

### **NOTICE TO READER**

The technical report titled "Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada" (the "Technical Report") was originally filed on SEDAR on March 31, 2015. The Technical Report is being re-filed in order to correct certain typographical errors in Table 22-1 (page 192) and Table 22-2 (pages 192-193). The changes to Table 22-1 were made in order to: (i) correct the headers of the columns, which incorrectly referred to the years 2015 through 2018, rather than 2014 through 2017, as reflected in the attached Technical Report, and (ii) to correct the total amount for the line item "Total Revenue". The changes to Table 22-2 were made to correct the headers of the columns, which incorrectly referred to the years 2015 through 2019, rather than 2014 through 2018, as reflected in the attached Technical Report. Other than the changes noted above, and a note in the first paragraph of Section 2 noting these changes, the Technical Report remains the same in all respects.

# Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada



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**EFFECTIVE DATE:  
AUGUST 31, 2014**

**AMENDED DATE:  
APRIL 2, 2015**

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## Date and Signature Page

The undersigned prepared this Technical Report (Technical Report), titled: “Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada,” amended the 2nd day of April, 2015, with an effective date of August 31, 2014, in support of the public disclosure of mineral resource and mineral reserve estimates for the Midas Project. The format and content of the Technical Report have been prepared in accordance with Form 43-101F1 of National Instrument 43-101 – Standards of Disclosure for Mineral Projects of the Canadian Securities Administrators.

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## List of Abbreviations

A	Ampere	kA	kiloamperes
AA	atomic absorption	kCFM	thousand cubic feet per minute
A/m <sup>2</sup>	amperes per square meter	Kg	Kilograms
AGP	Acid Generation Potential	km	kilometer
Ag	Silver	km <sup>2</sup>	square kilometer
ANFO	ammonium nitrate fuel oil	kWh/t	kilowatt-hour per ton
ANP	Acid Neutralization Potential	LOI	Loss On Ignition
Au	Gold	LoM	Life-of-Mine
AuEq	gold equivalent	m	meter
btu	British Thermal Unit	m <sup>2</sup>	square meter
°C	degrees Centigrade	m <sup>3</sup>	cubic meter
CCD	counter-current decantation	masl	meters above sea level
CIL	carbon-in-leach	mg/L	milligrams/liter
CoG	cut-off grade	mm	millimeter
cm	centimeter	mm <sup>2</sup>	square millimeter
cm <sup>2</sup>	square centimeter	mm <sup>3</sup>	cubic millimeter
cm <sup>3</sup>	cubic centimeter	MME	Mine & Mill Engineering
cfm	cubic feet per minute	Moz	million troy ounces
ConfC	confidence code	Mt	million tonnes
CRec	core recovery	MTW	measured true width
CSS	closed-side setting	MW	million watts
CTW	calculated true width	m.y.	million years
°	degree (degrees)	NGO	non-governmental organization
dia.	diameter	NI 43-101	Canadian National Instrument 43-101
EIS	Environmental Impact Statement	oz	Troy Ounce
EMP	Environmental Management Plan	opt	Troy Ounce per short ton
FA	fire assay	%	percent
Ft	Foot	PLC	Programmable Logic Controller
Ft <sup>2</sup>	Square foot	PLS	Pregnant Leach Solution
Ft <sup>3</sup>	Cubic foot	PMF	probable maximum flood
g	Gram	POO	Plan of Operations
g/L	gram per liter	ppb	parts per billion
g-mol	gram-mole	ppm	parts per million
g/t	grams per tonne	QAQC	Quality Assurance/Quality Control
ha	hectares	RC	reverse circulation drilling
HDPE	Height Density Polyethylene	ROM	Run-of-Mine
HTW	horizontal true width	RQD	Rock Quality Description
ICP	induced couple plasma	SEC	U.S. Securities & Exchange Commission
ID2	inverse-distance squared	Sec	second
ID3	inverse-distance cubed	SG	specific gravity
ILS	Intermediate Leach Solution	SPT	Standard penetration test

## **1. Summary**

On February 11, 2014, Klondex Mines Ltd. ("Klondex" or the "Company") completed the acquisition of all of the shares of Newmont Midas Holdings Limited, which indirectly owns the Midas mine and mill located in Elko County, Nevada (formerly known as the Ken Snyder Mine and Mill) (collectively, "Midas" or the "Midas Property" or the "Project"), from Newmont USA Limited, a subsidiary of Newmont Mining Corporation ("Newmont") for \$83 million, including approximately \$55 million in cash and approximately \$28 million for the replacement of Newmont's reclamation surety arrangement, in addition to five million common share purchase warrants (the "Midas Acquisition").

The Midas Property includes the underground mine (the "Midas Mine"), the Merrill Crowe processing facility, related support infrastructure, and mining and milling equipment. The land package includes fee lands, patented mining claims, and unpatented mining claims. The Midas Acquisition included an assignment of Newmont's interest in seven lease agreements for patented and unpatented mining claims. The total land package comprises approximately 30,000 acres.

Klondex has engaged Practical Mining LLC ("PM" or "Practical Mining") to prepare this Technical Report on the status of the property and related infrastructure.

This document was produced by PM based on site visits by the qualified persons ("QPs"), evaluation of extensive information provided by Klondex and Newmont and by interviewing Klondex's site management and technical staff. This document relies heavily on the information supplied by Klondex and Newmont, and it is the opinion of the QPs that this information is accurate.

### **1.1. Property Description**

The Midas project is approximately 58 miles northeast of Winnemucca, Nevada, in Elko County. The Midas Property covers approximately 30,000 acres and includes owned fee lands and unpatented mining claims in addition to seven lease agreements.

### **1.2. Geology**

The Midas Mine is the largest known Au-Ag epithermal deposit along the Northern Nevada Rift ("NNR") and is located, located in the mining district of Midas, also known as the Gold Circle district. The Midas Property is located in Elko County in north-central Nevada one mile east of the town of Midas, Nevada, about 62 miles from Winnemucca on Nevada State Highway 789 from Interstate Highway I-80 or 80 miles from the town of Battle Mountain.

The Midas Property is centered on latitude 41° 15' North (N) and longitude 116° 46' West (W). Most of the current Project activity is located in Township 39 N Range 46 East (E) Mount Diablo Meridian.

The Midas deposit consists of a series of complex steeply dipping, quartz-calcite-adularia precious metal veins hosted by volcanic and volcanoclastic rocks and locally contains mineral grades greater than (>) ten ounces per ton (opt) of gold. Gold mineralization occurs as electrum and is intimately associated with selenide and sulfide minerals. It belongs to a suite of middle Miocene low-sulfidation epithermal gold and silver mineralizing systems associated with magmatism and faulting along the NNR (Leavitt et al., 2004). The mineralization model at Midas is a shallow, low-sulfidation, vertically- and laterally-zoned, epithermal gold-silver system. Rocks in the Midas district are primarily ash flow, air-fall and lithic tuffs, felsic plugs, volcanoclastic sediments and gabbroic sills and dikes.

### **1.3. History**

Gold was discovered in the Midas district (then named Gold Circle district) in the summer of 1907, and by March 1908 the camp population grew to over 1,500 people. A number of companies operated the mines of the district and six or more mills operated at different times until the 1940s. (Rott, 1931)

Modern exploration of the Midas district began in the early 1990s under the direction of Ken Snyder and Franco-Nevada Mining Corporation (“Franco-Nevada Mining”). Construction of the present day Midas Mine began in 1997, with the first gold poured in December 1998. Newmont acquired Midas through its acquisition of Normandy Mining Corporation (“Normandy”) in February 2002. A history of Midas ownership is listed Table 1-1

### **1.4. Project Status**

During 2014, Klondex staff prioritized the near mine mineral resource areas for further evaluation and drilling. These areas were prioritized based on ounce potential, ease of accessibility from the existing mine development and geotechnical, ventilation and hydrologic considerations. Areas drill tested to date include the Colorado Grande, Discovery, and GP veins with the Discovery Vein showing the best results to date. Approximately 4,500 feet of exploration drifting has also been undertaken to test targets on the Queen and Link Veins that cannot be reached from the existing development platform.

**Table 1-1 Chronology of Ownership and Activities at the Midas Mine**

Dates	Company	Activity Details
1907-1941	Several Companies	Explored and mined using underground mining methods. Placers were also mined.
1992-1994	Franco-Nevada and Euro-Nevada Mining Corporation Limited ("Euro-Nevada")	Assembled land package, explored property, drilled discovery hole in 1994.
1994-1997	Franco-Nevada and Euro-Nevada 50/50	Delineation drilling, mine development, construction of mill.
1998-2001	Franco-Nevada and Euro-Nevada 50/50	First gold pour in 1998, operated mine until Normandy acquired it in 2001.
2001-2002	Normandy	Normandy acquired and operated mine until Newmont acquisition of Normandy in 2002.
2002-2014	Newmont	Newmont acquired Midas through its Normandy acquisition, operated property until sale of Midas to Klondex.
Feb. 2014-present	Klondex	Klondex purchased Midas from Newmont.

### 1.5. Mineral Resource Estimate

Gold and silver mineralization at Midas is hosted in several north-west striking veins. The veins are divided into four principle groups based on their location and orientation. The two groups hosting mineral resources are the Main Veins which dip easterly and are predominantly gold mineralization, while the East Veins dip to the west and have a much higher silver content than the main veins. The main veins produced in excess of 2.2 million ounces of gold and 26.9 million ounces of silver between 1998 and 2013. Initial production from the East Veins recently began in 2012.

Klondex's previous mineral resource estimate only included the five veins which were the target of near term production. This mineral resource estimate was updated to include all known veins proximal to the Midas Mine workings.

There are several additional veins known to occur within the Midas land package, these have not been included in the mineral resource estimate. A summary of the Midas Mine mineral resources is listed in Table 1-2.

**Table 1-2 Mineral Resource Statement**

Vein Name	Vein No.	Vein True Thickness		AuEq			AuEq		
		Feet	kton	Au opt	Ag opt	opt	Au koz	Ag koz	koz
		<i>Measured</i>							

Vein Name	Vein No.	Vein True Thickness				AuEq			
		Feet	kton	Au opt	Ag opt	opt	Au koz	Ag koz	AuEq koz
Colorado Grande	105	3.2	80	0.502	6.311	0.600	40	504	48
Gold Crown South	108	3.1	0.2	0.197	2.812	0.240	0.05	0.7	0.1
Midas Trend (MT)	201	0	0	0.000	0.000	0.000	0	0	0
Gold Crown	205	5.1	130	0.478	6.592	0.580	62	856	75
Gold Crown Sur	208	2.4	2	0.284	2.858	0.328	1	5	1
Gold Crown Hanging	305	2.9	31	0.601	6.577	0.703	18	201	21
Snow White	405	1.8	22	0.430	4.933	0.507	10	109	11
Discovery	505	2.7	39	0.494	7.447	0.609	19	287	23
Sleeping Beauty	605	4.3	1	0.511	5.585	0.597	1	8	1
Colorado Sur	705	0	0	0.000	0.000	0.000	0	0	0
Charger Hill	805	2.2	13	0.117	18.205	0.399	2	245	5
GP	905	2.4	19	0.086	11.310	0.261	1.6	217	5
Ace	9052	2.5	14	0.084	11.771	0.267	1.2	168	4
Happy	1081	1.9	0.7	0.143	6.285	0.240	0.1	4	0
Queen	1605	0	0	0.000	0.000	0.000	0	0	0
SR	5005	0	0	0.000	0.000	0.000	0	0	0
Total Measured		3.7	352	0.440	7.401	0.555	155	2,605	195
<i>Indicated</i>									
Colorado Grande	105	5.4	183	0.418	4.872	0.494	77	892	90
Gold Crown South	108	4.8	7.3	0.279	4.663	0.351	2.04	34.1	2.6
MT	201	6.5	10	0.217	2.161	0.251	2	21	2
Gold Crown	205	3.8	150	0.316	4.019	0.378	47	603	57
Gold Crown Sur	208	3.6	16	0.280	1.806	0.308	4	28	5
Gold Crown Hanging	305	2.8	103	0.470	5.484	0.555	48	564	57
Snow White	405	2.2	59	0.391	4.355	0.458	23	256	27
Discovery	505	2.8	79	0.397	5.896	0.489	31	463	38
Sleeping Beauty	605	4.2	31	0.305	6.059	0.399	9	186	12
Colorado Sur	705	3.6	13	0.370	1.689	0.397	5	23	5
Charger Hill	805	4.6	31	0.083	15.421	0.322	3	472	10
GP	905	2.5	34	0.097	9.942	0.251	3.3	337	9
Ace	9052	3.4	23	0.101	9.685	0.251	2.3	219	6
Happy	1081	3.1	5.2	0.329	7.653	0.448	1.7	39	2
Queen	1605	4.1	22	0.327	0.977	0.342	7	22	8
SR	5005	8.1	0	0.000	0.000	0.000	0	0	0
Total Indicated		3.9	765	0.349	5.440	0.433	267	4,161	331
<i>Measured and Indicated</i>									
Colorado Grande	105	4.7	263	0.444	5.309	0.526	117	1,396	138
Gold Crown South	108	4.8	7.5	0.276	4.605	0.347	2.08	34.7	2.6
MT	201	6.5	10	0.217	2.161	0.251	2	21	2
Gold Crown	205	4.4	280	0.391	5.212	0.472	109	1,459	132
Gold Crown Sur	208	3.5	17	0.280	1.919	0.310	5	33	5



Vein Name	Vein No.	Vein True Thickness		kton	Au opt	Ag opt	AuEq		AuEq
		Feet					opt	Au koz	Ag koz
Gold Crown Hanging	305	2.8		133	0.500	5.734	0.589	67	765
Snow White	405	2.1		81	0.402	4.512	0.471	33	365
Discovery	505	2.8		117	0.429	6.406	0.528	50	750
Sleeping Beauty	605	4.2		32	0.314	6.038	0.408	10	194
Colorado Sur	705	3.6		13	0.370	1.689	0.397	5	23
Charger Hill	805	3.9		44	0.094	16.272	0.346	4	718
GP	905	2.4		53	0.093	10.437	0.255	4.9	554
Ace	9052	3.1		37	0.094	10.492	0.257	3.5	387
Happy	1081	2.9		5.8	0.307	7.495	0.424	1.8	44
Queen	1605	4.1		22	0.327	0.977	0.342	7	22
SR	5005	8.1		0	0.000	0.000	0.000	0	0
Total Meas. and Ind.		3.8		1,117	0.377	6.058	0.471	421	6,765
<b>Inferred</b>									
Colorado Grande	105	3.3		179	0.298	3.156	0.347	53	565
Gold Crown South	108	4.3		9.3	0.179	3.396	0.232	1.66	31.4
MT	201	4.0		68	0.236	1.585	0.260	16	109
Gold Crown	205	4.7		157	0.225	2.281	0.260	35	359
Gold Crown Sur	208	4.3		9	0.227	2.870	0.271	2	25
Gold Crown Hanging	305	1.7		86	0.339	2.746	0.381	29	237
Snow White	405	3.7		42	0.395	3.019	0.442	17	128
Discovery	505	2.7		78	0.352	4.616	0.424	28	361
Sleeping Beauty	605	4.0		41	0.186	5.250	0.268	8	214
Colorado Sur	705	5.7		13	0.325	2.040	0.356	4	26
Charger Hill	805	3.0		10	0.080	10.486	0.242	1	101
GP	905	3.3		82	0.154	6.043	0.248	12.6	494
Ace	9052	2.2		41	0.167	6.459	0.268	6.9	265
Happy	1081	3.4		5.4	0.182	6.291	0.279	1.0	34
Queen	1605	2.6		29.3	0.273	0.862	0.286	8.0	25
SR	5005	3.7		8	2.113	1.684	2.139	18	14
Total Inferred		4.0		858	0.280	3.480	0.334	241	2,988

Notes:

1. Mineral resources have been calculated based on a gold price of \$1,200/troy ounce and a silver price of \$19.00 per troy ounce.
2. Mineral resources are calculated at a grade thickness cut-off grade of 0.96 Au equivalent opt-feet and a diluted Au equivalent cut-off grade of 0.225 opt.
3. Gold equivalent ounces were calculated based on one ounce of gold being equivalent to 64.53 ounces of silver.
4. The minimum mining width is defined as four feet or the vein true thickness plus one foot, whichever is greater.
5. Mineral resources include dilution to achieve mining widths and an additional 10% unplanned dilution.
6. Mineral resources include allowance for 5% mining losses.
7. Mineral Resources are inclusive of mineral reserves.

8. *Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.*
9. *The quantity and grade of reported inferred mineral resources in this estimation are uncertain in nature and there is insufficient exploration to define these inferred mineral resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.*
10. *Mineral resource estimates can be materially affected by environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other factors.*

### 1.6. Mineral Reserve Estimate

Excavation designs for stopes, stope development drifting, and access development were created using Vulcan Software. Stope designs were aided by the Vulcan Stope Optimizer Module. The stope optimizer produces the stope cross section which maximizes value within given geometric design constraints.

Design constraints included a four-foot minimum mining width for long-hole stopes with development drifts spaced at 50-foot vertical intervals. Stope development drift dimensions maintained a constant height of 11 feet and a minimum width of seven feet. Cut and fill stope dimensions are six feet in width, with each cut 10 feet high.

**Table 1-3 Midas Mineral Reserve Estimate as of August 31, 2014**

Vein Designation	Tons (000's)	Au opt	Ag opt	Au Eq opt	Au Ounces (000's)	Ag Ounces (000's)	Au Equiv. Ounces (000's)
Proven Reserves	134.1	0.381	13.35	0.588	51.1	1,790	78.8
Probable Reserves	108.0	0.376	7.92	0.498	40.6	855	53.8
<b>Proven + Probable Reserves</b>	<b>242.1</b>	<b>0.378</b>	<b>10.93</b>	<b>0.548</b>	<b>91.6</b>	<b>2,646</b>	<b>132.6</b>

*Notes:*

1. *Mineral Reserves have been estimated based on a gold price of \$1,000/ounce and a silver price of \$15.83/ounce.*
2. *Metallurgical recoveries for gold and silver are 94% and 92% respectively.*
3. *Gold equivalent ounces are calculated on the basis of one ounce of gold being equivalent to 64.53 ounces of silver.*
4. *Mineral Reserves are estimated at a cutoff grade of 0.335Au opt and an incremental cutoff grade of 0.110 Au opt.*
5. *Mine losses of 5% and unplanned mining dilution of 10% have been applied to the designed mine excavations.*

### 1.7. Cash Flow and Economic Analysis

The reserves mine plan was evaluated using constant dollar cash flow analysis, and the results are summarized in Table 1-4. The minimal capital requirement result in a 0.6 year capital payback period and a relatively high 21.1 profitability index (PI) calculated at a 10% discount rate and a 523% rate of return over 2.8 years.

**Table 1-4 Key Operating and After Tax Financial Statistics**

Material Mined and Processed (kt)	242
Avg. Gold Grade (opt)	0.378
Avg. Silver Grade (opt)	10.93
Contained Gold (koz)	91.6
Contained Silver (koz)	2,646
Avg. Gold Metallurgical Recovery	94%
Avg. Silver Metallurgical Recovery	92%
Recovered Gold (koz)	86.1
Recovered Silver (koz)	2,434
Reserve Life (years)	2.8
Operating Cost (\$/ton)	\$315
Cash Cost (\$/oz) <sup>1</sup>	\$466
Total Cost (\$/oz) <sup>1</sup>	\$485
Gold Price (\$/oz)	\$1,000.00
Silver Price (\$/oz)	\$15.83
Capital Costs (\$ Millions)	\$1.6
Payback Period (Years)	0.6
Cash Flow (\$ Millions)	\$33.1
5% Discounted Cash Flow (\$ Millions)	\$30.2
10% Discounted Cash Flow (\$ Millions)	\$27.7
Profitability Index (10%) <sup>2</sup>	21.1
Internal Rate of Return	523%

Notes:

1. Net of byproduct credits.
2. Profitability index (PI) is the ratio of payoff to investment of a proposed project. It is useful for ranking projects as a measure of the amount of value created per unit of investment. A PI of 1 indicates break even.

## 1.8. Conclusions

- The Midas Mine is a modern, mechanized narrow vein mine.
- Significant mineral resources have been identified on the main and eastern veins and other veins near the active mine workings. Klondex staff has been actively drill testing these areas and has prioritized them based on ounce expectations, accessibility from existing development and geotechnical, ventilation, and hydrological considerations. Mine plans are being updated on a regular basis as results are received. Additionally, alternative mining methods including shrinkage stoping and alimak stoping are being investigated where the development requirements for long hole stoping render these areas sub-economic.
- The conventional Merrill Crowe mill facility is an efficient well maintained modern mineral processing plant capable of processing 1,200 tons per day (tpd). The plant is

capable of operating with a minimum crew compliment resulting in cost reductions when operated at capacity. Excess milling capacity will allow the mill to process material from Klondex's nearby properties and also from third party toll milling sources.

- The Midas Tailings Storage Facility ("TSF") is nearing design capacity and has approximately 700,000 tons of capacity remaining. A significant percentage of the remaining capacity is displaced by the excess water volume generated from mine dewatering and is stored in the TSF.

### **1.9. Recommendations**

The authors recommend that Klondex should pursue the following initiatives.

1. Continue the near mine exploration program initiated in 2014, evaluating targets in order of the relative ranking given by Midas staff and management.
2. Continually update the comprehensive engineering study, evaluating mineralization peripheral to abandoned mining areas using alternative mining methods that may allow an increase in mine production.
3. Test the four district exploration targets identified by Newmont for additional work in 2011 and 2012.
4. Consider whether an additional TSF must be designed, permitted, and constructed to expand the capacity beyond the current 700,000 tons of remaining capacity. This must be completed within the next three to four years in order that operations may continue without interruption.
5. Geologic Database Administration: All of the Project data collected to date including drill samples, channel samples and quality assurance/quality control (QA/QC) samples need to be stored and archived in a permanent and indelible manner. The system software for this system has been procured.
6. QAQC: Timely follow-up of QAQC assay deviations and re-assay requests needs to be aggressively pursued. This should become an automated process once the database is implemented and will streamline tracking of QA/QC results and re-assay data entry.

## **2. Introduction**

### **2.1. Terms of Reference and Purpose of this Technical Report**

This Technical Report was prepared in accordance with the standards for disclosure of National Instrument (NI) 43-101 and Form 43-101F1 for technical reports of the Canadian Securities Administrators to support the disclosure by Klondex of its mineral reserve estimate on February 23, 2015, and was amended on April 2, 2015 to correct certain typographical errors in Table 22-1 and Table 22-2. This Technical Report uses the definitions published by the “Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) in “CIM Definitions for Mineral Resources and Mineral Reserves” adopted by CIM Council, May 10, 2014, and follows industry best practices.

This Technical Report documents the status of the Midas Mine and related infrastructure and includes an estimate of mineral resources and mineral reserves based on drilling and sampling completed by Klondex and by previous operators.

A production decision at the Midas mine was made by prior owners of the mine, prior to the completion of the acquisition of Midas by Klondex, and Klondex made a decision to continue production subsequent to the acquisition. This decision by Klondex to continue production and, to the knowledge of Klondex, this prior production decision were not based on a feasibility study of mineral reserves demonstrating economic and technical viability prepared in accordance with NI 43-101. Readers are cautioned that there is increased uncertainty and higher risk of economic and technical failure associated with such production decisions.

Klondex is focused on the exploration, development, and production of its two high quality gold and silver projects in the mining-friendly jurisdiction of north central Nevada. The 1,200 tpd milling facility is processing mineralized materials from the Midas Mine and the bulk sampling program at Klondex’s Fire Creek Project. Midas is fully-permitted.

### **2.2. Qualification of the Authors**

This Technical Report presents summaries based on a technical evaluation by four independent qualified professionals (QPs). The QPs are specialists in the fields of geology, geological engineering, exploration and mining data management, mineral resource and mineral reserve estimation and classification, and mine engineering, including open pit and underground mining.

None of the QPs has any beneficial interest in Klondex or any of its subsidiaries or in the assets of Klondex or any of its subsidiaries. The QPs will be paid a fee for this work in accordance with normal professional consulting practice.

The individuals who have provided input to the current Technical Report are cited as “author” and are listed below with the dates on which they visited the Midas Project. These authors have

extensive experience in the mining industry and are members in good standing of appropriate professional institutions.

Mr. Swanson last visited the Midas Project on September 23, 2014.

Ms. Symmes last visited the Midas Project on February 5, 2015.

Mr. Odell and Ms. Bull last visited the Midas Project on March 12, 2015.

Mr. Odell and Mr. Swanson have previously been engaged by Newmont to provide consulting services to the Midas Project. Ms. Bull was previously employed as a mining engineer at Midas.

Mr. Odell is the QP for this Technical Report and is cited as “primary author”.

Mr. Odell, Ms. Symmes and Ms. Bull inspected the underground mining operations, and Ms. Symmes and Mr. Swanson reviewed the site geology. Mr. Odell and Ms. Symmes reviewed reports detailing Klondex’s land position at the Midas Project.

### **2.3. Sources of Information**

The sources of information used for the preparation of this Technical Report include data and reports supplied by Klondex staff. In addition, some information was included in the Technical Report which was based on discussions with Klondex staff as related to their field of expertise with the cost data and operating statistics also provided by Klondex.

Sources of information are documented either within the text and cited in references, or are cited in references only. The authors believe the information provided by Klondex and Newmont staff to be accurate, based on their work experience at Midas. The authors asked detailed questions of specific individuals to help verify and clearly state contributions included in this document. These contributions are clearly stated within this Technical Report.

### **2.4. Units of Measure**

The units of measure used in this report are shown in Table 2-1 below. United States (US) Imperial units of measure are used throughout this document unless otherwise noted. The glossary of geological and mining related terms is also provided in Section 27 of this Technical Report. Currency is expressed in United States dollars (\$) unless stated otherwise.

**Table 2-1 Units of Measure.**

<b>US Imperial to Metric conversions</b>	
<b>Linear Measure</b>	
1 inch =	2.54 cm
1 foot =	0.3048 m
1 yard =	0.9144 m
1 mile =	1.6 km
<b>Area Measure</b>	
1 acre =	0.4047 ha
1 square mile =	640 acres = 259 ha
<b>Weight</b>	
1 short ton (st) =	2,000 lbs = 0.9071 metric tons
1 lb =	0.454 kg = 14.5833 troy oz
<b>Assay Values</b>	
1 oz per short ton =	34.2857 g/t
1 troy oz =	31.1036 g
1 part per billion =	0.0000292 oz/ton
1 part per million =	0.0292 oz/ton = 1 g/t

### **2.5. Coordinate Datum**

All spatial measurements used in the mineral resource estimate are in US feet. The coordinate datum is projected to North American Datum (NAD) 1927 Nevada State Plane, Central Zone.

### **3. Reliance on Other Experts**

The status of the environmental program and mine permitting were provided by Klondex and are assumed to be accurate portrayals, at the time of writing this Technical Report.

Observations made on-site by the authors include observing all aspects of mining activities encompassing: underground mining, safety procedures, haulage and equipment maintenance, water treatment, security, road maintenance, general geology, and character of mineralization, the mill and Merrill Crowe zinc precipitation methods of precious metal recovery.

The authors reviewed land tenure to verify Klondex's mining claim standing with the Bureau of Land Management's (BLM) Land and Mineral Legacy Rehost 2000 System (LR2000). The Midas claim status and title was also reviewed by Klondex's counsel (Erwin, 2014).

The opinions expressed in this Technical Report are based on the authors' field observations and assessment of the technical data in respect of the Midas Mine.



## **4. Property Description and Location**

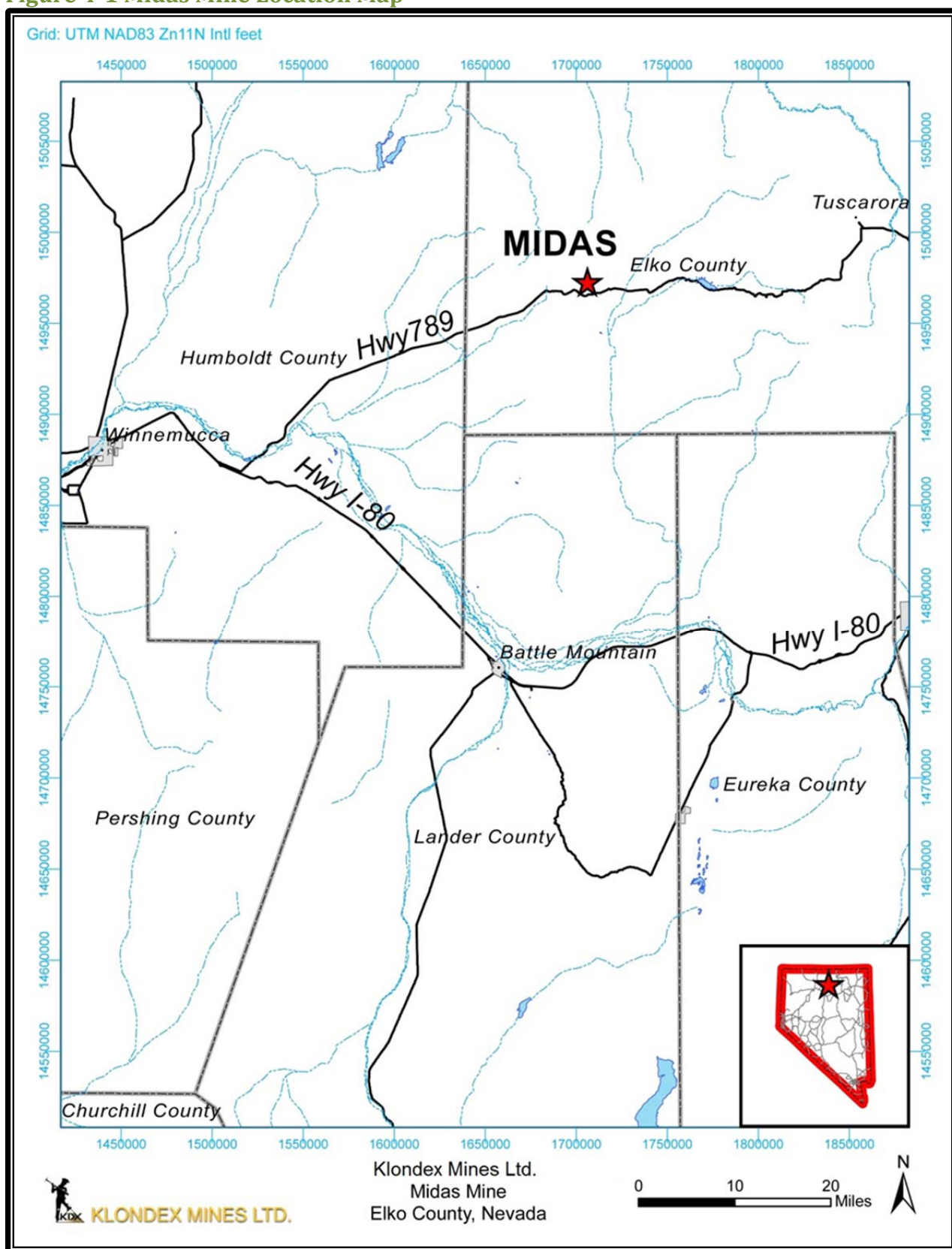
### **4.1. Property Description**

The Midas Project is a high-grade gold-silver vein deposit hosted in faulted and brecciated Tertiary volcanic rocks. Midas is located in a sage and grass covered hillside of the Snowstorm Mountains overlooking Squaw Valley to the south. The Midas Mine is located one mile from the town of Midas and 38 miles from the town of Tuscarora, both of which are small historic mining towns with a small number of year round residents. The Midas Property extends a little over 30,000 acres.

The portal to the underground mine is located approximately one-half mile west of the mill and other site facilities. The portal provides entry to a system of declines and ramps that access the gold and silver-bearing veins. Mining levels are developed at vertical intervals of nominally 50 feet to access the mineralized vein. The mineralized material is excavated and loaded into underground haul trucks, which transport it to a surface transfer stockpile located outside the mine portal. The mineralized material is then trucked from the transfer stockpile to the main stockpile area adjacent to the mill. In the mill, the mineralized material is crushed, processed, and refined to extract gold and silver. Molten gold/silver is poured from the refinery furnace into molds, and the resulting doré is shipped off-site for refining.

### **4.2. Property Location**

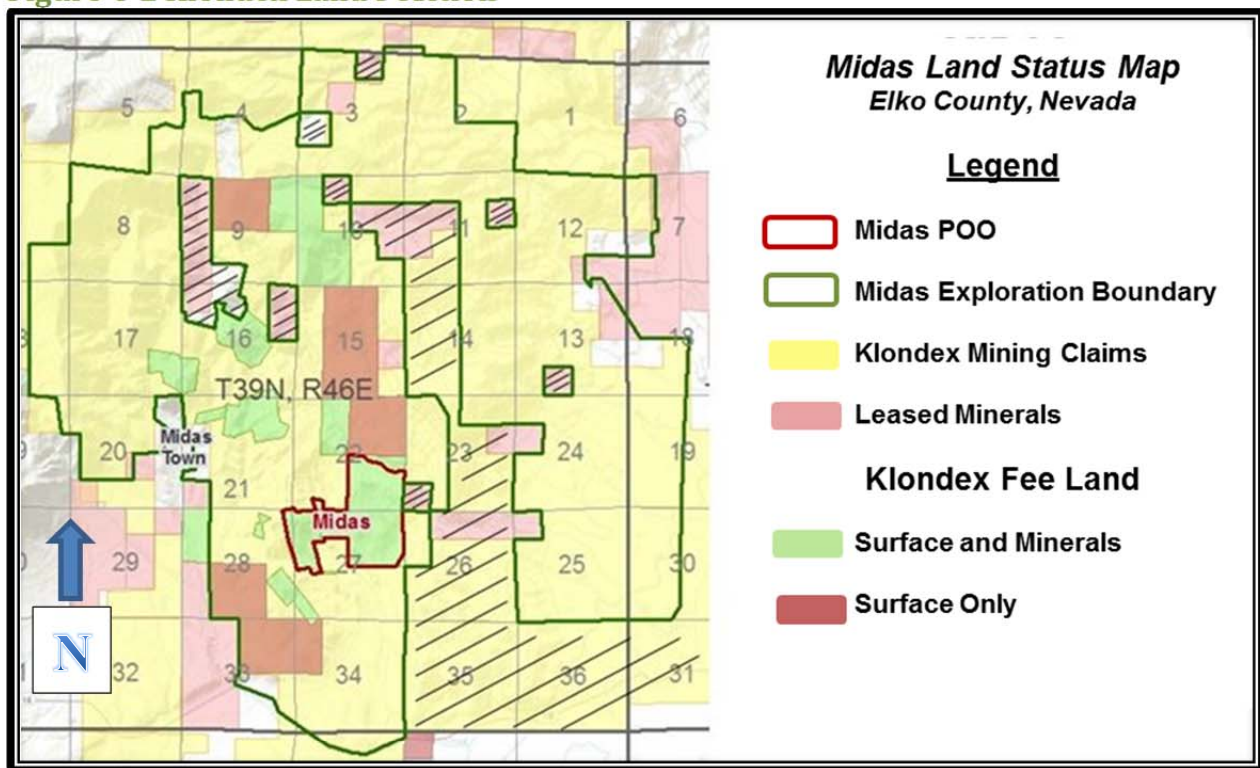
The Midas Mine is located in Elko County in north-central Nevada one mile from the town of Midas, Nevada, about 58 miles (93 kilometers) east of Winnemucca on Nevada State Highway 789 from Interstate Highway I-80, or 80 miles (128 kilometers) from Battle Mountain driving west then north, (Figure 4-1). The closest towns with comprehensive services are either Winnemucca or Battle Mountain off of Interstate-80. The closest commercial air service is located in Elko. Elko is approximately three hours driving time through Battle Mountain or about 150 miles. There is a remote, back roads access to Midas from Elko through Tuscarora on a road which does not have winter maintenance. The remote access from Elko to Midas is 90 miles, but the drive time would also be about two hours due to the unimproved roads. A location map for the Midas Mine and Mill is shown in Figure 4-1.

**Figure 4-1 Midas Mine Location Map**

#### 4.3. Status of Mineral Titles

Klondex's total land package in the Midas district (including easements) covers approximately 30,000 acres (Figure 4-2). This includes fee lands, federal unpatented mining claims, seven mining leases, BLM rights-of-way, general agreements, easements, and surface use agreements. Within the 30,000 acres, there are 1,489 federal unpatented mining claims, of which 1,456 are owned and 33 are leased (Klondex Mines Ltd., 2014). Fee lands comprise approximately 2,417 acres of the land package. About 1,311 acres of the fee land includes surface and mineral rights, while the other 1,106 acres includes only the surface rights. Some of the surface-only fee lands are lots within the town of Midas.

**Figure 4-2 Klondex Land Position**



**Table 4-1 Summary of Klondex Owned Unpatented Mining Claims**

Claim Name	No. of Claims
Acme, Acme R, Acme No. 1-3	5
Dot #1, Dot Lode, Dot Lode #2, Dot Lode NO.4	4
Marty, Marty 2R-6R, Midas 95R	7
MDS 1-49	49
CAT 1-58	58
Amsterdam 1-96	96
Amsterdam 97R, 98R	2
Amsterdam Fraction #1-2	2

<b>Claim Name</b>	<b>No. of Claims</b>
Amsterdam 99-108	10
Amsterdam 109R-111R	3
Amsterdam 12-115	4
Amsterdam 116R, 118R	2
Amsterdam 117, 119	2
Amsterdam 120R-122R	3
Amsterdam 123-136	14
Amsterdam 137R, 138R	2
Amsterdam 139-144	6
Amsterdam 145R	1
Amsterdam 146-165	20
Amsterdam 166R, 167R	2
Amsterdam 168-172	5
Amsterdam 173R-175R	3
Amsterdam 176-185	10
Amsterdam 186R	1
Amsterdam 187RR	1
Amsterdam 188-195	8
Amsterdam 197-300	104
Amsterdam 301R, 302R	2
Amsterdam 303-380	78
Amsterdam 381R, 382R	2
Amsterdam 383-411	29
Amsterdam 412R	1
Amsterdam 413-418	6
Amsterdam 420-423	4
Amsterdam 424R	1
Amsterdam 425-428	4
Amsterdam 433, 438, 439	3
Amsterdam 440R	1
Amsterdam 442-450	9
Amsterdam 452-459	8
Midas 1R-12R	12
Midas 13-16	4
Midas 17R-23R, 25R	8
Midas 26 RR, 32RR	2
Midas 27R, 28R, 31R	3
Midas 30, 30-34	6
Midas 33-41	9
Midas 42R-80R	39
Midas 81	1
Midas 82R-93R	12
Midas 94, 96	2

<b>Claim Name</b>	<b>No. of Claims</b>
Midas 97R-106R, 109R	11
Midas 110	1
Midas 111R-113R	3
Midas 114, 115	2
Midas 116R, 117R	2
Midas 118, 119	2
Midas 120RR	1
Midas 121-144	24
Midas 146-158	13
Midas 159R, 160R	2
Midas 165-174	10
Midas 175R-180R	6
Midas 181-188	8
Midas 189R, 190R	2
Midas 191-264	74
Midas 266R-268R	3
Midas 269-278	10
Midas 279R, 281R, 283R, 286R	4
Midas 280, 282, 284-285, 287-290	8
Midas 299R-324R	26
Midas 325-326	2
Midas 327RR-328RR, 330RR, 332RR	4
Midas 335R-342R	8
Midas 343RR-347RR	5
Midas 349-350	2
Midas 351R-352R	2
Midas 353-420	68
Midas 421R-422R	2
Midas 423-484	62
Midas 506-509	4
Midas 510R-514R	5
Midas 543-550	8
Midas 583-586, 588	5
Midas 623-637	15
Midas 639, 641, 643, 645, 647, 649, 651	7
Midas 661, 663, 665, 667, 669-798	134
Midas 809-832, 841-843	27
Midas 844R	1
Midas 845-849	5
Midas 850R	1
Midas 851	1
Midas 852RR, 854RR-855RR	3



Claim Name	No. of Claims
Midas 856-866	11
Midas 867R-868R	2
Midas 869-873	5
Midas 873A	1
Midas 874R, 875R, 878R-881R, 888R	7
Midas 876, 877, 882-886, 889-947	66
Midas 954-973	20
Midas 1,000-1,090	91
Total Owned Unpatented Mining Claims	1456

**Table 4-2 Summary of Leased Unpatented Mining Claims**

Claim Name	No. of Claims
Redar 1-5	5
Estar 1-19	19
Laura 6, Laura 20	2
King Midas, King Midas No. 2	2
Dixie, Dixie 1-3	4
H-2	1
Total Leased Unpatented Mining Claims	33

**Table 4-3 Summary of Patented Mining Claims**

Patent Name	M.S. No.	Patent No.	Assessor Parcel No.
Elko Prince Annex Fraction	4034	314565	0PM-314-056
Elko Prince No. 1	4034	314565	0PM-314-056
Elko Prince No. 2	4034	314565	0PM-314-056
Elko Prince No. 4 Fraction	4034	314565	0PM-314-056
Tod Fraction	4034	314565	0PM-314-056
Hanks Fraction	4034	314565	0PM-314-056
Little Willie Fraction	4034	314565	0PM-314-056
Merle	4034	314565	0PM-314-056
June Bell	4034	314565	0PM-314-056
June Bell Fraction	4034	314565	0PM-314-056
Ripsaw No. 2	3991	298366	0PM-298-036
Gold Crown	3738	256016	0PM-256-001
Oversight Fraction (Portion)	3738	256016	0PM-256-001
Banner	3738	256016	0PM-560-016
Gift No. 1	3738	256016	0PM-560-016
Oversight Fraction (Portion)	3738	256016	0PM-060-016
Gift No. 2	3738	256016	0PM-060-016
Rabbit's Foot	3738	256016	0PM-256-006
Banner Fraction	3738	256016	0PM-256-006

<b>Patent Name</b>	<b>M.S. No.</b>	<b>Patent No.</b>	<b>Assessor Parcel No.</b>
Wedge	3738	256016	0PM-668-021
Old Judge No. 1	4327	668211	0PM-668-021
Hardscrabble No. 1	4356	827131	0PM-827-013
Hardscrabble No. 2	4356	827131	0PM-827-013
Hardscrabble Fraction	4356	827131	0PM-827-013
Water Witch No. 1 (E. Portion)	4192	567990	004-26C-004
Water Witch No. 2 (E. Portion)	4192	567990	004-26C-008
Water Witch No. 3	4192	567990	0PM-567-099
Water Witch No. 4	4192	567990	0PM-567-099
Water Witch Fraction	4192	567990	0PM-567-099
Water Witch No. 1 (Parcel 1)	4192	567990	004-26C-001
Water Witch No. 1 (Parcel 2)	4192	567990	004-26C-002
Water Witch No. 1 (Parcel 3)	4192	567990	004-26C-003
Water Witch No. 2 (Parcel 4)	4192	567990	004-26C-005
Water Witch No. 2 (Parcel 5)	4192	567990	004-26C-006
Water Witch No. 2 (Parcel 6)	4192	567990	004-26C-007
Sleeping Beauty	4666	1054830	0PM-373-058
Poor Man	4666	1054830	0PM-373-058
Orphan Boy	4666	1054830	0PM-373-058
Orphan Boy 2	4666	1054830	0PM-373-058
Pan Handle	4666	1054830	0PM-373-058
Pan Handle 2	4666	1054830	0PM-373-058
Little Dot	4666	1054830	0PM-373-058
Red Top	4666	1054830	0PM-373-058
Sunset Fraction	4667	1037358	0PM-373-058

Claim locations are based on the location of monuments and associated dimensions cited to the BLM. The authors are not aware of any conflicting surface rights within the Midas land package. Other considerations that might affect accessing claim status include grazing rights and protected habitats. Grazing rights may exist in the area; however, conflicts with local ranchers are not common in north-central Nevada. Newly established protected habitat for sage grouse has not been defined in this area at the time of this Technical Report. There are archaeological considerations in the immediate area of Midas; however, all proposed surface disturbance is reviewed and approved by BLM. The land information outlining claim status and fee lands was provided by Klondex, and to the authors' knowledge at the time this document was prepared, there were no environmental or social factors that would affect land title.

**Table 4-4 Summary of Fee Land Holdings**

Section	Legal Description	Acres (Approx)
T38N R46E MDB&M, APN 004-250-0003, Surface and Mineral Rights		40.9
Section 2	NW4NW4	
T39N R46E MDM, APN 004-260-03, Surface and Mineral Rights		840
Section 9	E2NE4	
Section 10	W2N4, SW4	
Section 22	E2N W4, SE4	
Section 27	NE4, NE4NW4	
Section 28	W2NW4	
T39N R46E MDM, APN 004-260-03, Surface Rights Only		1019
Section 9	W2NE4, E2NW4	
Section 15	E2W2, W2E2	
Section 22	NE4	
Section 28	W2SE4, E2SW4	
Section 33	NE4	
Section 34	SW4NW4, Lot 1	
Total acres:		1899.9

**Table 4-5 Midas Town Site Lots**

Lot No.	Block No.	Assessor's Parcel No.
6-7	I (Gold Circle)	03-523-03-2
8	I (Gold Circle)	03-523-02-4
11-12	Q (Gold Circle)	03-526-01-9
1	S (Gold Circle)	03-521-05-1
2	S (Gold Circle)	03-521-04-4
1	W (Gold Circle)	03-513-03-3
3-16	W (Gold Circle)	03-513-01-7

#### 4.4. Royalties

Property agreement and holding cost obligations are listed in Table 4-6. As part of Klondex's financing package to acquire the Midas Mine, a subsidiary of Franco-Nevada Corporation ("FNC") will receive a 2.5% net smelter return (NSR) royalty from all production commencing in 2019. Royalties applicable to the project are listed in Table 4-7 below.



**Table 4-6 Summary of Midas Project Holding Costs**

Due Date	Project	Descriptor	Annual Obligation	Payable/Due to	Notes
Apr. 2	Midas	29-607-0044	110,000	Third party lessor	Annual Rental
Aug. 1	Midas	29-607-0001-A	10,000	Third party lessor	Annual Rental
Apr. 18	Midas	29-607-0039	75,000	Third party lessor	Advance Royalty
July 1	Midas/ Frazer Creek	29-607-0001	75,000	Third party lessor	Advance Royalty
Oct. 30	Midas	29-607-0002	50,000	Third party lessor	Advance Royalty
Nov. 1	Midas	29-607-SR-07	3,500	Third party lessor	Right-of-Way fees
1/1/2017	Midas	29-607-SR-01	795	BLM ROW N-61100	Right-of-Way fees
1/1/2020	Midas	29-607-SR-02	310	BLM ROW N-66023	Right-of-Way fees
Aug. 31	Midas/ Midas EXPL/ Midas POO	29-607-0005, 6, 7, 40, 42	219,856	Midas et al CAT 1-58, MDS 1-49	Annual Claim Fees- 1,456 unpatented claims owned by Klondex listed in Table 4-1
Aug. 31	Midas/ Frazer Creek	29-607-0001	3,926	Third party lessor	Annual Claim Fees- 26 unpatented claims leased from Domenichelli: Laura 6, 20 Redar 1-5, Estar 1-19
Aug.. 31	Midas/Lee	29-607-0002	1,057.50	BLM \$980 Elko County Recorder \$73.50	Annual Claim Fees- 7 unpatented claims leased from Powell et al: King Midas, King Midas No. 2, Dixie, Dixie no. 1-3, H-2
<b>Total \$</b>			<b>539,711.50</b>		

**Table 4-7 Royalties**

Agreement	Recorded	Royalty
Mining Lease Dated August 1, 1990	Recorded in short form version as Document No. 297863 in Book 735 at Pages 508-514 of the Official Records of the Elko County Recorder's Office, Elko County, Nevada	5% NSR
Grant Deed Dated January 12, 1993	Recorded as Document No. 333428 in Book 809, Page 904-905 of the Official Records of the Elko County Recorder's Office, Elko County, Nevada	2 patented mining claims; Banner, Gift No. 1 (1% NSR to a \$30,000 maximum royalty payment).

<b>Agreement</b>	<b>Recorded</b>	<b>Royalty</b>
Grant Deed dated January 25, 1993	Recorded as Document No. 334437 in Book 811, Page 472-473 of the Official Records of the Elko County Recorder's Office, Elko County, Nevada	1 unpatented lode mining claim known as the New Grant; (1% NSR to a \$100,000 maximum royalty payment).
Grant Deed dated January 27, 1993	Recorded as Document No. 333895 in Book 810, Page 708-709 of the Official Records of the Elko County Recorder's Office, Elko County, Nevada.	2 patented mining claims; Gold Crown and portion of Oversight Fraction (1% NSR to a \$100,000 maximum royalty payment).
Grant Deed dated March 17, 1993	Recorded as Document No. 336177 in Book 814, Page 923-924 of the Official Records of the Elko County Recorder's Office, Elko County, Nevada.	1 patented mining claim; Ripsaw No. 2 (1% NSR to a \$100,000 maximum royalty payment).
Mining Lease dated October 30, 1995	BLM Serial Numbers 105502 to 105507, 105509 recorded in Book 1095, Pages 890-896.	During the 30 year term of agreement: (i) advance minimum royalties totaling \$135,000 in the aggregate payable between execution of lease and third anniversary; (ii) advance minimum royalty of \$50,000 payable annually after fourth anniversary of lease. Production royalty of 2.5% of NSR.

Agreement	Recorded	Royalty
Lease Dated July 1, 2000	Recorded as a memorandum as Document No. 467521 in Book 1, Pages 5290-5317 in the Official Records of the Elko County Recorder's Office, Elko County, Nevada, on February 28, 2001. The Lease affects unpatented lode mining claims and agreements pertaining to lands situated in Sections 12 and 13, Township 39 North, Range 46 East, and in Sections 7, 18 and 19, Township 39 North, Range 47 East, MDM, Elko County, Nevada.	Advance minimum royalty totaling \$150,000 payable between execution of lease and fourth anniversary and of \$75,000 until the lease is terminated or expires, whichever first occurs. NSR payable as a production royalty as follows: (i) 4% if the average spot price of gold quoted on the London Bullion Market, Afternoon fix, for a particular payment period is \$500 or less; or (ii) 5% if the average spot price of gold quoted on the London Bullion Market, Afternoon fix, for a particular payment period is \$700 or less; or (iii) 6% if the average spot price of gold quoted on the London Bullion Market, Afternoon fix, for a particular payment period is greater than \$700. When the Lessee has cumulatively paid the Lessor the sum of \$1,000,000 in advance minimum royalties, production royalties or other form of pre-payment of same, the production royalty shall be reduced by 1% of NSR so that the above percentages will be 3%, 4% and 5%, respectively.
Agreement dated August 11, 2000	Recorded as Document No. 462327 in Book 0 at Pages 23222-23233 of the Official Records of the Elko County Recorder's Office, Elko County, Nevada, and on September 18, 2000	Laura 6 and 20 unpatented lode mining claims are subject to a 2% NSR and portions of the REDAR 3, 4 and 5, and ESTAR 1, 7, 8, 11, 18 and 19 unpatented lode mining claims are subject to a 1% NSR

<b>Agreement</b>	<b>Recorded</b>	<b>Royalty</b>
Mining Lease and Agreement dated April 18, 2005	Recorded as a memorandum as Document No. 534181 in the Official Records of the Elko County Recorder's Office, Elko County, Nevada, and amended on December 21, 2006	Advance royalty payments going forward of \$75,000 on April 18, 2014, \$100,000 on April 18, 2015 and \$100,000 on each April 18 thereafter; commencing on April 18, 2016, advance royalty payments shall escalate by 5% each year. 50% of all advance royalty payments to be credited against production royalty payments otherwise payable: (i) for precious metals, 4% NSR if average gold price per ounce ("AGP") is less than or equal to \$500.00, 5% if AGP is between \$500.01 and \$700.00, and 6% if AGP is \$700.01 and above; and (ii) 3% NSR for ores other than precious metals, all subject to proportionate reduction in certain circumstances in accordance with terms of lease.
Mining Sublease and Option dated April 2, 2007	Recorded as a memorandum as Document No. 571656 in the Official Records of the Elko County Recorder's Office, Elko County, Nevada, on April 20, 2007	1.5% NSR on properties identified in Part 1 of Exhibit A of the Mining Lease with Conditional Purchase Obligation Agreement dated April 2, 2007 (attached as Exhibit I to sublease), 3.0% NSR on properties identified in Part 2 of Exhibit A, subject to proportionate reduction in certain circumstances in accordance with terms of sublease.
Royalty Agreement dated February 12, 2014		The payee under the royalty agreement will receive a 2.5% NSR royalty from all production on the Midas Property starting in 2019.

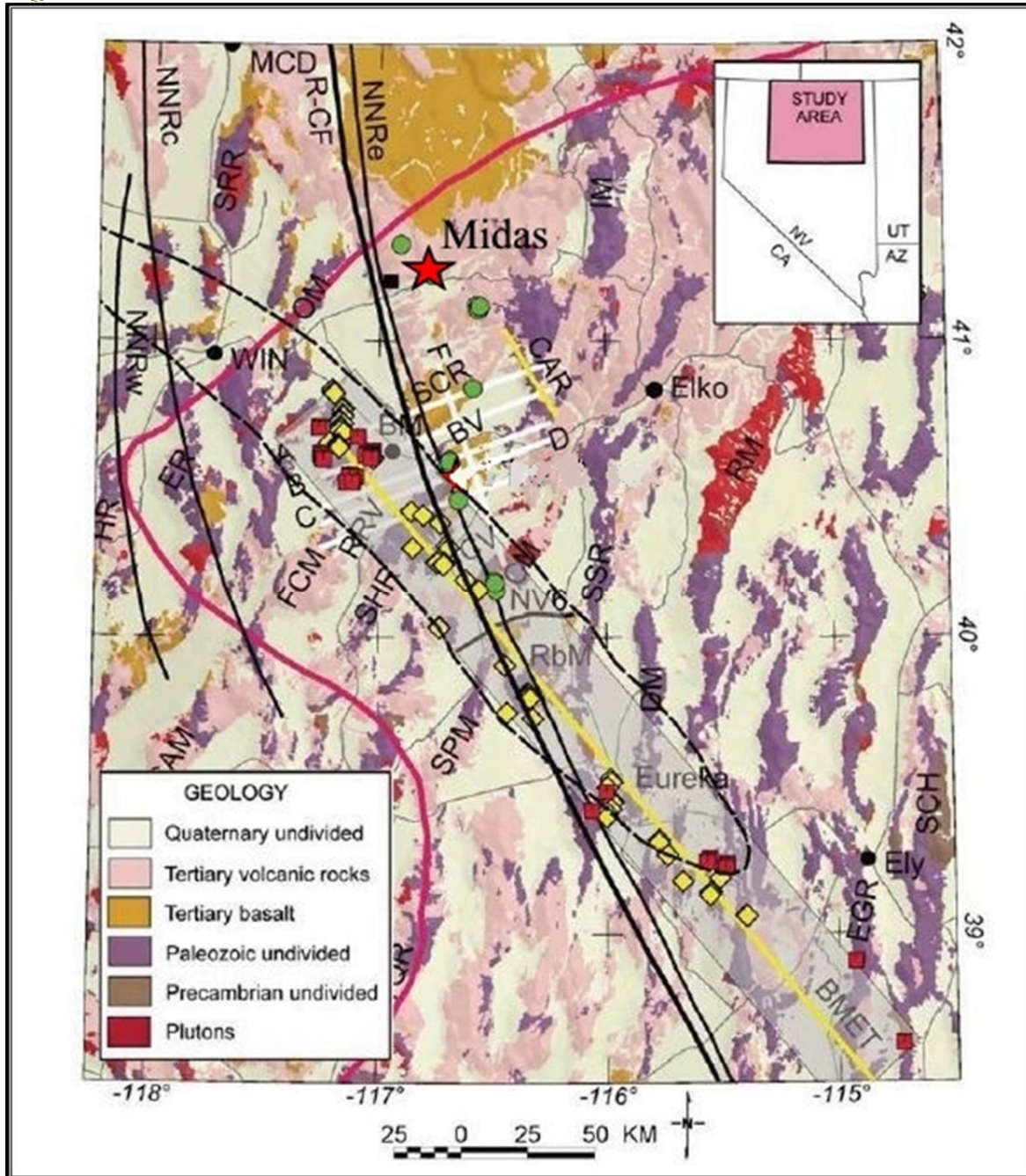
#### 4.5. Location of Mineralization

The Midas Mine and associated infrastructure are located near the southern limits of the land package, primarily within sections 22 and 27 of T39N R 46E.

Klondex has an approved plan of operations with the BLM for exploration activities on the property. Klondex has a second plan of operations associated with the construction of five vent raises which were designed for ventilation to remote areas of the proposed expanded underground. The mill and most of the Midas infrastructure are located on private lands. The permits required to operate the mine and mill are listed in Section 20.5. The authors are not

aware of any environmental liabilities beyond normal reclamation and site closure that exist at the Project. The existing TSF is nearing capacity, and further expansion carries a relatively high unit cost per ton of tailings compared to constructing a new TSF. A new TSF will be required to be permitted by both state and federal authorities, and such permits will take two or more years to secure. There are no other regulatory issues known to the authors related to the continued operation of the Midas Project.

**Figure 4-3 Location of the Midas Mine Relative to the NNR**



Ponce 2008



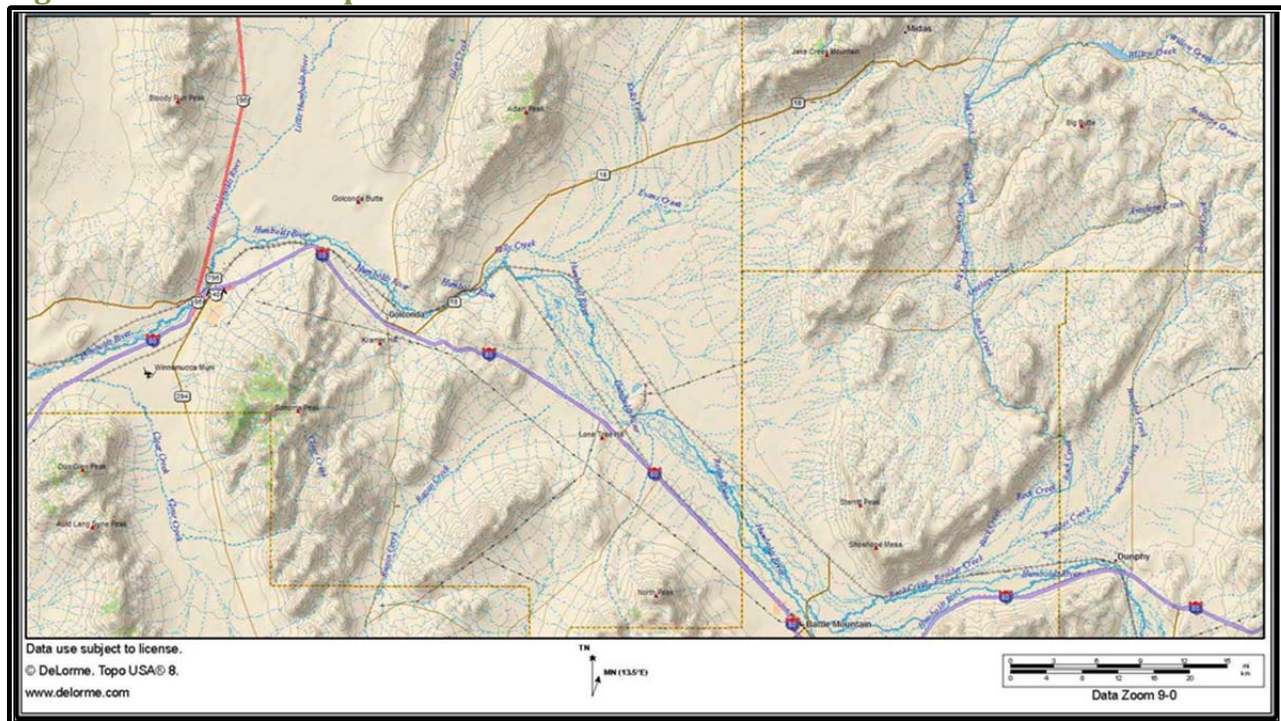
## 5. Infrastructure

### 5.1. Access to the Midas Mine

The Midas Mine can be reached from the town of Winnemucca by driving east on Interstate Highway I-80 for 15 miles to the Golconda Exit Number 194. From Exit 194, turn left onto Nevada State Highway 790 (NV 790) for 0.3 miles, then take the first right onto Nevada State Highway 789 (NV 789) and drive northeast for 43 miles towards the town of Midas. NV 789 turns into NV 18 / Midas Road at about mile thirty. One quarter mile past the turn-off to the town of Midas, continue to follow the Midas Road to a mine direction sign. The entrance to the mine site is about two and one half miles past the town of Midas. To reach the Midas Mine from Battle Mountain, drive west on I-80 for 36.5 miles to reach the Golconda Exit, and then proceed as described above. (Figure 5-1)

The roads leading to the mine are mostly unpaved but are maintained by state, county and Midas operational crews in order to service the ranches and mines in the vicinity. In this part of Nevada, it is common for mine staff to commute long distances for work on a daily basis. The average commute for Midas staff is one and one quarter to one and one half hours each way.

**Figure 5-1 Location Map**



## **5.2. Climate**

The climate at Midas is typical for northern Nevada with hot summers and cold winters. Average daily summer temperatures range from 50 degrees Fahrenheit (°F) to 95°F, and average winter temperatures range from 15°F to 40°F. Summer temperature extremes may reach above 100°F for short periods, and winter extreme temperatures may drop to below 0°F for short periods. Fieldwork, including exploration drilling, is commonly conducted throughout the year except for winter. Mines in northern Nevada typically operate all year without experiencing any major weather-related problems.

## **5.3. Vegetation**

Midas vegetation is mainly limited to sagebrush, other species of low vegetation, and some grasses. There are no trees at the Project. As a result of the low quantity of rainfall, the vegetation is low and sparse.

## **5.4. Physiography**

The Midas Mine is in the foothills on the southeast slope of the Snowstorm Mountains on the north side of Squaw Valley. The elevation of surface infrastructure lies mostly between 5,400 to 5,800 feet. The topographic relief is moderate with mature topography consisting mostly of rounded hills with steeper grades along more competent strata. The Midas project falls on the USGS's Midas, Oregon Canyon, Scraper Springs, and Squaw Valley Ranch 7.5 minute topographic quadrangles, and on the Tuscarora 1:100,000 scale quadrangle

## **5.5. Local Resources and Infrastructure**

The Midas Mine is a well-established facility with extensive underground mine workings and a proven processing facility with nameplate capacity of 1,200 tpd. Prior to the Midas Acquisition, power was supplied from Newmont's Dunphy power plant via NV Energy Corp. ("NV Energy") transmission lines and the Osgood substation. Klondex purchases electrical power from NV Energy which is transmitted through the same infrastructure to Midas.

The towns of Winnemucca and Battle Mountain, about 58 miles southwest and 43 miles south of the Project, respectively, are the nearest larger towns and are home to the workforce and industrial suppliers. These towns are the only locations with amenities and services such as motels, fuel, grocery stores and restaurants. Newmont supplied its Midas operations through its centralized warehousing rather than maintaining an on-site warehouse. Klondex has established business relationships with the suppliers necessary to support ongoing operations and has inventoried on site those items frequently used.

Maintenance of the main access roads is reliable because the roads are also used by ranchers and other mining companies. State road NV 789 serves as access to Newmont's Twin Creeks mine, Atna Resources Ltd.'s Pinson Gold Project Mine, and Barrick Gold Corporation's Turquoise

Ridge Mine along the Getchell Gold Belt. In addition, Waterton Global Mining Company's Hollister Mine access road is roughly eight miles beyond the Midas Mine turn-off on NV 18.

The most accessible rail siding is located near the town of Golconda, a small community of about 200 people, the point of departure from the interstate on the best maintained route to Midas. Golconda has no services with the exception of an intermittently operating convenience store.

The local infrastructure and Midas Mine land position are adequate to support ongoing exploration and mining activity. There is land available adjacent to the existing TSF to support expansion of that facility as needed.



## **6. History**

### **6.1. Exploration History**

The Midas Mining district, also known as the Gold Circle district in its earlier years, had historic gold production dating as early as 1907 (Rott, 1931). Modern exploration methods were employed in the district casually in the 1970s and 1980s by various companies, and exploration began in earnest in the early 1990s when Franco-Nevada Mining assembled a land package at the urging of Ken Snyder.

The official discovery of high grade veins at Midas occurred in 1994 at the Rex Grande prospect, which grew into the Colorado Grande vein . Mine development commenced in 1997, and Franco-Nevada Mining operated the mine on behalf of the Midas Joint Venture (Franco-Nevada/Euro-Nevada) until the mine was acquired by Normandy in 2001, followed by the Newmont acquisition of Normandy in 2002. Prior to the Midas Mine acquisition by Klondex in February 2014, Newmont was the operator from 2002 through 2014. Klondex is currently the operator of the Midas Mine.

The Midas land package is quite large, extending well beyond the known mineralized extents, and exploration is ongoing, with pauses to focus on near-mine vein delineation. In 2012, Newmont ceased all exploration activity at Midas and began to plan for final depletion and closure.

Historic exploration activities include soil and rock chip sampling, surface mapping, geophysics, and drilling. Thirty-eight holes were drilled by Newmont in the 2011 to 2012 field season to test 15 targets with follow-up work recommended in four of the areas tested. The follow up work was Not completed.

### **6.2. Production History**

Midas is a historic mining district, with recorded production beginning in the early 1900s. Most accounts estimate approximately 300,000 ounces of gold and three million ounces of silver production between 1907 and 1942 when non-essential mining activity was suspended by the War Production Board. This production was from predominately underground mining of high grade veins that outcropped at surface, sporadically augmented by discoveries of placer deposits. The largest historic producer was the Elko-Prince mine in the northern part of the district.

Since modern mining began in 1998, 2.2 million ounces of gold and 26.9 million ounces of silver were produced by Franco-Nevada Mining, Normandy, and Newmont.

Recent production from the Midas mill, prior to the acquisition of the Project by Klondex, is presented in Table 6-1. Production rates peaked in 2011 and declined in succeeding years. Gold

grades have also declined, indicating Newmont's planned depletion of the Main Veins. Silver grades increased in 2013 indicating the shift in production from the Main Veins to the East Veins where the silver gold ratio is substantially greater.

**Table 6-1 Annual Midas Mill Production**

Year	Kt	Au (opt)	Ag (opt)
2013 (1)	190	0.21	5.7
2012	330	0.23	4.1
2011	367	0.31	4.3
2010 (2)	327	0.43	6
2009 (3)	291	0.51	6.9

*Notes:*

1. Ten months through October.
2. Includes toll milling 35kt containing 27 koz. Au and 194 koz. Ag from Hollister.
3. Includes toll milling 35kt containing 34 koz. Au and 361 koz. Ag from Hollister.

### 6.3. Historical Mineral Reserve and Mineral Resource Estimates

Newmont's historic mineral reserves and mineral resources are presented in Table 6-2 through Table 6-4 (Newmont Mining Corporation, 2013). A qualified person within the meaning of the NI 43-101, has not classified these historic estimates as current mineral reserves or mineral resources, and Klondex is not treating these historic estimates as a current mineral reserves or mineral resources. The authors are unaware of methods, parameters or assumptions used to generate these historic estimates and cannot comment to their accuracy.

**Table 6-2 Newmont Historic Mineral Reserve Estimates**

Year	Proven					Probable					Proven + Probable				
	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)
2012	200	0.19	3.07	30	510	400	0.06	9.73	20	3,900	600	0.10	7.79	50	4,410
2011	300	0.32	4.62	80	1,200	500	0.18	8.63	80	4,050	800	0.23	7.20	160	5,250
2010	200	0.39		100		300	0.26		90		500	0.32		190	-
2009	400	0.48		200		300	0.35		100		700	0.43		300	-

*Source: Modified from Newmont Mining Corporation website*

**Table 6-3 Newmont Historic Measured and Indicated Mineral Resources**

Year	Measured					Indicated					Measured + Indicated				
	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)
2012	18	0.149	2.24	3	40	100	0.039	7.72	4	700	118	0.095	7.79	7	740
2011	10	0.094	1.72	1	17	100	0.066	4.76	6	476	110	0.226	7.20	7	493
2010	20	0.152		3		100	0.172		17		120	0.170		20	
2009						100	0.188		19		100	0.118		19	

*Source: Modified from Newmont Mining Corporation website*

**Table 6-4 Newmont Historic Inferred Mineral Resources**

Year	Inferred				
	kt	Au Grade	Ag Grade	Au (koz)	Ag (koz)
2012	3000	0.070	7.16	20	2,500
2011	100	0.049	9.56	5	96
2010	100	0.214	-	21	-
2009	100	0.248	-	25	-

*Source: Modified from Newmont Mining Corporation website*

## 7. Geological Setting and Mineralization

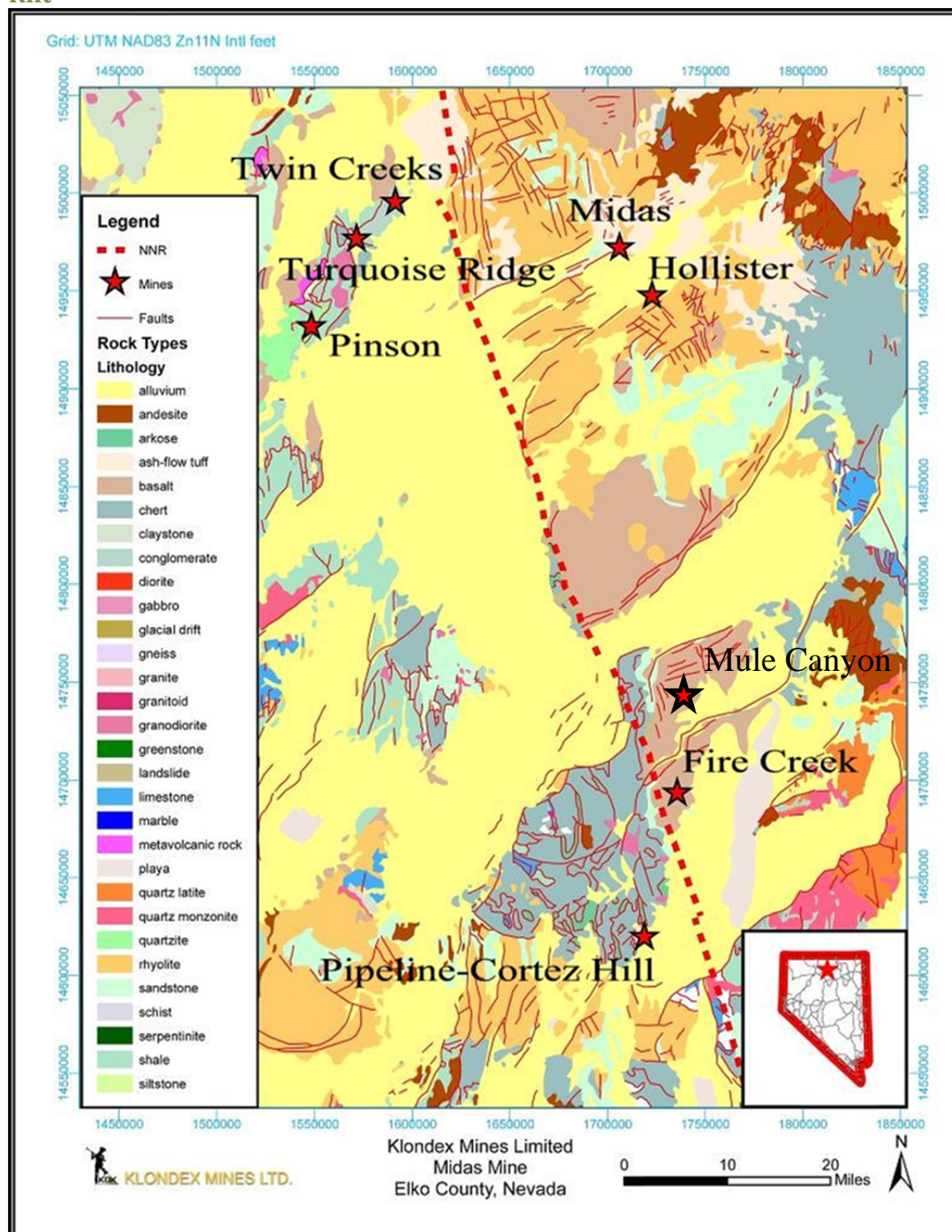
### 7.1. Regional Geology

The Midas Mine is located on the southeast flank of the Snowstorm Mountain range near the eastern margin of the NNR structural domain, hosted in a bimodal suite of volcanic rocks. Several other structurally controlled, epithermal precious-metal vein deposits are hosted in similar Miocene-age volcanic rocks along the NNR, including Klondex's Fire Creek Project, Newmont's Mule Canyon Mine ("Mule Canyon"), and Waterton Global's Hollister Mine, (under the name of Carlin Resources). All occur along the NNR (Figure 7-1) and share similar mineralization characteristics, including epithermal textures and trace-elements, locally high grade Au and Ag, mid-Miocene ages of mineralization (15.1-15.6 Ma) and close temporal association with the Miocene host rocks (John et al., 2003; John, 2001; Leavitt et al., 2004; Wallace, 2003).

The NNR is distinguishable on regional-scale magnetic maps as a prominent north-northwest-trending lineament of magnetic highs. This distinctive positive magnetic anomaly is caused by Miocene-age syn-rift mafic and intermediate volcanic rocks of basaltic to dacitic composition

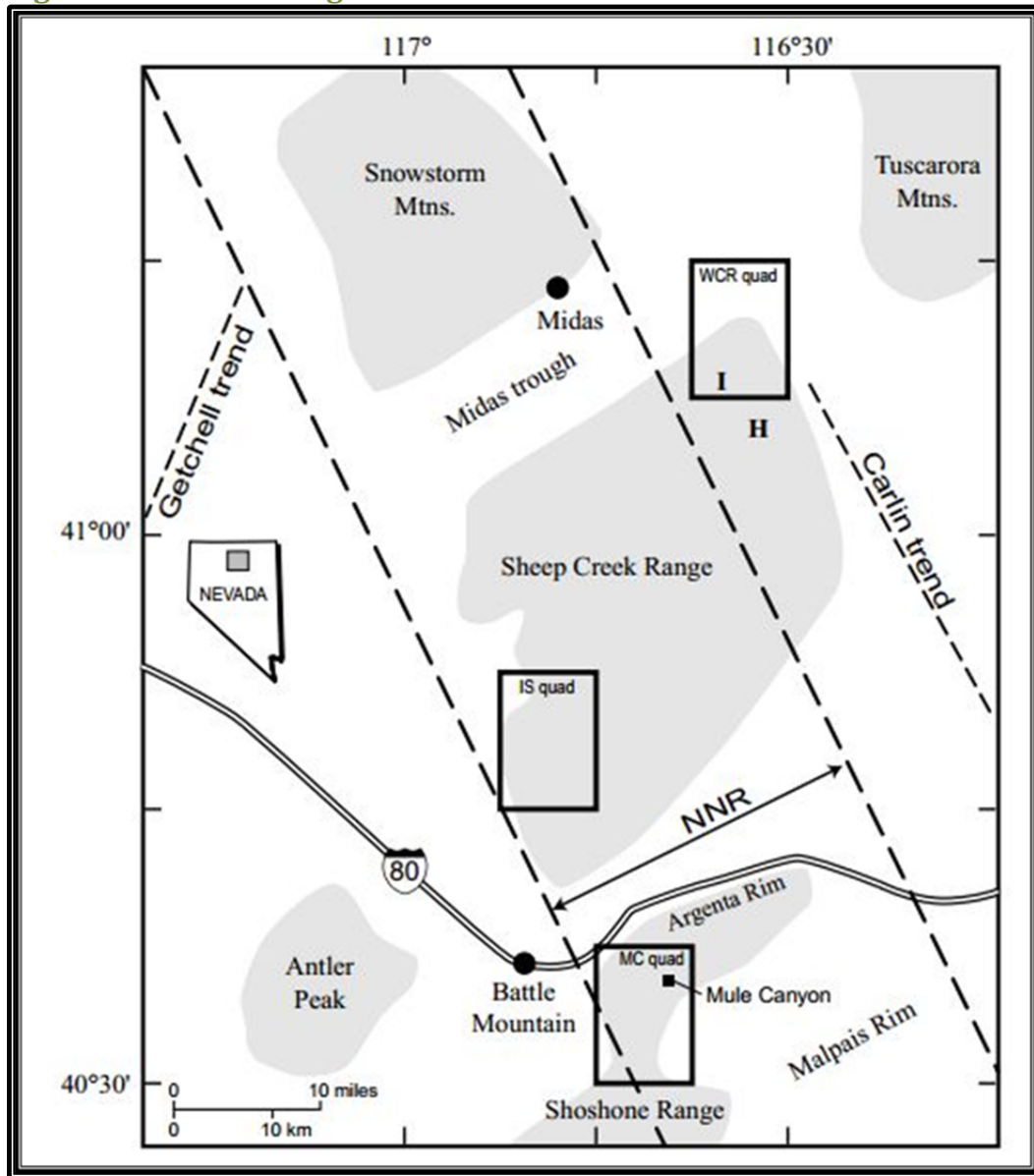
The NNR originated at the McDermitt caldera in northwest Nevada, site of the initial eruption of the Yellowstone hot spot (Zoback et al., 1994), and propagated 500 km to southeast Nevada. The rift is readily visible on regional aeromagnetic maps as a narrow positive anomaly for approximately 250 km (John et al, 2000) and is defined by an accumulation of basaltic to dacitic lava flows and dikes of mid-Miocene age. In the central portion of the rift between the Malpais Rim and Midas, John et al. (2000) defined it as a 5- to 30-km wide north-northwest-trending zone that corresponds to a magnetic high, to mafic dikes and high-angle normal faults that parallel the anomaly, and to middle Miocene volcanic flows that overlie the anomaly. The primary extension direction during rift development and magmatism at 16.5 – 15 Ma was ENE to WSW, perpendicular to the N22°W axis of the rift. These syn-rift faults sharply bound the present-day NNR on the west and decrease towards the east. From 10 Ma to about 6 Ma, the regional stress field rotated clockwise, resulting in an extension direction that was NNW-SSE (Zoback et al., 1994). This resulted in the formation of horst and graben faults that cut the NNR to form ENE-trending grabens such as the Midas Trough, the Argenta Rim, and the Malpais Rim (Figure 7-2).

**Figure 7-1 Regional Geologic Map with Mines in and adjacent to the Northern Nevada Rift**



(Modified from Ludington et al., 2005).



**Figure 7-2 Midas Trough in the NNR**

(Modified from Wallace et al., 1998)

The chemical composition of the volcanic and intrusive rocks varies greatly within the rift, ranging from mafic to intermediate volcanic flows at the Malpais and Argenta Rims, mafic flows at Fire Creek, felsic tuff and andesite at Ivanhoe, and a bimodal sequence at Midas of felsic flows, tuffs and domes, and basaltic sills and dikes. Consequently, rocks from one mining district generally cannot be correlated directly with those from another, except in a time sense where high-resolution radiometric dates are available. Gold mineralization at Midas is structurally controlled by normal faults within the NNR. The style of structurally controlled mineralization

observed at the Midas Mine is typical of rift-hosted epithermal style mineralization associated with an intrusive center.

## **7.2. Midas Mine Local Geology**

The Midas deposit belongs to a group of middle Miocene low-sulfidation epithermal gold and silver mineralizing systems associated with magmatism and faulting along the rift. Interpretation of argon-argon ( $^{40}\text{Ar}/^{39}\text{Ar}$ ) dates from volcanic rocks and hydrothermal minerals related to gold mineralization, and additional isotopic dates throughout the Midas region, constrain the timing of volcanic, tectonic, and hydrothermal activity. The Midas hydrothermal system developed following a change from mafic-dominated bimodal volcanism and basin formation to felsic volcanism and extensional faulting at about 15.6 Ma. (Leavitt et al. 2004).

From 15.6 to 15.2 Ma, lacustrine sediments and tuffs were deposited on a relatively impermeable rhyolite flow at Midas. During this period, faulting and tilting of the volcanic edifice created pathways for hydrothermal fluids that flowed to the surface forming sinter and hydrothermal breccia. The Midas district at this time was the site of an epithermal hot-spring system, with deposition of volcanoclastic rocks in a series of fresh-water lakes. Approximately 200 thousand years after the change in volcano-tectonic regime, dip-slip normal faulting incurred a small component of left-lateral oblique-slip stress along zones of pre-existing weakness, creating dilational zones and additional channel ways for mineralizing fluids (Leavitt et al., 2004; Rhys, 2002).

At 15.4 Ma, epithermal quartz-calcite-adularia veins formed in fault zones and open conduits in the geothermal field. Ore is confined to steeply dipping, banded quartz veins within north-northwest-striking faults. Highest ore grades display an elevation control related to the paleo-water table, brittle felsic host rocks, and the widest veins (including the Colorado Grande shear vein and the Gold Crown extension vein). The deposition of high-grade Au-Ag mineralization at 15.37 Ma (Leavitt et al, 2004) is identical to the age of rhyolite intrusions which likely provided the heat necessary to drive the hydrothermal system. The age of an unaltered tuff that unconformably overlies opalized sediments establishes that tilting of the units and the hydrothermal system had ceased by 15.2 Ma. The temporal and spatial coincidence of rhyolite volcanism, faulting, and high-grade mineralization may reflect the importance of contributions from deeper fluid reservoirs containing magmatic components or highly exchanged meteoric waters (Leavitt et al., 2004).

The paragenesis of gangue and ore minerals in the Midas veins are consistent with an epithermal hot spring (geothermal) system dominated by meteoric water. Fluid inclusions within the quartz veins indicate low salinities (as expected from meteoric water), and homogenization temperatures between 190-260°C (Riederer and Brown, 2008; Simpson and Mauk, 2001). The paleosurface above the quartz and calcite veins was estimated by Simpson and Mauk (2001) to

be between 6200 and 7570 ft above sea level, indicating at least 330 to 1090 ft of erosion, and averaging 500-1000 ft. There are no sinters present in the central part of the district, particularly above the Colorado Grande or Gold Crown veins.

At a microscopic scale, the mechanism to deposit the bonanza ore grades of electrum and selenide minerals can be attributed to colloidal precipitation (Saunders et al., 2007) in which charged particles of gold and silver suspended in a saturated hydrothermal fluid quickly coagulate along the open walls of the veins. The bulk of the gold and silver metal was precipitated early, forming the highest precious-metal grades symmetrically on the outside walls of the veins, followed by less gold and silver in successive depositional events, and lastly depositing low-grade to barren quartz-calcite in the centers of some of the veins.

Veins at Midas pinch and swell along strike, and up and down dip. Veins commonly split before merging along strike. The geometrical shapes of the veins are described as cymoids (Marma and Vance, 2011); these shapes are fractal in nature, with predictable outcomes and can be used to predict ore chutes and vein structures in the underground workings.

Some of the wider and more complex veins, such as the Colorado Grande and Gold Crown, show evidence for repeated brecciation and mineralization resulting in the highest precious-metal grades in the district where electrum and naumannite are distributed across the width of the veins. The individual pulses of saturated metal-bearing hydrothermal fluid into the geothermal reservoir seem likely to be key to forming high-grade gold-silver veins at Midas.

The Midas veins formed during a middle Miocene pulse of bimodal basalt-rhyolite magmatism that was widespread throughout the northern Great Basin. Drilling in the district has shown that Miocene tuffs, flows, and volcanoclastic rocks extend to a depth of at least 1.5 kilometers (km) beneath the present eroded surface. The depth to older Tertiary volcanic rocks or pre-Tertiary basement is unknown, however, xenoliths of quartzite and metasedimentary rock resembling Paleozoic siliciclastic lithology and representing the pre-Tertiary basement, have been uncovered in a mafic dike or sill of basaltic andesite.

The middle Miocene stratigraphic column at Midas is shown in Figure 7-3 (Goldstrand and Schmidt, 2000; Leavitt et al., 2004). From bottom to top the Miocene rocks consists of:

Tlt - a lower tuff unit, which forms the base of the altered section of Miocene ash-flow tuffs in the district;

Tjb - The June Belle formation, which overlies the lower tuff unit and comprises a rhyolite flow-dome-tuff complex, 10 to 250 meters (m) thick;



Tep - The Elko Prince formation, which has both gradational and sharp contacts with the underlying June Belle formation. The Elko Prince formation is composed of a variety of ash-flow tuffs and volcanoclastic sedimentary rocks and is divided into three informal members:

Tep 1 - is up to 155 m thick and consists of green-gray poorly welded lithic-crystal ash-flow tuff that contains clasts of basalt, welded tuff, banded rhyolite, and pumice;

Tep2 - is a distinctive marker unit composed of gray carbonaceous lacustrine and volcanoclastic sedimentary rocks that are laterally discontinuous and up to 30 m thick;

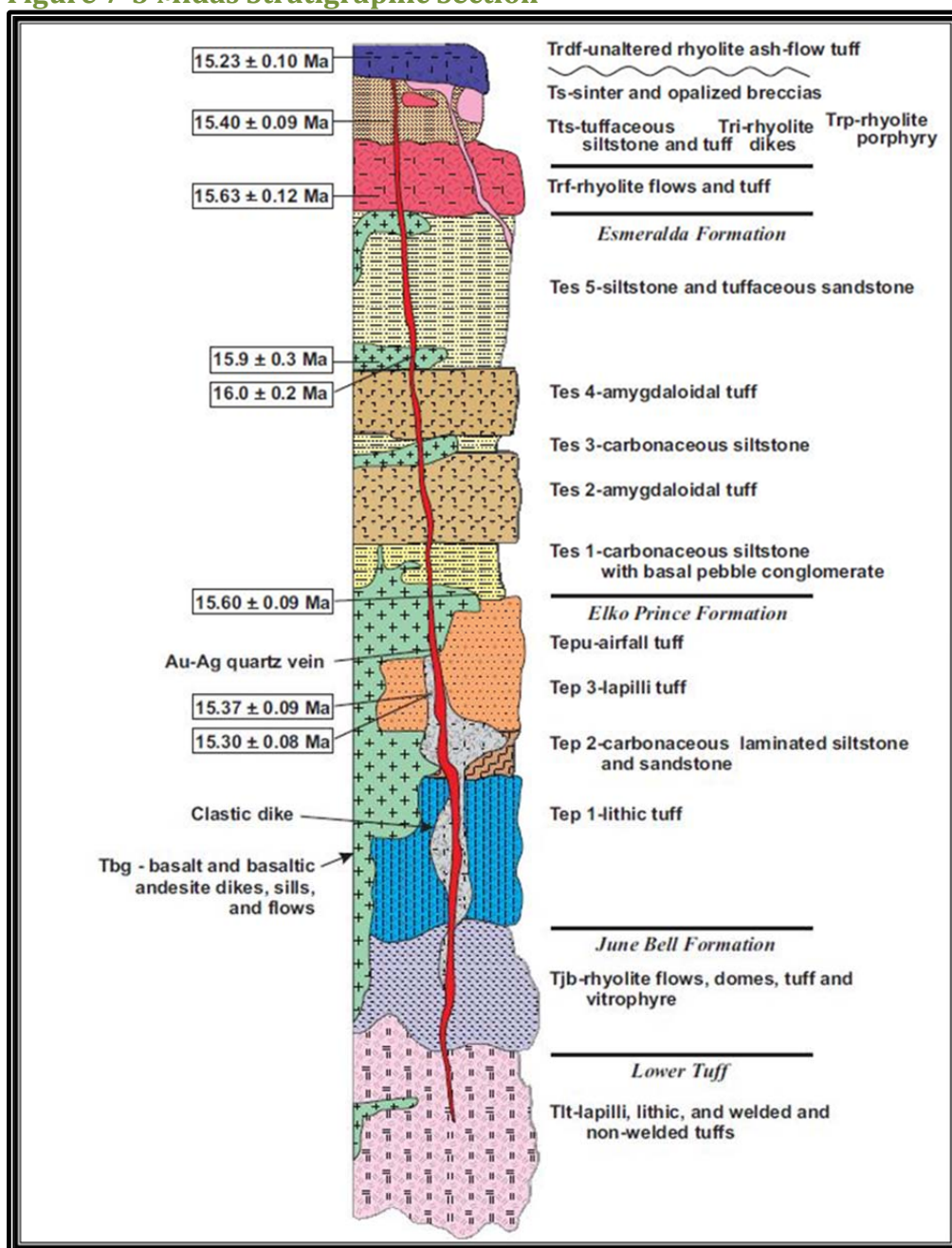
Tep3 – is the upper member consisting of light-green lapilli tuff that has undergone little to no welding and weak to moderate compaction. The unit is 30 to 105 m thick in the mine area.;

Tepu - a fine-grained, white, sanidine-rich air-fall tuff overlies Tep 3 in some areas;

Tes - sediments of the Esmeralda formation, 85 to 260 m thick, consist of an alternating sequence of tuffaceous and carbonaceous lacustrine sedimentary rocks, pebble conglomerates, and fine-grained amygdaloidal tuffs that form five distinct informal members, Tes1 through 5;

Trf - the so-called “red rhyolite” tuff, the top of which caps the altered rocks in the district, and is dated at 15.63 Ma.

This stratigraphic section is cut by numerous mafic sills and dikes known as Tbg (Tertiary basaltic gabbro). Locally the sills are 700-1200 ft thick in the eastern part of the district and inflate the stratigraphic pile (Fig. 7-4). Peperites (a sedimentary rock that contains fragments of igneous material and is formed when magma comes into contact with wet sediments) grade laterally into a feature described locally as a “clastic dike” (Tcd). The clastic dike is sub-parallel to a north-south–striking fault that contains the Colorado Grande vein.

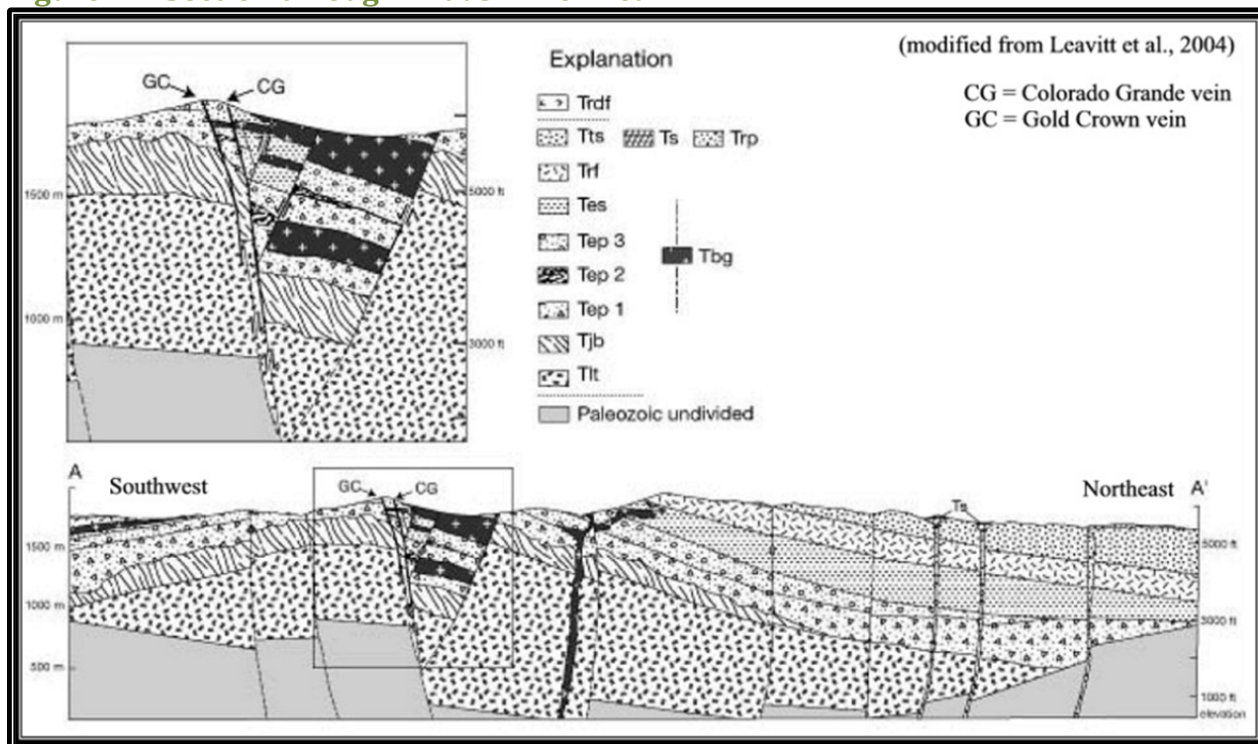
**Figure 7-3 Midas Stratigraphic Section**

(Leavitt et al., 2004, Modified from Goldstrand and Schmidt, 2000.)

The structural setting of the Colorado Grande “shear” vein was provided in a laterally and vertically persistent, north-south to N10-30°W-striking, steeply northeast-dipping normal fault. The Gold Crown “extension” vein formed in a steeply northeast-dipping, N 50° to 60° W-striking fault that splays into the footwall of the Colorado Grande vein on the Midas fault. Other fault splays of similar orientation in the hanging wall host additional veins (Leavitt et al., 2004). The Midas fault is the principal structure in the mine and dips typically exceed 70° to the northeast. Late oblique-slip stress with minor left-lateral offset on the Midas fault created

dilational openings that were filled by the Colorado Grande vein (Rhys, 2002). The Gold Crown, Discovery, and Snow White veins to the northwest are all extensional veins, differing in character from the Colorado Grande shear vein.

**Figure 7-4 Section through Midas Mine Area**



The Colorado Grande and Gold Crown veins formed during multiple episodes of deposition and brecciation. Early silica flooding and brecciation of the wall rocks was followed by deposition of banded veins, several centimeters to several meters wide, which comprise high-grade ore. Dark bands variably enriched in electrum, naumannite ( $\text{Ag}_2\text{Se}$ ), aguilarite ( $\text{Ag}_4\text{SeS}$ ), acanthite ( $\text{Ag}_2\text{S}$ ), and lesser chalcopryrite, pyrite, sphalerite, galena, and marcasite alternate with quartz-, chalcedony-, adularia-, and calcite-rich bands (Rhys, 2002; Leavitt et al., 2004).

The alteration assemblages at Midas show zonation centered on the main veins. Weak propylitic alteration occurs at distances greater than 1,300 feet from the veins. Minor veining and partial replacement of phenocrysts and groundmass by chlorite, calcite, minor smectite (predominantly montmorillonite), and a trace of pyrite characterize this alteration (Leavitt et al 2004).

In summary, the structural geology of the district is as follows:

There are three general stress regimes responsible for the fault geometries and mineralization in the Midas district.

Generally, NW-striking normal faults compose an orthorhombic system that is consistent with the regional mid-Miocene strain field;

These faults were re-activated under a transient change in the stress field that coincided with gold deposition, a return to normal faulting followed, and;

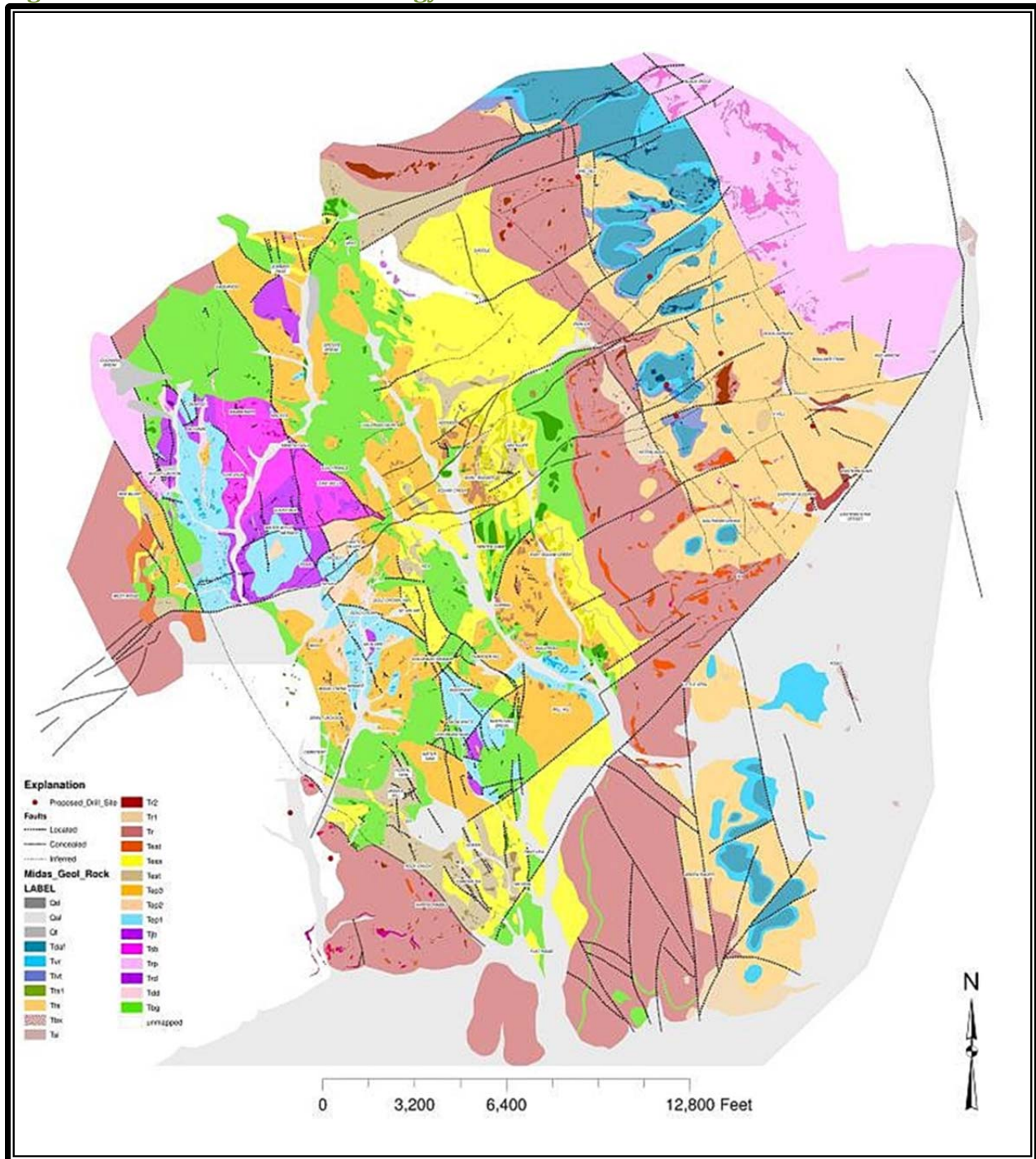
Data collected to date indicate that the late Owyhee faults comprise a normal fault system, with minor left-lateral oblique slip

Application of a structural model in the periphery of the district will be hampered by the high-level of exposure in the system known to have blind veins. Growth faults at this level may display minimal displacement, much of which may be post-mineral. Improved geologic mapping of the outlying areas, in concert with the CSAMT (Controlled Source Audio Frequency Magnetotellurics Testing) geophysical survey technique, will likely become the primary targeting tools outside the main district (Postlethwaite, 2011).

The Midas fault, host to the Colorado Grande vein, is the principal structure in the mine. It strikes approximately N15°W and coincides with a structural high or arch within the district. Closure of rock exposures to the south and general convergence of bedding strike on the west and east sides of the arch to the south indicate a shallow southerly plunge. Based on drill hole information, the Midas fault shows apparent normal movement, down to the east, of more than 1,000 feet as determined from offset stratigraphy. Left-lateral shear movement along the Midas fault later created northwest oriented, dilatant openings that host bonanza vein mineralization (Rhys, 2002). Owyhee structures oriented N65°E show syn- to post-ore - movement, as the Colorado Grande (Midas fault) is displaced along the Northern and Southern Owyhee faults. The most recent movement on the Owyhee structures resulted from basin and range extension during the last 10 Ma (Graf, 2013; Zoback et al, 1994).



**Figure 7-5 Midas Mine Local Geology**



### 7.3. Vein Nomenclature

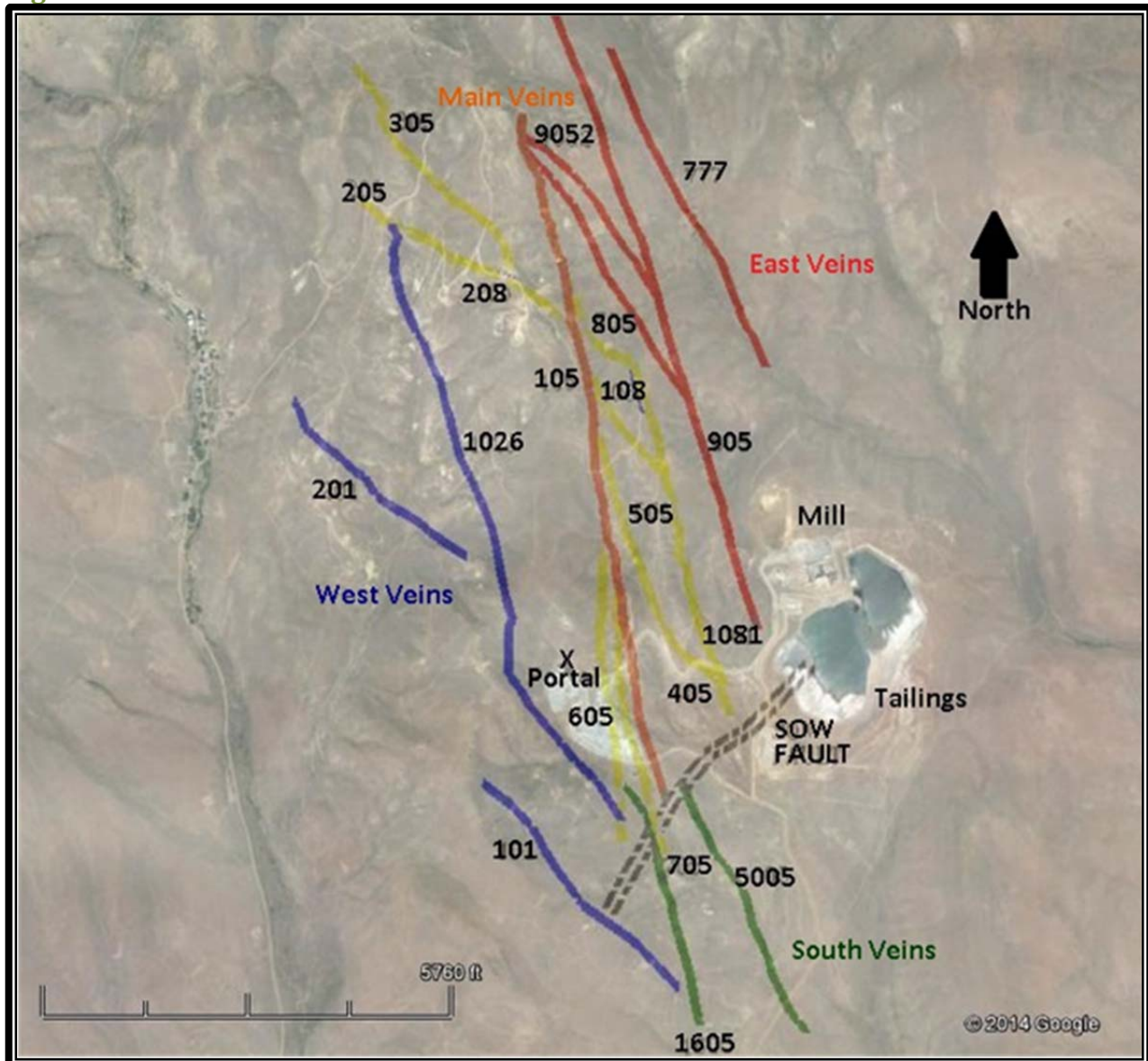
The near mine veins at Midas are divided into four major groups, which are shown graphically in Figure 7-6 and listed in Table 7-1. Prior to 2013, all production was from the Main Vein group,

particularly the Colorado Grande and Gold Crown Veins. Development of the East Veins began in 2012.

The third group of veins is comprised of the Queen and SR veins located to the south of the existing workings and south of the South Owyhee (SOW) Fault. There has been no mining on these veins; they are defined only by surface drilling. They represent a high priority near mine target, and the Queen Vein has been added to the mineral resources estimate.

The fourth group of veins are west of the main vein system and includes the Link and Midas Trend veins. Like the southern vein group, these veins have yet to be delineated from underground.

**Figure 7-6 Vein Locations**



**Table 7-1 Significant Veins**

Group	Vein Name	Vein No.
Main Veins	Colorado Grande	105
	Gold Crown	205
	Gold Crown HW	305
	Snow White	405
	Discovery	505
	Sleeping Beauty	605
	Colorado Sur	705
	Gold Crown Southern Ext	108
	Gold Crown HW Split	208
	Happy	1081
East Veins	Homestead	777
	Charger Hill	805
	GP	905
	Ace	9052
South Veins	Queen	1605
	SR	5005
West Veins	SV	101
	Midas Trend	201
	Link	1026

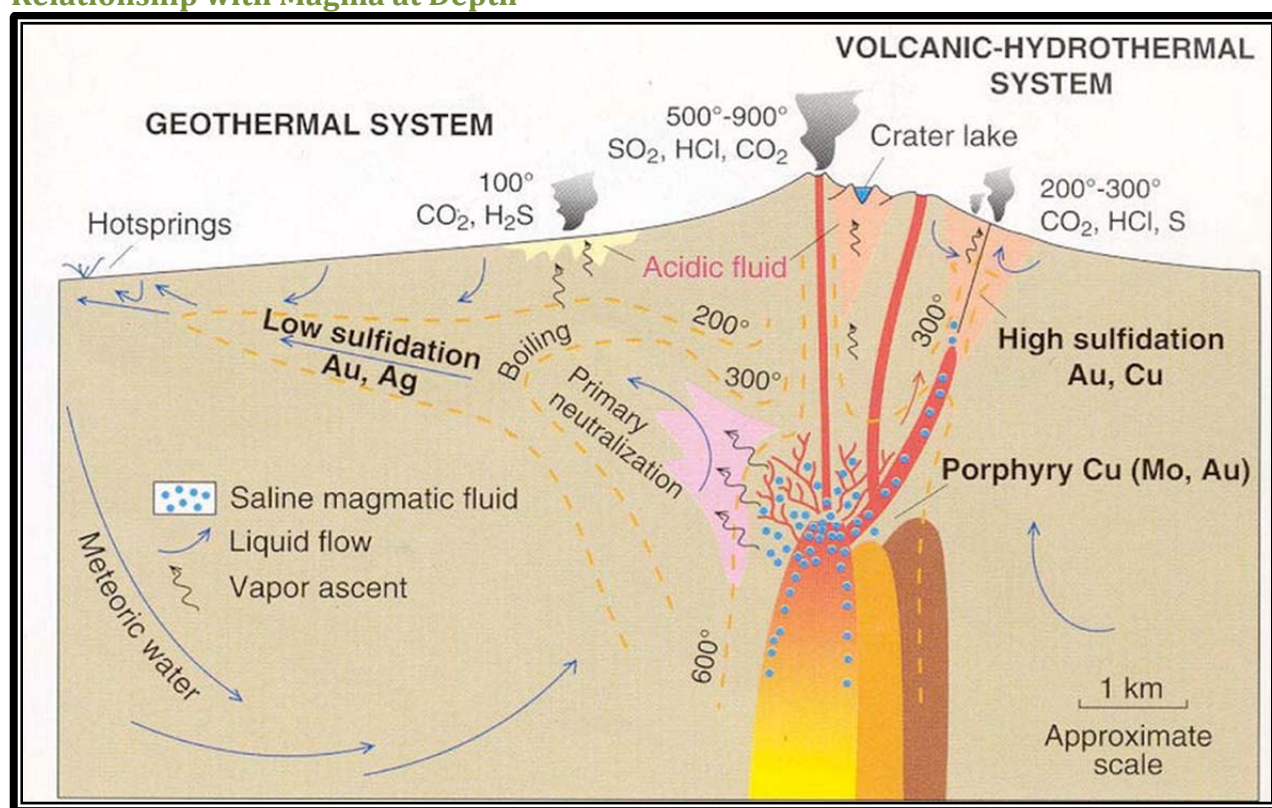


## 8. Deposit Types

### 8.1. Alteration and Mineralization

On a general scale, the hydrothermal system and subsequent mineralization developed at Midas is currently interpreted as a low sulfidation, epithermal precious-metal vein system, as part of a larger magmatic system at depth. A model of this type shows how loss of volatiles from magmas at depth can form large porphyry deposits adjacent to the intrusions (Figure 8-1). If the correct structural and/or hydrologic conditions exist, then metal-rich magmatic fluids potentially can migrate upward and outward to form low-sulfidation epithermal deposits (Saunders et al, 2007).

**Figure 8-1 Schematic Diagram of Low-Sulfidation Gold, Silver Solutions in Relationship with Magma at Depth**



(Hodenquist and Lowenstern)

Mineralization at Midas appears to be part of a convective system related to emplacement of a magmatic heat source at depth. In this schematic model, contacts, faults, and fractures likely provided conduits for geothermal fluids to migrate to the surface, mix with meteoric water, and form epithermal hot springs. Siliceous minerals and gold and silver precipitated as banded bonanza veins in open veins and conduits. Later oxidation of the upper part of this hydrothermal system likely occurred due to convection of a localized plume of low acidity (pH) groundwater. This oxidation effect altered the host rocks under the silica cap to an assemblage of clays, zeolites, and iron oxides. Such an oxide zone at Midas is mostly limited.



A chronology of magmatic and hydrothermal events leading to mineralization (Leavitt et al., 2004) at Midas include:

The Midas hydrothermal system developed after mafic volcanism waned and during rift-related felsic-dominated volcanism. The close spatial association of mineralization with felsic volcanism (units Tjb, Tep) suggests that felsic intrusions provided a heat source to drive convection of hydrothermal fluids.

Gentle tilting and faulting during the felsic-dominated volcanism provided plumbing for fluid flow. Gently dipping flows of the relatively impermeable red rhyolite (Trf) near the paleo-surface probably formed a cap to the hydrothermal system that was breached locally by normal faults. Normal faults facilitated fluid up-flow.

Shallow lakes were present in the vicinity of Midas during formation of the host rocks (units Tep2, Tes). During hydrothermal activity, water from the lakes recharged the meteoric water-dominated geothermal system.

The nearly synchronous deposition of high-grade Au-Ag selenium-rich veins throughout the Midas area suggests that the quartz-adularia-calcite veins were derived from the same hydrothermal system by common depositional mechanisms. The source of the precious metals, however, may be sourced from mafic magmas at depth, rather than from the felsic intrusions, and transported quickly to the Midas hydrothermal system as colloids (Saunders et al, 2007) where the particles precipitate on the vein walls. At Midas, the thickest portions of high-grade veins occur in dilational zones created by oblique-slip stress along a north-northwest to northwest-striking fault system. Evidence of coeval faulting and high-grade mineralization (vein breccia, Tcd) suggests that seismic events may have triggered movement along existing fault zones with release of metal-bearing fluids from deeper hydrothermal reservoirs. The presence of bladed quartz-after-calcite and adularia in quartz veins are indicative of boiling, possibly caused by the decreased pressure along fault conduits.

## 9. Exploration

Most recently, Newmont utilized analysis from CSAMT geophysical surveys to target district-wide veins at depth. The CSAMT helped Newmont define distinct structures across the Midas District in conjunction with surface mapping and analysis of previous drilling data. Resistivity anomalies defined distinct structures and near surface silicification commonly associated with veining at depth.

### 9.1. 2011 to 2012 Drill Target Selection Methodology

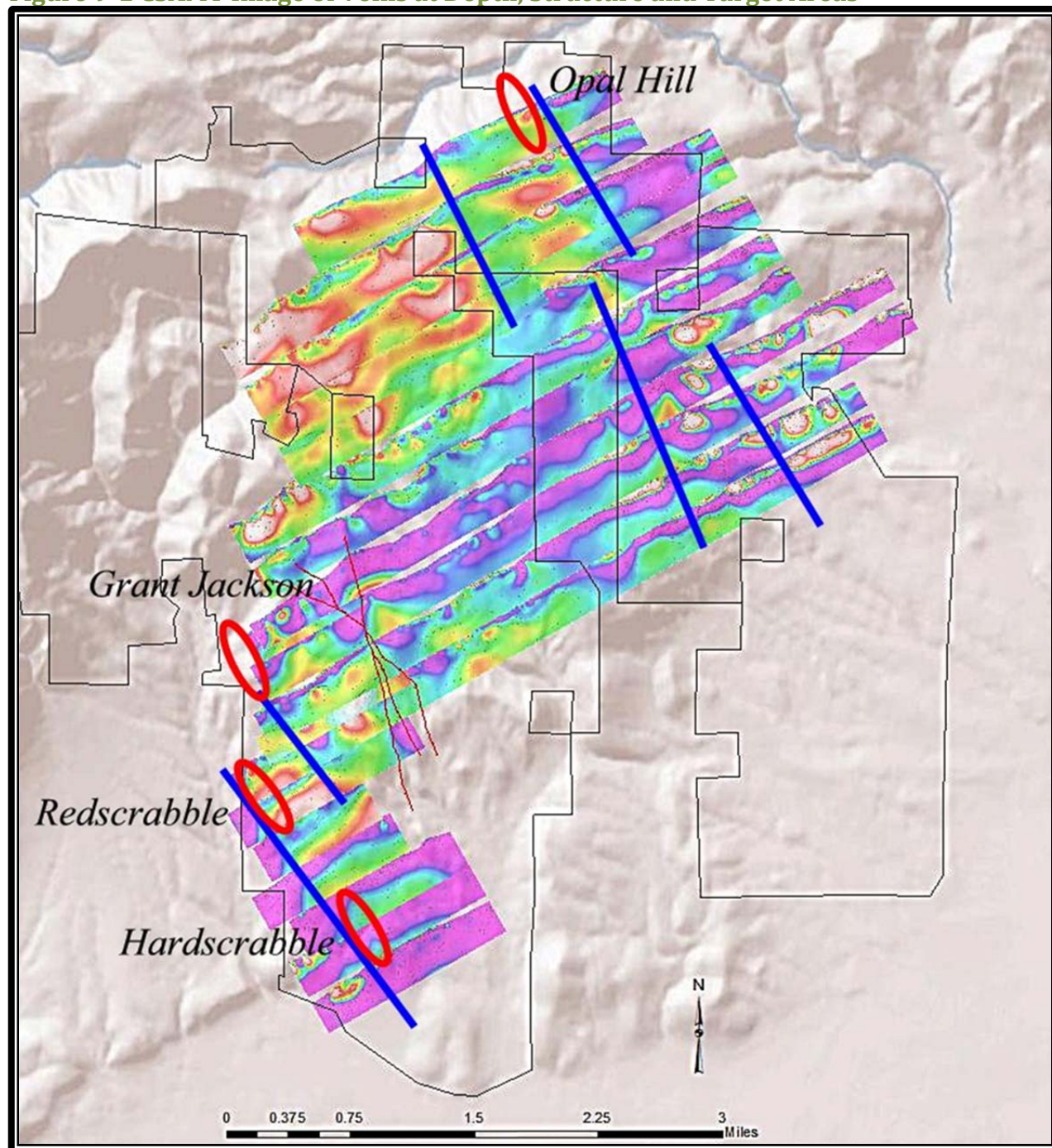
Newmont's exploration program for 2011 and 2012 included the identification of 16 target areas. Newmont drill tested 14 of the areas, and identified four areas for follow-up. Drill intercepts with notable mineralization from those four areas include:

- Opal Hill - DMC-00251 = 7.3 feet at 0.073 opt Au / 0.126 opt Ag;
- Grant Jackson/Missing link - DMC-00226 = 5.0 feet at 0.249Au / 0.028Ag;
- Redscrabble – 31.0 feet at 0.041 Au / 0.128 Ag, and;
- Hardscrabble - DMC-00232A = 14.1 feet at 0.068Au / 4.66Ag.

Midas drill targets were ranked by Newmont using the following data sets:

1. Soil and Rock Chip Geochemistry – As, Hg, Se and Sb anomalies;
2. Surface mapping – Large mapped fault structure with favorable orientation;
3. Geophysics – Resistivity anomalies from (CSAMT) and;
4. Application of the epithermal model

**Figure 9-1 CSAMT Image of Veins at Depth, Structure and Target Areas**



Results of Newmont's 2011 to 2012 drilling are summarized below: (Graf 2013):

**Opal Hill** - One core-tail was drilled in the Opal Hill target during 2012 to test a CSAMT anomaly and previously drilled high grade reverse-circulation (RC) intercepts. Mapping in this area has defined opalization, eruption breccias and drill hole geochemical signatures of a high-level epithermal system indicating possible mineralization at depth. It was recommended to drill

two holes at various depths along this fault to further define the potential for high grade Gold veins at depth.

**Redscrabble** - Two core-tails and one RC hole were drilled in the Redscrabble area in 2012. These holes originally targeted the northwest (NW) striking Hardscrabble fault, but drilling intercepts have led to a new interpretation of the structure. The Redscrabble fault appears to be the northern extension of the Hardscrabble fault, offset along the Southern Owyhee Fault. It was recommended to drill two more holes into this structure (500 feet above and below gold intercept) to determine where high grade veins could be located in this fault.

**Grant Jackson / Missing Link** - Six core-tail holes were drilled in the Grant Jackson-Missing Link area in 2012. These holes were drilled to test veins at depth. There is limited drilling on these targets below 5,200 ft due to this being the conceptual ore horizon throughout the Midas District. This new drill data suggests potential remains for “bonanza” grade veins at depth. The Missing Link Vein has limited drilling. This new intercept suggests that the vein may be striking NW, which may make it a southern extension of the Midas Trend Vein. It was recommended to drill one hole on each of these veins in 2013, a deep hole on Grant Jackson to test depth, and one hole on Missing Link to test strike.

**Hardscrabble** - Three core-tails and one RC hole were drilled in the Hardscrabble target during 2011-2012 to test a CSAMT anomaly and offset previously drilled high grade intercepts. Geology and mineralization suggest this structure may horsetails as it moves to the south. There is some inconsistency in logged chips from 2002 to present. These chips and core should be re-logged. It was recommended to drill two holes 200 feet deeper along this fault to the north to further define the potential for high grade gold veins at depth.

**Golden Belle** - Four core-tail holes were drilled in the Golden Belle area in 2011, and three core-tail follow-up holes were drilled in 2012. Five holes were previously completed in the mid 2000's, intercepting higher grade silver. These more recent holes were drilled to test for higher grade gold at depth. Due to inconsistency in logging of core and chips, a cross section was not constructed until geologic units can be determined. It was recommended to re-log RC drill chips to provide consistency within this structural zone. If questions still remain on lithologies, a litho-geochemical study should be completed to determine chemical identities of Midas geologic units to aid in district wide RC logging.

**Eastern Star** - One core-tail and two RC holes were drilled targeting the Eastern Star fault in 2011. Mercury (Hg) anomalies in this area suggest the gold/silver system is below the Hg anomaly. The holes were drilled to test for high grade veins at depth. The deepest hole appears to have missed the interpreted structure, and one follow-up RC hole was recommended to test this structure at depth.

**Red Bluff** - One core hole was drilled into the Red Bluff fault in 2011. This hole was drilled with an underground U-8 rig due to pad restriction size and shallow angle of the drilled hole. A weak fault zone with quartz was encountered 985 feet down hole, which corresponds with the west dipping Red Bluff fault. This area has the potential to host Au mineralization, but no further drilling was recommended at this time.

**Fe Oxide fault** - Two RC holes and two core-tails were drilled into the FeOx target during 2011-2012 to test a CSAMT anomaly and surface mapped fault. The two RC holes were drilled into the footwall (FW) of the fault, and the two core tails crossed the fault. The fault contact was Tep1/Tess, indicating significant offset; however, there was no Au or vein mineralization present within the fault. There are weak anomalies of arsenic (As) along the fault. No drilling was recommended in the FeOx area.

**Astralagus** - One core-tail and one RC hole were drilled into the Astralagus target during 2012 to test a CSAMT anomaly and surface mapped fault with unit test in the hanging wall and unit Tep1 in the footwall. This is similar to offset seen to the south in the FeOx area. There was no Au or vein mineralization present within the fault. No significant geochemical anomalies were found within the drill holes. No drilling was recommended in the Astralagus area.

**Mill Hill** - One RC hole was drilled into the East Squaw Creek Fault during 2011 to test a CSAMT anomaly. This hole had no Au or geochemical anomalies, and no fault structures were encountered. No drilling was recommended in the Mill Hill area.

**Homestead** - Two core-tail holes were drilled in the Homestead area during 2011-2012. These holes were drilled about 500-foot and about 1,500-foot north of the limit of underground drilling along the Homestead Vein. The furthest north underground intercept along the vein assayed 1.0 foot at 0.119 opt Au and 47.80 opt Ag. Both of the holes crossed the modeled structure; however, returned no significant intercepts. No further drilling was recommended on this vein structure until further mining occurs development along the East Veins.

**Colorado Norte / Hoodoos** - One core-tail and one RC hole were drilled into the Colorado Norte/Hoodoo's faults during 2011-2012 encountering a fault structure (repeated section suggesting down drop to the west) filled with a mafic dike. There was no gold anomaly, but significant anomalies in As, Hg, and stibnite (Sb) existed, suggesting high level mineralization. One hole was drilled into the Hoodoos fault structure. This hole had no Au or geochemical anomalies, and no fault structures were encountered. It was recommended to drill below the anomalies in the Colorado Norte area, but due to the lack of Au encountered, it was not considered a priority. No drilling was recommended for the Hoodoos area.

**Eastern Sleeper** - One RC hole was drilled into the Eastern Sleeper fault to test a CSAMT anomaly. This hole had no Au or geochemical anomalies, and no fault structures were encountered. No further drilling was recommended in the Eastern Sleeper area.

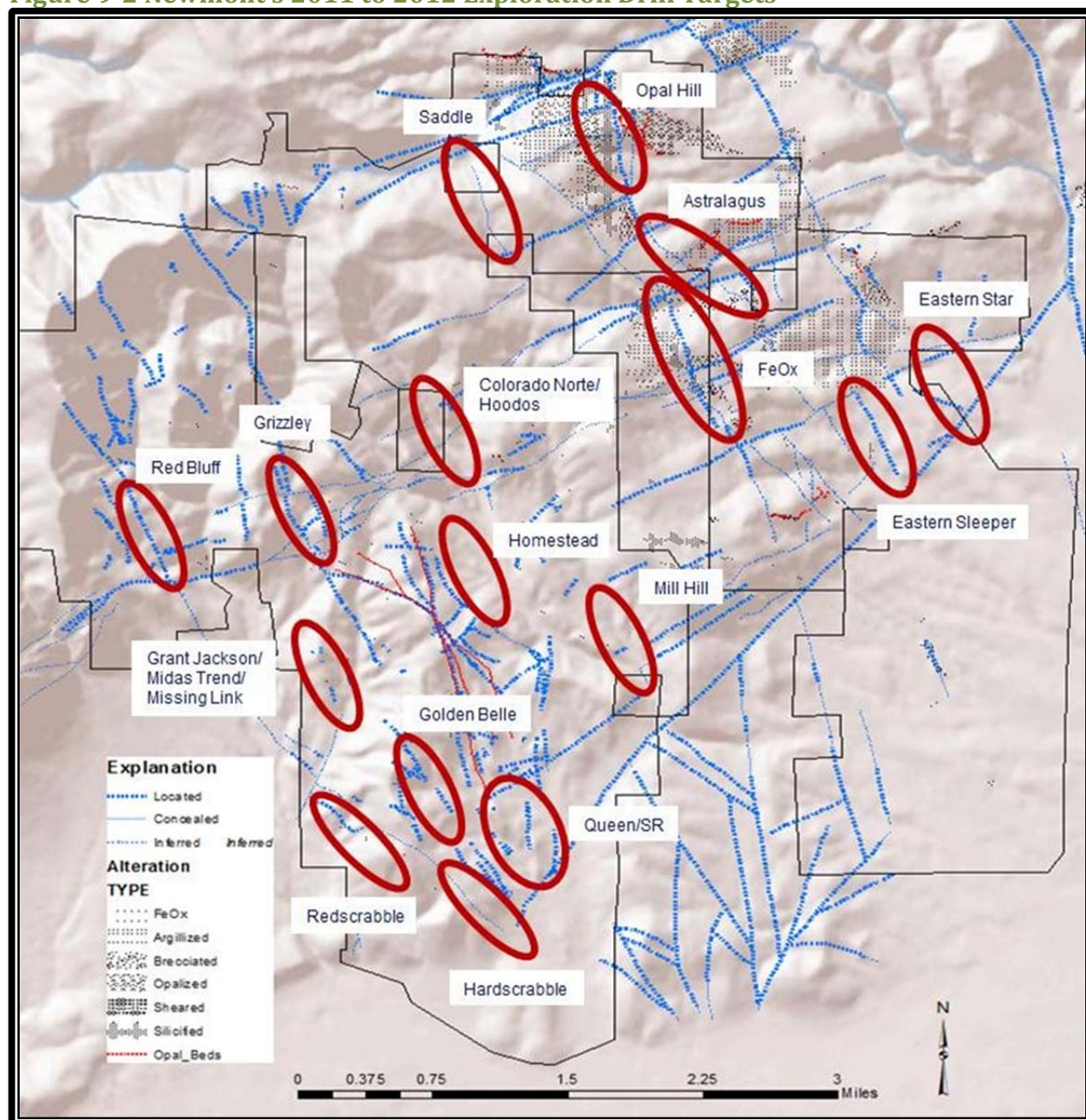
**Saddle** - One RC hole was drilled into the Saddle fault to test a CSAMT anomaly. This hole had no Au or geochemical anomalies, and no fault structures were encountered. No further drilling was recommended in the Saddle area.

In summary: Fourteen drill targets were tested by Newmont in 2011 and 2012 after careful review of geologic and geophysical features. Four areas have the potential for large Au deposits which may merit follow up drilling. They include:

1. Opal Hill;
2. Redscrabble;
3. Grant Jackson/Missing link, and ;
4. Hardscrabble.



**Figure 9-2 Newmont's 2011 to 2012 Exploration Drill Targets**



(Graf 2013)

## 9.2. Klondex's 2014 Drill Program

The Midas exploration team has adopted the low-sulfidation epithermal model. On a general scale, the hydrothermal system and subsequent mineralization developed at Midas is currently interpreted as a low-sulfidation, epithermal precious-metal vein system, as part of a larger magmatic system at depth. A model of this type shows how loss of volatiles from magmas at depth can form large porphyry deposits adjacent to the intrusions. If the correct structural and/or

hydrologic conditions exist, then metal-rich magmatic fluids potentially can migrate upward and outward to form low-sulfidation epithermal deposits (Saunders et al, 2007) (Figure 8-1).

This model information, coupled with a geochemical study on the Colorado Grande Vein, has increased the understanding of the depth to which high grade mineralization exists along vein systems. Two conclusions have been adopted to understand zoning within the mineralization systems:

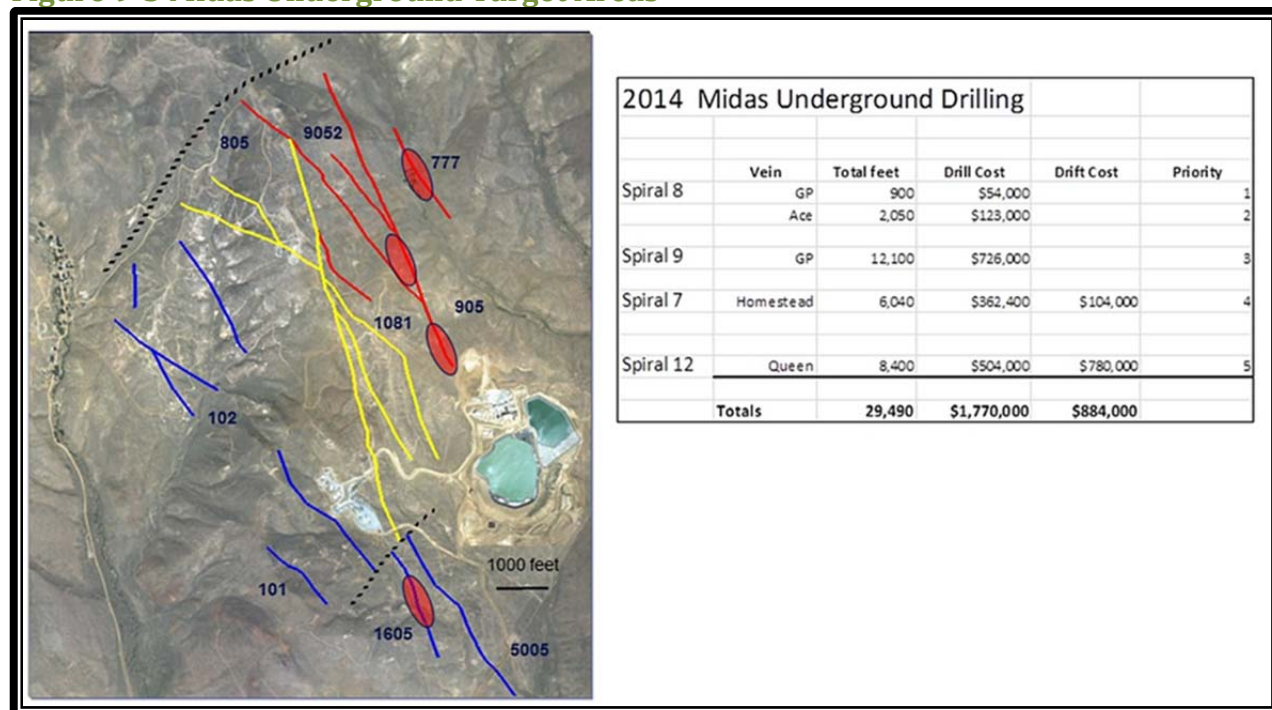
1. Arsenic is relatively enriched above the mineralization body. Arsenic values ranging from 0-10 parts per million (ppm) indicate a position below the mineralization body; values ranging from 10-25 ppm indicate a position within the mineralization body; and values ranging from 25 to over 100 ppm indicate a position above the mineralization body.
2. Base metal enrichment with depth is not recognized. However, Cu is somewhat enriched at depth, where values ranging from 150 to 200 ppm occur below the mineralization body; values ranging from 50 to 150 ppm occur within the mineralization body; and values ranging from 0 to 50 ppm occur above the mineralization body.

Drilling along these four exploration targets to further define location of high-grade mineralization is recommended:

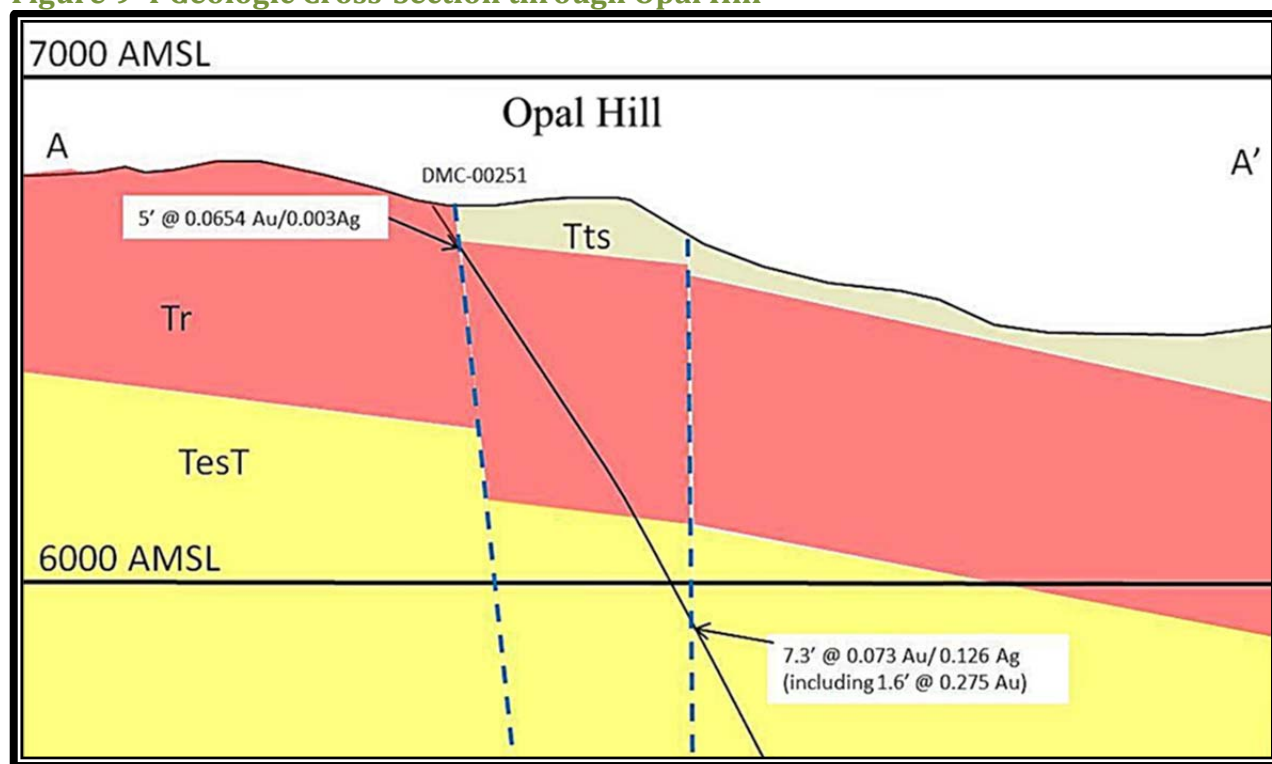
1. Opal Hill;
2. Grant Jackson / Missing Link;
3. Redscrabble, and;
4. Hardscrabble.



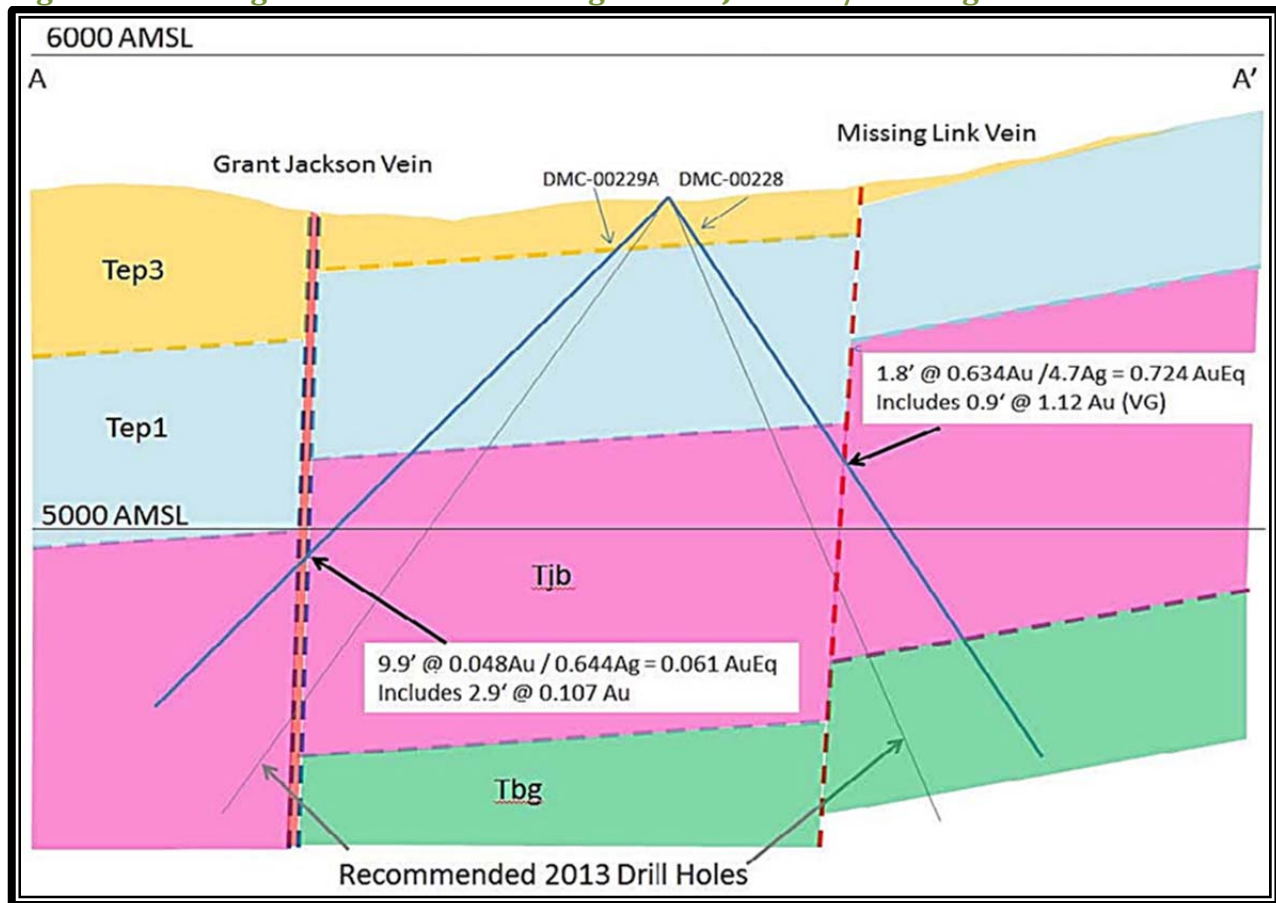
**Figure 9-3 Midas Underground Target Areas**



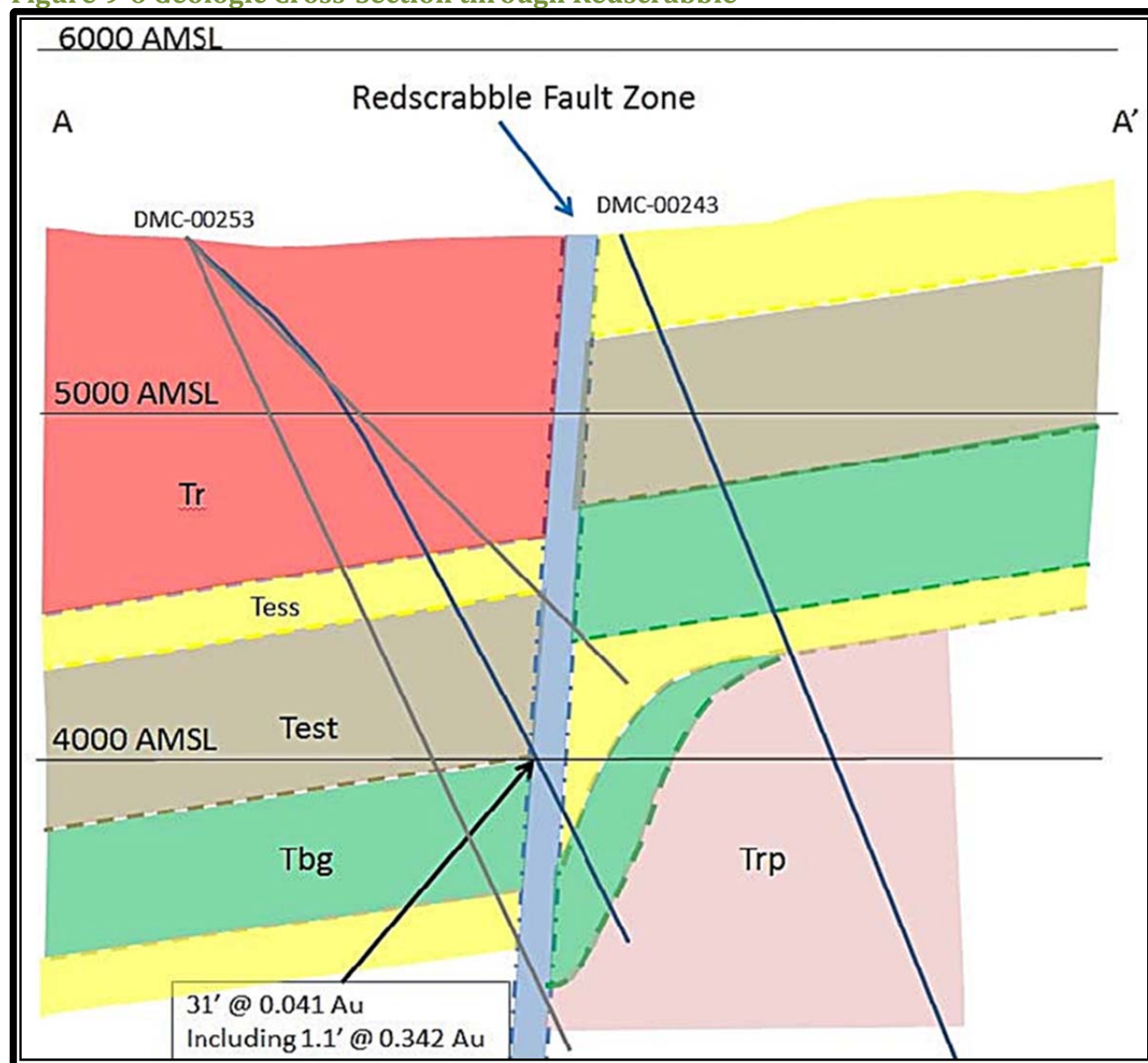
**Figure 9-4 Geologic Cross-Section through Opal Hill**



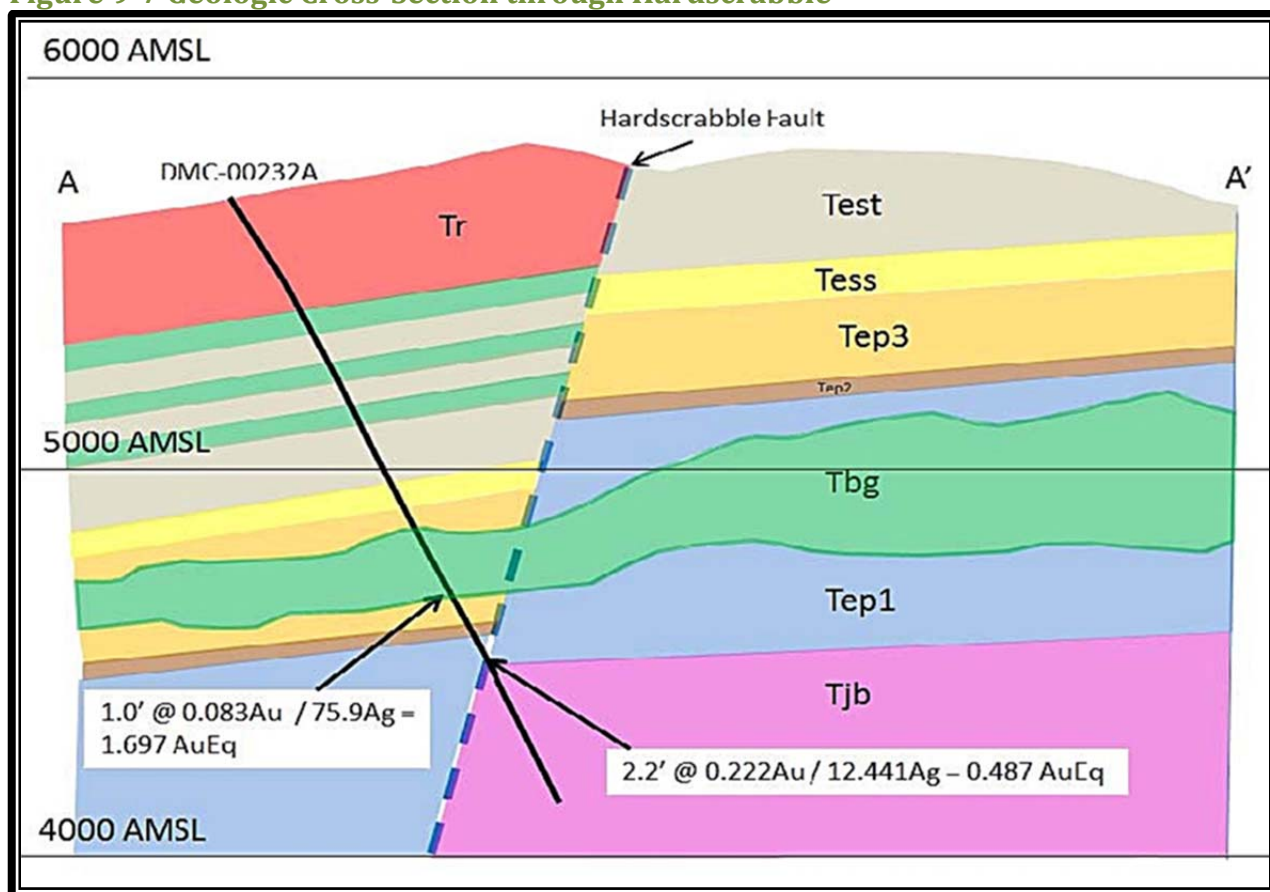
(Graf 2013)

**Figure 9-5 Geologic Cross-Section through Grant Jackson / Missing Link***(Graf 2013)*

**Figure 9-6 Geologic Cross-Section through Redscrabble**



(Graf 2013)

**Figure 9-7 Geologic Cross-Section through Hardscrabble***(Graf 2013)*

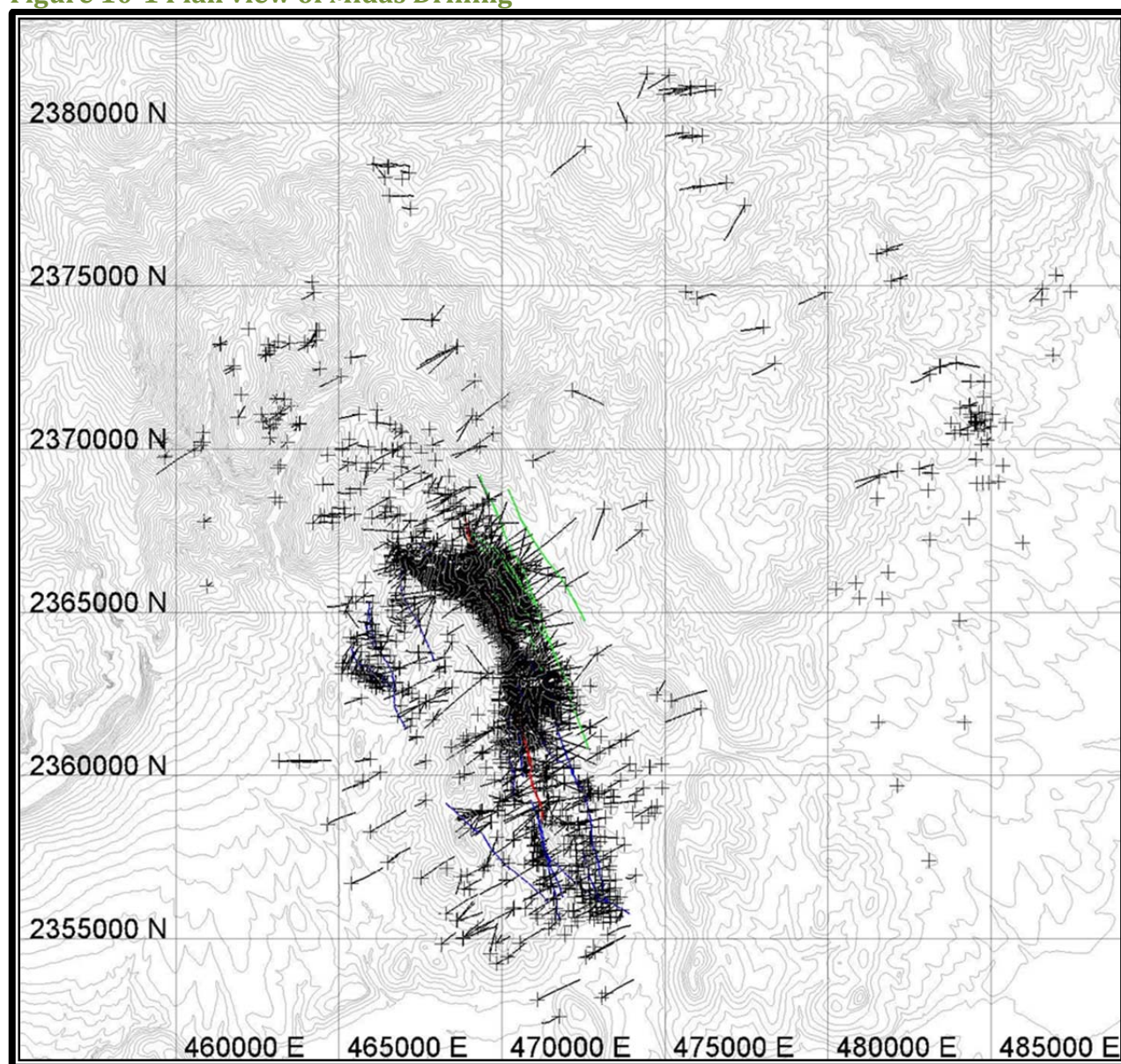


## 10. Drilling and Sampling Methodology

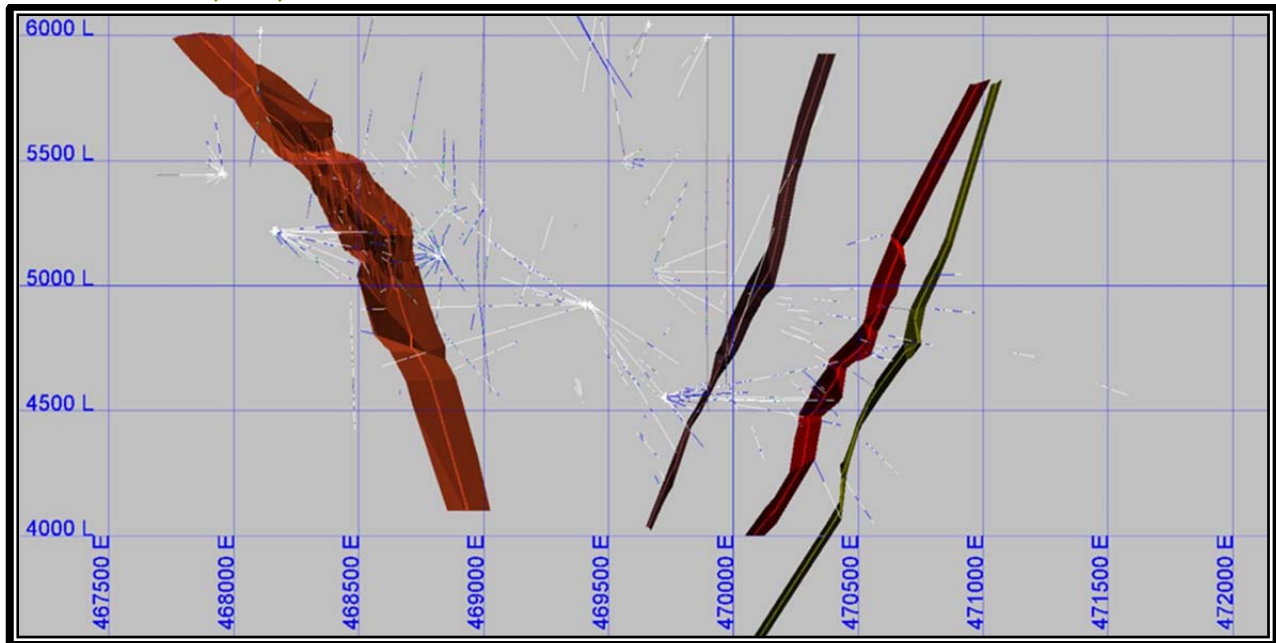
### 10.1. Introduction

Klondex completed 112 new drill holes totaling 76,990 feet which were included in the current mineral resource estimate. As of the effective date of this report, August 31, 2014, drilling was ongoing. The previous operators of the Midas Mine have completed 4,037 drill holes totaling over 2.7 million feet of drilling on over a dozen major veins. The distribution of drill holes throughout the Midas Project area is shown in Figure 10-1. Typical cross sections through the veins with drill traces are shown in Figure 10-2 and Figure 10-3.

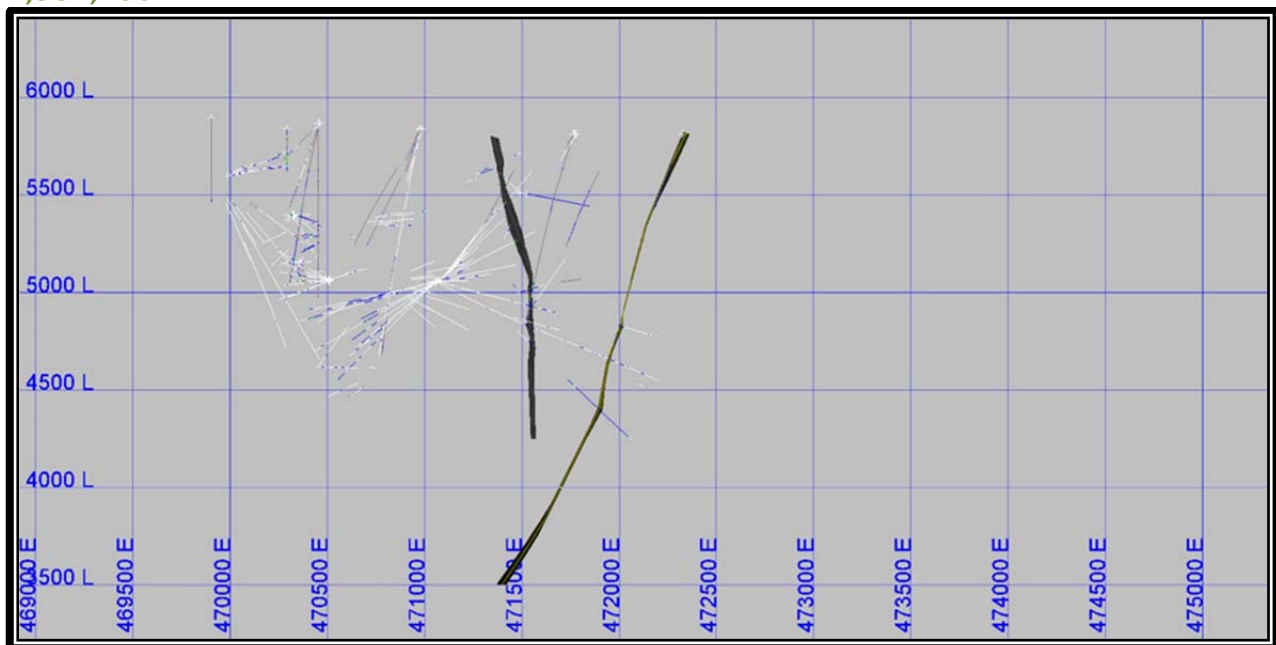
**Figure 10-1 Plan view of Midas Drilling**



**Figure 10-2 Typical Cross Section with Drill Traces through the 205, 805, 905-2 and 905 Veins at 2,365,700N**



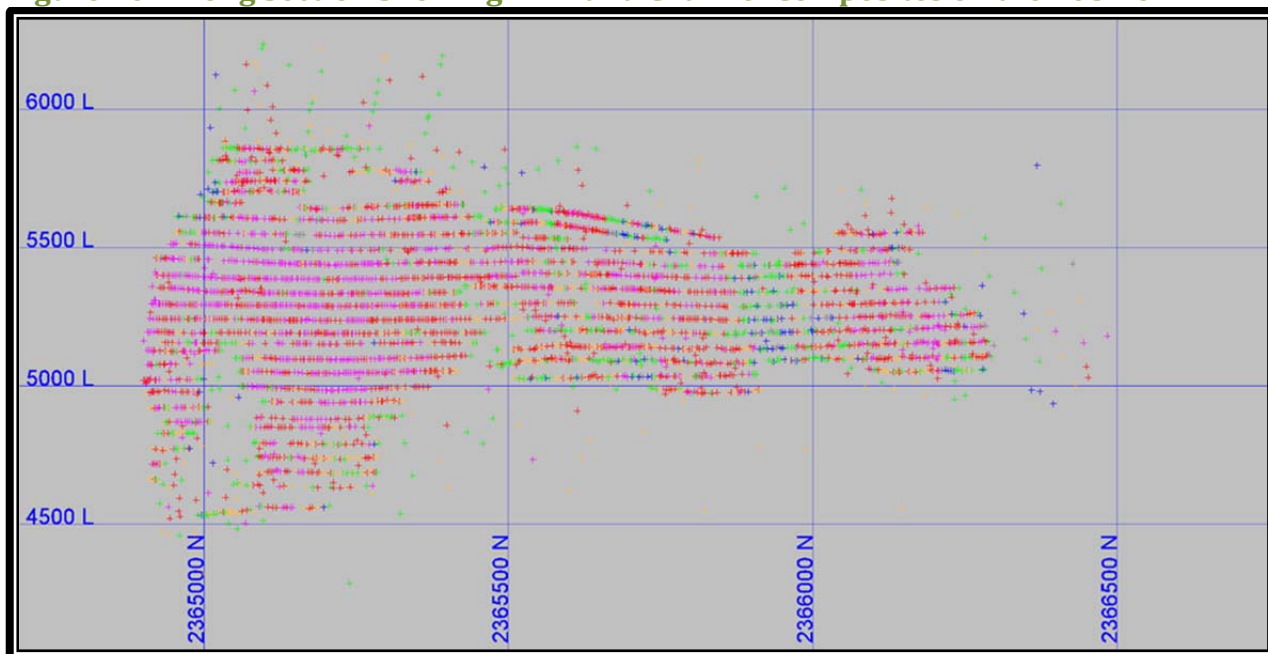
**Figure 10-3 Typical Cross Section with Drill Traces through the 505 and 905 Veins at 2,362,400N**



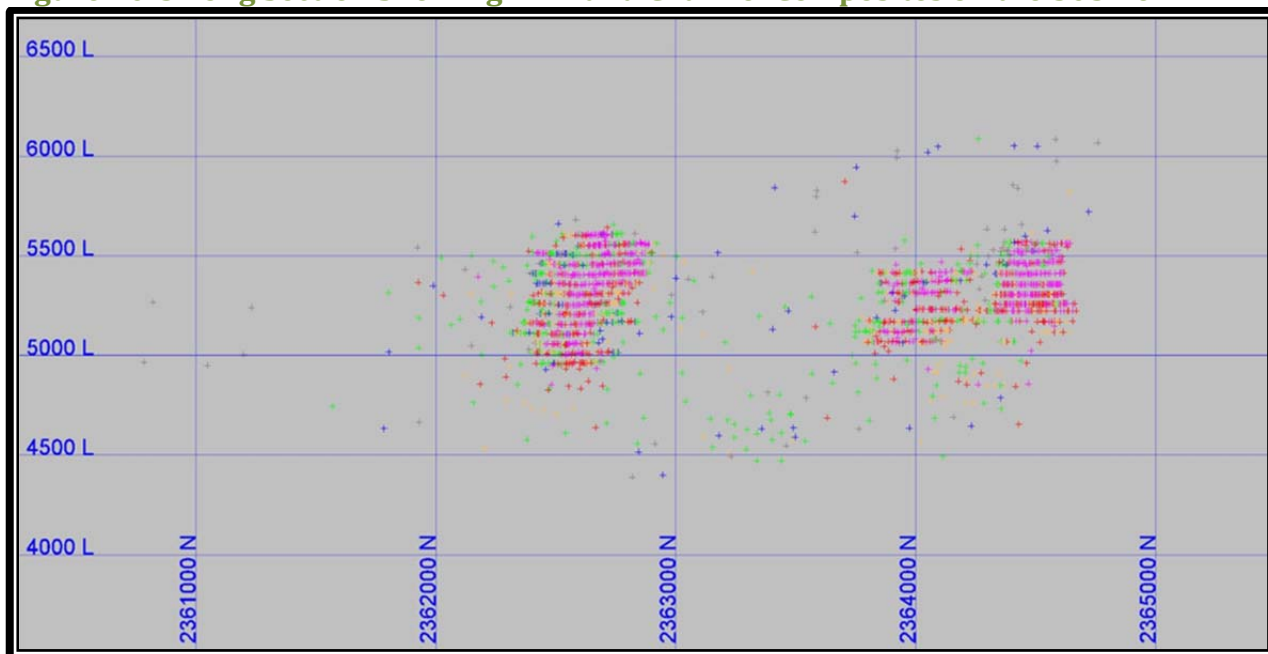
The 21 veins included in the mineral resource estimate are defined by 2,990 drill holes which contain 10,116 feet of mineralized vein intercepts. There are an additional 18,041 channel samples totaling 160,764 feet of vein sampling. Of this total, approximately 1.5% of the drilling

and 4.5% of the channel samples are attributable to Klondex and the balance to the previous owners of the project. True thickness of the veins varies from a fraction of a foot to several feet. Typical long sections showing the composite drilling and channel sampling locations are shown in Figure 10-4 through Figure 10-7.

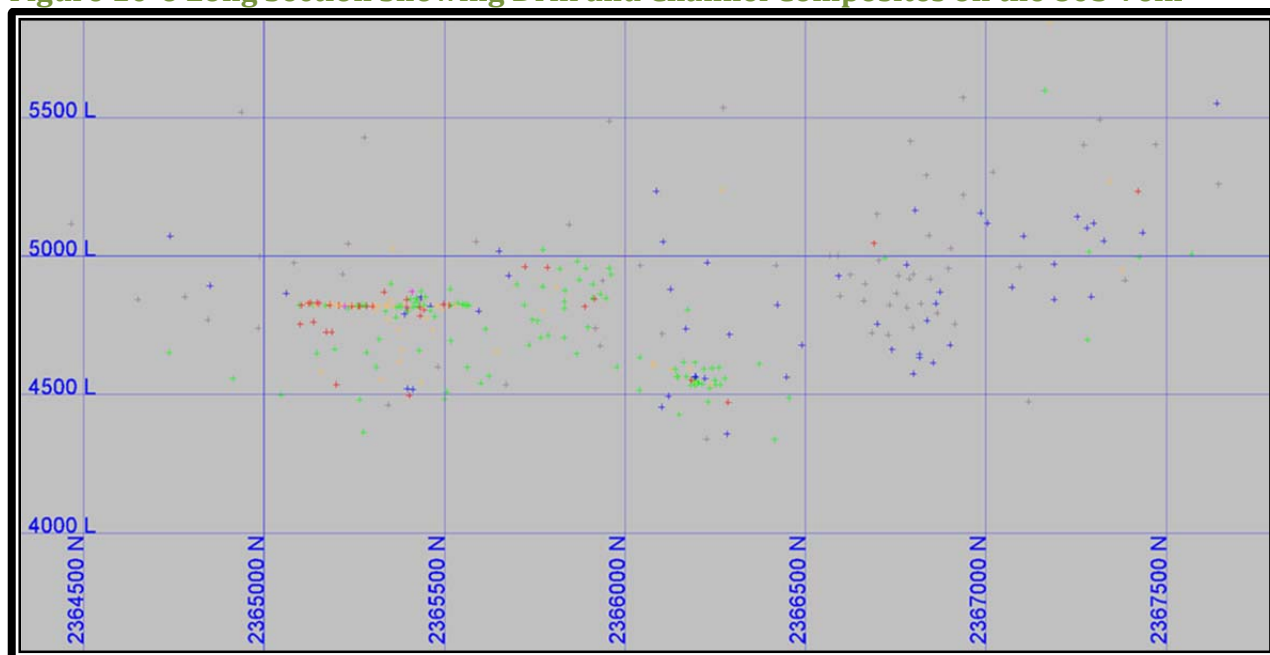
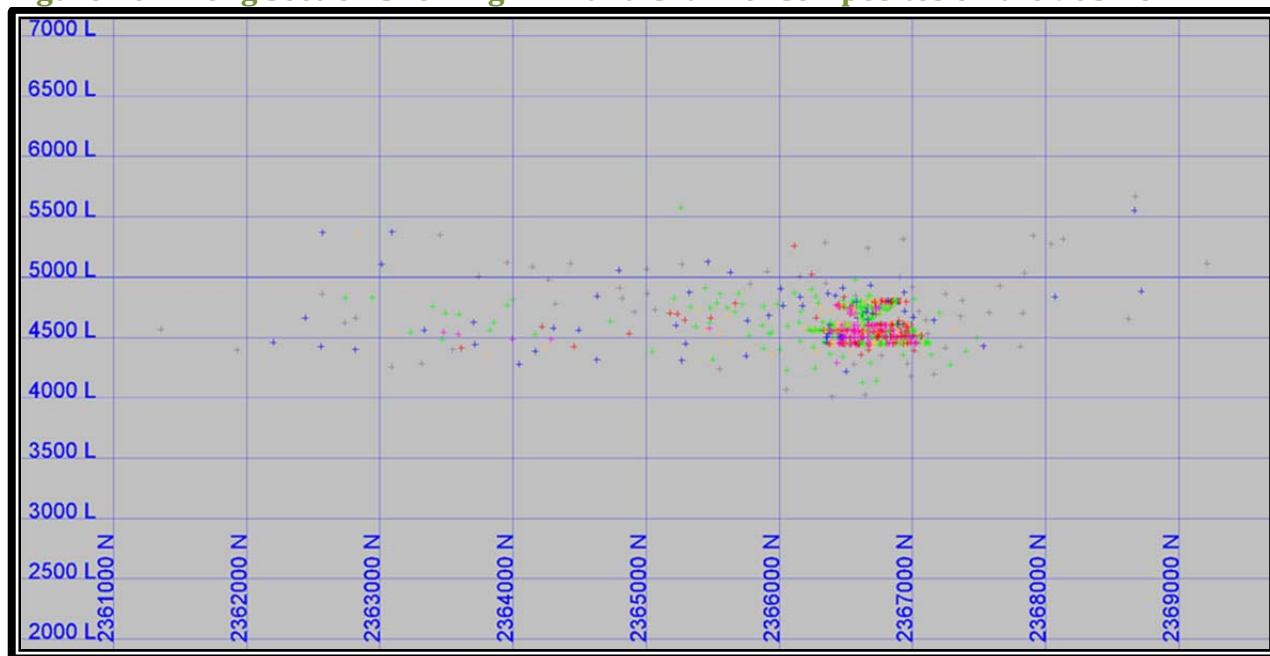
**Figure 10-4 Long Section Showing Drill and Channel Composites on the 205 Vein**



**Figure 10-5 Long Section Showing Drill and Channel Composites on the 505 Vein**





**Figure 10-6 Long Section Showing Drill and Channel Composites on the 805 Vein****Figure 10-7 Long Section Showing Drill and Channel Composites on the 905 Vein**

## 10.2. Drill Core Sampling

In September 2014, authors of this report visited the Midas site but did not observe any drilling or sample recovery. The procedures used have been summarized from interviews with the Midas technical staff that have been employed at Midas by both Newmont and Klondex. These procedures are as follows:

1. Handling of the drilled core from the station includes drilling with a Diamec U8 core rig (other types of drill rigs have been used in the past). Drillers label core box lids with a unique Bore Hole Identification number (BHID, which includes the year), box number, and drilled interval. Drillers put the core in with top of drilled sequence leading the run in the box and end of drilled interval ending the run in the box. Drillers label the end of the run to the nearest one tenth of a foot, and measure and record the recovery in feet on wooden blocks, which are put at the end of the drilled interval.
2. Drillers stack full core boxes on a pallet in numerical order.
3. Drillers or geotechnicians either deliver the pallet to surface or take a partial delivery of core boxes in the back of their motorized underground personnel vehicle. They leave the pallet of core boxes (or individual core boxes on a spare pallet) at the core logging facility.

Collar locations and downhole surveys were conducted by Newmont staff with Newmont equipment, and the data uploaded directly into acQuire.

Channel samples along production drifts were also incorporated into this mineral resource estimate. The channel sample locations are stored as “synthetic drill holes” in AcQuire in order to utilize them spatially with software (northings, eastings, elevations, azimuth, dip, and length). The northing, easting, and elevation of the samples were derived from Vulcan after geologists digitized the channel sample locations into the digital underground drift asbuilt survey. The channel sample locations were not survey points that can be verified by the author, but the asbuilts are derived from surveys.

It is not known by the authors what percent of core recovery Newmont experienced at Midas. Since February 2014, Klondex’s percent of core recovery at Midas is 95%.

Material from core, rejects, RC chips, and pulps were stored by Newmont onsite within a fenced and protected facility. This practice has been continued by Klondex.

Newmont logged core utilizing electronic tablets and uploaded data directly into acQuire. Newmont’s logging protocols for core have not been reviewed by the authors. Klondex’s logging protocols are as follows:

- When core is delivered to the core shed, the core shed manager enters it into a core tracking spreadsheet located on the server. This allows the geologists to easily check core processing status.
- Core is laid out on the logging table.
- The logging form for the hole is downloaded from the AcQuire 4 data entry software to the logging computer.

- Geologists log details of lithology, alteration, structure, veins and sample interval directly into the logging computer.
- When the log is finished, it is uploaded from the logging computer to the database.
- Sample IDs are tracked on a separate “Master” spreadsheet. After the hole is logged, the geologist opens the spreadsheet named “Master”, which contains the sample IDs from the previous hole. The geologist over-writes the sample intervals from the previous hole with the sample intervals for the current hole then uses the next sample ID in the sequence to start generating sample IDs for the current hole. Once the geologist has generated the sample IDs, including IDs for QA/QC samples, the “Master” spreadsheet is over-written. Two copies are saved with the name of the hole. The first copy serves as the “cutsheet”, which is the document the geotechnician uses to sample the core. The cutsheet contains a ‘comments’ column which contains QA/QC information. The second copy has the comments column deleted and serves as the lab submittal.
- Sample IDs are loaded to the database.

### 10.3. Face Sampling

Face sampling methodology at Midas by Newmont and Klondex geologists is typical of narrow vein mining operations. The geologists collected material from the face by hand with a rock hammer to chip off multiple fragments in the face across the vein and wall rock representing all material from a variety of features, such as silicified patches, oxidized breccias, vug-fill, free gold, etc. The geologist collect various features proportionately within a measured zone for one sample as follows:

1. Before sampling and mapping a face, the geologist washes the face with water from a hose to expose the vein, structures such as faults, and alteration and to remove contaminants from the blast.
2. Sampling and mapping followed the wash.
3. Three samples were collected from the face: left wall rock, vein, and right wall rock from left to right. The area sampled was from the sill to the extent of reach by hand.
4. Samples consisted of chips removed by rock hammer into a bag, which was slipped inside a bucket.

*NOTE: A geologist pre-labeled the bags on the surface during pre-shift with a bar-coded sticky label, which was also stapled on. Additionally, the geologist also labeled the bags with a permanent magic marker.*

5. All samples had a three letter prefix followed by a six digit number: KSF000000 = channel sample.
6. After the sampling procedures were completed, the geologist mapped the face and recorded vein widths, sample locations, and structural features in hand-written notes on a face sheet.

7. The geologist marked the vein margins, structures, face heading, and distance with spray paint on the wall rock.
8. The geologist took the bagged samples to the geology office and hand-entered data into a central Excel spreadsheet including SampleID, face distance, date, geologist name, sample widths, and a geologic description of the sample.

*NOTE: The location of the sample channels are measured from known points along the drift alignment and posted on face sheets and plan maps. Location sheets are then scanned. Channel locations (faces) are digitized with Vulcan Software. Channel collar eastings, northings, and elevations are obtained using Vulcan software. Individual sample widths are obtained from mapping at the time of sampling. Channel location coordinates are exported from Vulcan into CSV (comma-separated values) formatted collar files. Sample width values are hand entered into CSV formatted sample files with assay results pasted from laboratory reports. The channel sample files are then imported into Vulcan Software and modeled as synthetic drill holes using the eastings, northings, elevation, width, and assay values.*

9. All samples collected within a twelve-hour shift were entered into a sample submittal form, which was saved on the company server.

*NOTE: QA/QC samples were not inserted in the channel sample stream at Midas. Channel sample assays were performed at Newmont's Twin Creeks laboratory rather than an independent assay lab. Twin Creeks analyses production and grade control samples for Newmont's other western Nevada mines. The past production history of over 2 million gold ounces from the Midas Mine supports the validity of the channel samples, and the authors believe that they are accurate.*

10. The samples were sent to the assay lab after every twelve-hour shift.

Klondex has an agreement with Pinson Mining Company (PMC) to lease PMC's assay laboratory and has staffed the facility with Klondex personnel. Klondex now sends channel samples to the Pinson lab for analysis. A blank is inserted into the channel sample stream at least once per shift. Otherwise, channel sampling protocol has remained unchanged.

The authors are not aware of any drilling, sampling or recovery factors that could materially impact the accuracy and reliability of the results.

## **11. Sample Preparation Analysis and Security**

### **11.1. Core Sample Preparation**

Core is sampled after the core logging procedure is complete. Only mineralized intervals are sampled in holes drilled for delineation purposes. Mineralized intervals are identified by projecting modeled mineralized trends to expected down-hole intercept depths and by experienced staff consistently recognizing mineralization characteristics. Holes drilled for exploration purposes would be sampled entirely. All of the Klondex drilling to date has been for delineation purposes.

Once a mineralized interval is identified, the geologist chooses sample intervals with the goal of obtaining the best possible characterization of the interval. Samples are taken across the mineralized interval, consuming the whole core, beginning and ending in waste beyond the margins of the interval. Minimum sample length is 0.8 feet, and maximum sample length is 5 feet for NQ size core. A standard or blank is inserted in the sample stream every 25 samples with a minimum of 2 QA/QC samples per hole.

Samples are placed into cloth sample bags according to their sample intervals. Sample bags are labeled with sample ID. Sample IDs for core holes begin with the KMC- prefix followed by 5 digits.

QA/QC samples for the hole are assembled and kept with the lab submittal form.

Sample bags are placed in a bin in the core yard to await shipment to American Assay Laboratories (AAL) in Reno, Nevada. AAL is an ISO 17025 accredited facility and is independent of Klondex. When enough samples have accumulated to constitute a full shipment, the AAL driver is called to the core shed. Bins of samples are loaded onto the AAL truck, and the submittals and QA/QC samples are handed to the driver.

When the core sampling procedure is complete, remaining core is discarded except for categorically unaltered basalt. Unaltered basalt is thoroughly chip sampled and set aside. The chip samples are sent to AAL for analysis. If the result of the analysis is below the detection limit, the basalt is used for blank QA/QC material. If the result of the analysis yields a measurable result, the basalt is discarded.

### **11.2. Channel Sample Preparation**

The following outlines the channel sample preparation methodology.

Channel samples at Midas were bagged on site at the face;

Full bags were brought to the Geology office;

QA/QC materials were not inserted into the channel sample dispatch; and

Channel samples were delivered to the Pinson lab every shift.

### **11.3. Sample Analysis Protocol**

Drill samples are analyzed by AAL. The sample analysis protocol is as follows:

1. Each sample of core will be dried and crushed to a state that permits 80% of the sample passes through a 10 mesh screen;
2. The sample is then split using a rotary splitter to 1,000 grams;
3. The 1000 gram splits are then pulverized to a state that 80% of the sample passes through a 200 mesh screen, creating a “pulp”;
4. Returning to the original 1,000 gram pulp, 50 to 60 grams are then analyzed by fire assay for gold and silver with a two acid digestion and an ICP finish;
5. Samples that are over 10 PPM Au or 100 PPM Ag then receive a 50 to 60 Gram Fire assay with a gravimetric finish for gold and silver;
6. All results will be reported in opt Au and opt Ag;
7. All coarse rejects and pulps are returned to the Klondex Midas core shed by American Assay courier during normal sample pickup; and
8. Sample turnaround time is 20 calendar days from the date the samples are picked up at the Midas core shed.

Channel samples are analyzed by the Klondex lab. The channel sample analysis protocol is as follows:

#### **Sample Preparation:**

- Sample received, inventoried, panned, and dried at 250° F;
- Sample crushed to 80% passing 10 mesh;
- Crusher cleanout rock/air after every sample, high grade cleanout twice;
- Sample homogenized, 300 gram riffle split taken;
- 300 gram split pulverized to 85% passing 200 mesh; and
- Pulverizer cleanout sand/air after every sample, high grade cleanout twice.

#### **Fire Assay:**

- 30 gram prepared sample weighed in 40 gram crucible for fire assay gold/silver;
- Sample custom fluxed for oxide/sulfide matrix;
- Quality Control (QC), Certified Reference Material (CRM), blank, and 5% analytical duplicates inserted and reported by batch;

- Sample are fused, poured, cupelled, and finished gravimetrically; and
- Gold/silver grades calculated.

#### 11.4. Sample Security Measures

Sample pulps and coarse rejects are returned to the Midas core shed, a fenced facility. Pulps are stored in shipping containers at the core shed facility. Coarse rejects are sorted, high grade samples are saved, and waste samples are discarded.

#### 11.5. Historic Quality Control Measures

Starting in 2008, Newmont geologists routinely inserted blind standards and blanks with the drill core samples submitted to ALS for assaying. These standards and blanks were selected from an inventory of QA/QC materials maintained by Newmont at their Nevada operations. The authors have reviewed the gold assay QA/QC performance for drill core submitted to ALS by Newmont from about 5 percent of the drill hole data used in the current estimation. Most Newmont standards were not certified for silver, so the silver QA/QC data for Newmont drill samples were not reviewed. Gold and silver QA/QC data for the channel samples was also not reviewed by the authors.

ALS is an independent laboratory and has branches located worldwide, and locally in Sparks and Elko, Nevada. Most ALS Geochemistry laboratories are registered or are pending registration to ISO 9001:2008, and a number of analytical facilities have received ISO 17025 accreditations for specific laboratory procedures.

The performance of standard samples submitted with drill core to ALS is summarized in Table 11-1 below, and graphical results for individual standards are presented in Figure 11-1 through Figure 11-8. All of these results are within acceptable statistical limits with the exception of standard GVL. The value for standard GVL of 0.0049 gold opt is below the detection limit for the assay method employed by ALS on the Midas drill core samples, and the discrepancy is insignificant.

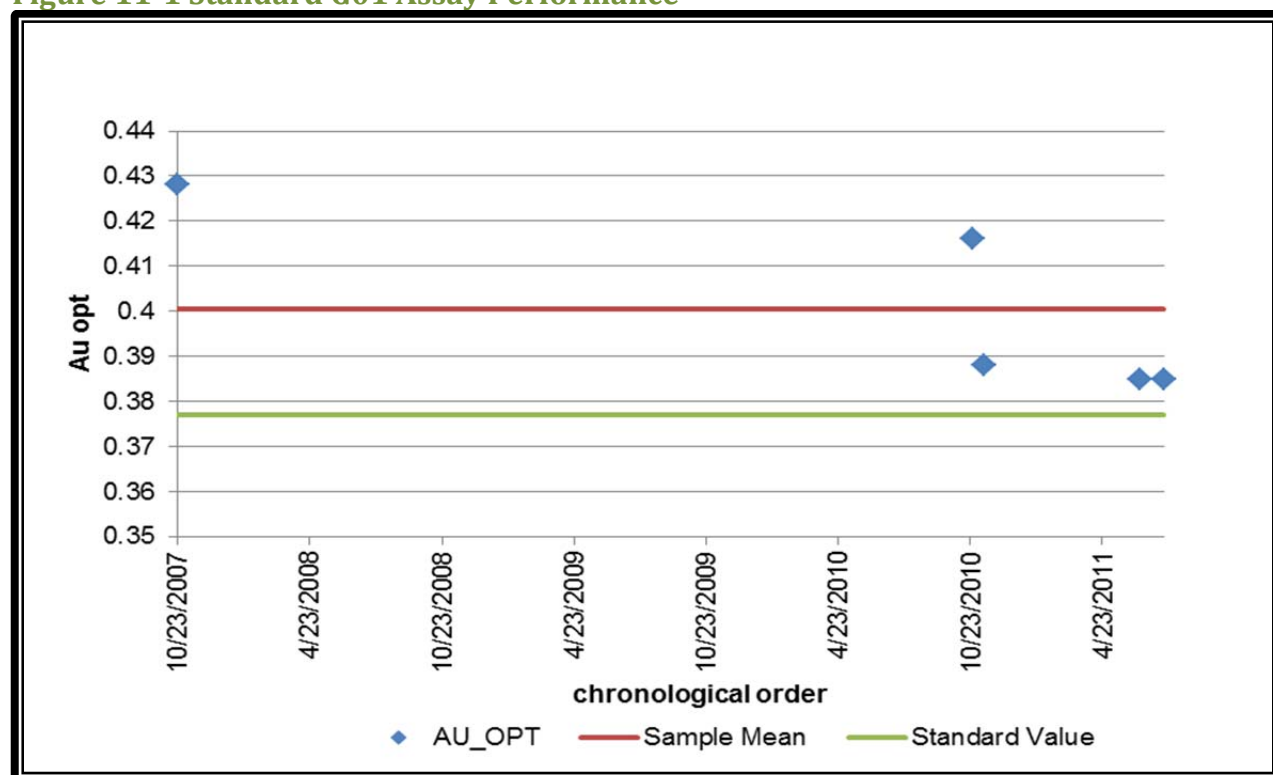
**Table 11-1 Newmont Standard Performance Summary, Drill Samples, ALS**

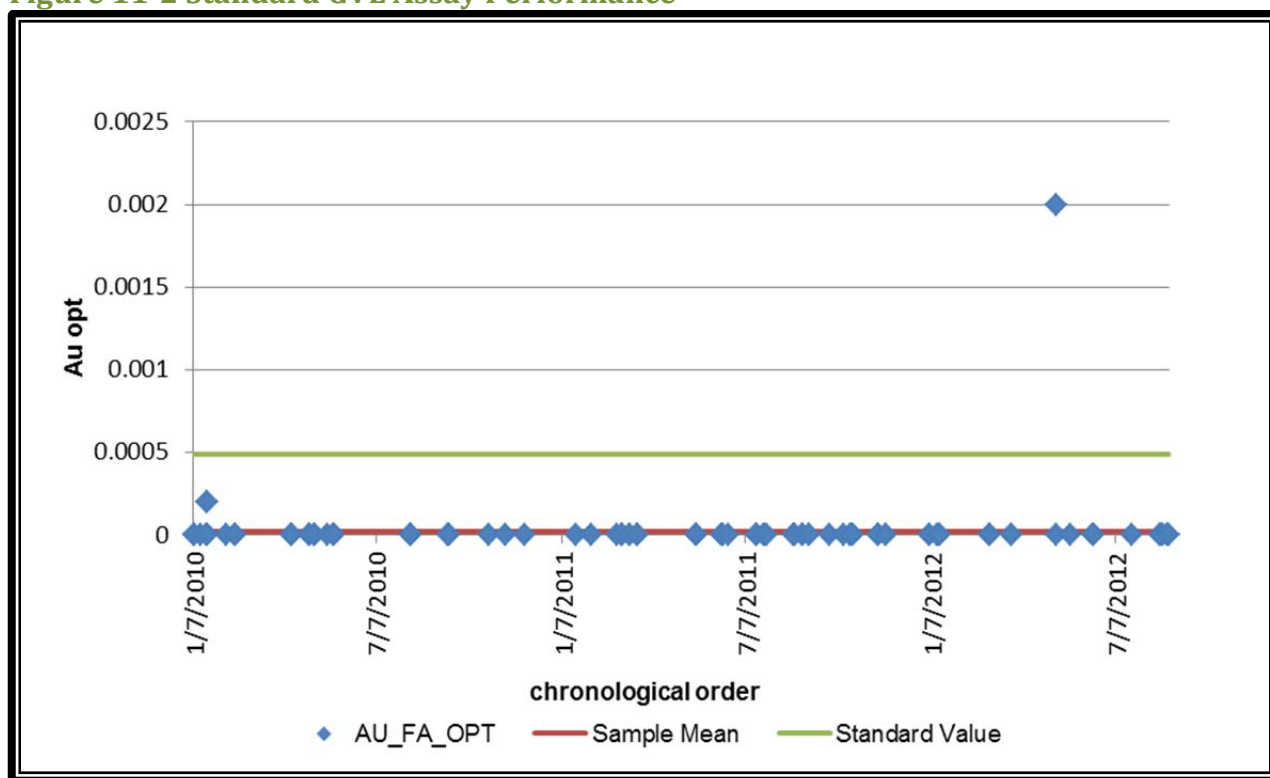
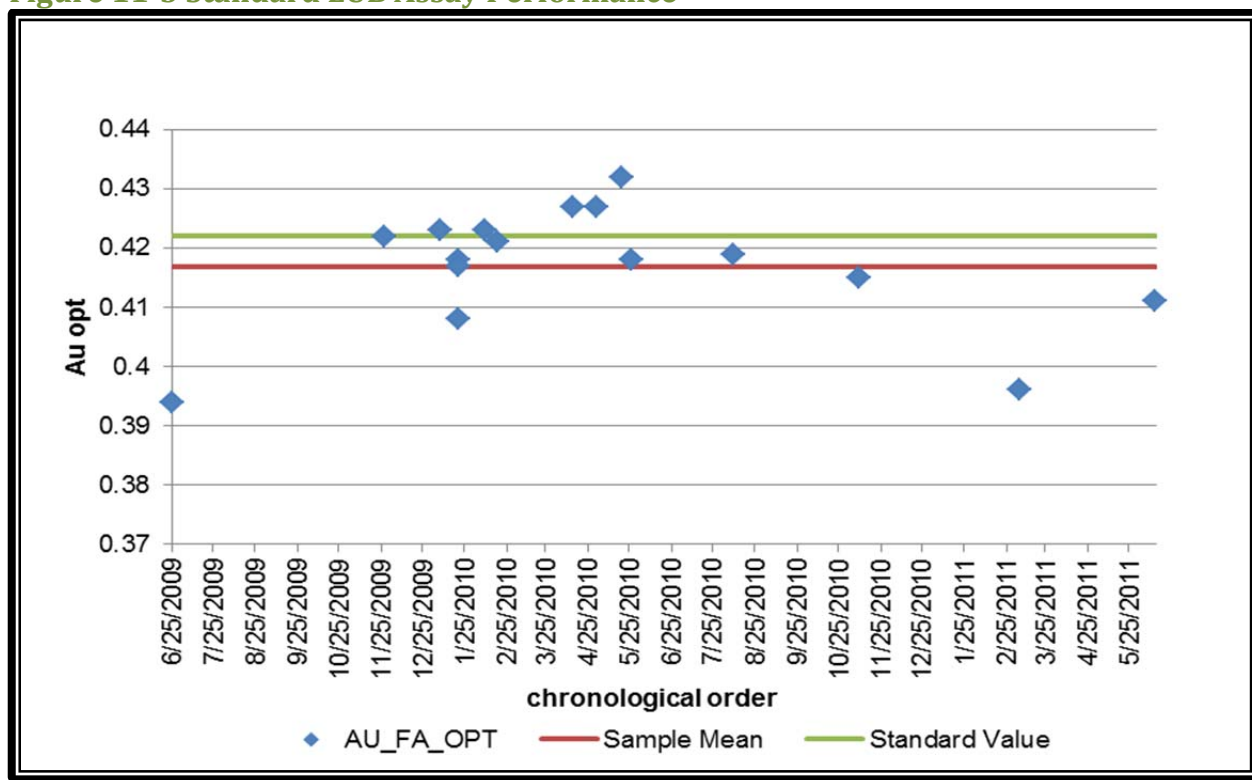
Standard							
Standard	Value	Count	Mean	Std. dev.	T-statistic	T 0.95	Comment
G01	0.377	5	0.4	0.02	2.589	-2.775	Accept
GVL	0.00049	135	$5.9 \times 10^{-6}$	$3.4 \times 10^{-5}$	-31.61	-1.978	Detection Limit
LUB	0.422	16	0.417	0.01	-1.94	-2.131	Accept



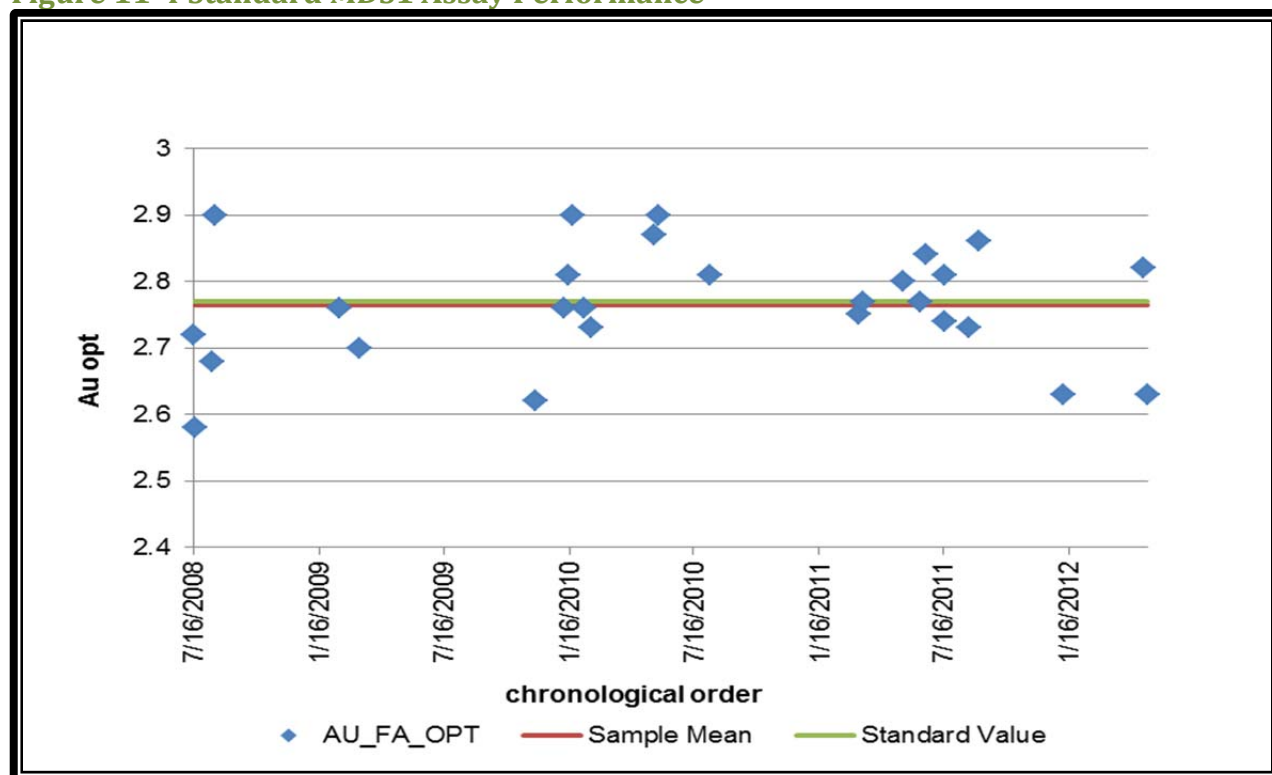
Standard	Standard Value	Count	Mean	Std. dev.	T-statistic	T 0.95	Comment
MDS1	2.77	27	2.765	0.088	-0.308	-2.056	Accept
MS7	0.079	41	0.078	0.003	-2.129	-2.021	Inconclusive
PR6	0.013	25	0.013	0.003	0.892	-2.064	Accept
G399-5	0.0254	4	0.028	0.005	1.291	-3.182	Accept
MS1	0.00298	3	0.00693	0.004	1.842	-4.303	Accept

Figure 11-1 Standard G01 Assay Performance

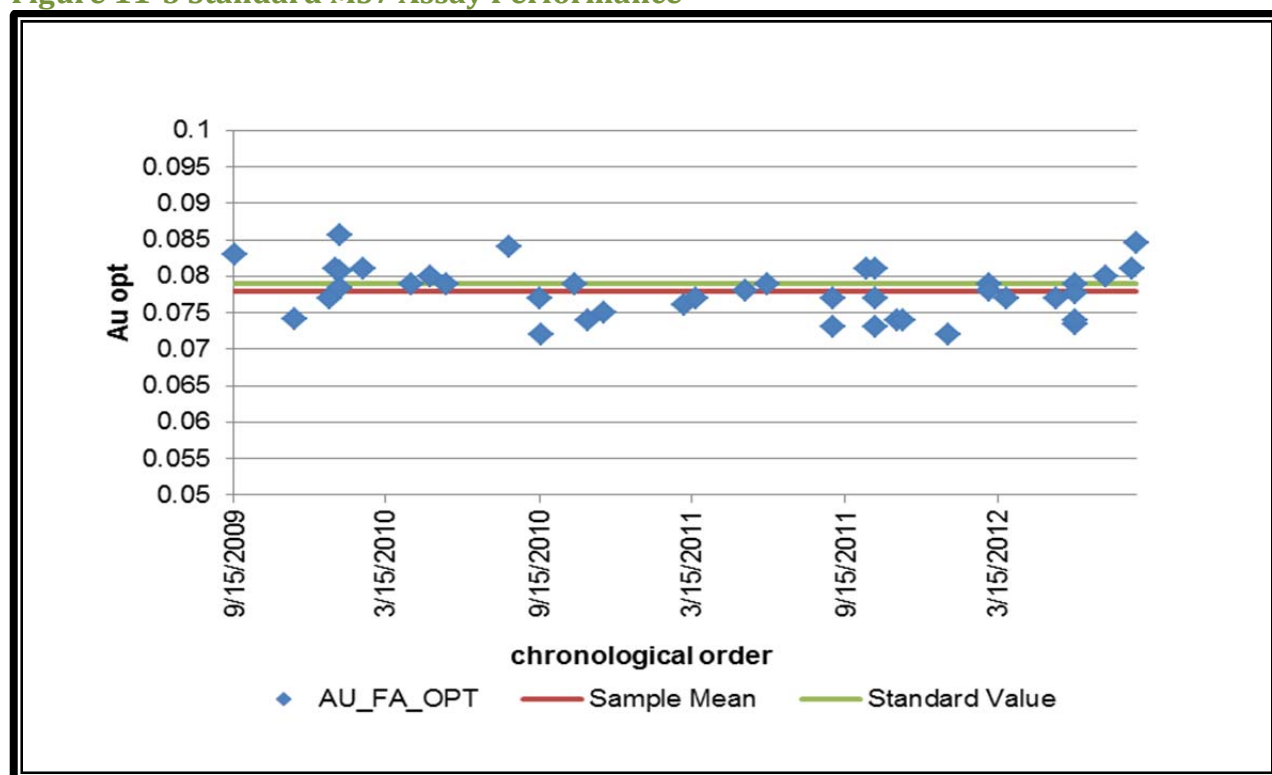


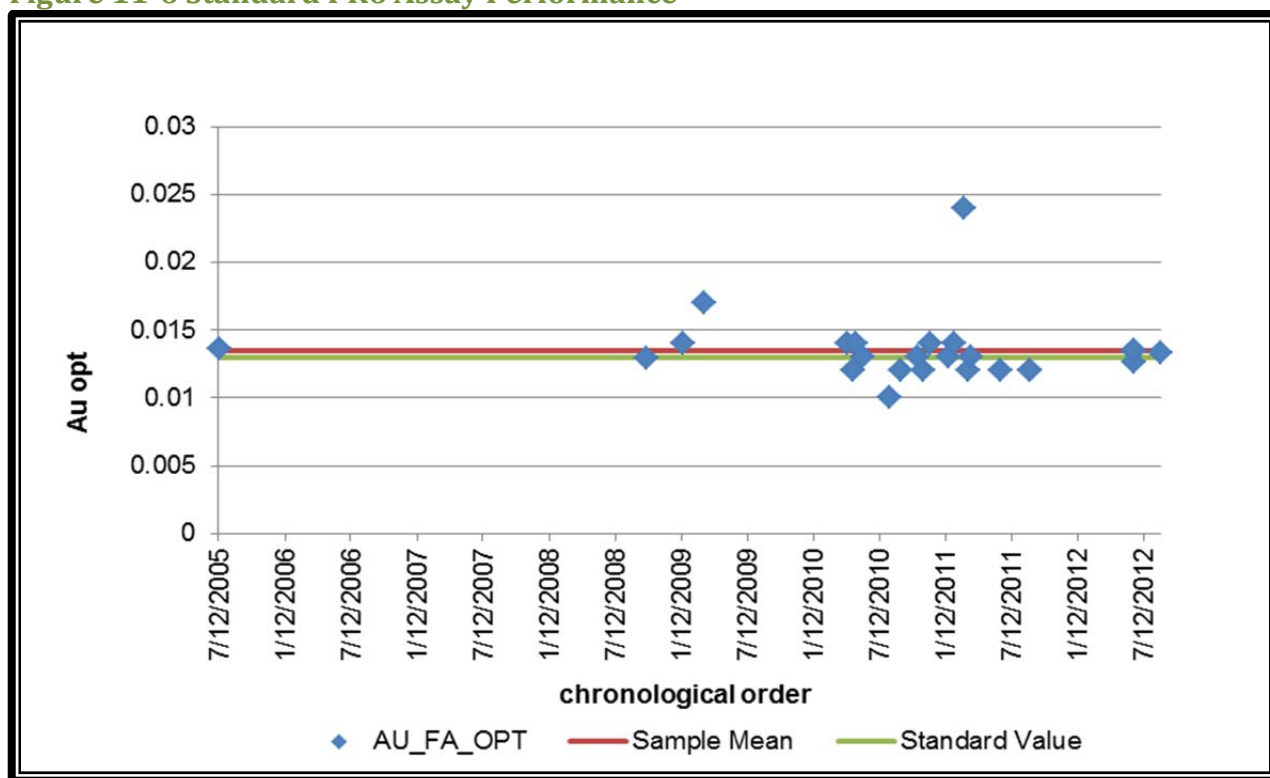
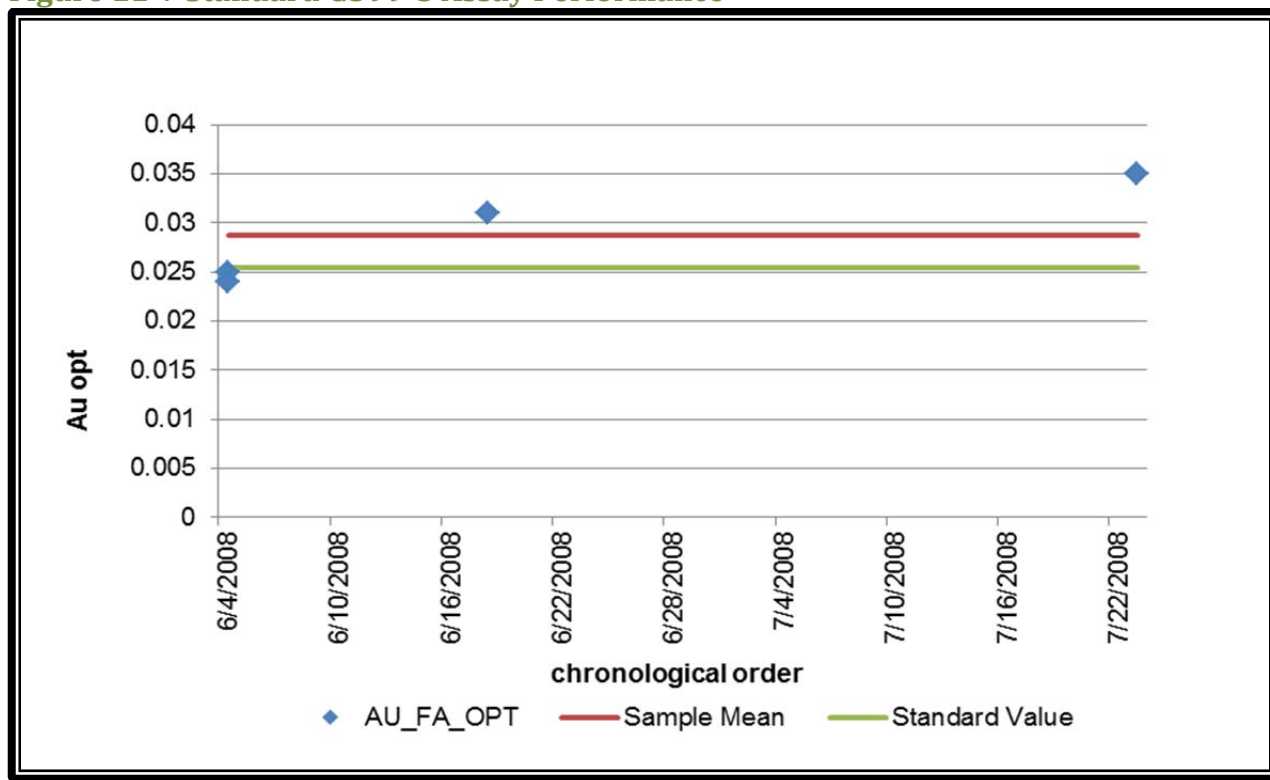
**Figure 11-2 Standard GVL Assay Performance****Figure 11-3 Standard LUB Assay Performance**

**Figure 11-4 Standard MDS1 Assay Performance**

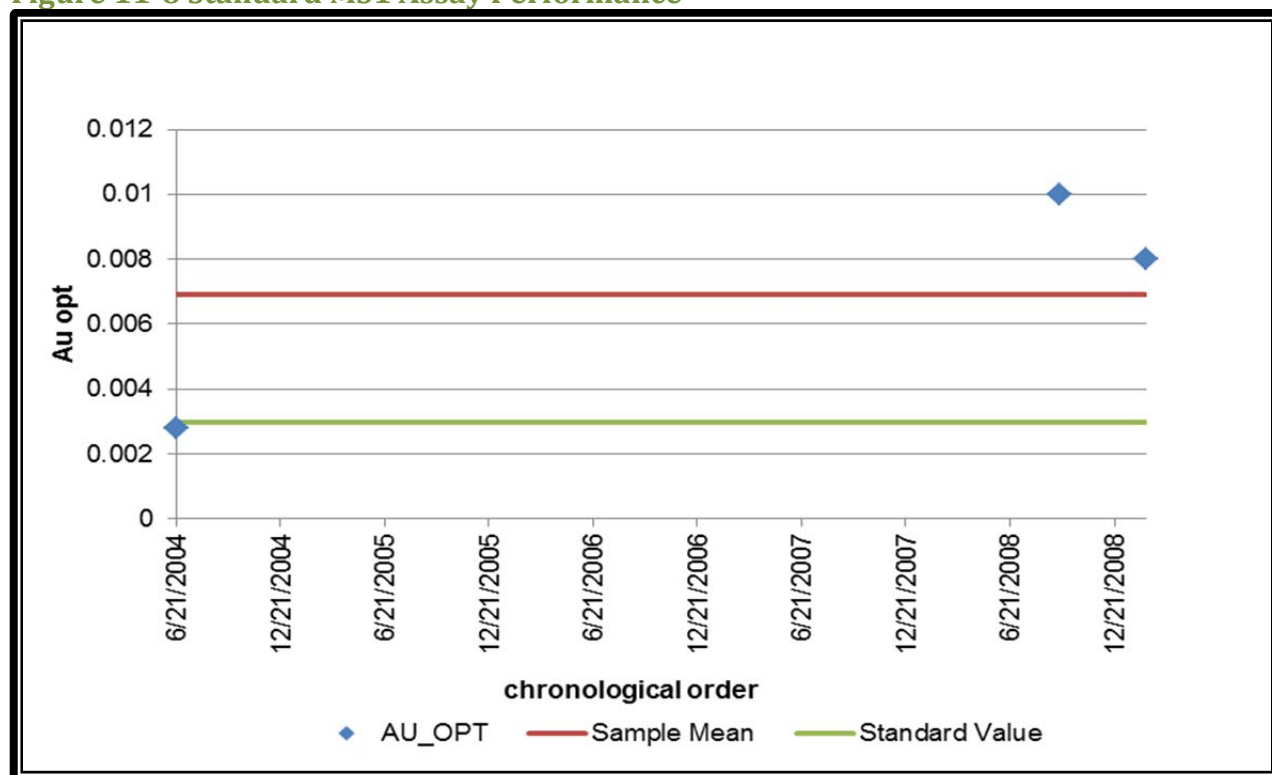


**Figure 11-5 Standard MS7 Assay Performance**



**Figure 11-6 Standard PR6 Assay Performance****Figure 11-7 Standard G399-5 Assay Performance**

**Figure 11-8 Standard MS1 Assay Performance**



#### 11.6. Current Quality Control Measures

The current QA/QC protocol for drill samples at Midas is to insert a standard, blank or duplicate every 25 samples, with a minimum of two QA/QC samples per hole, or at least one blank and one standard for holes with less than 25 samples.

For channel samples, a blank is inserted into the sample stream at least once per shift.

Pulps and coarse rejects from AAL are being set aside for check analysis. Check samples include high-grade intercepts and waste samples, which are representative of the core sampling method, involves sampling from waste, through the mineralized interval, back into waste. The check samples are accumulating at the core shed and have not yet been submitted to Inspectorate.

Klondex geologists routinely insert blind standards and blanks with the drill core samples submitted to AAL for assaying. Duplicates have been inserted irregularly. Klondex's inventory of QA/QC material currently consists of three standards purchased from Rocklabs, a reputable supplier of certified reference material. All three of the standards have certified values for both gold and silver. Blank material used for QA/QC is obtained by thoroughly chip sampling unaltered mafic drilled material. The chip samples are sent to AAL for assay analysis. If the assay results are below detection, the core is bagged in one foot to two foot increments and used as blank reference material.

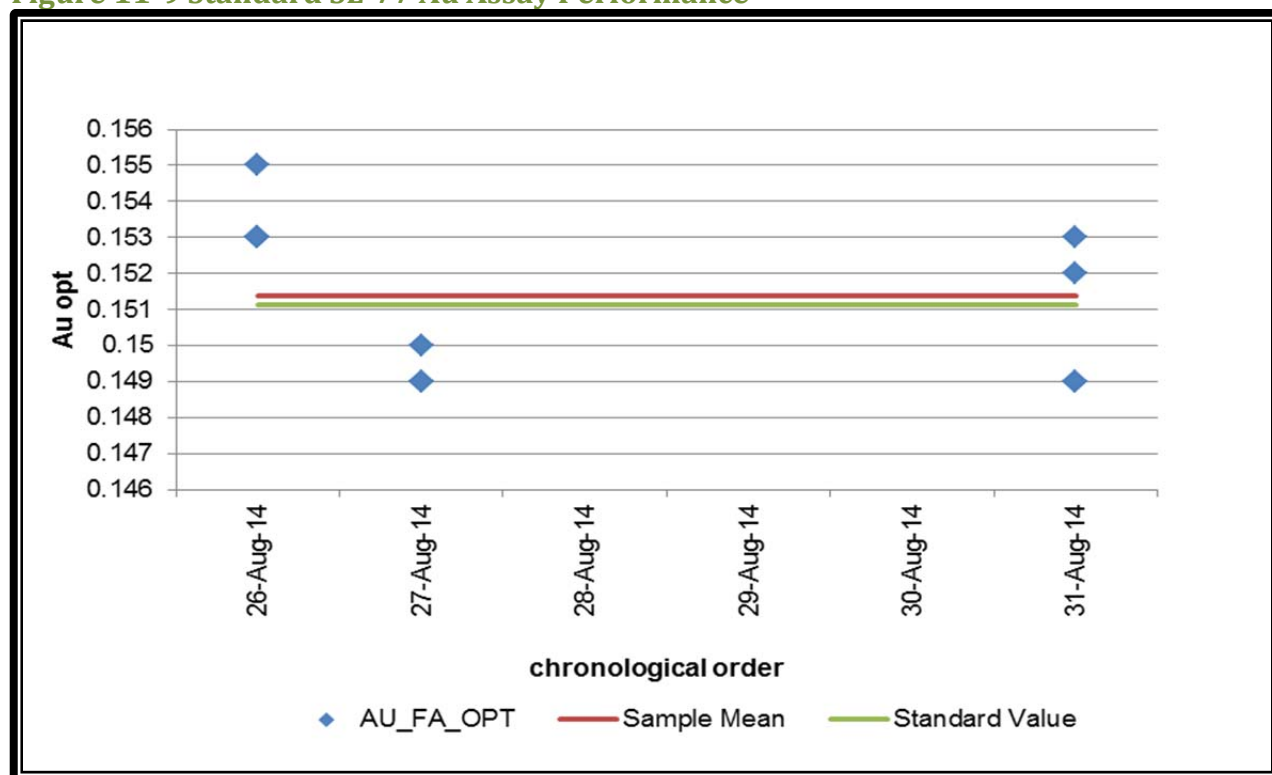
The authors have reviewed the gold and silver assay QA/QC performance for all 112 holes drilled by Klondex. All were submitted to AAL for analysis. The gold and silver QA/QC data for about five percent of the channel samples was also reviewed by the authors.

The performance of standard samples submitted with drill core to AAL is summarized in Table 11-2 below, and graphical results for individual standards are presented in Figure 11-9 through Figure 11-16. All of these results are within acceptable statistical limits with the exception of standard SN-74 for both gold and silver and blanks for gold and silver.

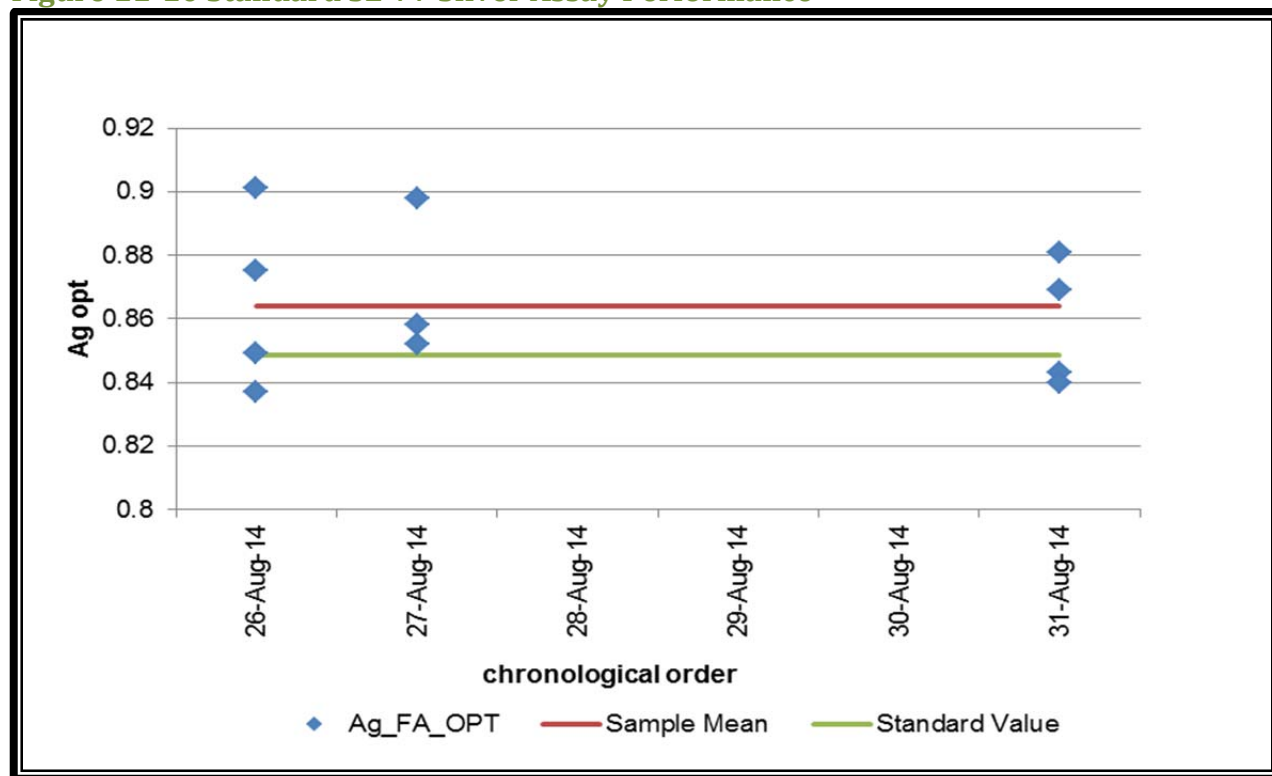
**Table 11-2 Current Standard Performance Summary, Drill Samples, AAL**

Standard							
Standard	Value	Count	Mean	Std. dev.	T-statistic	T 0.95	Comment
SL-77 Au	0.151	11	0.151	0.002	0.378	-2.228	Accept
SL-77 Ag	0.849	11	0.864	0.023	0.224	-2.228	Accept
SN-74 Au	0.262	16	0.259	0.003	-4.329	-2.131	Reject – Mean less than one std. dev. from value
SN-74 Ag	1.502	16	1.522	0.03	2.669	-2.131	Reject – Mean less than one std. dev. from value.
SQ-70 Au	1.156	13	1.156	0.015	-0.011	-2.179	Accept
SQ-70 Ag	4.652	13	4.708	0.119	1.688	-2.179	Accept
Blank Au	0	72	0	0.001	2.076	-1.994	Reject – 3 assays from Aug. 26 and 27 reported high values.
Blank Ag	0	72	0.006	0.012	4.419	-1.994	Reject – Several assays beginning Aug. 27 report high values.

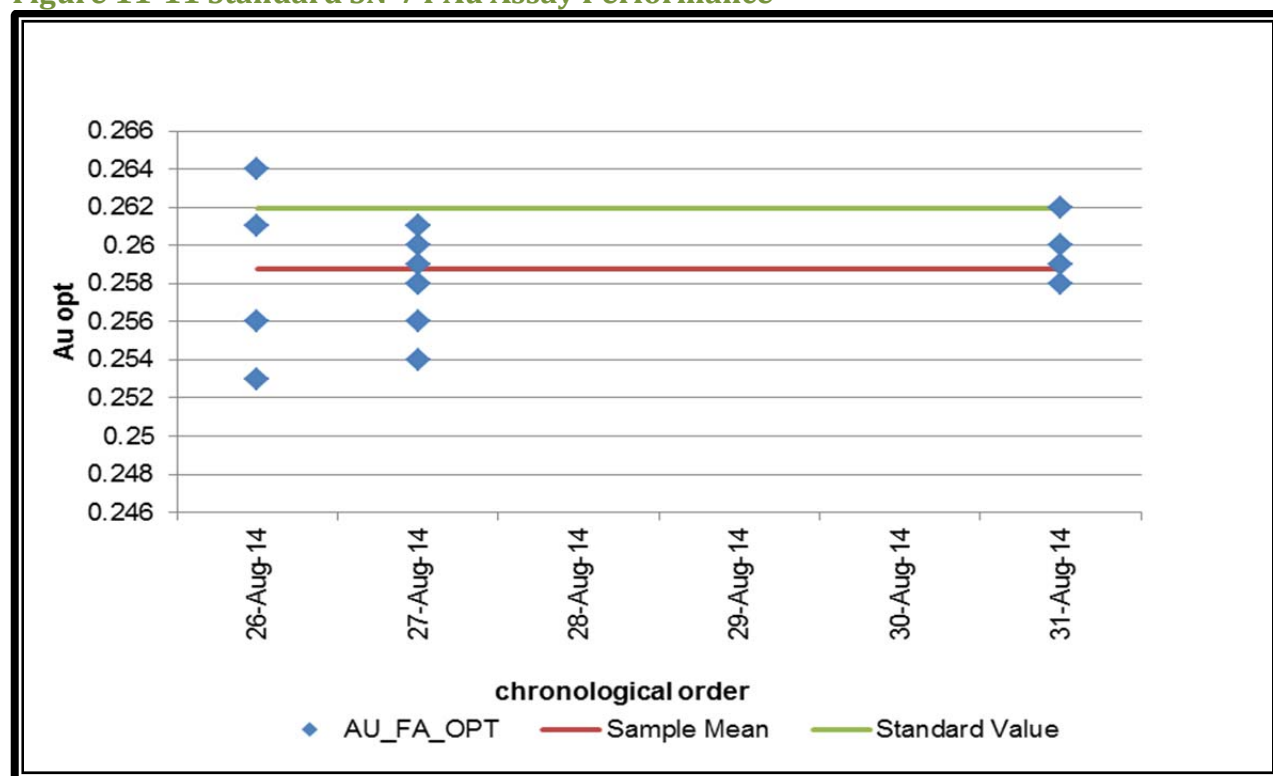
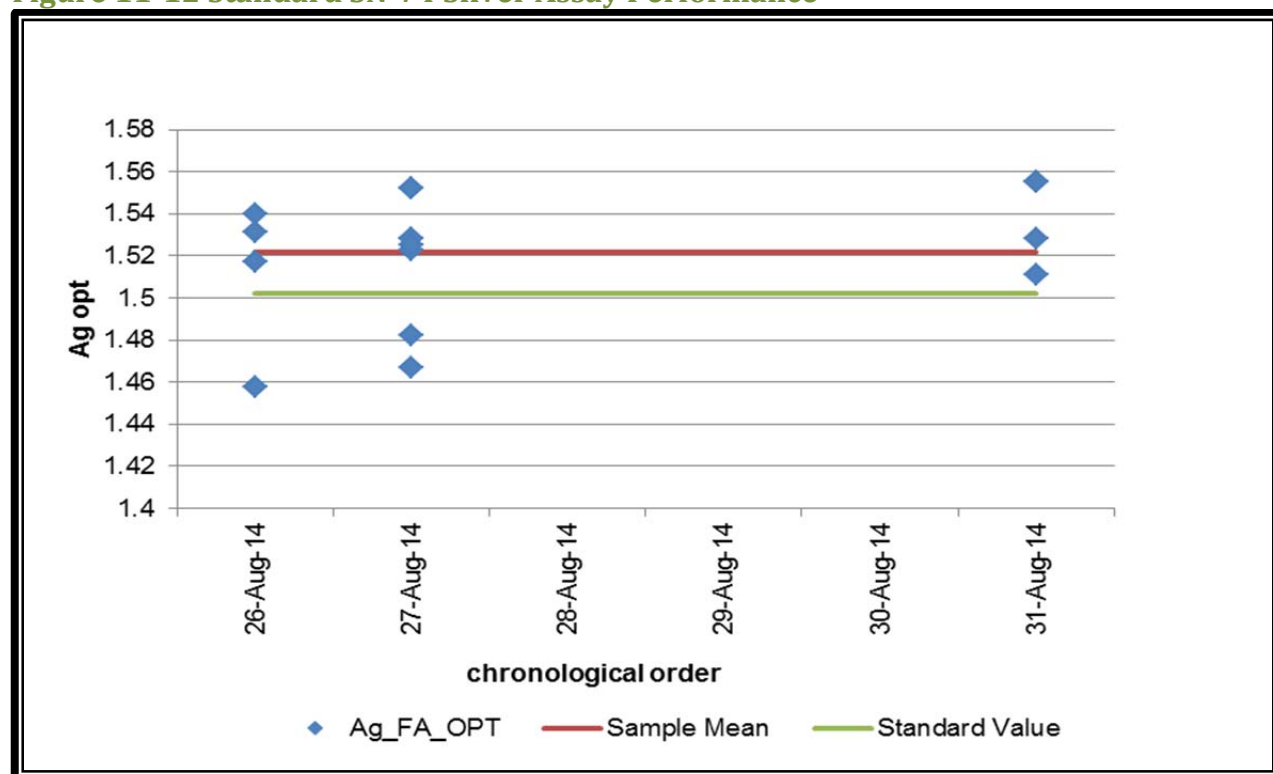
**Figure 11-9 Standard SL-77 Au Assay Performance**



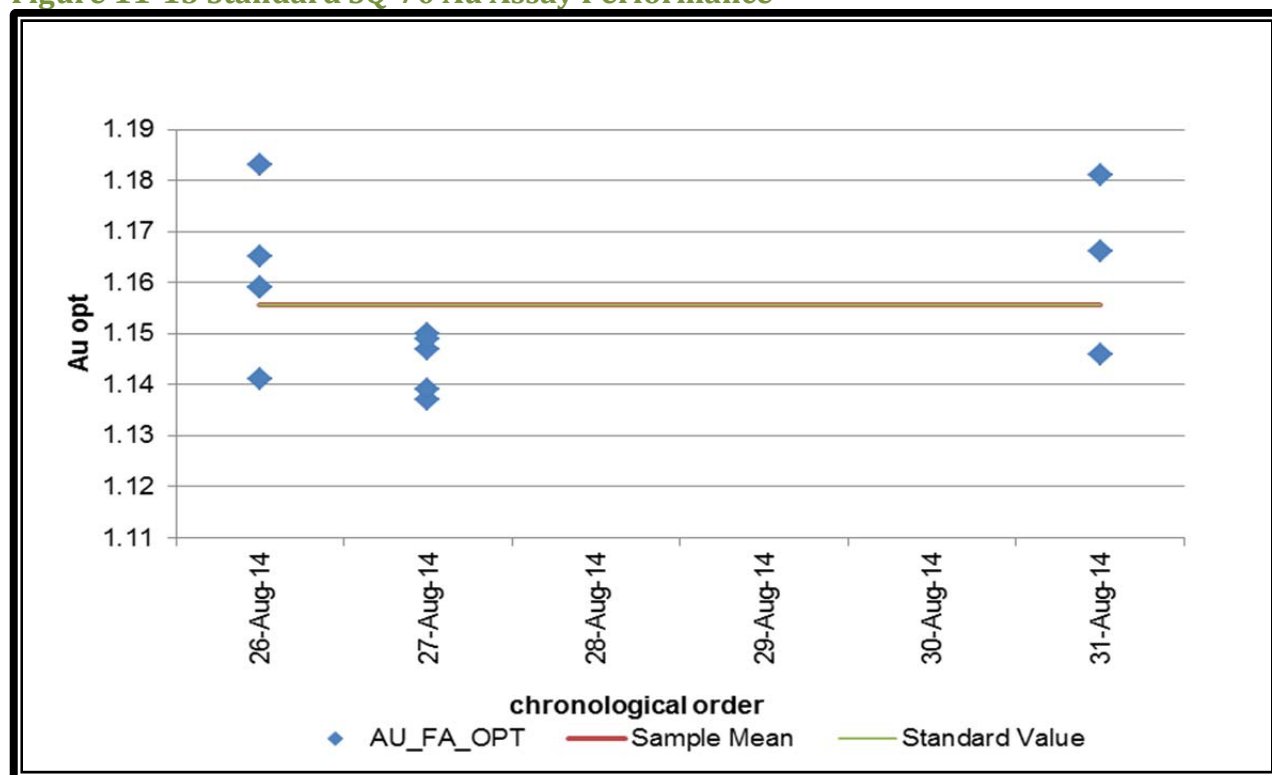
**Figure 11-10 Standard SL-77 Silver Assay Performance**



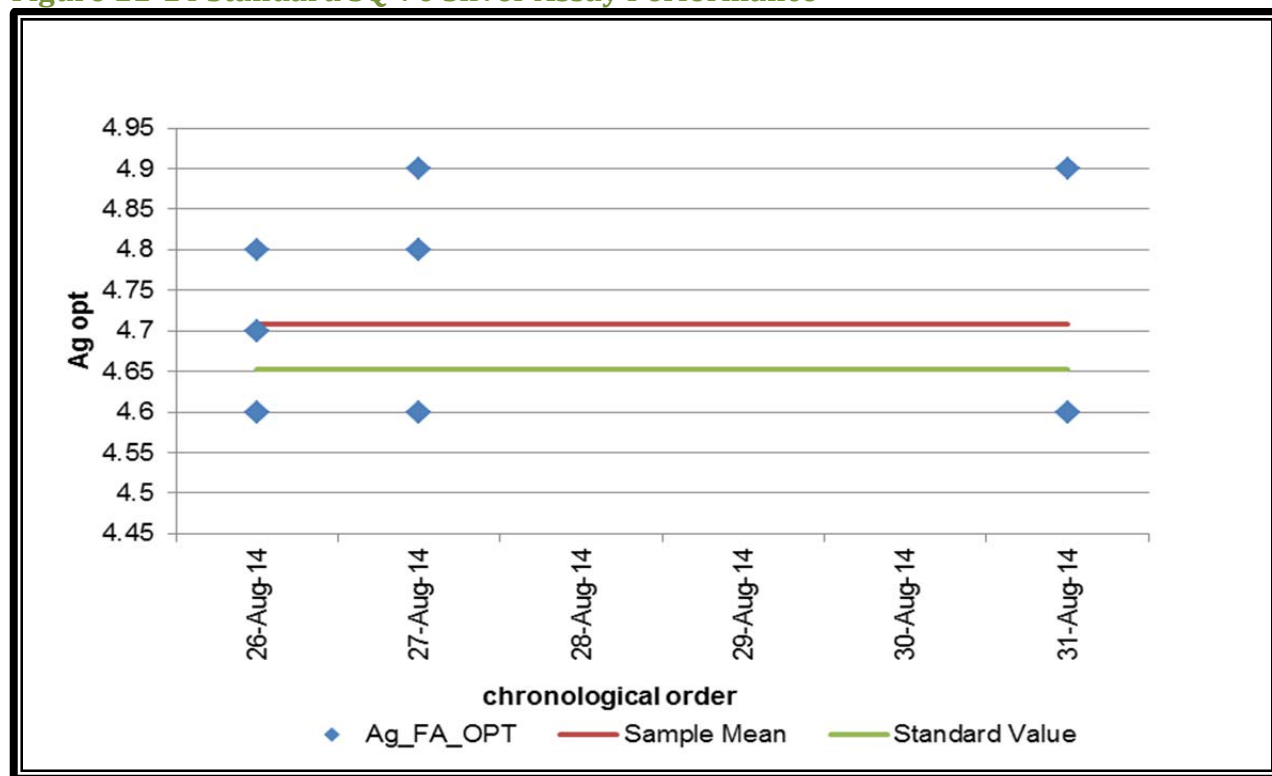


**Figure 11-11 Standard SN-74 Au Assay Performance****Figure 11-12 Standard SN-74 Silver Assay Performance**

**Figure 11-13 Standard SQ-70 Au Assay Performance**



**Figure 11-14 Standard SQ-70 Silver Assay Performance**



A scatter plot showing the relationship between 'Au opt' (Y-axis) and 'chronological order' (X-axis). The Y-axis ranges from 0 to 0.006 with increments of 0.001. The X-axis shows dates: 15-Jul-14, 25-Jul-14, 4-Aug-14, 14-Aug-14, and 24-Aug-14. The legend indicates three data series: AU\_FA\_OPT (blue diamonds), Sample Mean (red line), and Standard Value (green line). AU\_FA\_OPT values are mostly near zero, with a notable peak around 0.005 on 14-Aug-14. The Sample Mean and Standard Value lines are both very close to zero.

chronological order	AU_FA_OPT	Sample Mean	Standard Value
15-Jul-14	0.0030	0.0001	0.0000
25-Jul-14	0.0000	0.0001	0.0000
4-Aug-14	0.0000	0.0001	0.0000
14-Aug-14	0.0050	0.0001	0.0000
24-Aug-14	0.0020	0.0001	0.0000

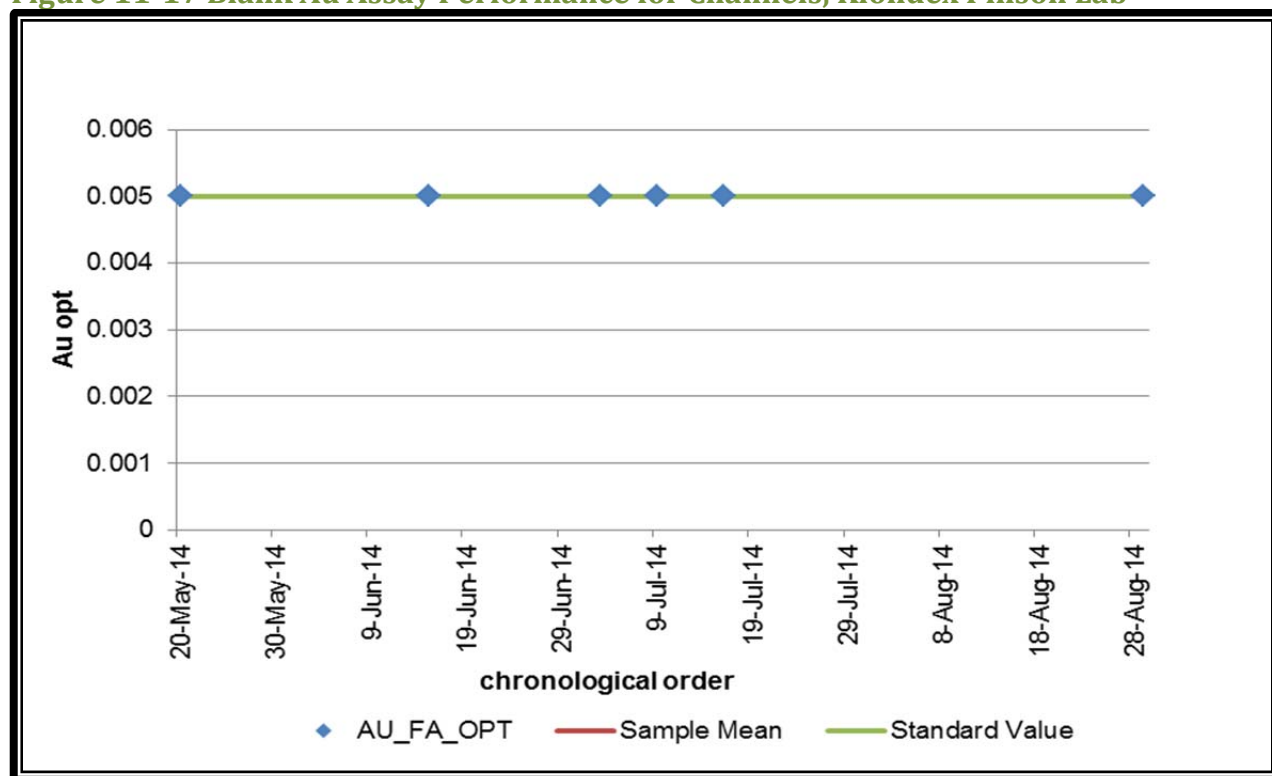
A scatter plot with 'chronological order' on the x-axis and 'Ag opt' on the y-axis. The y-axis ranges from 0 to 0.09 with increments of 0.01. The x-axis has labels for 15-Jul-14, 25-Jul-14, 4-Aug-14, 14-Aug-14, and 24-Aug-14. Three data series are plotted: 'Ag\_FA\_OPT' (blue diamonds), 'Sample Mean' (red line), and 'Standard Value' (green line). The 'Ag\_FA\_OPT' data points are scattered around the 'Sample Mean' line, with a notable peak around 14-Aug-14. The 'Sample Mean' line is relatively flat, and the 'Standard Value' line is at zero.

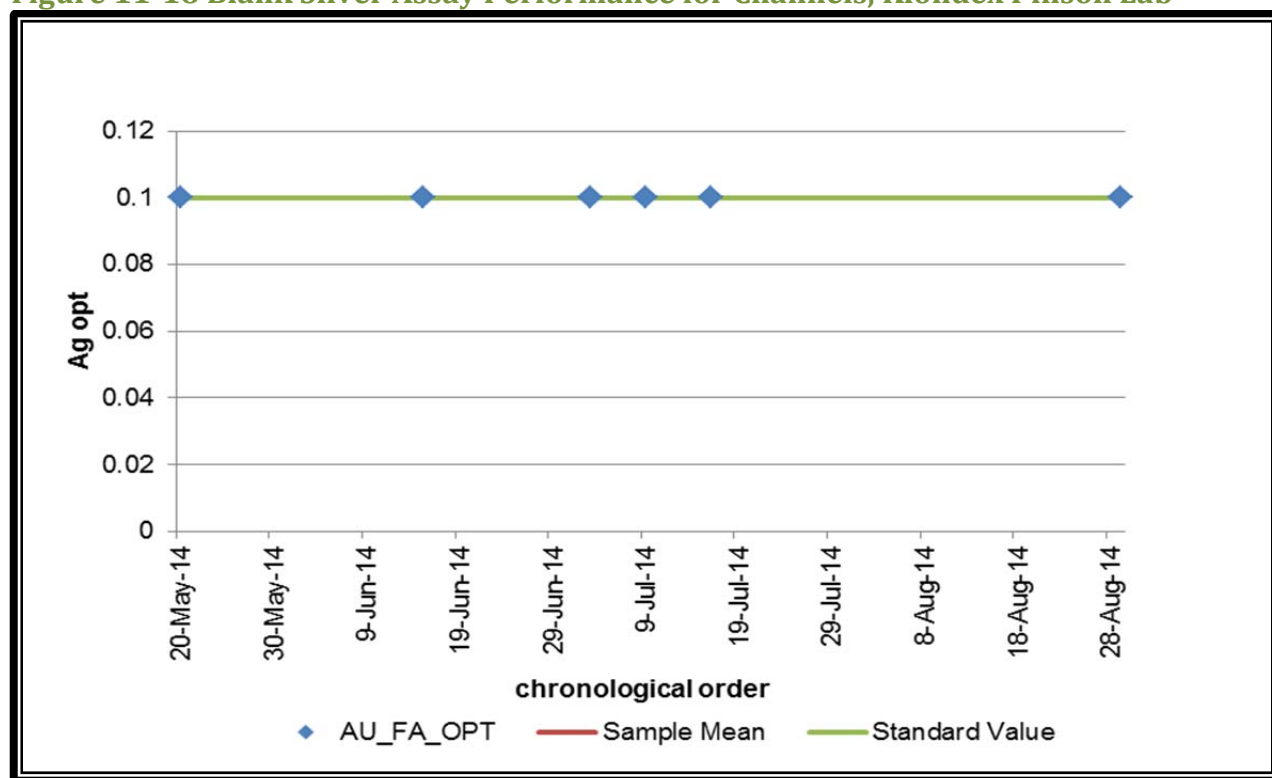
chronological order	Ag_FA_OPT	Sample Mean	Standard Value
15-Jul-14	0.015, 0.018, 0.020, 0.005, 0.000, 0.008	0.005	0.000
25-Jul-14		0.005	0.000
4-Aug-14	0.010, 0.012, 0.000, 0.005, 0.000, 0.000, 0.012	0.005	0.000
14-Aug-14	0.000, 0.000, 0.000, 0.008, 0.025, 0.047, 0.000	0.005	0.000
24-Aug-14	0.000, 0.000, 0.000, 0.005, 0.008, 0.012, 0.018, 0.080, 0.000, 0.000, 0.000, 0.005, 0.028, 0.023, 0.018, 0.005, 0.000, 0.000, 0.000, 0.008, 0.010, 0.012	0.005	0.000

**Table 11-3 Current Standard Performance Summary, Channel Samples, Klondex Pinson Lab**

Standard	Standard Value	Count	Mean	Std. dev.	T-statistic	T 0.95	Comment
Blank Au	0	6	0.0025	0			All values reported at ½ of detection limit.
Blank Ag	0	6	0.05	0			All values reported at ½ of detection limit.

**Figure 11-17 Blank Au Assay Performance for Channels, Klondex Pinson Lab**



**Figure 11-18 Blank Silver Assay Performance for Channels, Klondex Pinson Lab**

### 11.7. Opinion on the Adequacy of the Sampling Methodologies

Staff at Midas have shown a solid understanding with regard to management of the drilled core and associated digital data. The methods of handling the drilled material both physically and electronically, are acceptable for use in an analysis of the mineral resource; however, there exist system improvements that should be implemented. The anticipated implementation of the Klondex AcQuire database in 2015 will increase reliability of digital data.

### 11.8. Sampling Protocol Issues

There are no known issues with sampling protocol by Newmont or Klondex at Midas.

### 11.9. Standards and Blanks Performance Issues

There are no known quality assurance, quality control or sample security issues with sampling protocol by Newmont or Klondex at Midas. Klondex should implement a program of inserting standards and duplicates in the channel sample stream similar to that used for drill core. QA/QC procedures should be expanded to include duplicate assays at a second independent lab for both core and channel sampling. When the QA/QC sample for an assay set exceeds the acceptable deviation, the set should be rerun and the earlier results replaced in the data base. The implementation of the AcQuire database will streamline tracking of QA/QC results and re-assay data entry.

## **12. Data Verification**

### **12.1. Data Validation Procedures**

The authors of this report have reviewed Newmont and Klondex drill and channel sample data used for the current mineral resource and mineral reserve estimate. This review was performed for verification purposes to allow the datasets to contribute to evaluation of the mineral resource and mineral reserve estimate. The authors' work included review of protocols for data management and sample collection, preparation and analysis. Assay values from the Klondex database were verified by correlation with original assay certificates and by review of QA/QC procedures and results.

Midas geologists provided the Midas database and corresponding raw data files (source data) for the validation. The Midas database was derived by merging the Newmont AcQuire database with Klondex data. The authors analyzed a random population of data representing five percent of the total samples produced from drilled and channel sampled material used in the mineral resource and mineral reserve estimate.

In addition to verifying gold and silver values for sampled material, this validation also reviewed general technical data related to sampling, such as the location of the drill hole collars and downhole survey data. Geologic logs were also reviewed to validate the data used for shaping and projecting vein trends. Channel samples were verified by comparing the geologists' daily face sheets with sample interval and geology data. There were no assay certificates provided to the authors for Newmont channel samples because the channel samples were processed in-house at the Newmont's Twin Creeks laboratory and the results were uploaded from the assay Laboratory Information Management System (LIMS) directly into the Newmont AcQuire database system. Assay results for channel samples completed by Klondex were provided and reviewed.

Values were compared for direct correlation, record-by-record, between the original source data and the September 2014 tables exported from the Midas database used for the mineral resource estimation. The scale of detailed examination record-by-record produced a positive data validation covering 5% of the data used in the resource estimate, which upholds the integrity of the assay values for use in the mineral resource and mineral reserve estimate.

### **12.2. Datasets Submitted for Evaluation**

Two datasets, drilling and channel sampling, were used for estimating the mineral resource and mineral reserve. The authors compared the values in both data sets with the data in the source files. Source files were requested for 152 of the 2,990 drill holes used in the mineral resource estimate and 73 of the 18,041 channels used in the mineral resource estimate. Data categories reviewed include:

**Collar locations:** raw collar survey reports for 152 holes out of 2990 (about 5%) of the drill holes used in the mineral resource estimate. Survey reports were compared to values in the Midas database. (Channel locations are derived from geologist's measurements and do not have formal survey reports).

**Downhole surveys:** raw downhole survey reports for 112 holes and 40 collar and quill projected surveys out of 2990 (about 5%) of the drill holes used in the mineral resource estimate. (Channel surveys are derived from geologist's measurements and do not have formal survey reports).

**Lithology:** electronic or scanned paper geological logs for 152 out of 2990 (about 5%) of the drill holes used in the mineral resource estimate. For channels, geologist's face sheets for 35 Newmont channels out of 18,041 (about 0.2%) and 38 out of 295 Klondex channels (about 12%) of channel samples used in the mineral resource estimate. Reliability of Newmont channels has been supported by mine reconciliation, and unavailability of source data limit the value of a thorough check of Newmont channels.

**Sample intervals:** Newmont and Klondex electronic cut-sheets with SampleID and sample intervals for 5% of the drill holes used in the mineral resource estimate. Face sheets with SampleID and sample intervals for 12% of the Klondex channels used in the mineral resource estimate.

**Assays:** original ALS and AAL PDF assay result certificates for five percent of the drill holes used in the mineral resource estimate were compared with the Midas database. For Klondex channel samples, assay results in XLSX format from Twin Creeks Lab, Dave Francisco Lab and Klondex Lab were compared with the Midas database for 12% of the channels. There are no assay certificates for the Newmont channel samples.

Table 12-1 summarizes the number of records and percent of drilling and channel samples reviewed for this report.



**Table 12-1 Data Verification Summary**

Dataset	Total Samples Utilized Resource Estimate	Collar Az., Dip, TD Records Reviewed	XYZ, TD Survey Records Reviewed	Downhole Survey Records Reviewed	Sample Lithology Records Reviewed	Sample Intervals Reviewed	Sample Assay Certificates Reviewed
Drilled Samples	4,370	152		497	264	10,730	10,73
Klondex Channel Samples	36	N/A		N/A	43	76	76
Newmont Channel Samples	24,689	N/A		N/A	37	107	0
Totals	29,421	264		497	344	10,913	10,806
Percent of Population Reviewed		5%		5%	1%	1%	1%

### 12.3. Collar Location Checks

The authors reviewed 152 collar survey reports, representing about five percent of the drill holes utilized in this mineral resource estimate. Easting, northing, elevation and depth data from the original survey sheets were compared with the values in the Midas database. Two errors were found: two eastings were off by less than 1 foot from the collar survey report. This yields a 99.6% match between the original report values and the Midas database for drill hole collar locations. It is unknown to the authors in which datum the original surveys were collected or if the data was subsequently re-projected.

There were no channel sample surveys, but the location of the samples fits the surveyed asbuilts. For 38 of the 295 channels collected by Klondex, the authors checked geologists' measurements from the face sheets with the channel locations relative to the asbuilt and observed good correlation. In summary, the authors observe a positive correlation between original survey reports and the Midas database for drill hole collar locations. Channel sample locations show positive location correlation based on their projection relative to asbuilts.

### 12.4. Down Hole Survey Checks

The authors reviewed 6,497 original down hole survey records from International Directional Services (IDS) for 111 drill holes against the records in the Midas database. Collar and quill survey records were reviewed for 20 holes. Collar and quill surveys are used underground for short holes where little deviation is expected. The azimuth and dip is measured during the collar survey and projected to the total depth. In total, about five percent of the total down hole survey record population used in the mineral resource estimate was reviewed. There were 6,387 direct

matches and 110 records with discrepancies in the azimuth uniformly off by 10 degrees in the drill hole MUC-01889. The azimuth of that hole is not expected to impact the mineral resource estimate. In summary, 5% of the down hole surveys in Newmont's Acquire database were matched with original down hole survey records, demonstrating reliable data integrity. Channel sample locations show positive azimuth and dip correlation based on their projection relative to asbuilts.

### **12.5. Lithology Review**

From the 2,990 drill holes utilized in this mineral resource estimate, 152 (or about 5%) of the geological logs were randomly selected and reviewed by the authors. The vein flag field was the focus of the review because it is the component of the geology dataset that primarily affects the model. Of the 4,370 flagged records for drilled material used in the mineral resource estimate, 264 (or about 6%) were reviewed. One non-match was identified, yielding a 99.6% correlation.

Of the 295 Klondex channels used in this mineral resource estimate, 38 (about 12%) of the geological summaries in original face sheets were reviewed by the authors. Of the 18,155 Newmont channels used in this mineral resource estimate, 35 (about 0.2%) of the geological summaries in original face sheets were reviewed by the authors. In total, about 0.4% of channels were reviewed. No discrepancies were found in the channel vein identification. In summary, the Midas channel sample database shows excellent correlation with the correct vein identification.

### **12.6. Sample ID and Sample Interval Checks**

The drill hole sample records in the Midas database exports are sorted by their sampling interval and do not include SampleID in the tables. From the 2,990 drill holes utilized in this mineral resource estimate, 152 (or about 5%) of the sample intervals in original cut sheets were randomly selected and reviewed by the authors in comparison to the Midas database exported tables. From the 10,730 records reviewed for drilled material used in the mineral resource estimate, 10,723 sample intervals were directly matched to the cut sheets. Seven mismatched records were found but do not affect samples used in the mineral resource estimation. The sample intervals correlate well between the cut sheets and the Midas database.

Of the 25,051 channel samples used in this mineral resource estimate, 12% of Klondex samples and 0.15% of Newmont samples, or 0.3% of the sample intervals and SampleIDs in original face sheets were reviewed by the authors. There were 184 total records reviewed in the selected dataset with 100% direct correlation between the face sheet and the Midas database.

In summary, the Midas database shows excellent correlation with the sample intervals in the corresponding original cut sheets.

### **12.7. Assay Certificate Checks**

The authors compared assay values for samples from 152 drill holes in the Midas database to the original PDFs of certified assay results from ALS and AAL, which is about five percent of the total drill holes and includes 6% of the flagged drill samples utilized in this mineral resource estimate. In total, 10,730 samples were checked of the 201,033 samples from holes used in the mineral resource estimation. Thirty-two mismatches were identified in the gold values and 26 mismatches were identified in the silver values. There was one discrepancy in a sample used in the estimate: Hole MUC-02181 has a silver value of 156.22 opt Ag for sample interval 525.7 to 526.5, whereas the assay certificate has 116.5. The gold values match for this sample interval. It is possible that this sample, due to its high grade, was resampled, and the later assay certificate is the source of the larger silver value. In any case, both values contribute equally to the mineral resource estimate, and this discrepancy is not considered an issue by the authors. The other mismatches are in samples which were not used in the mineral resource estimate calculation. Most of the mismatches are minor and attributable to inconsistent choice of ‘best assay’ value for samples with more than one assay, rounding discrepancies and inconsistent handling of under limit values.

There were no assay certificates provided for the Newmont channel samples. This material was processed in Newmont’s own laboratories, and their LIMS uploaded assay results directly into Acquire without generating individual reports. Due to the excellent correlation between drilled sample results and the Acquire database, the methodology for uploading data from LIMS to Acquire is probably excellent, though a review of Newmont’s laboratory results or external audit of their lab has not been evaluated by the authors for this report. Assay values were checked for about 12% of Klondex channel samples. Two errors were found, neither of which affected a sample used in the mineral resource estimate. The errors were a result of manual data entry; values were swapped for two adjacent samples, and one gold value was entered as 0.016 instead of 0.061. Implementation of the Klondex Acquire database will prevent this type of data entry error.

In summary, the Midas database demonstrates excellent correlation with the original assay certificates for drilled material; but the assays for Newmont channel samples are reliant on supposing that the Newmont in-house laboratory produces accurate assay results. The upload of Newmont’s LIMS data to Acquire was probably seamless. The assay data for Klondex channel samples is acceptable.

### **12.8. Format Conversions**

Gold and silver assay results from ALS were reported to Newmont in both opt and in ppm. Newmont directly imported the assay values into Acquire and relied on Acquire to automatically adjust the units. Gold and silver assay results from AAL are reported to Klondex in

both opt and in ppm. Conversions are made in Excel when necessary. The authors observed that the calculations have been performed correctly.

### **12.9. Summary of Database Verification**

The database utilized for this mineral resource estimate complies with standards prescribed by CIM protocol.

In summary, 5% of each data set (with the exception of channel assays) under review was verified against original source data as listed above for accuracy. The authors consider that the validation work for this report is at a sufficient level to allow the use of the database in a CIM mineral resource estimate. In particular, the accuracy of the assay database has been quantified by independent review for five percent of the drill hole assays by direct correlation with assay certificates from accredited laboratories. The author's verification of the results indicates there is no significant grade bias in the primary laboratory data.

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

The Midas Mill has been in operation since 1998 and has successfully recovered over 2.2M ounces of gold and over 27M ounces of silver.

#### **13.1. Midas Mill**

The Midas Mill uses conventional leach technology and Merrill-Crowe precipitation, with gravity concentration after crushing and grinding. A complete process description is given in Section 17.

#### **13.2. Mineralogy**

As the Midas underground mine has matured, production has shifted from the Main Veins to the East Veins. The metallurgy of the East Veins may be complex and has been the focus of metallurgical testing in recent years.

##### **13.2.1. Main Veins**

Main Vein mineralization contains free-milling gold, associated with silver in electrum. Small amounts of silver associated minerals also contain recoverable silver values.

##### **13.2.2. East Veins**

The East Veins have gold values that are diminished compared to the Main Veins. The ratio of silver to gold is much higher in the East Veins. Mined silver-to-gold ratios in the East Veins can be as high as 50:1 and average approximately 22:1. Silver occurs in gold related electrum as well as in various sulfide and selenide minerals.

Primary silver minerals in the Midas East Veins are argentite ( $\text{Ag}_2\text{S}$ ), naumannite ( $\text{Ag}_2\text{Se}$ ), and aguilerite ( $\text{Ag}_4\text{SeS}$ ). Processing and recovery of these clay-related minerals have been studied by Newmont metallurgists. It has been determined that silver selenides are less soluble than electrum and argentite. Successful recovery requires a combination of finer grinding, higher levels of cyanide in solution, and increased leach retention times.

#### **13.3. Testing and Procedures**

Third party metallurgical testing results are not available. Newmont conducted extensive testing, both on-site and at other Newmont laboratories.

Recent Midas test work focused on the East Vein mineralization. Analysis included iterative leach tests varying the following parameters: blend, grind, leach time, cyanide, zinc, and leach catalysts such as lead-nitrate.

Metallurgical test work was completed on multiple requested Midas Eastern Expansion composites made up of exploration samples. The composites represented defined areas of

Charger Hill, Ace, GP, Homestead, and Corral veins. Test parameters were targeted at a 75 to 80 percent passing a 200 mesh grind, and cyanide additions were monitored and maintained at 5.0 pounds per ton for the first twenty-four hours of a ninety-six hour residence leach. All percent recoveries are based on the back calculated head grades.

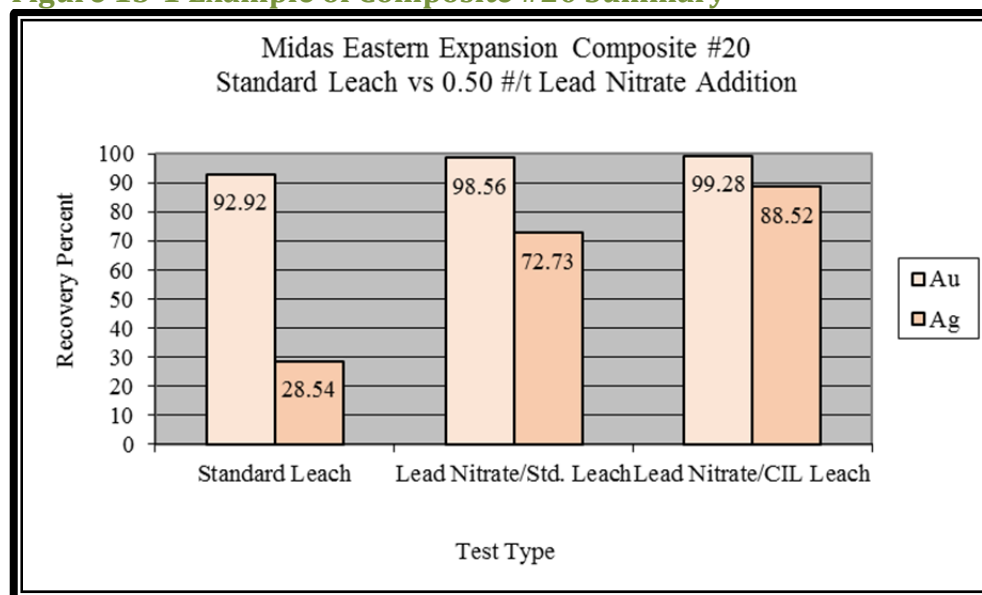
Table 13-1 indicates the type of samples that were used in East Vein test work starting in 2010 (Newmont Mining Corporation, 2010).

**Table 13-1 Midas Eastern Expansion Composite Mineralogy Head Descriptions**

Vein	Composite Sample	Au Recovery	Ag Recovery	Calc. Au Head opt	Calc. Ag Head opt	
Charger Hill	Comp. #6	91.54	37.89	0.054	21.7	Low Ag Recovery
Charger Hill	Comp. #8	95.41	63.79	0.062	14.7	Highest Ag Recovery
Ace	Comp. #15	92.98	23.9	0.316	55.2	Lowest Ag Recovery
Ace	Comp. #19	82.13	57.54	0.028	9.7	Higher Ag Recovery
GP	Comp. #20	92.92	28.54	0.353	26.7	Lowest Ag Recovery
GP	Comp. #29	80.4	73.55	0.034	7.1	Higher Ag Recovery
Homestead	Comp. #30	81	75.71	0.038	16.1	Only comp representing Homestead
Corral	Comp. #31	75.79	63.45	0.051	21.5	Lowest Ag Recovery
Corral	Comp. #32	83.16	72.65	0.061	25.2	Highest Ag Recovery

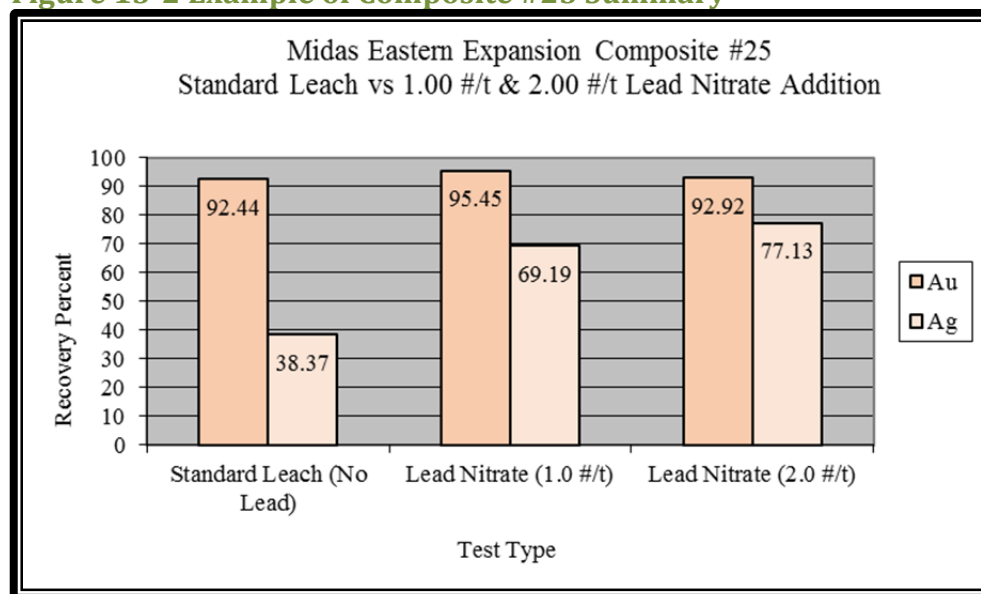
Results of the total test exceed the scope of this report. Summary results are shown in Figure 13-1 and Figure 13-2.

**Figure 13-1 Example of Composite #20 Summary**





**Figure 13-2 Example of Composite #25 Summary**



#### 13.4. Toll Milling

Toll milling of material from third party sources has been processed periodically at the Midas Mill since 2008. The focus of ongoing metallurgical testing has been to determine how these materials typically behave in processing as blended with Midas mineralization. Table 13-2 summarizes the tonnage of processing toll milling at Midas from 2008 through 2014.

**Table 13-2 Summary of Mineralization Sourced from Other Properties Processed at Midas from 2008 through 2014**

Source		2008	2009	2010	2011	2012	2013	2014
Fire Creek	Tons							56,000
	Au oz							67,500
	Ag Oz							
Hollister	Tons	29,061	35,162	34,662				
	Au oz	37,707	33,930	27,096				
	Ag oz	327,156	361,359	193,913				
French Gulch	Tons	3	0		6	8	7	5,000
	Au oz	282	50		640	583	463	492
	Ag oz	201	27		331	326	365	
Klondex	Tons						1,165	
	Au oz						1,727	
	Ag oz						1,842	
LKA	Tons							21,000
	Au oz							36
	Ag oz							
Granite Construction	Tons	494		195	394	368		
	Au oz	253		77	185	131		
	Ag oz	0		0	0	0		

In summary, careful metallurgical practices during processing of variable mineralized material while maintaining gold recovery despite changing silver grades have proven successful at Midas. Controlling the reagents in the refinery based on mineralogy have allowed the operation to benefit from the higher silver grades in the East Veins.