical aerial photos and drill-hole plan maps. Two holes were found to be mis-located, and these were corrected. While the locations of many of the historical holes in the project database undoubtedly have errors, the verification steps undertaken by Liberty Gold serve to significantly limit the magnitude of these potential inaccuracies.

There are no down-hole survey data in the project database for the historical holes. This lack is not unusual for projects drilled prior to the 1990s, especially considering the shallow depths of most of the drilling. Only 5% of the historical holes were drilled at angles of  $-75^{\circ}$ , or shallower, and to down-hole depths in excess of 150 meters.

Historical references to percussion and drilling methods are not clear as to the type of drilling, as they could refer to either RC or conventional rotary methods. While both drilling methods can experience down-hole contamination issues, RC can be superior to conventional rotary under certain drilling conditions. It is therefore important to assign a definitive drilling method to all Black Pine holes, to the extent historical documentation can be found.

Irrespective of the RC versus conventional rotary distinction, all percussion-type drill holes of materiality to the project should be carefully evaluated on a hole-by-hole basis to identify potential down-hole contamination. Any samples deemed to have a high probability of being contaminated should be properly flagged in the project database. In addition, all references to ground water intersected during drilling, water flows returned to the surface during drilling, and drilling fluids injected, as well as comments regarding sample recovery, sample quality, possible contamination, etc., should be compiled from historical drill logs. Closely spaced holes ('twin holes') of differing types, or drilled in different campaigns, should also be evaluated.

The most significant cause of down-hole contamination is the presence of groundwater. In this regard, a Draft Environmental Impact Statement prepared for Pegasus states, "Pegasus exploration wells did not encounter any measurable groundwater at depths between 300 and 700 feet below the surface and there are no perennial or intermittent streams in the project area" (USDA Forest Service, 1993).

Mr. Gustin does not believe the level of uncertainties imparted by the historical drill-hole locations and lack of down-hole deviation data is a significant issue for the Black Pine project. While Mr. Gustin is unaware of any drilling, sampling, or recovery factors that could materially impact the use of the project data in possible future estimations of mineral resources, further verification work should be part of such a study.



## 11.0 SAMPLE PREPARATION, ANALYSIS, AND SECURITY (ITEM 11)

This section summarizes all information known to the authors relating to sample preparation, analysis, and security, as well as quality assurance/quality control (“QA/QC”) procedures employed, that pertain to the Black Pine project. This information has been compiled by the authors from historical records, as cited.

### 11.1 Sample Preparation and Analysis

#### 11.1.1 Historical Surface and Drilling Samples

With the exception of Pegasus drill samples from 1990 through 1997, which were assayed at the Black Pine mine laboratory, all historical samples were analyzed at laboratories independent of the historical operators, and it is not known what, if any, certifications these laboratories held at the times they were used.

**Newmont 1963 and 1964:** Newmont submitted rock-chip samples to Union Assay for gold and silver analyses. Newmont’s drilling samples were also sent to Union Assay for gold and silver by fire assay. MDA has no information on procedures and methods used for sample preparation by Union Assay.

**Newmont 1974:** Newmont submitted soil samples to Rocky Mountain Geochemical Corp. (“Rocky Mountain”) in Midvale, Utah. These were analyzed for gold, silver, lead, and zinc by atomic absorption (“AA”), and arsenic was determined colorimetrically. Cuttings from some of the 1974 drill holes were sent to Rocky Mountain’s laboratory in Salt Lake City, Utah for gold and silver assays by AA. Drill cuttings from nine holes were sent to Skyline Labs (“Skyline”) of Tucson, Arizona for gold and silver assays, but the methods of the analyses are not known. Check assays on 38 of these samples were performed by fire assay by Union Assay for gold and silver. One hole was also assayed for lead and zinc by Union Assay, but the method of analysis is not known. MDA has no information on procedures and methods used for sample preparation by Rocky Mountain, Skyline, and Union Assay.

**Gold Resources 1974 - 1976:** Gold Resources submitted rock and soil samples to Rocky Mountain, and these were analyzed for gold, silver, arsenic, mercury, and copper; the methods of sample preparation and analysis are not known. For 1974 and 1975 drilling, drill cuttings and selected intervals of core were sent to Union Assay for fire assay analyses of gold and silver.

In 1976, Gold Resource’s drilling samples were assayed by Rocky Mountain in West Jordan, Utah for gold by fire assay with an AA finish.

**Kerr Addison Mines Ltd. 1975:** Kerr Addison used Vangeochem Lab Ltd. of North Vancouver, B.C. for Cu, Zn, and Au analyses.

**Pioneer Nuclear 1979 - 1981:** Pioneer’s drill samples were sent to Union Assay in Salt Lake City, Utah. Gold and silver were assayed, but MDA has no information on the methods of sample preparation and analysis that were used.



**Pegasus 1983 - 1985:** Pegasus collected several hundred rock-chip and soil samples across the Black Pine Mountains and the future mine area. Assay certificates are not available, and sample locations were not entered into the 1990-1997 Pegasus database, but summary sheets indicate they were assayed for gold, silver, and mercury, with occasional antimony and arsenic analyses. Drill samples in 1983 and 1984 were analyzed by Rocky Mountain in Salt Lake City, Utah. for gold using a “roast” with AA finish. No other information is available on the sample preparation and analytical methods used.

**Permian Exploration and Pegasus 1984:** Drill samples were sent to Union Assay in Salt Lake City, Utah for fire assay of gold and silver with “one assay ton” (30-gram) aliquots. Some samples were also sent to Rocky Mountain in Salt Lake City, Utah. No other information is available on the sample preparation and analytical methods used.

**Noranda 1986 - 1989:** Noranda carried out extensive soil sampling across the property. In 1986 through 1989, soil samples were analyzed at Chemex Labs Inc. (“Chemex”) in Sparks, Nevada for gold by fire assay with an AA finish. In 1988 and 1989, Noranda’s rock-chip samples were analyzed at Geochemical Services Inc. (“GSI”) in Torrance, California for silver, arsenic, gold, mercury, and antimony. No other information is available on the methods and procedures used for sample preparation and analyses.

Samples from Noranda’s 1986 drilling were analyzed at several laboratories. Rocky Mountain in West Jordan, Utah determined gold and silver by fire assay on 30-gram aliquots. Samples from previously analyzed holes were sent to Assay Lab Inc. (“Assay Lab”) in West Jordan, Utah for 30-gram fire assay of gold and silver. Cuttings for at least 12 holes were sent to GSI for 30-gram fire assay with gravimetric finish. Samples from multiple holes were also sent to Chemex in North Vancouver, B.C., for 30-gram fire assays for gold. No other information is available on the methods and procedures used for sample preparation and analyses.

The 1987 and 1988 drilling samples were mainly sent to Analytical Services Inc. (“ASI”) in Elko, Nevada for 30-gram fire assay of gold with a gravimetric finish. For some samples, gold was determined by fire assay at GSI and Chemex. Some check assays for gold were also done by ASI, and others were conducted by Legend Metallurgical Laboratory Inc. (“Legend”) in Reno, Nevada and GSI using 30-gram fire assay with a gravimetric finish. No other information is available on the methods and procedures used for sample preparation and analyses.

All of the 1989 drill samples were analyzed for gold by Legend using a 30-gram fire assay procedure. No other information is available on the methods and procedures used for sample preparation and analyses in 1989.

**Pegasus 1990 - 1997:** Pegasus collected several thousand rock-chip samples across the Black Pine property. These were routinely analyzed for gold, silver, arsenic, barium, bismuth, antimony, and mercury, and occasionally for copper, lead, zinc, and molybdenum. No sample certificates are available and there is no information regarding assay laboratories, sample preparation, or analytical methods.

The Pegasus drill samples during this time period were assayed on-site at the Black Pine mine laboratory. Every sample was analyzed for gold by a hot cyanide leach (“HCL”) procedure. If the HCL



analysis reported  $>0.005$  oz Au/ton, the sample was also analyzed for gold by fire assay. No other information is available on the methods and procedures used for sample preparation and gold assays. The mine laboratory was not independent of Pegasus. It is not known if the mine laboratory held any certifications.

For long runs of samples reporting  $<0.005$  oz Au/ton by the HCL procedure, approximately one in every five to seven samples was analyzed for gold by fire assay. The intervening intervals were assigned an “estimated fire assay” gold value by a factoring method specific to each deposit. There is no record of whether lab personnel or exploration staff assigned these factored gold values. This factoring for low-grade HCL assays was referenced in 1992 through 1997 internal annual reports and evident in 1996 and 1997 assay worksheets from the Black Pine mine laboratory.

**Western Pacific 2011 - 2012:** Drill samples were initially stored on site, then transported to the ALS Minerals sample preparation facility in Elko, Nevada by an ALS representative. No QA/QC samples were inserted.

Surface rock-chip and drilling samples were sent to the ALS Minerals (“ALS”) laboratory in Elko, Nevada for sample preparation. The pulps were analyzed at ALS’ facilities at Reno, Nevada. Gold was analyzed using a 30-gram fire assay fusion with an AA finish (ALS method code Au-AA23). Separate 1.0-gram aliquots of some samples were analyzed for 51 major, minor, and trace elements at the ALS laboratory in North Vancouver, B.C. using a combination of inductively-coupled-plasma atomic emission (“ICP-AES”) and mass spectrometry (“MS”) following an aqua-regia digestion (ALS method code ME-MS41).

Liberty Gold is not aware of the insertion of QA/QC samples with the Western Pacific rock samples.

### **11.1.2 Liberty Gold Surface Samples**

A total of 122 rock samples were collected by Liberty Gold personnel and transported to the ALS sample preparation facility in Elko, Nevada. Sample weights were generally between 1 and 2 kilograms. The samples were crushed to 70% at -2.0 millimeters, split to obtain a 250-gram subsample, and the subsample was pulverized to 85% at -75 microns. The pulverized splits were shipped by ALS either to their assay laboratory in Reno, Nevada or North Vancouver, B.C., where in both cases gold was determined by 30-gram fire assay with an AA finish (method code Au-AA23). Separate 1.0-gram aliquots were analyzed for 51 major, minor, and trace elements by ICP-AES and MS following aqua-regia digestion (ALS method code ME-MS41).

ALS is independent of Liberty Gold. The ALS analytical facility in North Vancouver, B.C., is certified to ISO 9001:2008 standards and has received ISO/IEC 17025:2005 accreditation from the Standards Council of Canada. The ALS laboratory in Reno, Nevada, is certified to ISO 9001:2008 standards and has received ISO/IEC 17025:2005 accreditation.



### **11.1.3 Liberty Gold Drilling Samples**

The drill samples were transported periodically by Liberty Gold personnel, or by ALS personnel, to the ALS laboratory in Elko, Nevada. After drying and weighing, the samples were crushed to 70% at -2.0-millimeter particle size. The crushed material was riffle split to obtain a 250-gram subsample that was ring-mill pulverized to 85% at less than 75 microns. The sample pulps were shipped by ALS to their assay laboratory in Reno, Nevada, where 30-gram aliquots were analyzed for gold by fire assay fusion with an AA finish (ALS method code Au-AA23). Separate aliquots were also analyzed for cyanide-soluble gold by AA after a 1.0 hour agitated leach in a 0.25% NaCN solution (ALS method code Au-AA13).

Drill samples returning results greater than 5.0 g Au/t were re-assayed using another 30-gram aliquot and fire assay fusion followed by a gravimetric finish (ALS method code Au-GRA23). Silver and 50 major, minor, and trace elements were analyzed by a combination of ICP-AES and MS using a 1.0-gram aliquot following an aqua-regia digestion (ALS method code ME-MS41) at the ALS laboratory in North Vancouver, B.C.

Liberty Gold employs a blind numbering system for RC samples, such that the hole number and down-hole footage are not known to the assay laboratory.

## **11.2 Sample Security**

No information is available concerning security measures used by historical operators for surface and drilling samples. Liberty Gold's surface samples were transported by Liberty Gold personnel to the ALS sample preparation laboratory in Elko, Nevada. The 2017 drilling samples were stored at the Black Pine drill sites for a few days prior to transport to the ALS laboratory in Elko, Nevada by either ALS personnel or Liberty Gold personnel.

## **11.3 Quality Assurance/Quality Control**

### **11.3.1 Historical QA/QC Procedures**

QA/QC procedures used by historical operators involved check assays and, in certain cases, the submission of RC rig duplicates and/or the preparation of duplicates from coarse rejects (preparation duplicates). In 1974, Newmont sent 38 drill-sample pulps from five of the holes drilled in 1974 to Union Assay for gold and silver check fire assays. The Union Assay certificates for these check assays have been located, but the data have not yet been compiled. In 1985 and 1986, Permian had check assays done at Rocky Mountain on 48 pulps from 38 holes drilled in 1983 by Pegasus. The Newmont and Permian/Pegasus check assays have not been compiled, but together represent approximately 3% and 2% of the drilling assays of these operators in 1974 and 1988, respectively.

Noranda analyzed duplicates each year using "selected secondary splits stored at the drill sites." In 1986, samples from 1.52-meter intervals were sent to ASI for "check assays" of gold and silver to allow comparisons with 6.1-meter drill samples originally analyzed at Rocky Mountain. For the 1987 drilling, a total of 23 "check assays" of 1.52-meter samples from one hole were completed. In 1988, a total of



113 pulps and coarse rejects were analyzed. No information is available concerning possible QA/QC procedures implemented in 1989. The results of these check and duplicate assays have not been captured and compiled.

Records are incomplete, but 1996 and 1997 assay worksheets from the Black Pine mine laboratory refer to inserted standards for samples analyzed by the HCL procedure. The rate of standard insertion and the expected gold values for the standards are not known. If this information is found in the historical data, it should be compiled and evaluated.

### **11.3.2 Liberty Gold QA/QC**

The QA/QC program instituted by Liberty Gold for the 2017 drilling included the insertion of coarse blanks, certified reference materials (“CRMs”) as standards, and RC field duplicates into the RC sample stream. A minimum of one CRM, one blank, and one field duplicate was inserted into the sample stream for every 36 drill samples, which is the number of samples in each ALS analytical batch. The results of these inserted control samples are summarized in Section 12.2.2.

## **11.4 Summary Statement**

The laboratories used to analyze the primary drill samples of the historical operators prior to open-pit mining at the Black Pine project include ASI, Chemex, GSI, Legend, Rocky Mountain, Skyline, and Union Assay. All of these laboratories were independent of the historical operators, widely known and used by the exploration and mining industry at the time. During the mining operation, the Pegasus drill samples were analyzed at the on-site mine laboratory.

While documentation of the methods and procedures used for historical sample preparation, analyses, and sample security is incomplete and in some cases is not available, and the Pegasus drill samples were analyzed in-house during the mining operation, it is important to note that the historical sample data were used to develop a successful commercial mining operation that produced more than 400,000 ounces of gold.

Mr. Gustin is satisfied that the procedures and methods used for the sample preparation, analysis, and security of Liberty Gold’s samples are appropriate for generating reliable assay data that can be used to support the interpretations, conclusions, and recommendations in this report.



## 12.0 DATA VERIFICATION (ITEM 12)

### 12.1.1 Drill-Hole Collar Audit

The historical data available from which to check the project database drill-collar locations have the hole coordinates in the original local mine grid, and therefore cannot be used for auditing purposes. There is very limited evidence of the locations of historical drill-hole collars in the field due to mining and later reclamation activities.

The authors were provided with scans of historical Noranda drill-hole plan maps that show pre-mine topographic contours and drill-collar locations of many of the holes drilled in 1987 and earlier. These maps were used to qualitatively assess the general accuracy of the hole locations as represented in the current project database. Ten percent of the holes drilled by Gold Resources, Pioneer Nuclear, Pegasus, and Noranda in this time period were qualitatively checked, using visual assessments of drill-hole x-y locations relative to topographic contours, as well as approximate hole elevations as indicated by the contours. The database drill-hole locations of the holes checked are generally in agreement with the locations as indicated on the historical maps, although several appeared to be off by 15 to 30 meters. These discrepancies were reported to Liberty Gold for further assessment.

The locations of three Liberty Gold holes and two Western Pacific holes were checked by Mr. Gustin using a handheld GPS, as discussed in Section 12.3.

### 12.1.2 Down-Hole Survey Audit

There are no down-hole deviation data for any of the historical drill holes. Deviation data in the project database for four of the Liberty Gold holes were checked against original digital files created during down-hole surveying completed by IDS, and no discrepancies were found.

### 12.1.3 Assay Database Audit

A total of 285 of the 1,887 drill holes in the project database were randomly chosen for auditing, but assay backup data were found for only 96 of these holes. None of the Pegasus holes drilled from 1990 to 1995 have backup data, and 157 holes chosen for auditing were drilled during this period. When backup data were lacking for holes not drilled in 1990 to 1995, attempts were made to find audit data for other holes, which led to the auditing of 26 additional holes that were not originally chosen for auditing. Ultimately, the assay data from 14% of the holes in the project database not drilled in 1990 to 1995 were audited. The backup data generally consisted of copies of original assay certificates, although handwritten gold results on geologic logs were sometimes used when no assay certificates were available.

Of the 6,337 sample intervals checked, only 12 discrepancies between the project database and the backup data were identified. The most substantive of these discrepancies includes three sample intervals with assay data (0.14, 0.34, and 1.82 g Au/t) that have no values recorded in the database, and a less-than-detection-limit value on the assay certificate that is recorded as 0.27 g Au/t in the database (this value was repeated from the previous sample interval). Other discrepancies include two sample



intervals for which there were no assays that have 0 g Au/t values in the database, two less-than-detection-limit assays that are recorded in the database as nulls (no values), a 0.068 g Au/t assay that is recorded in the database as 0.045 g Au/t, and three sample intervals in the database with values of 0.10, 0.55, and 2.02 g Au/t for which no assay was provided on the original assay certificate (it is possible that these three samples were analyzed later and reported on a different assay certificate). Nine sample-interval “depth from” or “depth to” errors were also found, but these depth errors are not be material. If all of the discrepancies discussed above, including the depth discrepancies, were actual errors, the error rate would be significantly less than one percent.

The assay data auditing led to the recognition of original 10- and 20-foot (6.096-meter) sample intervals that are broken in the database into four 5-foot intervals, with each of the four intervals having the same assay value. This artificial creation of sample intervals was found to occur in some portions of some of the holes drilled by Gold Resources in 1975, Pegasus in 1983, and Noranda in 1986, 1987, and 1989. A careful review of all holes drilled by these operators in these general timeframes is warranted, so that the project database properly represents the actual sample intervals.

In addition to the sample-interval problem, there is a significant quantity of Union Assay gold analyses that lack precision in holes drilled by Gold Resources and Pioneer Nuclear, as well as some Pegasus 1983 holes. These Union assays were reported in increments of 0.005 oz Au/ton (0.17 g Au/t) up to a value of 0.1 oz Au/ton (3.43 g/t). While many of the original Union Assay pulps from these sample intervals were later re-assayed by Rocky Mountain using higher-precision methods, not all mineralized intervals were re-assayed and some of the results of samples that were re-assayed are not in the project database. The low-precision analyses are inadequate for the definition of mineral resources that would reflect relatively low processing costs, such as heap-leach operations. An effort should be made to replace all low-precision Union Assay results where possible, and to clearly code those that remain in the database.

## **12.2 Quality Assurance/Quality Control**

### **12.2.1 Historical Programs**

Little QA/QC data have been found that relates to the various historical drilling programs at Black Pine. The data that have been identified remains to be compiled.

### **12.2.2 Liberty Gold 2017**

**Certified Reference Materials:** CRMs (standards) were used to monitor and evaluate the analytical accuracy and precision of the 2017 drill sample assays performed at ALS. The insertion of CRMs can also be useful for detecting sample switches and numbering issues. Three of the CRMs were prepared by Minerals Exploration and Environmental Geochemistry (“MEG”) of Carson City, Nevada, using drill samples from Liberty Gold’s Kinsley sediment-hosted CTGD in eastern Nevada. These three CRMs are designated with the “PG” prefix in Table 12.1. A fourth CRM was purchased from CDN Resource Laboratories of Langley, BC (Table 12.1). A total of 45 CRMs were inserted into the 2017 drill sample stream.





**Table 12.1 Liberty Gold 2017 Certified Reference Materials**

CRM Name	Source	Certified Value (g Au/t)	1 Standard Deviation	No. of ALS Standard Analyses	No. of Failures
PG13001X	MEG	1.873	0.075	15	0
PG13002X	MEG	2.188	0.087	7	0
PG14001X	MEG	0.328	0.017	14	0
CDN-GS-P6A	CDN	0.738	0.027	9	1

In the case of normally distributed data, 95% of the CRM analyses would be expected to lie within two standard-deviations of the certified value, while only 0.3% of the analyses are expected to lie outside of the three standard-deviation limits. Note, however, that most assay datasets from metal deposits are positively skewed.

CRM analyses outside of the three standard-deviation limits are typically considered to be failures. As it is statistically unlikely that two consecutive analyses of standards would lie between the two and three standard-deviation limits, such samples are also considered to be failures unless further investigations suggest otherwise. All potential failures should trigger investigation, possible laboratory notification of potential problems, and possible re-analyses of all samples included with the failed standard result.

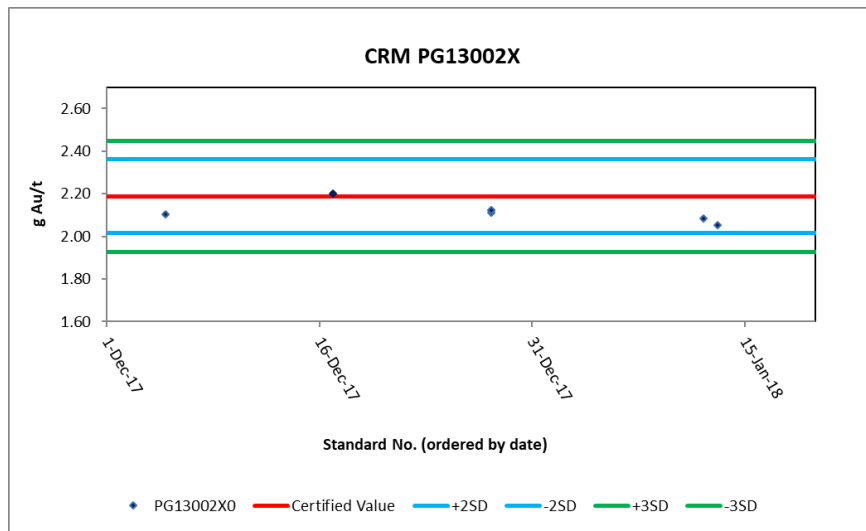
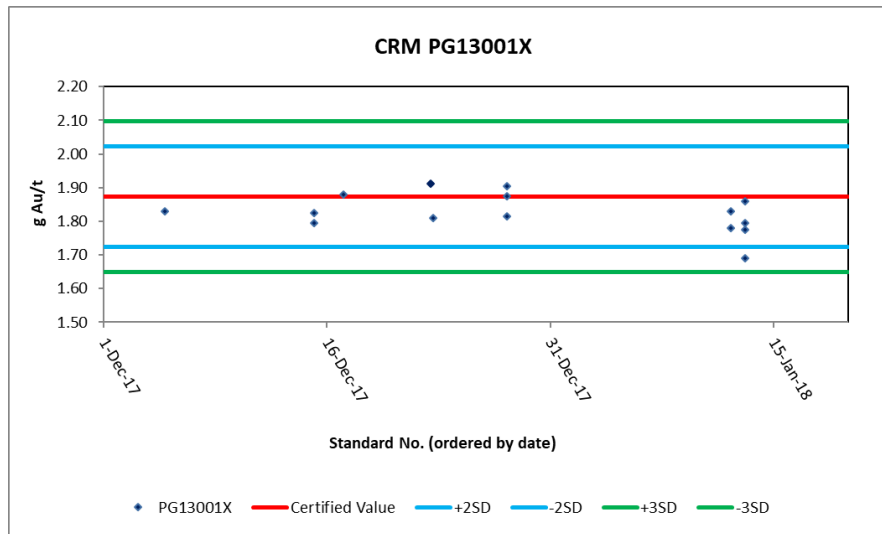
The certified value (red line) and the two and three standard-deviation control limits (blue and green lines, respectively) for each CRM are shown in Figure 12.1, along with the analytical results for each of the CRMs inserted into the drill-sample stream. The x-axis plots the ALS certificate numbers by increasing dates.

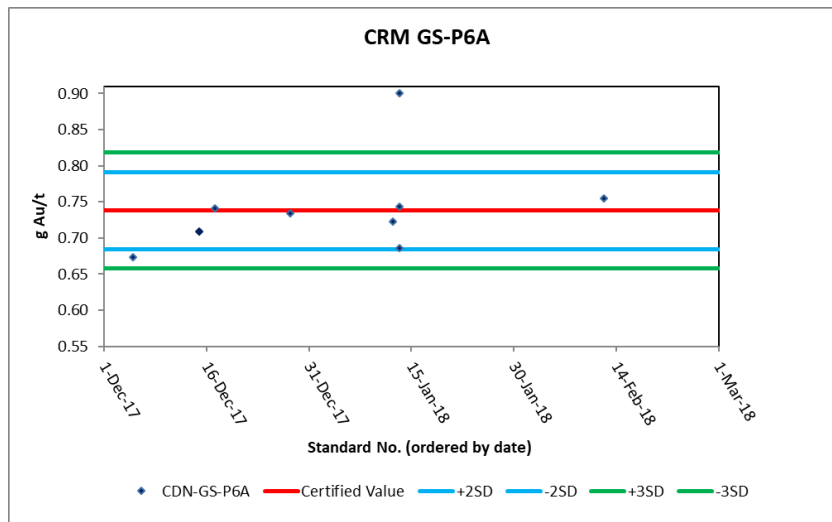
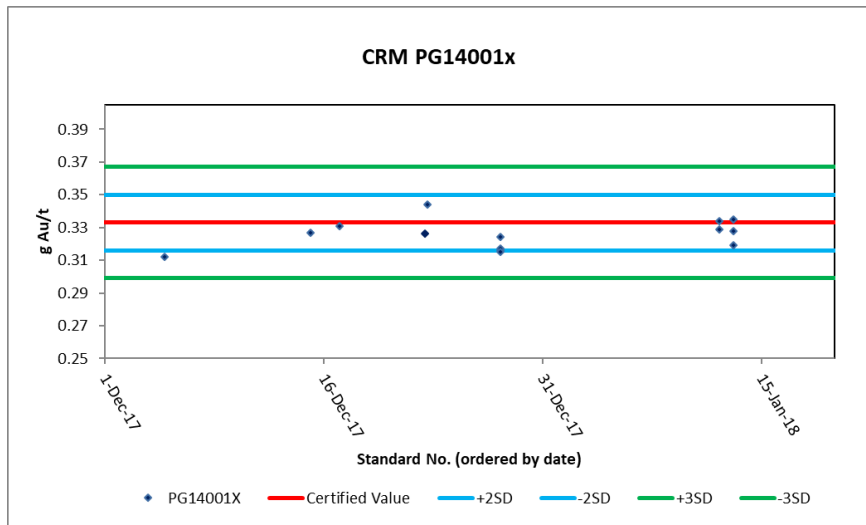
The CRM graphs show one high-side failure for GM-P6A and no low-side failures. The failed CRM, as well as the 10 drill samples analyzed before and after it, were re-analyzed. The re-analyzed CRM was within two standard deviations of the certified mean gold value and the re-analyzed samples returned values similar to the originals.

The CRM analyses indicate a slight low bias in the ALS gold assays relative to the CRMs, as most ALS assays of the CRMs are less than the certified means (Figure 12.1).



**Figure 12.1 Graphs of ALS Analyses of CRMs – 2017 Drill Program**  
(from Liberty Gold 2018; red line = certified value; blue lines  $\pm 2$  std. dev.; green lines  $\pm 3$  std. dev.)





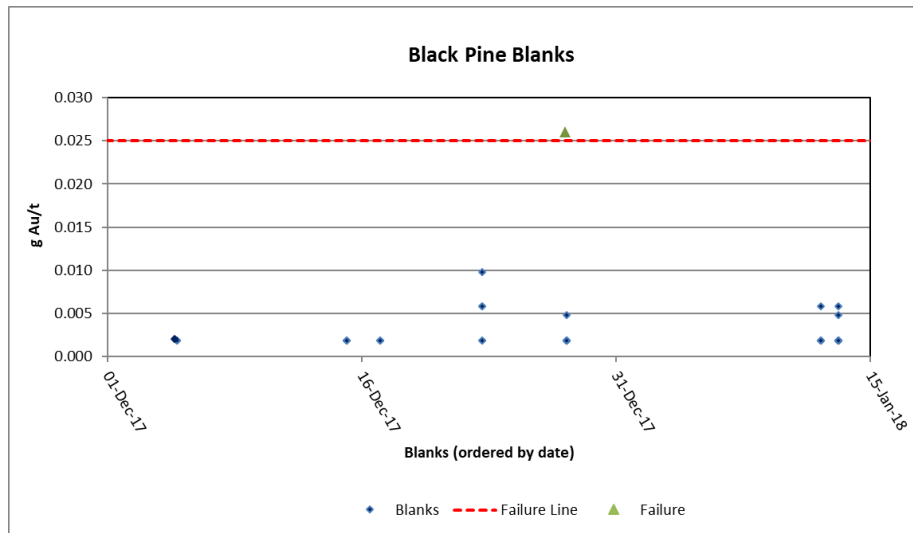
**Coarse Blanks:** Coarse blanks are samples of barren material that are used to monitor for possible contamination during sample preparation stages in the laboratory, and they are useful for detecting sample switches and numbering issues. The detection limit of the ALS fire assay with AA finish is 0.005 g Au/t. Blanks with assays in excess of 0.025 g Au/t (five times the lower detection limit) were considered failures worthy of investigation and possible re-analyses of the blanks and associated drill samples.

Liberty Gold’s blanks consisted of Vigoro brand “pond pebbles” which are coarse enough to require primary and secondary crushing, which allows for the monitoring of the entire sample-preparation process experienced by the drill samples. Blanks were inserted every approximately 36 samples, except in cases where the drilled rocks appeared likely to be unmineralized based on unfavorable rock type or lack of macroscopically visible alteration. Where possible, the blanks were inserted within intervals that judged to have the potential to be mineralized.



A total of 44 blanks were inserted in the sample stream for the 2017 program. Of these, 43 blanks returned 0.010 g Au/t or less, with most below the detection limit (Figure 12.2). One sample returned 0.026 g Au/t, which is technically a failure but at a level of possible contamination that would not have a material effect on the successive samples.

**Figure 12.2 Coarse Blank Analyses - 2017 Drilling Program**  
(from Liberty Gold 2018; dashed red line is upper acceptable limit)



**RC Field Duplicates:** RC field duplicates are splits of drill samples taken at the same time as the original sample splits are collected during drilling. Field duplicates are mainly used to assess geologic variability and sub-sampling variance. The field duplicate samples were submitted to ALS at the same time as their associated drill samples.

The outlet of the cyclone of the RC drill rig used by Liberty Gold was set up with a “Y” splitter, and the primary sample was consistently collected from the same outlet of the “Y” splitter throughout the drilling campaign. In the case of the field duplicates, an additional bucket was added to the secondary outlet of the “Y”, so that two samples were simultaneously collected for the interval. The field duplicates were collected randomly, which resulted in a large number of duplicates of unmineralized intervals. A total of 41 field duplicates were collected and assayed in the course of the 2017 drill program.

Figure 12.3 is a relative-difference graph that shows the percentage difference (plotted on the y-axis) of each RC-duplicate assay relative to its paired primary-sample analysis. This relative difference (“RD”) is calculated as follows:

$$100 \times \frac{(\text{duplicate} - \text{original})}{\text{lesser of } (\text{duplicate}, \text{original})}$$

The x-axis of the graph plots the means of the gold values of the paired data in a sequential but non-linear fashion. The red line marks 0% RD, the case where the duplicate and original samples have





hole database and associated historical documents and discussed the current geologic interpretations with Liberty Gold technical staff.

Mr. Gustin took handheld GPS measurements of drill-hole collars that were encountered during the site visit. This included three Liberty Gold holes from the 2017 drilling program and two Western Pacific holes (Table 12.2). No historical holes drilled by operators prior to Western Pacific were seen during the site visit, and very few are known by Liberty Gold to have survived the historical mining and subsequent reclamation activities of Pegasus.

Mr. Gustin's measurements of the three Liberty Gold holes and one of the two Western Pacific holes are generally within the expected accuracy range of the handheld GPS, with the exception of the northing value for hole LBP011. The handheld location of the other Western Pacific hole (MG1109) is significantly different than that of the database.

**Table 12.2 Liberty Gold 2017 Certified Reference Materials**

Hole ID	MDA GPS			MDA vs Database		
	Easting	Northing	Elevation	Easting	Northing	Elevation
LBP009	330660	4660897	2058.647	3.98	-0.67	-5.47
LBP010	331270	4660523	1889.869	0.54	-0.95	-7.48
MG1109	330716	4660739	1974.026	68.02	-29.01	-9.18
MG1120	330840	4661528	2058.048	-4.44	0.47	-13.92
LBP011	330581	4660734	2023.66	-0.43	10.79	7.27

In addition to the holes shown in Table 12.2, a hole labelled in the field as MG1238 was also found and measured with the handheld device. No such hole exists in the project database, and no holes are known to have been drilled by Western Pacific in 2012, as is suggested by the hole name on the tag in the field. In addition, no drill-hole collar location of any hole drilled by Western Pacific in the project database fits with the location measured by Mr. Gustin. Liberty Gold is investigating the noted discrepancies.

No samples of mineralized material were collected during the site visit for verification purposes, as historical gold production from the open-pit heap-leach operations of Pegasus is well documented and is a matter of public record.

#### 12.4 Summary Statement

Based on the auditing of the project database, the analysis of available QA/QC data, the general verification process that is inherent in the compilation of this technical report, and the personal inspection of the project, Mr. Gustin believes the project data are adequate as used in this report. The only limitations on the verification of the project data were imposed by availability of historical records. For example, Liberty Gold is not in the possession of assay certificates or drill-hole logs for Pegasus holes drilled in 1990 to 1995, which precluded auditing of these data as represented in the project database.



## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING (ITEM 13)

### 13.1 Metallurgical Work Completed Prior to Mining Operations

A significant number of historical reports are available that document metallurgical testing completed prior to the Pegasus mining operations that began in 1991. The reports reviewed by the authors as of the Effective Date of this report are summarized in chronological order below.

**Potter (1974):** The U.S. Bureau of Mines Salt Lake City Metallurgy Center carried out column-percolation cyanidation tests on two samples (BP7 and BP9) with calculated head assays of 2.71 g Au/t and 6.75 g Au/t, respectively. A total of 5 kg of minus 2-inch material from sample BP7 and 8 kg of minus 2-inch material from BP9 were leached in glass columns. BP7 was leached for 191 hours, recovering 87.4 per cent of the gold to activated carbon. BP9 was leached for 701 hours, with 80.2% extracted to activated carbon.

**Ennis (undated – 1975?):** Gold Resources commissioned Newport Minerals, Inc. of Cripple Creek, Colorado to carry out crush-leach testing on a 136-kilogram composite sample with a head grade of approximately 15 g Au/t. Five tests were done at various particle sizes, including “as received”, 1 inch, ¾ inch, ½ inch, and 3/8 inch. Samples were leached “in a barrel” for 7 days. The “as received” sample showed “approximately 70%” extraction, with 73% for the 3/8-inch sample.

**Dawson (1980):** Pioneer commissioned Dawson Metallurgical Laboratories, Inc. of Murray, Utah to carry out a 48-hour leach of a “composite of samples” ground to 90% passing 200 mesh. The conclusion was that “an appreciable portion of the gold does not leach”, possibly “due to carbonaceous matter” in the tested sample.

**Dix (1984):** Kappes, Cassidy & Associates (“KCA”) of Reno, Nevada carried out cyanide leach tests on three samples from the Tallman mine. Sample BP1 had a grade of 7 g Au/t; BP2 assayed 1.37 g Au/t, and BP3 had a gold content of 0.21 g Au/t. Two 58-day leach tests were carried out on minus 4-inch and minus ½-inch material from BP1, with gold extractions of 75% and 81%, respectively. Agitated cyanide tests were run for 24 hours on portions of pulverized head samples. The average extraction for BP1 and BP2 was 93%. BP3 was found to contain strongly “preg robbing” carbonaceous material.

**Defilippi (1988):** In 1988, KCA carried out tests on a composite sample of Black Pine carbonaceous mineralization, made up of 34.14 meters of drill core and a total weight of 372.2 kg. The sample was subjected to double oxidation, chlorination with hypochlorite, thiourea leaching, carbon-in-leach (“CIL”), and roast/cyanide leach tests. Most techniques did not significantly increase extractions over those obtained from direct cyanidation. However, “straight oxidation with hypochlorite gave gold recoveries of 88% with the addition of 320 pounds [145 kilograms] of calcium hypochlorite per ton of ore”, and, “roasting the ore at 540 degrees C for two hours followed by straight cyanidation gave gold recoveries of 80%.”

**Yernberg (1988):** According to a copy of a report by Senior Metallurgist W.R. Yernberg of KCA that is missing the first 18 pages and some details and results, 8 bottle-roll tests were carried out on 500



grams of pulverized material that was agitated for 24 or 48 hours in different sets of tests. With one exception, gold extractions ranged from 78.3 to 89.7%. A single sample had an extraction of 50% and was found to be moderately preg robbing.

Continuously drained drip-leach column tests were carried out with backhoe samples and drill core. Backhoe samples included splits of three samples processed at minus 3-inch and minus 1-inch particle sizes, and these were leached for 60 days. Five core samples were crushed to 1.5 and ½ inch and were leached for 40 or 60 days in separate tests. Two of the 1/2" columns required agglomeration. Tailings screen analyses were employed to look at the effectiveness of leaching in different size fractions within the samples. Leaching was significantly more effective for the smaller size fractions than the larger ones.

**Clemson (1988):** This study provided an in-depth look at the distribution of gold in oxidized and unoxidized mineralized materials in the Black Pine deposits. Extremely fine-grained native gold was noted in oxidized samples, averaging two microns in diameter, associated with hematite, quartz, and calcite. Some silica encapsulation was noted.

The report describes bottle-roll testing undertaken at Lakefield Research of Peterborough, Ontario, Canada. Samples of drill chips were ground to -20 mesh and screened at minus 35, 100, 200, and 500 mesh, and the various screen fractions were assayed for gold. No enrichment of gold in any of the size fractions was noted. Ten samples were used for the study, with results for the minus 200-mesh fraction reported for all samples. Gold extractions for seven of the ten samples ranged from 81.9% to 92.4%. Three of the samples yielded very low recoveries; these samples contained preg-robbing carbonaceous material. A number of techniques were applied to these samples in an attempt to improve extraction; grinding to 86% passing minus 400 mesh, roasting at 600 degrees C, and then leaching was found to be the most effective method.

**Dix (1990):** KCA performed 4-hour agitated cyanide-leach tests on 10 1-kilogram "as received" chip samples (nominally ¼-inch particle size), and the data were compared to conventional fire assays. Gold extractions ranged from 78.1% to 97.5% and averaged 87.5%.

## **13.2 Metallurgical Work Completed by Pegasus**

Liberty Gold has no historical records documenting metallurgical testing that Pegasus may have carried out. However, production records from the Pegasus operation indicate that from 1991 through 1997, the average gold recovery by ROM heap leaching was 65% (Table 6.3). The highest annual average recovery reported was 80% in 1993, and the lowest was 54% in 1994.

## **13.3 Summary**

Although the authors are not experts with respect to metallurgy, the authors have reviewed the metallurgical test studies summarized above and believe the information to be sound and appropriate for the purposes for which it has been used in this report.





#### **14.0 MINERAL RESOURCE ESTIMATES (ITEM 14)**

There are no current mineral resources reported herein.

Item 15 (Mineral Reserve Estimates) through Item 22 (Economic Analysis) are not applicable to the Black Pine property as of the Effective Date of this report, and these sections of the report have therefore been omitted.



## **23.0 ADJACENT PROPERTIES**

The authors have not reviewed relevant information from adjacent properties.



## **24.0 OTHER RELEVANT DATA AND INFORMATION (ITEM 24)**

The authors are not aware of any relevant data or information available for the Black Pine project that have been excluded from this report.



## 25.0 INTERPRETATION AND CONCLUSIONS (ITEM 25)

Mr. Gustin has reviewed the Black Pine project data, audited the drill-hole database, evaluated the Liberty Gold QA/QC data, and visited the project site. MDA is unaware of any significant risks or uncertainties that could be expected to affect the reliability of the exploration information presented in this report, and the data provided to MDA by Liberty Gold are believed to be reasonably representative of the Black Pine project geology and gold mineralization.

Significant historical gold production has occurred at the Black Pine project. Virmyra Mining Company ran a vat-leach operation from 1949 to 1955, mining 109,000 tonnes of ore with an average grade of 5.14 g Au/t from the Tallman open pit. Following a period of exploration by multiple companies, most notably Noranda, Pegasus acquired the property in 1990 and initiated an ROM open-pit heap-leach operation in 1991, with mining starting at the Tallman area and expanded to eventually include six pits. By the end of the operation in 1998, Pegasus had completed a substantial amount of exploration drilling and mined a total of about 31 million tonnes of ore at a waste-to-ore stripping ratio close to 1-to-1. Pegasus produced over 430,000 ounces of gold from their Black Pine operations and achieved an average recovery of about 65%.

Following the closure of the Black Pine mine, the heap-leach pad, which is not on Liberty Gold's property, was rinsed and reclaimed. According to Liberty Gold's environmental consultants, Liberty Gold is liable only for disturbance incurred as part of Liberty Gold's exploration activities, or if Liberty Gold causes disturbance of the historical leach pad and other designated areas.

The Black Pine gold mineralization fits into the class of sediment-hosted Carlin-style gold deposits on the basis of, among other features, its stratigraphic controls and host-rock lithologies, geochemical associations, and micron-sized dissemination of gold that is associated with silicification, decalcification, and solution-collapse breccias. The host units at Black Pine have been strongly affected by multiple periods of compressional and extensional deformation, much of it occurring prior to and some possibly contemporaneously with, mineralization. This history of deformation, which is manifested by both folding and faulting as documented in pit walls, has led to structural complexities that will require careful consideration as the project exploration program progresses.

Liberty Gold has compiled a historical drill-hole database that is comprised of 1,908 historical drill holes, for a total of 191,500 meters. Pegasus drilled 61% of these holes and Noranda 27%, with the remainder drilled by various other historical operators. Only 23 of the historical holes are core holes, with all others drilled by either RC or conventional-rotary methods. Liberty Gold drilled an additional 13 RC holes for 2,077 meters in 2017.

While much of the historically drilled gold mineralization has been mined out, this drilling also indicates that significant unmined mineralization exists, both lateral to and below the mined pits. The presence of such *in situ* mineralization has been confirmed by Liberty Gold's 2017 drilling program.

Extensive historical gold-in-soil data define a consistent anomaly, the core of which encompasses four kilometers in a north-south direction, with much of this length extending for two kilometers east-west. This anomaly includes all open-pit mined areas on the project, which highlights the significance of the



soil data, and other isolated anomalies exist beyond the limits of this large anomaly. The soil data were clearly a critical tool used in the development of historical drilling targets at Black Pine, and they ultimately led to the mining of the deposits that were discovered following the exploitation of the Tallman orebody. The soil data lend support to, and serve to extend the potential of, unmined targets along the peripheries of the historical pits. Additionally, and potentially more importantly, significant portions of the soil anomaly have little to no drilling to date, and these areas are prime drilling targets that could lead to the discovery of new mineralized zones of consequence. Three such targets include the areas from the E pit east to the B pit, the B pit south and southeast to the C/D pit, and the area northwest from the C/D pit to the E pit (the latter two area comprising what is known as the F Trend anomaly).

Large soil anomalies are also present to the west of the C/D pit (SWX Anomaly), north and northeast of the E pit, and a long northeast-trending anomaly to the north that includes the H and J anomalies (Figure 7.15). Very little drilling, to no drilling, has been carried out in these areas.

There are metallurgical aspects of the Black Pine mineralization that are worthy of consideration as the project progresses. While the Pegasus mining operation proved that ROM heap leaching was economically viable, historical metallurgical testing suggests that recoveries may increase with decreasing particle size. If future testing proves this to be the case, and the project advances to a stage that warrants economic evaluations, the tradeoff between the cost of crushing and the associated increase in recovery will be important. Another factor that warrants further study is the presence of preg-robbing carbonaceous materials in some of the mineralization. Such materials are evidenced by the metallurgical testwork completed to date, and by the presence of black, likely carbonaceous zones visible in some of the pit walls.



## **26.0 RECOMMENDATIONS (ITEM 26)**

As discussed in Section 25.0, Liberty Gold has clear potential to outline mineralization of economic interest at the Black Pine property and the project therefore warrants significant additional investment. Based on compilation of historical data and Liberty Gold drill results to date, an aggressive drill program should be implemented. This drilling should focus on the extensions of previously mined mineralization in historic pits, as well as test other targets, both drilled and undrilled, that Liberty Gold is in the process of identifying and prioritizing.

MDA recommends a US \$2,000,000 Phase 1 work program (including land holding costs) that includes 10,000 meters of RC drilling, followed by a 43-101 compliant resource estimate. The goal of this drilling would be to test for down-dip and strike extensions to gold mineralization in areas of historical open-pit mining, including the B, A, and C/D pits, to achieve a sufficient drill density to support resource estimation. Some drilling also should be allocated to initial and continued testing of undrilled or poorly-drilled targets, including the F Zone, A Basin, SWX, J, and H Zones. If positive results are received from any of these targets, more detailed infill drilling should be undertaken. Assuming sufficiently positive results are obtained from Phase 1 exploration work, a resource estimate should be completed following the completion of the Phase 1 program.

Subject to sufficiently positive Phase 1 results, a Phase 2 exploration program, totaling US \$5,000,000 program (including land holding costs), is recommended. This program should include at least 30,000 meters of definition drilling of areas along the historical mine trend, as well as initial drill testing of outlying target areas. Metallurgical testing should also be undertaken as part of the program, with samples collected from large-diameter core. Column-leach testing of oxidized materials should be a major part of the testing program. An updated resource estimate and a subsequent Preliminary Economic Assessment (“PEA”) should be carried at the appropriate time during the Phase 2 program, with the goal of assessing the potential economic viability of the project.

Details of the costs of the recommended programs are provided in Table 26.1.



**Table 26.1 Recommended Black Pine Project Budget**

<b>Item</b>	<b>Phase 1</b>	<b>Phase 2</b>
RC and Core Drilling (incl. access roads and drill pads, water, surveys, etc.)	\$1,030,000	\$2,700,000
Assaying and Geochemistry	\$270,000	\$750,000
Geology, Soil and Rock Sampling	\$50,000	\$50,000
Direct Salaries and Expenses	\$185,000	\$500,000
Land Holding Costs	\$90,000	\$100,000
Permitting and Environmental	\$200,000	\$150,000
Metallurgy	\$0	\$200,000
Resource Estimation	\$120,000	\$120,000
PEA	\$0	\$210,000
Administrative	\$75,000	\$200,000
<b>Total</b>	<b>\$2,000,000</b>	<b>\$5,000,000</b>



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## 28.0 DATE AND SIGNATURE PAGE (ITEM 28)

Effective Date of report:

July 23, 2018

Completion Date of report:

September 7, 2018

“*Michael M. Gustin*”

Michael M. Gustin, Ph.D., CPG

Date Signed:

September 7, 2018

“*Moira T. Smith*”

Moira T. Smith, Ph.D., P. Geo.

Date Signed:

September 7, 2018

“*William A. Lepore*”

William A. Lepore, M.Sc., P. Geo.

Date Signed:

September 7, 2018



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## **29.0 CERTIFICATE OF QUALIFIED PERSON (ITEM 29)**

### **MICHAEL M. GUSTIN, CPG**

I, Michael M. Gustin, CPG, do hereby certify that I am currently employed as Senior Geologist by Mine Development Associates, Inc., 210 South Rock Blvd., Reno, Nevada 89502 and:

1. I graduated with a Bachelor of Science degree in Geology from Northeastern University in 1979 and a Doctor of Philosophy degree in Economic Geology from the University of Arizona in 1990. I have worked as a geologist in the mining industry for more than 25 years. I am a Licensed Professional Geologist in the state of Utah (#5541396-2250), a Licensed Geologist in the state of Washington (#2297), a Registered Member of the Society of Mining Engineers (4037854RM), and a Certified Professional Geologist of the American Institute of Professional Geologists (CPG-11462).
2. I have previously explored for, evaluated, and completed resource estimations on a number of sediment-hosted gold deposits in Nevada. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”). I certify that by reason of my education, affiliation with certified professional associations, and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
3. I visited the Black Pine project site on May 2, 2018.
4. I am responsible for all sections of this report titled, “Technical Report on the Black Pine Gold Project, Cassia County, Idaho, USA” dated September 7, 2018, with an Effective Date of July 23, 2018 (the “Technical Report”), subject to my reliance on other experts identified in Section 3.0.
5. I have had no other involvement with the property or project that is the subject of the Technical Report other than that directly associated with the completion of the Technical Report.
6. I am independent of Liberty Gold Corp. and all of its subsidiaries, as defined in Section 1.5 of NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.
7. As of the Effective Date of this Technical Report, to the best of my knowledge, information, and belief, this Technical Report contains all the scientific and technical information that is required to be disclosed to make this Technical Report not misleading.
8. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 7<sup>th</sup> day of September, 2018.

***“Michael M. Gustin”***

\_\_\_\_\_  
Michael M. Gustin



**MOIRA T. SMITH, PH.D., P.GEO**

I, Moira T. Smith, Ph.D., P.Geo., do hereby certify that I am a geologist residing at 928 Hardrock Place, Spring Creek, NV 89815, and am employed by Liberty Gold Corp. as Vice President, Exploration and Geoscience, and:

1. I graduated from Pomona College, with a B.A in Geology in 1983. I obtained a M.Sc. in Geology from Western Washington University in 1986, and a Ph.D. in Geology from the University of Arizona in 1990. I have practiced my profession continuously since 1990.
2. I am a Professional Geoscientist (P.Geo.) registered in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (#122720); I have relevant experience having led or participated in geological studies supporting 6 advanced exploration and development projects and/or operations, in 4 different countries.
3. 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 professional associations (as deemed 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.
4. I visited the Black Pine project site more than 6 times in 2015 – 2018, and my most recent visit took place on April 30, 2018.
5. I assisted in the preparation of Sections 4 through 13 of this report titled, “*Technical Report on the Black Pine Project, Cassia County, Idaho, U.S.A.*” dated September 7, 2018, with an effective date of July 23, 2018 (the “Technical Report”).
6. I have worked on the Black Pine project in a technical capacity since August 2016. I am not independent of Liberty Gold Corp. (the “Issuer”) applying all the tests in Section 1.5 of NI 43-101, and acknowledge that I hold securities of the Issuer in the form of stock and stock options.
7. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
8. I have read NI 43-101 and Form 43-101F1, and the portions of the Technical Report that I am co-responsible for have been prepared in compliance with that instrument and form.

Dated this September 7<sup>th</sup> day of September, 2018.

“Moira T. Smith”

Moira T. Smith, Ph.D., P.Geo.



**WILLIAM A. LEPORE, M.Sc., P.GEO.**

I, William A. Lepore, M.Sc., P.Geo., do hereby certify that I am a Senior Project Geologist employed by Liberty Gold Corp. of Suite 1900 – 1055 West Hastings St, Vancouver British Columbia, V6E 2E9 and:

1. I graduated from The University of British Columbia, with a B.Sc. in Geology in 2006. I obtained a M.Sc. in Geology from The University of British Columbia in 2012. I have worked as a geologist in the mining industry for over 10 years.
2. I am a Professional Geoscientist (P.Geo.) registered in good standing with Engineers and Geoscientists British Columbia (#41208); I have relevant experience having participated in a leadership role in geological exploration studies supporting 5 advanced exploration and development projects, in 3 different countries.
3. 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 professional associations (as deemed 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.
4. I have been the Project Manager on the Black Pine Project continuously since 2016 in charge of data compilation, geological exploration, permitting and drilling activities.
5. I assisted in the preparation of Sections 6 through 12 of this report titled, “*Technical Report on the Black Pine Project, Cassia County, Idaho, U.S.A.*” dated September 7, 2018, with an effective date of July 23, 2018 (the “Technical Report”).
6. I have worked on the Black Pine project in a technical capacity since August 2016. I am not independent of Liberty Gold Corp. (the “Issuer”) applying all the tests in Section 1.5 of NI 43-101, and acknowledge that I hold securities of the Issuer in the form of stock and stock options.
7. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all of the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
8. I have read NI 43-101 and Form 43-101F1, and the portions of the Technical Report that I am co-responsible for have been prepared in compliance with that instrument and form.

Dated this 7<sup>th</sup> day of September, 2018.

“William A. Lepore”

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William A. Lepore, M.Sc., P.Geo.

## **APPENDIX A**

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### **List of Liberty Gold's Unpatented Federal Lode Mining Claims, Black Pine Gold Property, Cassia County, Idaho**

Appendix A

Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 1	9/23/2009	IMC199549	10/22/2009	2009-005242	10/21/2009
MG 2	9/23/2009	IMC199550	10/22/2009	2009-005243	10/21/2009
MG 3	9/23/2009	IMC199551	10/22/2009	2009-005244	10/21/2009
MG 4	9/23/2009	IMC199552	10/22/2009	2009-005245	10/21/2009
MG 5	9/23/2009	IMC199553	10/22/2009	2009-005246	10/21/2009
MG 6	9/23/2009	IMC199554	10/22/2009	2009-005247	10/21/2009
MG 7	9/23/2009	IMC199555	10/22/2009	2009-005248	10/21/2009
MG 8	9/23/2009	IMC199556	10/22/2009	2009-005249	10/21/2009
MG 9	9/23/2009	IMC199557	10/22/2009	2009-005250	10/21/2009
MG 10	9/23/2009	IMC199558	10/22/2009	2009-005251	10/21/2009
MG 11	9/23/2009	IMC199559	10/22/2009	2009-005252	10/21/2009
MG 12	9/23/2009	IMC199560	10/22/2009	2009-005253	10/21/2009
MG 13	9/23/2009	IMC199561	10/22/2009	2009-005254	10/21/2009
MG 14	9/24/2009	IMC199562	10/22/2009	2009-005255	10/21/2009
MG 15	9/24/2009	IMC199563	10/22/2009	2009-005256	10/21/2009
MG 16	9/24/2009	IMC199564	10/22/2009	2009-005257	10/21/2009
MG 17	9/24/2009	IMC199565	10/22/2009	2009-005258	10/21/2009
MG 18	9/24/2009	IMC199566	10/22/2009	2009-005259	10/21/2009
MG 19	9/24/2009	IMC199567	10/22/2009	2009-005260	10/21/2009
MG 20	9/24/2009	IMC199568	10/22/2009	2009-005261	10/21/2009
MG 21	9/24/2009	IMC199569	10/22/2009	2009-005262	10/21/2009
MG 22	9/24/2009	IMC199570	10/22/2009	2009-005263	10/21/2009
MG 23	9/24/2009	IMC199571	10/22/2009	2009-005264	10/21/2009
MG 24	9/24/2009	IMC199572	10/22/2009	2009-005265	10/21/2009
MG 25	9/24/2009	IMC199573	10/22/2009	2009-005266	10/21/2009
MG 26	9/24/2009	IMC199574	10/22/2009	2009-005267	10/21/2009
MG 27	9/24/2009	IMC199575	10/22/2009	2009-005268	10/21/2009
MG 28	9/24/2009	IMC199576	10/22/2009	2009-005269	10/21/2009
MG 29	9/24/2009	IMC199577	10/22/2009	2009-005270	10/21/2009
MG 30	9/24/2009	IMC199578	10/22/2009	2009-005271	10/21/2009
MG 31	9/24/2009	IMC199579	10/22/2009	2009-005272	10/21/2009
MG 32	9/24/2009	IMC199580	10/22/2009	2009-005273	10/21/2009
MG 33	9/24/2009	IMC199581	10/22/2009	2009-005274	10/21/2009
MG 34	9/24/2009	IMC199582	10/22/2009	2009-005275	10/21/2009
MG 35	9/24/2009	IMC199583	10/22/2009	2009-005276	10/21/2009
MG 36	9/24/2009	IMC199584	10/22/2009	2009-005277	10/21/2009
MG 37	9/24/2009	IMC199585	10/22/2009	2009-005278	10/21/2009
MG 38	9/24/2009	IMC199586	10/22/2009	2009-005279	10/21/2009
MG 39	9/24/2009	IMC199587	10/22/2009	2009-005280	10/21/2009



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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 40	9/24/2009	IMC199588	10/22/2009	2009-005281	10/21/2009
MG 41	9/24/2009	IMC199589	10/22/2009	2009-005282	10/21/2009
MG 42	9/24/2009	IMC199590	10/22/2009	2009-005283	10/21/2009
MG 43	9/24/2009	IMC199591	10/22/2009	2009-005284	10/21/2009
MG 44	9/24/2009	IMC199592	10/22/2009	2009-005285	10/21/2009
MG 45	9/24/2009	IMC199593	10/22/2009	2009-005286	10/21/2009
MG 46	9/24/2009	IMC199594	10/22/2009	2009-005287	10/21/2009
MG 47	9/24/2009	IMC199595	10/22/2009	2009-005288	10/21/2009
MG 48	9/24/2009	IMC199596	10/22/2009	2009-005289	10/21/2009
MG 49	9/24/2009	IMC199597	10/22/2009	2009-005290	10/21/2009
MG 50	9/24/2009	IMC199598	10/22/2009	2009-005291	10/21/2009
MG 51	9/24/2009	IMC199599	10/22/2009	2009-005292	10/21/2009
MG 52	9/24/2009	IMC199600	10/22/2009	2009-005293	10/21/2009
MG 53	9/24/2009	IMC199601	10/22/2009	2009-005294	10/21/2009
MG 54	9/24/2009	IMC199602	10/22/2009	2009-005295	10/21/2009
MG 55	9/22/2009	IMC199603	10/22/2009	2009-005296	10/21/2009
MG 56	9/22/2009	IMC199604	10/22/2009	2009-005297	10/21/2009
MG 57	9/22/2009	IMC199605	10/22/2009	2009-005298	10/21/2009
MG 58	9/22/2009	IMC199606	10/22/2009	2009-005299	10/21/2009
MG 59	9/22/2009	IMC199607	10/22/2009	2009-005300	10/21/2009
MG 60	9/22/2009	IMC199608	10/22/2009	2009-005301	10/21/2009
MG 61	9/24/2009	IMC199609	10/22/2009	2009-005302	10/21/2009
MG 62	9/23/2009	IMC199610	10/22/2009	2009-005303	10/21/2009
MG 63	9/23/2009	IMC199611	10/22/2009	2009-005304	10/21/2009
MG 64	9/23/2009	IMC199612	10/22/2009	2009-005305	10/21/2009
MG 65	9/23/2009	IMC199613	10/22/2009	2009-005306	10/21/2009
MG 66	9/23/2009	IMC199614	10/22/2009	2009-005307	10/21/2009
MG 67	9/23/2009	IMC199615	10/22/2009	2009-005308	10/21/2009
MG 68	9/23/2009	IMC199616	10/22/2009	2009-005309	10/21/2009
MG 69	9/23/2009	IMC199617	10/22/2009	2009-005310	10/21/2009
MG 70	9/23/2009	IMC199618	10/22/2009	2009-005311	10/21/2009
MG 71	9/23/2009	IMC199619	10/22/2009	2009-005312	10/21/2009
MG 72	9/23/2009	IMC199620	10/22/2009	2009-005313	10/21/2009
MG 73	9/22/2009	IMC199621	10/22/2009	2009-005314	10/21/2009
MG 74	9/22/2009	IMC199622	10/22/2009	2009-005315	10/21/2009
MG 75	9/22/2009	IMC199623	10/22/2009	2009-005316	10/21/2009
MG 76	9/22/2009	IMC199624	10/22/2009	2009-005317	10/21/2009
MG 77	9/22/2009	IMC199625	10/22/2009	2009-005318	10/21/2009
MG 78	9/22/2009	IMC199626	10/22/2009	2009-005319	10/21/2009

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 79	9/22/2009	IMC199627	10/22/2009	2009-005320	10/21/2009
MG 80	9/23/2009	IMC199628	10/22/2009	2009-005321	10/21/2009
MG 81	9/23/2009	IMC199629	10/22/2009	2009-005322	10/21/2009
MG 82	9/23/2009	IMC199630	10/22/2009	2009-005323	10/21/2009
MG 83	9/23/2009	IMC199631	10/22/2009	2009-005324	10/21/2009
MG 84	9/23/2009	IMC199632	10/22/2009	2009-005325	10/21/2009
MG 85	9/23/2009	IMC199633	10/22/2009	2009-005326	10/21/2009
MG 86	9/23/2009	IMC199634	10/22/2009	2009-005327	10/21/2009
MG 87	9/23/2009	IMC199635	10/22/2009	2009-005328	10/21/2009
MG 88	9/23/2009	IMC199636	10/22/2009	2009-005329	10/21/2009
MG 89	9/23/2009	IMC199637	10/22/2009	2009-005330	10/21/2009
MG 90	9/23/2009	IMC199638	10/22/2009	2009-005331	10/21/2009
MG 91	2/1/2010	IMC200230	2/16/2010	2010-000718	2/16/2010
MG 92	2/1/2010	IMC200231	2/16/2010	2010-000719	2/16/2010
MG 93	2/1/2010	IMC200232	2/16/2010	2010-000720	2/16/2010
MG 94	2/1/2010	IMC200233	2/16/2010	2010-000721	2/16/2010
MG 95	2/2/2010	IMC200234	2/16/2010	2010-000722	2/16/2010
MG 96	2/2/2010	IMC200235	2/16/2010	2010-000723	2/16/2010
MG 97	2/2/2010	IMC200236	2/16/2010	2010-000724	2/16/2010
MG 98	2/2/2010	IMC200237	2/16/2010	2010-000725	2/16/2010
MG 99	2/2/2010	IMC200238	2/16/2010	2010-000726	2/16/2010
MG 100	2/2/2010	IMC200239	2/16/2010	2010-000727	2/16/2010
MG 101	2/2/2010	IMC200240	2/16/2010	2010-000728	2/16/2010
MG 102	2/2/2010	IMC200241	2/16/2010	2010-000729	2/16/2010
MG 103	2/2/2010	IMC200242	2/16/2010	2010-000730	2/16/2010
MG 104	2/2/2010	IMC200243	2/16/2010	2010-000731	2/16/2010
MG 105	2/2/2010	IMC200244	2/16/2010	2010-000732	2/16/2010
MG 106	2/2/2010	IMC200245	2/16/2010	2010-000733	2/16/2010
MG 107	2/2/2010	IMC200246	2/16/2010	2010-000734	2/16/2010
MG 108	2/3/2010	IMC200247	2/16/2010	2010-000735	2/16/2010
MG 109	2/4/2010	IMC200248	2/16/2010	2010-000736	2/16/2010
MG 110	2/4/2010	IMC200249	2/16/2010	2010-000737	2/16/2010
MG 111	2/4/2010	IMC200250	2/16/2010	2010-000738	2/16/2010
MG 112	2/4/2010	IMC200251	2/16/2010	2010-000739	2/16/2010
MG 113	2/4/2010	IMC200252	2/16/2010	2010-000741	2/16/2010
MG 114	2/4/2010	IMC200253	2/16/2010	2010-000742	2/16/2010
MG 115	2/2/2010	IMC200254	2/16/2010	2010-000743	2/16/2010
MG 116	2/2/2010	IMC200255	2/16/2010	2010-000744	2/16/2010

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 117	2/2/2010	IMC200256	2/16/2010	2010-000745	2/16/2010
MG 118	2/4/2010	IMC200257	2/16/2010	2010-000746	2/16/2010
MG 119	2/4/2010	IMC200258	2/16/2010	2010-000747	2/16/2010
MG 120	2/4/2010	IMC200259	2/16/2010	2010-000748	2/16/2010
MG 121	2/4/2010	IMC200260	2/16/2010	2010-000749	2/16/2010
MG 122	2/4/2010	IMC200261	2/16/2010	2010-000750	2/16/2010
MG 123	2/4/2010	IMC200262	2/16/2010	2010-000751	2/16/2010
MG 124	2/4/2010	IMC200263	2/16/2010	2010-000752	2/16/2010
MG 125	2/4/2010	IMC200264	2/16/2010	2010-000753	2/16/2010
MG 126	2/4/2010	IMC200265	2/16/2010	2010-000754	2/16/2010
MG 127	2/4/2010	IMC200266	2/16/2010	2010-000755	2/16/2010
MG 128	2/4/2010	IMC200267	2/16/2010	2010-000756	2/16/2010
MG 129	2/4/2010	IMC200268	2/16/2010	2010-000757	2/16/2010
MG 130	2/5/2010	IMC200269	2/16/2010	2010-000758	2/16/2010
MG 131	2/5/2010	IMC200270	2/16/2010	2010-000759	2/16/2010
MG 132	2/5/2010	IMC200271	2/16/2010	2010-000760	2/16/2010
MG 133	2/5/2010	IMC200272	2/16/2010	2010-000761	2/16/2010
MG 134	2/5/2010	IMC200273	2/16/2010	2010-000762	2/16/2010
MG 135	2/5/2010	IMC200274	2/16/2010	2010-000763	2/16/2010
MG 136	2/5/2010	IMC200275	2/16/2010	2010-000764	2/16/2010
MG 137	2/5/2010	IMC200276	2/16/2010	2010-000765	2/16/2010
MG 138	2/3/2010	IMC200277	2/16/2010	2010-000766	2/16/2010
MG 139	2/3/2010	IMC200278	2/16/2010	2010-000767	2/16/2010
MG 140	2/3/2010	IMC200279	2/16/2010	2010-000768	2/16/2010
MG 141	2/3/2010	IMC200280	2/16/2010	2010-000769	2/16/2010
MG 142	2/3/2010	IMC200281	2/16/2010	2010-000770	2/16/2010
MG 143	2/3/2010	IMC200282	2/16/2010	2010-000771	2/16/2010
MG 144	2/3/2010	IMC200283	2/16/2010	2010-000772	2/16/2010
MG 145	2/3/2010	IMC200284	2/16/2010	2010-000773	2/16/2010
MG 146	2/4/2010	IMC200285	2/16/2010	2010-000774	2/16/2010
MG 147	2/4/2010	IMC200286	2/16/2010	2010-000775	2/16/2010
MG 148	2/4/2010	IMC200287	2/16/2010	2010-000776	2/16/2010
MG 149	2/4/2010	IMC200288	2/16/2010	2010-000777	2/16/2010
MG 150	2/4/2010	IMC200289	2/16/2010	2010-000778	2/16/2010
MG 151	2/4/2010	IMC200290	2/16/2010	2010-000779	2/16/2010
MG 152	2/4/2010	IMC200291	2/16/2010	2010-000780	2/16/2010
MG 153	2/4/2010	IMC200292	2/16/2010	2010-000781	2/16/2010
MG 154	2/4/2010	IMC200293	2/16/2010	2010-000782	2/16/2010
MG 155	2/4/2010	IMC200294	2/16/2010	2010-000783	2/16/2010

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 156	2/4/2010	IMC200295	2/16/2010	2010-000784	2/16/2010
MG 157	4/7/2010	IMC200606	5/14/2010	2010-002069	5/4/2010
MG 158	4/7/2010	IMC200607	5/14/2010	2010-002070	5/4/2010
MG 159	4/7/2010	IMC200608	5/14/2010	2010-002071	5/4/2010
MG 160	4/7/2010	IMC200609	5/14/2010	2010-002072	5/4/2010
MG 161	4/7/2010	IMC200610	5/14/2010	2010-002073	5/4/2010
MG 162	4/7/2010	IMC200611	5/14/2010	2010-002074	5/4/2010
MG 163	4/7/2010	IMC200612	5/14/2010	2010-002075	5/4/2010
MG 164	4/7/2010	IMC200613	5/14/2010	2010-002076	5/4/2010
MG 165	4/7/2010	IMC200614	5/14/2010	2010-002077	5/4/2010
MG 166	4/7/2010	IMC200615	5/14/2010	2010-002078	5/4/2010
MG 167	4/7/2010	IMC200616	5/14/2010	2010-002079	5/4/2010
MG 168	4/7/2010	IMC200617	5/14/2010	2010-002080	5/4/2010
MG 169	4/7/2010	IMC200618	5/14/2010	2010-002081	5/4/2010
MG 170	4/7/2010	IMC200619	5/14/2010	2010-002082	5/4/2010
MG 171	4/7/2010	IMC200620	5/14/2010	2010-002083	5/4/2010
MG 172	4/7/2010	IMC200621	5/14/2010	2010-002084	5/4/2010
MG 173	4/7/2010	IMC200622	5/14/2010	2010-002085	5/4/2010
MG 174	4/9/2010	IMC200623	5/14/2010	2010-002086	5/4/2010
MG 175	4/9/2010	IMC200624	5/14/2010	2010-002087	5/4/2010
MG 176	4/9/2010	IMC200625	5/14/2010	2010-002088	5/4/2010
MG 177	4/9/2010	IMC200626	5/14/2010	2010-002089	5/4/2010
MG 178	4/9/2010	IMC200627	5/14/2010	2010-002090	5/4/2010
MG 179	4/9/2010	IMC200628	5/14/2010	2010-002091	5/4/2010
MG 180	4/9/2010	IMC200629	5/14/2010	2010-002092	5/4/2010
MG 181	4/9/2010	IMC200630	5/14/2010	2010-002093	5/4/2010
MG 182	4/9/2010	IMC200631	5/14/2010	2010-002094	5/4/2010
MG 183	4/9/2010	IMC200632	5/14/2010	2010-002095	5/4/2010
MG 184	4/10/2010	IMC200633	5/14/2010	2010-002096	5/4/2010
MG 185	4/10/2010	IMC200634	5/14/2010	2010-002097	5/4/2010
MG 186	4/10/2010	IMC200635	5/14/2010	2010-002098	5/4/2010
MG 187	4/10/2010	IMC200636	5/14/2010	2010-002099	5/4/2010
MG 188	4/6/2010	IMC200637	5/14/2010	2010-002100	5/4/2010
MG 189	4/6/2010	IMC200638	5/14/2010	2010-002101	5/4/2010
MG 190	4/6/2010	IMC200639	5/14/2010	2010-002102	5/4/2010
MG 191	4/6/2010	IMC200640	5/14/2010	2010-002103	5/4/2010
MG 192	4/6/2010	IMC200641	5/14/2010	2010-002104	5/4/2010
MG 193	4/6/2010	IMC200642	5/14/2010	2010-002105	5/4/2010

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 194	4/6/2010	IMC200643	5/14/2010	2010-002106	5/4/2010
MG 195	4/9/2010	IMC200644	5/14/2010	2010-002107	5/4/2010
MG 196	4/9/2010	IMC200645	5/14/2010	2010-002108	5/4/2010
MG 197	4/9/2010	IMC200646	5/14/2010	2010-002109	5/4/2010
MG 198	4/9/2010	IMC200647	5/14/2010	2010-002110	5/4/2010
MG 199	4/9/2010	IMC200648	5/14/2010	2010-002111	5/4/2010
MG 200	4/9/2010	IMC200649	5/14/2010	2010-002112	5/4/2010
MG 201	4/9/2010	IMC200650	5/14/2010	2010-002113	5/4/2010
MG 202	4/9/2010	IMC200651	5/14/2010	2010-002114	5/4/2010
MG 203	4/9/2010	IMC200652	5/14/2010	2010-002115	5/4/2010
MG 204	4/9/2010	IMC200653	5/14/2010	2010-002116	5/4/2010
MG 205	4/9/2010	IMC200654	5/14/2010	2010-002117	5/4/2010
MG 206	4/9/2010	IMC200655	5/14/2010	2010-002118	5/4/2010
MG 207	4/9/2010	IMC200656	5/14/2010	2010-002119	5/4/2010
MG 208	4/9/2010	IMC200657	5/14/2010	2010-002120	5/4/2010
MG 209	4/9/2010	IMC200658	5/14/2010	2010-002121	5/4/2010
MG 210	4/9/2010	IMC200659	5/14/2010	2010-002122	5/4/2010
MG 211	4/9/2010	IMC200660	5/14/2010	2010-002123	5/4/2010
MG 212	4/9/2010	IMC200661	5/14/2010	2010-002124	5/4/2010
MG 213	4/10/2010	IMC200662	5/14/2010	2010-002125	5/4/2010
MG 214	4/10/2010	IMC200663	5/14/2010	2010-002126	5/4/2010
MG 215	4/10/2010	IMC200664	5/14/2010	2010-002127	5/4/2010
MG 216	4/10/2010	IMC200665	5/14/2010	2010-002128	5/4/2010
MG 217	4/10/2010	IMC200666	5/14/2010	2010-002129	5/4/2010
MG 218	4/10/2010	IMC200667	5/14/2010	2010-002130	5/4/2010
MG 219	4/6/2010	IMC200668	5/14/2010	2010-002131	5/4/2010
MG 220	4/6/2010	IMC200669	5/14/2010	2010-002132	5/4/2010
MG 221	4/6/2010	IMC200670	5/14/2010	2010-002133	5/4/2010
MG 222	4/6/2010	IMC200671	5/14/2010	2010-002134	5/4/2010
MG 223	4/6/2010	IMC200672	5/14/2010	2010-002135	5/4/2010
MG 224	4/6/2010	IMC200673	5/14/2010	2010-002136	5/4/2010
MG 225	4/6/2010	IMC200674	5/14/2010	2010-002137	5/4/2010
MG 226	4/9/2010	IMC200675	5/14/2010	2010-002138	5/4/2010
MG 227	4/9/2010	IMC200676	5/14/2010	2010-002139	5/4/2010
MG 228	4/9/2010	IMC200677	5/14/2010	2010-002140	5/4/2010
MG 229	4/9/2010	IMC200678	5/14/2010	2010-002141	5/4/2010
MG 230	4/9/2010	IMC200679	5/14/2010	2010-002142	5/4/2010
MG 231	4/9/2010	IMC200680	5/14/2010	2010-002143	5/4/2010
MG 232	4/9/2010	IMC200681	5/14/2010	2010-002144	5/4/2010

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 233	4/9/2010	IMC200682	5/14/2010	2010-002145	5/4/2010
MG 234	4/9/2010	IMC200683	5/14/2010	2010-002146	5/4/2010
MG 235	4/9/2010	IMC200684	5/14/2010	2010-002147	5/4/2010
MG 236	4/9/2010	IMC200685	5/14/2010	2010-002148	5/4/2010
MG 237	4/9/2010	IMC200686	5/14/2010	2010-002149	5/4/2010
MG 238	4/9/2010	IMC200687	5/14/2010	2010-002150	5/4/2010
MG 239	4/9/2010	IMC200688	5/14/2010	2010-002151	5/4/2010
MG 240	4/9/2010	IMC200689	5/14/2010	2010-002152	5/4/2010
MG 241	4/9/2010	IMC200690	5/14/2010	2010-002153	5/4/2010
MG 242	4/10/2010	IMC200691	5/14/2010	2010-002154	5/4/2010
MG 243	4/10/2010	IMC200692	5/14/2010	2010-002155	5/4/2010
MG 244	4/10/2010	IMC200693	5/14/2010	2010-002156	5/4/2010
MG 245	4/10/2010	IMC200694	5/14/2010	2010-002157	5/4/2010
MG 246	4/10/2010	IMC200695	5/14/2010	2010-002158	5/4/2010
MG 247	4/10/2010	IMC200696	5/14/2010	2010-002162	5/4/2010
MG 248	4/10/2010	IMC200697	5/14/2010	2010-002163	5/4/2010
MG 249	4/10/2010	IMC200698	5/14/2010	2010-002164	5/4/2010
MG 250	4/6/2010	IMC200699	5/14/2010	2010-002165	5/4/2010
MG 251	4/6/2010	IMC200700	5/14/2010	2010-002166	5/4/2010
MG 252	4/6/2010	IMC200701	5/14/2010	2010-002167	5/4/2010
MG 253	4/6/2010	IMC200702	5/14/2010	2010-002168	5/4/2010
MG 254	4/7/2010	IMC200703	5/14/2010	2010-002169	5/4/2010
MG 255	4/7/2010	IMC200704	5/14/2010	2010-002170	5/4/2010
MG 256	4/7/2010	IMC200705	5/14/2010	2010-002171	5/4/2010
MG 257	4/7/2010	IMC200706	5/14/2010	2010-002172	5/4/2010
MG 258	4/7/2010	IMC200707	5/14/2010	2010-002173	5/4/2010
MG 259	4/7/2010	IMC200708	5/14/2010	2010-002174	5/4/2010
MG 260	4/7/2010	IMC200709	5/14/2010	2010-002175	5/4/2010
MG 261	4/7/2010	IMC200710	5/14/2010	2010-002176	5/4/2010
MG 262	4/7/2010	IMC200711	5/14/2010	2010-002177	5/4/2010
MG 263	4/7/2010	IMC200712	5/14/2010	2010-002178	5/4/2010
MG 264	4/7/2010	IMC200713	5/14/2010	2010-002179	5/4/2010
MG 265	4/7/2010	IMC200714	5/14/2010	2010-002180	5/4/2010
MG 266	4/7/2010	IMC200715	5/14/2010	2010-002181	5/4/2010
MG 267	4/7/2010	IMC200716	5/14/2010	2010-002182	5/4/2010
MG 268	4/7/2010	IMC200717	5/14/2010	2010-002183	5/4/2010
MG 269	4/7/2010	IMC200718	5/14/2010	2010-002184	5/4/2010
MG 270	4/7/2010	IMC200719	5/14/2010	2010-002185	5/4/2010
MG 271	4/7/2010	IMC200720	5/14/2010	2010-002186	5/4/2010

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 272	4/10/2010	IMC200721	5/14/2010	2010-002187	5/4/2010
MG 273	4/10/2010	IMC200722	5/14/2010	2010-002188	5/4/2010
MG 274	4/7/2010	IMC200723	5/14/2010	2010-002189	5/4/2010
MG 275	4/7/2010	IMC200724	5/14/2010	2010-002190	5/4/2010
MG 276	4/10/2010	IMC200725	5/14/2010	2010-002191	5/4/2010
MG 277	4/10/2010	IMC200726	5/14/2010	2010-002192	5/4/2010
MG 278	4/10/2010	IMC200727	5/14/2010	2010-002193	5/4/2010
MG 279	4/10/2010	IMC200728	5/14/2010	2010-002194	5/4/2010
MG 280	4/10/2010	IMC200729	5/14/2010	2010-002195	5/4/2010
MG 281	4/11/2010	IMC200730	5/14/2010	2010-002196	5/4/2010
MG 282	4/11/2010	IMC200731	5/14/2010	2010-002197	5/4/2010
MG 283	4/11/2010	IMC200732	5/14/2010	2010-002198	5/4/2010
MG 284	4/11/2010	IMC200733	5/14/2010	2010-002199	5/4/2010
MG 285	4/11/2010	IMC200734	5/14/2010	2010-002200	5/4/2010
MG 286	4/11/2010	IMC200735	5/14/2010	2010-002201	5/4/2010
MG 287	4/11/2010	IMC200736	5/14/2010	2010-002202	5/4/2010
MG 288	4/11/2010	IMC200737	5/14/2010	2010-002203	5/4/2010
MG 289	4/11/2010	IMC200738	5/14/2010	2010-002204	5/4/2010
MG 290	4/11/2010	IMC200739	5/14/2010	2010-002205	5/4/2010
MG 291	4/12/2010	IMC200740	5/14/2010	2010-002206	5/4/2010
MG 292	4/12/2010	IMC200741	5/14/2010	2010-002207	5/4/2010
MG 293	4/12/2010	IMC200742	5/14/2010	2010-002208	5/4/2010
MG 294	4/12/2010	IMC200743	5/14/2010	2010-002209	5/4/2010
MG 295	4/12/2010	IMC200744	5/14/2010	2010-002210	5/4/2010
MG 296	4/12/2010	IMC200745	5/14/2010	2010-002211	5/4/2010
MG 297	4/12/2010	IMC200746	5/14/2010	2010-002212	5/4/2010
MG 298	4/12/2010	IMC200747	5/14/2010	2010-002213	5/4/2010
MG 299	4/12/2010	IMC200748	5/14/2010	2010-002214	5/4/2010
MG 300	4/12/2010	IMC200749	5/14/2010	2010-002215	5/4/2010
MG 301	4/12/2010	IMC200750	5/14/2010	2010-002216	5/4/2010
MG 302	4/12/2010	IMC200751	5/14/2010	2010-002217	5/4/2010
MG 303	4/12/2010	IMC200752	5/14/2010	2010-002218	5/4/2010
MG 304	4/12/2010	IMC200753	5/14/2010	2010-002219	5/4/2010
MG 305	4/12/2010	IMC200754	5/14/2010	2010-002220	5/4/2010
MG 306	4/8/2010	IMC200755	5/14/2010	2010-002221	5/4/2010
MG 307	4/8/2010	IMC200756	5/14/2010	2010-002222	5/4/2010
MG 308	4/8/2010	IMC200757	5/14/2010	2010-002223	5/4/2010
MG 309	4/8/2010	IMC200758	5/14/2010	2010-002224	5/4/2010
MG 310	4/8/2010	IMC200759	5/14/2010	2010-002225	5/4/2010

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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
MG 311	4/8/2010	IMC200760	5/14/2010	2010-002226	5/4/2010
MG 312	4/8/2010	IMC200761	5/14/2010	2010-002227	5/4/2010
MG 313	4/8/2010	IMC200762	5/14/2010	2010-002228	5/4/2010
MG 314	4/8/2010	IMC200763	5/14/2010	2010-002229	5/4/2010
MG 315	4/8/2010	IMC200764	5/14/2010	2010-002230	5/4/2010
MG 316	4/8/2010	IMC200765	5/14/2010	2010-002231	5/4/2010
MG 317	4/8/2010	IMC200766	5/14/2010	2010-002232	5/4/2010
MG 318	4/8/2010	IMC200767	5/14/2010	2010-002233	5/4/2010
MG 319	4/8/2010	IMC200768	5/14/2010	2010-002234	5/4/2010
MG 320	4/8/2010	IMC200769	5/14/2010	2010-002235	5/4/2010
MG 321	4/8/2010	IMC200770	5/14/2010	2010-002236	5/4/2010
MG 322	4/8/2010	IMC200771	5/14/2010	2010-002237	5/4/2010
MG 323	4/8/2010	IMC200772	5/14/2010	2010-002238	5/4/2010
MG 324	4/8/2010	IMC200773	5/14/2010	2010-002239	5/4/2010
MG 325	4/8/2010	IMC200774	5/14/2010	2010-002240	5/4/2010
MG 326	4/8/2010	IMC200775	5/14/2010	2010-002241	5/4/2010
MG 327	4/8/2010	IMC200776	5/14/2010	2010-002242	5/4/2010
MG 328	4/8/2010	IMC200777	5/14/2010	2010-002243	5/4/2010
MG 329	4/8/2010	IMC200778	5/14/2010	2010-002244	5/4/2010
MG 330	4/8/2010	IMC200779	5/14/2010	2010-002245	5/4/2010
MG 331	4/8/2010	IMC200780	5/14/2010	2010-002246	5/4/2010
MG 332	4/8/2010	IMC200781	5/14/2010	2010-002247	5/4/2010
MG 333	4/8/2010	IMC200782	5/14/2010	2010-002248	5/4/2010
MG 334	4/8/2010	IMC200783	5/14/2010	2010-002249	5/4/2010
MG 335	4/8/2010	IMC200784	5/14/2010	2010-002250	5/4/2010
MG 336	4/8/2010	IMC200785	5/14/2010	2010-002251	5/4/2010
MG 337	4/8/2010	IMC200786	5/14/2010	2010-002252	5/4/2010
MG 338	4/8/2010	IMC200787	5/14/2010	2010-002253	5/4/2010
MG 339	4/8/2010	IMC200788	5/14/2010	2010-002254	5/4/2010
MG 340	4/8/2010	IMC200789	5/14/2010	2010-002255	5/4/2010
MG 341	4/8/2010	IMC200790	5/14/2010	2010-002256	5/4/2010
MG 342	4/8/2010	IMC200791	5/14/2010	2010-002257	5/4/2010
MG 343	4/8/2010	IMC200792	5/14/2010	2010-002258	5/4/2010
MG 344	4/8/2010	IMC200793	5/14/2010	2010-002259	5/4/2010
MG 345	4/8/2010	IMC200794	5/14/2010	2010-002260	5/4/2010
PMG 1	10/24/2016	IMC216703	11/17/2016	2016-004680	11/7/2016
PMG 2	10/24/2016	IMC216704	11/17/2016	2016-004681	11/7/2016
PMG 3	10/24/2016	IMC216705	11/17/2016	2016-004682	11/7/2016



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Claim Name	Location Date	BLM Serial Number	BLM Recording Date	County Document Number	County Recording Date
PMG 4	10/24/2016	IMC216706	11/17/2016	2016-004683	11/7/2016
PMG 5	10/25/2016	IMC216707	11/17/2016	2016-004684	11/7/2016
PMG 6	10/25/2016	IMC216708	11/17/2016	2016-004685	11/7/2016
PMG 7	10/25/2016	IMC216709	11/17/2016	2016-004686	11/7/2016
PMG 8	10/26/2016	IMC216710	11/17/2016	2016-004687	11/7/2016
PMG 9	10/26/2016	IMC216711	11/17/2016	2016-004688	11/7/2016
PMG 10	10/26/2016	IMC216712	11/17/2016	2016-004689	11/7/2016
PMG 11	10/27/2016	IMC216713	11/17/2016	2016-004690	11/7/2016
PMG 12	10/24/2016	IMC216714	11/17/2016	2016-004691	11/7/2016
PMG 13	10/24/2016	IMC216715	11/17/2016	2016-004692	11/7/2016
PMG 14	10/24/2016	IMC216716	11/17/2016	2016-004693	11/7/2016
PMG 15	10/25/2016	IMC216717	11/17/2016	2016-004694	11/7/2016
PMG 16	10/25/2016	IMC216718	11/17/2016	2016-004695	11/7/2016
PMG 17	10/25/2016	IMC216719	11/17/2016	2016-004696	11/7/2016
PMG 18	10/26/2016	IMC216720	11/17/2016	2016-004697	11/7/2016
PMG 19	10/26/2016	IMC216721	11/17/2016	2016-004698	11/7/2016
PMG 20	10/26/2016	IMC216722	11/17/2016	2016-004699	11/7/2016
PMG 21	10/27/2016	IMC216723	11/17/2016	2016-004705	11/7/2016
PMG 22	10/24/2016	IMC216724	11/17/2016	2016-004706	11/7/2016
PMG 23	10/24/2016	IMC216725	11/17/2016	2016-004707	11/7/2016
PMG 24	10/24/2016	IMC216726	11/17/2016	2016-004708	11/7/2016
PMG 25	10/25/2016	IMC216727	11/17/2016	2016-004709	11/7/2016
PMG 26	10/25/2016	IMC216728	11/17/2016	2016-004710	11/7/2016
PMG 27	10/25/2016	IMC216729	11/17/2016	2016-004711	11/7/2016
PMG 28	10/26/2016	IMC216730	11/17/2016	2016-004712	11/7/2016
PMG 29	10/26/2016	IMC216731	11/17/2016	2016-004713	11/7/2016
PMG 30	10/26/2016	IMC216732	11/17/2016	2016-004714	11/7/2016
PMG 31	10/27/2016	IMC216733	11/17/2016	2016-004720	11/7/2016
PMG 32	10/24/2016	IMC216734	11/17/2016	2016-004721	11/7/2016
PMG 33	10/24/2016	IMC216735	11/17/2016	2016-004722	11/7/2016
PMG 34	10/24/2016	IMC216736	11/17/2016	2016-004723	11/7/2016
PMG 35	10/25/2016	IMC216737	11/17/2016	2016-004724	11/7/2016
PMG 36	10/25/2016	IMC216738	11/17/2016	2016-004730	11/7/2016
PMG 37	10/25/2016	IMC216739	11/17/2016	2016-004731	11/7/2016
PMG 38	10/26/2016	IMC216740	11/17/2016	2016-004732	11/7/2016
PMG 39	10/26/2016	IMC216741	11/17/2016	2016-004733	11/7/2016
PMG 40	10/26/2016	IMC216742	11/17/2016	2016-004734	11/7/2016
PMG 41	10/27/2016	IMC216743	11/17/2016	2016-004700	11/7/2016
PMG 42	10/23/2016	IMC216744	11/17/2016	2016-004701	11/7/2016

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<b>Claim Name</b>	<b>Location Date</b>	<b>BLM Serial Number</b>	<b>BLM Recording Date</b>	<b>County Document Number</b>	<b>County Recording Date</b>
PMG 43	10/23/2016	IMC216745	11/17/2016	2016-004702	11/7/2016
PMG 44	10/23/2016	IMC216746	11/17/2016	2016-004703	11/7/2016
PMG 45	10/23/2016	IMC216747	11/17/2016	2016-004704	11/7/2016
PMG 46	10/23/2016	IMC216748	11/17/2016	2016-004715	11/7/2016
PMG 47	10/23/2016	IMC216749	11/17/2016	2016-004716	11/7/2016
PMG 48	10/23/2016	IMC216750	11/17/2016	2016-004717	11/7/2016
PMG 49	10/23/2016	IMC216751	11/17/2016	2016-004718	11/7/2016
PMG 50	10/23/2016	IMC216752	11/17/2016	2016-004719	11/7/2016
PMG 51	10/23/2016	IMC216753	11/17/2016	2016-004725	11/7/2016
PMG 52	10/23/2016	IMC216754	11/17/2016	2016-004726	11/7/2016
PMG 53	10/23/2016	IMC216755	11/17/2016	2016-004727	11/7/2016
PMG 54	10/22/2016	IMC216756	11/17/2016	2016-004728	11/7/2016
PMG 55	10/22/2016	IMC216757	11/17/2016	2016-004729	11/7/2016