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# TECHNICAL REPORT AND PRE-FEASIBILITY STUDY ON THE TRUE NORTH GOLD MINE, BISSETT, MANITOBA, CANADA

#### **FOR**

#### KLONDEX CANADA LTD.

LATITUDE 51° 01' 19.6" N LONGITUDE 95° 40' 44.9" W UTM WGS84 Zone 15U 312,110 m E 5,655,700 m N

NI-43-101 & 43-101F1 TECHNICAL REPORT

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#### 1.0 SUMMARY

Klondex Canada Ltd. ("Klondex" or "the Company"), is a subsidiary of Klondex Mines Ltd., which is a Canadian and U.S. listed mining company. Klondex Mines Ltd. also owns and operates additional high grade underground gold mines in north central Nevada. In January 2016, Klondex acquired the Rice Lake Mine through its purchase from 7097914 Manitoba Ltd. (formerly Shoreline Gold Inc.). Rice Lake Mine was previously owned by San Gold Corporation (San Gold). In May 2016, Klondex renamed the Rice Lake Gold Mine to True North Gold Mine.

The mine and processing plant are located approximately 190 miles (250 km) northeast of the city of Winnipeg on the edge of the Bissett township in Manitoba, Canada.

Klondex has engaged the services of Canadian based geology and mining engineering consultants P&E Mining Consultants Inc. (P&E) to complete a National Instrument (NI) 43-101 Technical Report and Pre-Feasibility Study (Technical Report) for the True North Gold Mine ("True North" or "Project"). The purpose of this Technical Report is to provide an independent Mineral Resource and Mineral Reserve estimate of the gold mineralization in conformance with the standards required by NI 43-101 and Form 43-101F1.

#### 1.1 PROJECT HISTORY

Gold was originally discovered on the Project in 1911, however, it was not until the 1920s that the construction of a shaft to a depth of 725 feet (221 metres) and approximately 2,000 feet (600 metres) of underground lateral development confirmed the presence of an economically viable mineral resource.

Small scale production from underground mining commenced in 1932 and production increased to about 500 tons per day (450 tonnes per day) in 1948. A fire destroyed some of the surface facilities in 1968, and as a result production was suspended. Beginning in the late 1990s, production was intermittent under various ownerships, until 2016 when Klondex acquired a 100% interest in True North.

#### 1.2 GEOLOGIC SETTING AND MINERALIZATION

All the major gold occurrences in the True North area occur as quartz veins or quartz vein systems formed during structural deformation of the host rocks. At the Project, gold mineralization is controlled by quartz-carbonate veins and vein systems in brittle-ductile structures with related hydrothermal alteration halos within or at the margin of particular host rock units.

All of the gold mineralized zones at the Project are hosted in rocks of the Bidou Lake Assemblage which forms a north-facing stratigraphic sequence of tholeitic basalt to intermediate volcanic flows, dacite crystal tuffs and breccias overlain by well stratified felsic epiclastic rock interpreted to be of pyroclastic and sedimentary origin. The stratigraphic sequence is intruded by tholeitic gabbro sills and dykes and felsic porphyry dykes.

The best-known gabbro sill is the San Antonio Unit, host rock of the gold mineralization at the True North deposit. The Bidou Lake Assemblage is unconformably overlain by feldspathic sandstone of the San Antonio Assemblage.

The gold mineralized veins show a high degree of structural control and are best developed in competent mafic host rock ranging from intermediate to gabbroic in composition.

#### 1.3 PROJECT STATUS

True North is accessible from Winnipeg via all-weather Provincial highways and is located adjacent to the town of Bissett, a long established mining community with a fluctuating population which is currently approximately 340 people.

Refurbishing existing underground openings as well as test stope mining is underway, as of the effective date of this Technical Report. Process plant testing programs are progressing and a historic tailings re-processing assessment project commenced in August 2016.

#### 1.4 MINERAL RESOURCE ESTIMATES

P&E has produced an NI 43-101 compliant Mineral Resource estimate for True North based primarily on information from exploration and definition drilling, underground chip sampling, and supplemented in part by geophysical data, historical underground and surface mapping which assisted with interpretations.

P&E developed block models constrained within 3D wireframe models of the principal geological domains. Values for bulk density and gold (Au) ounces per ton (opt) were interpolated into the grade model blocks using Inverse Distance Squared (ID<sup>2</sup>) weighting.

The underground Mineral Resource estimate is based on a gold cut-off grade of 0.09 opt (3.09 grams per tonne), which has been calculated from the following parameters:

Gold Price: US\$ 1,400 per oz
Exchange Rate: C\$ to US\$: 0.80
Mining Cost: C\$49.09 per ton
Process Cost: C\$27.77 per ton
Indirect Mine Cost: C\$49.04 per ton
G&A Cost: C\$15.62 per ton

• Process Recovery: 94%

The underground Mineral Resource estimate for the Project is tabulated in Table 1.1.

TABLE 1.1 UNDERGROUND MINERAL RESOURCE <sup>(1-7)</sup>						
Class	Grade Au opt	Grade Au g/t	Tons (k)	Au (k) oz		
Measured	0.232	7.95	455	106		
Indicated	0.202	6.92	931	188		
Measured & Indicated	0.212	7.26	1,386	294		
Inferred	0.165	5.65	2,793	460		

- (1) Mineral Resource is inclusive of Mineral Reserve.
- (2) 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, marketing, or other relevant issues.
- (3) Mineral Resource was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.

- (4) The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred 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.
- (5) Contained metal may differ due to rounding.
- (6) Cut-off grade = 0.09 opt Au (3.09 g/t).
- (7) A bulk density of 0.086 tons per cubic foot was utilized in Resource tonnage calculations.

The tailings Mineral Resource estimate for the Project is based on information from auger drilling. A block model constrained within a 3D wireframe model of the geological domain was developed. Values for bulk density and Au/opt were interpolated into the grade model blocks using Inverse Distance Squared weighting.

The tailings Mineral Resource estimate is based on a gold cut-off grade of 0.015 opt Au (0.51 grams per tonne), which has been calculated from the following parameters:

Gold Price: US\$ 1,400 per oz
Exchange Rate: C\$ to US\$: 0.80
Process Cost: C\$18.01 per ton
G&A Cost: C\$6.40 per ton

• Process Recovery: 90%

The tailings Mineral Resource estimate for the project is tabulated in Table 1.2.

TABLE 1.2 TAILINGS MINERAL RESOURCE <sup>(1-7)</sup>					
Class	Grade Au opt	Grade Au g/t	Tons (k)	Au (k) oz	
Indicated	0.024	0.82	2,138	51.0	
Inferred	0.022	0.75	47	1.1	

- (1) Tailings Mineral Resource is inclusive of tailings Mineral Reserve.
- (2) 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, marketing, or other relevant issues.
- (3) Mineral Resource was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
- (4) The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been 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.
- (5) Contained metal may differ due to rounding.
- (6) Cut-off grade = 0.015 opt Au (0.51 g/t Au).
- (7) A dry bulk density of 0.044 tons per cubic foot (pcf) was utilized in the tailings Mineral Resource estimate tonnage calculation.

#### 1.5 MINERAL RESERVE ESTIMATES

P&E have produced a NI-43-101 compliant Mineral Reserve estimate for True North based on the resource block model, achievable mining shapes, mining recovery, mining dilution and stope pre-production development cost considerations.

The underground Mineral Reserve estimate is based on a gold cut-off grade of 0.13 opt (4.46 grams per tonne) which has been calculated from the following parameters:

•	Gold Price:	US\$ 1,200 per oz
•	Exchange Rate:	C\$ to US\$: 0.80
•	Mining Cost	C\$49.09 per ton
•	Process Cost:	C\$27.77 per ton
•	Indirect Mine Cost:	C\$49.04 per ton
•	G&A Cost:	C\$15.62 per ton
•	Sustaining Development Cost:	C\$42.49 per ton
•	Recovery:	94%

The underground Mineral Reserve estimate for the Project is tabulated in Table 1.3.

TABLE 1.3 UNDERGROUND MINERAL RESERVE <sup>(1-6)</sup>					
Class	Grade Au opt	Grade Au g/t	Tons (k)	Au (k) oz	
Proven	0.241	8.26	153	36.8	
Probable	0.245	8.40	199	48.7	
Proven & Probable	0.243	8.33	352	85.5	

- (1) Mineral Resource is inclusive of Mineral Reserve shapes, mining recovery, mining dilution and stope preproduction development costs. Mineral Reserve estimate includes dilution and is constrained to a minimum mining width of 5 feet.
- (2) Mineral Reserve was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
- (3) Mining losses of 2% have been applied to the designed mine excavations and no additional unplanned dilution has been included.
- (4) Contained metal may differ due to rounding.
- (5) Cut-off grade = 0.13 opt Au (4.46 g/t Au).
- (6) A bulk density of 0.086 tons pcf was utilized in Mineral Reserve tonnage calculations.

The tailings Mineral Reserve estimate for the Project is based on the resource block model, achievable recovery shape, mining recovery, reprocessing cost considerations and availability of process plant capacity in conjunction with underground ore mining.

The tailings Mineral Reserve estimate is based on a gold cut-off grades of 0.026 opt Au (0.89 g/t Au) for 2016 to 2018 and 0.020 opt Au (0.69 g/t Au) for 2019 to 2023 which has been calculated from the following parameters:

#### 2016-2018 At 600tpd

•	Gold Price:	US\$ 1,200 per oz
•	Exchange Rate:	C\$ to US\$: 0.80
•	Process Cost:	C\$25.06 per ton
•	Sustaining Capital Cost	C\$6.39 per ton
•	G&A Cost:	C\$3.15 per ton
•	0 1	1

• Recovery: 90%

• Cut-off 0.026 opt Au (0.89 g/t Au)

#### 2019-2023 at 1200tpd

Gold Price: US\$ 1,200 per oz
Exchange Rate: C\$ to US\$: 0.80
Process Cost: C\$18.01 per ton
G&A Cost: C\$ 6.40 per ton

• Recovery: 90%

• Cut-off 0.020 opt Au (0.69 g/t Au)

The tailings Mineral Reserve estimate for the Project is tabulated in Table 1.4.

TABLE 1.4									
TAILINGS MINERAL RESERVE <sup>(1-6)</sup>									
Class	Grade	Grade	Tons	Au					
Au opt Au g/t (k) (k) o									
Probable	0.028	0.96	1,170	32.4					

- (1) Tailings Resource is inclusive of Mineral Reserves.
- (2) Tailings Mineral Reserve was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
- (3) No mining losses of have been applied to the designed mine excavations and no additional unplanned dilution has been included.
- (4) Contained metal may differ due to rounding.
- (5) Cut-off grade = 0.026 opt Au (0.89 g/t Au) for 2016 to 2018 and 0.020 opt Au (0.69 g/t Au) for 2019 to 2023
- (6) A dry bulk density of 0.044 tons pcf was utilized in the tailings Mineral Reserve tonnage calculation.

#### 1.6 MINING

The mining of the Mineral Reserve at True North will be using conventional underground mining methods. Extraction of the mineralized ore will be by long-hole stoping methods according to the economic and geometric requirements of the specific ore zones. These mining methods are similar to those previously used and are shown to be effective for mining ore at True North. The primary method will be mechanized long-hole retreat benching, production from with captive sublevel long-hole benching being used in narrow, less accessible, areas.

Mining will commence on the 710 and 711 ore bodies on the 26 Level, supplemented by production from L1020 and 84 Vein.

Mined ore will be transported to chutes for loading onto 5 ton (4.5 tonne) rail cars for transfer to the main ore bins located close to A-shaft. Ore will then be hoisted to surface by a modernized double drum mine hoisting system to bins from where it is transported by truck to the run of mine (ROM) stockpile pad.

#### 1.7 MINERAL PROCESS AND METALLURGICAL TESTING

The ore processing circuit comprises crushing, grinding and gravity concentration and flotation, followed by Carbon-in-Pulp (CIP) processing on the gravity circuit. The process plant will operate on a 24-hour per day 7-day per week schedule. General arrangement of the ROM pad, crushing and processing facilities is shown in Figure 18.1. The nominal production rate is 800 tons (725 tonnes) per day.

Under the previous San Gold operations the process plant recovery was 93.5% on an ore feed grade of 0.21 opt Au. Process recovery is grade dependent, and test work on the anticipated higher ore feed grades, recoveries will be as high as 96.5%. The economic evaluation presented in this Technical Report is based on a more conservative gold process recovery rate of 94%.

Past and current processing analyses have shown no evidence of any deleterious elements such as arsenic, mercury, or antimony that would otherwise affect gold recovery in the leach circuit, however, copper in the leach circuit solution may occasionally be high.

#### 1.8 TAILINGS REPROCESSING

Under the previous ownership a percentage of the coarse grained free gold was lost to tailings. Trial processing of the reslurried tailings has demonstrated that reprocessing of the existing historic tailings can recover approximately 89% of the contained gold.

P&E have produced a Mineral Resource estimate on the tailings and the Company plans to supplement the mine feed with historic tailings. The tailings reprocessing operation will be carried out concurrently with the underground mining operation until 2018 and will continue for an additional 5 years until 2013 on a stand-alone basis.

#### 1.9 ENVIRONMENTAL AND PERMITTING

Klondex has revised the existing Environmental Act Licence 2628RR (Licence) for True North which includes approvals for minor alternations needed for operation. The San Gold Mine Closure Plan (2012) (Closure Plan) and the pledged fixed-asset financial security for mine closure were transferred to Klondex in January.

Klondex collects all required environmental monitoring data including: water quality sampling, environmental effects monitoring, final effluent release reporting, and is developing procedures for its environmental management system. Klondex is also in the process of re-initiating First Nations and Aboriginal community engagement.

Based on the available information, P&E is of the opinion that there does not appear to be any significant environmental and/or social barriers to the True North operation.

#### 1.10 OPERATING AND CAPITAL COST ESTIMATES

The capital cost estimate for True North was developed by Klondex, and includes all future sustaining capital expenditures to be incurred over the remainder of True North mine life. There are no significant pre-production capital requirements, since the Project will be utilizing existing infrastructure. Sustaining capital costs are scheduled over the life-of-mine (LOM).

The total capital cost for the life-of-mine is summarized in Table 1.5 and totals approximately \$32.1 million over the next several years.

TABLE 1.5 SUSTAINING CAPITAL COSTS										
Description	(000's of dollars)									
Description	Q4 - 2016	2017	2018	2019-2023	Total					
Ramp Development	2,493	6,798	4,079		13,370					
Capital Development	553	3,952	2,253		6,758					
Capital Drilling	231	1,649	940		2,820					
Mobile Fleet	90	641	365		1,096					
Site Infrastructure & Processing Plant	297	2,119	1,208		3,624					
Underground Services	53	382	217		652					
Tailings Reprocessing	0	511	735	2,500	3,746					
_										
Total	3,717	16,052	9,797	2,500	32,066					

Sustaining capital for the five years following mine closure when tailings reprocessing will be continuing in isolation will be approximately \$400,000 per year. In addition, an allowance for winterization of the processing plant and reopening in the spring has been included at \$100,000 per year.

In addition, the cost of mine closure and remediation is estimated to be \$4.4 million (per the existing accepted Closure Plan).

These estimates have an accuracy of  $\pm 15\%$  with a base date as of the effective date of this Technical Report.

The operating costs of True North encompass all labour, supervision, and operating consumables required for production, support, and equipment maintenance activities.

The average operating cost estimate for the True North operation over the LOM is summarized in Table 1.6 which is calculated based on the cost per ton of ore mined and processed at the Project.

TABLE 1.6 UNDERGROUND ORE OPERATING COST SUMMARY							
Description \$/ton							
Mining	49.09						
Processing	27.77						
Indirect Mine	49.04						
G&A	15.62						
Total	141.52						

The average total operating cost for the Tailings Reserve tonnage during underground mining is \$25.06 per ton, which includes the extraction and delivery of the tailings to the processing facility. Sustaining capital costs are included in the capital cost summary.

In 2019, the mining operation will be finished, however, the processing plant will continue to process historic tailings at a rate of 195,000 per annum, as a seasonal operation from May to October. During this period following the closure of the underground mining operation, historic

tailings processing costs will average \$18.01 per ton. G&A costs will average approximately \$6.40 per ton due to the reduced site requirements and the higher historic tailings processing rate of 1,200 tons (1,089 tonnes) per day.

#### 1.11 PROJECT ECONOMICS

The results of the Project's economic analysis based on mining the identified underground and tailings Mineral Reserve, indicate a positive net present value (NPV) of \$26.3 million (after tax) at a discount rate of 7%, as shown in Table 22.1. Since True North does not include any preproduction cost, the Internal Rate of Return (IRR) and payback period are not pertinent to this analysis.

Taxes are included in the operating cash flow analysis. The analysis conclusively shows that for the purpose of the NI-43-101 assessment, True North will be profitable.

This economic analysis carried out was based on the following parameters:

- Mine production schedule commencing the fourth quarter of 2016 and continuing through to 2018;
- Reprocessing of historic tailings during mine operation and continuing for 5 years (2019-2023) following mine closure;
- An underground Mineral Reserve tonnage of 352,000 tons containing 85,500 oz Au (0.243 opt);
- Waste dilution of 15.6% was included in the underground Mineral Reserve tonnage;
- A tailings Mineral Reserve of 1.17 million tons containing 32,400 oz Au (0.028 opt Au) (0.96 g/t Au);
- Process plant gold recovery of 94% for underground ore and 90% for tailings; and
- A fixed gold price of \$US 1,200/oz.

#### 1.12 RECOMMENDATIONS AND CONCLUSIONS

This Technical Report, as prepared by P&E, describes a viable mining and processing operation at the True North Gold Mine.

As of the effective date of this Technical Report, True North hosts an underground Mineral Reserve of 352,000 tons (319,000 tonnes) at average grade of 0.243 opt Au (8.33 g/t) at a 0.13 opt Au (4.46 g/t Au) cut-off grade. In addition, the historic tailings re-processing project contains 1.17 million tons (1.06 million tonnes) of recoverable tailings Mineral Reserves at an average grade of 0.028 opt Au (0.96 g/t Au) at a cut-off grade of 0.026 opt Au (0.89 g/t Au) for 2016 to 2018 and 0.018 opt Au (0.62 g/t Au) for 2019 to 2023.

Economically, True North appears to be robust, and the risks are low given the Project is an operating mine with significant production history. Capital expenditures for construction will not be required and True North components will require only limited refurbishment.

Based on a cash flow model using estimated cost of production and revenues, True North will generate an undiscounted pre-tax net cash flow of \$48.8 million over the LOM. At a discount rate of 7%, this corresponds to an NPV of \$26.3 million on an after tax basis.

Technically, True North presents no fatal flaws.

P&E recommends that True North continue its current production plan with long-hole mining of the underground Mineral Reserve and the reprocessing of the historic tailings. Klondex has advised that they will be spending additional capital on near mine exploration and further resource/reserve definition in order to expand the current LOM. A summary of the interpretations, conclusions, and recommendations to advance True North are provided in Sections 25 and 26 of this Technical Report.

#### 2.0 INTRODUCTION AND TERMS OF REFERENCE

#### 2.1 TERMS OF REFERENCE

At the request of Mr. Brian W. Morris, CPG, Vice President Exploration of Klondex Mines Ltd. P&E has prepared this National Instrument 43-101 (NI 43-101) technical report for the True North Gold Mine and processing facility.

Klondex Canada Ltd. is the Canadian-based subsidiary of TSX listed Klondex Mines Ltd, a gold mining company that owns and operates three gold and silver mines in north central Nevada.

True North is an existing underground gold mining operation, acquired by Klondex in January 2016, located approximately 250 kilometres northeast of Winnipeg on the edge of the town of Bissett, Manitoba, Canada.

The purpose of this Technical Report is to deliver Mineral Resource and Mineral Reserve estimates for the underground gold mining and tailings reprocessing operations at True North.

The corporate address of Klondex Mines Ltd. is:

1055 West Hastings Street, Suite 2200 Vancouver, BC V6E 2E9

The effective date for this Mineral Reserve and Mineral Resource estimate Technical Report is June 30, 2016.

Eugene Puritch, P.Eng., William Stone, P.Geo., Alfred Hayden, P.Eng. and Alexandru Veresezan, P.Eng., all of P&E and Qualified Persons (QP) under the terms specified under of NI 43-101. Each of the aforesaid has conducted site visits to the Project during May, June, July, and September, 2016.

In addition to visits to the Project, P&E carried out a study of relevant parts of the available literature on documented results concerning the Project, and held discussions with technical personnel from the Company regarding other pertinent aspects of True North. For additional information, the reader can refer to these data sources which are outlined in Section 27.0, "References" of this Technical Report, for further details on True North.

The purpose of the Technical Report is to provide independent Mineral Resource and Mineral Reserve estimates of the gold mineralization present at the Project, in conformance with the standards required by NI 43-101 and Form 43-101F1.

The authors of this Technical Report ("the Authors") are listed in Section 28.

#### 2.2 SOURCES OF INFORMATION

This report is based in part on internal Company technical reports and maps, published government technical reports, published scientific papers, company letters and memoranda, and public information listed in Section 27.0 "References" at the conclusion of this Technical Report.

Sections from reports authored by other consultants have been directly quoted or summarized in this Technical Report and are indicated as such within the appropriate sections. P&E held discussions with technical personnel from the Company regarding pertinent aspects of the Project. P&E has not conducted detailed land status evaluations, and has relied on previous qualified reports, public documents and statements by Klondex management and legal counsel, regarding the status and legal title to True North.

This Technical Report is prepared in accordance with the requirements of NI 43-101 and in compliance with Form NI 43-101 F1 the Canadian Securities Administrators (CSA).

The estimates of Mineral Resource and Mineral Reserve contained in the Technical Report are prepared in conformity to the CIM Mineral Resource and Mineral Reserve definitions referenced in the National Instrument 43-101 Standards of Disclosure for Mineral Projects that are in force as of the effective date of this Technical Report.

#### 2.3 UNITS AND CURRENCY

Unless otherwise stated all units used in this report are imperial. Gold assay values are reported in ounces per short ton (opt Au) unless grams per tonne (g/t Au) are specifically stated. The Canadian dollars (\$ or C\$) is used throughout this report unless the United States Dollars (US\$) is specifically stated. The US\$:C\$ currency exchange rate utilized in this report is 0.8:1.

The following list shows the meaning of the abbreviations for technical terms used throughout the text of this Technical Report.

## **Abbreviation Meaning**

 $ID^3$ Inverse distance cubed method Three dimensional 3D AA Atomic absorption Ag Silver **ANFO** Ammonium nitrate/fuel oil **AOI** Area of interest ARD Acid rock drainage **ASL** Above sea level Au Gold Au g/t Grams of gold per tonne C\$ Canadian dollars **CEAA** Canadian Environmental Assessment Agency CIM Canadian Institute of Mining, Metallurgy And Petroleum cm Centimetre(s) **CSA** Canadian Securities Administrators Cum Cumulative **DCF** Discounted cash flow DDH Diamond drillhole **DMT** Dry metric tonne Ε East

**Environmental Impact Assessment** 

EIA

FAR Fresh Air Raises

g or gm Gram

G&A General and Administration g/t or gm/t Grams per metric tonne

ha Hectare(s)

IP Induced polarization
IRR Internal rate of return

ISO International Organization for Standardization

k Thousands kg Kilogram

kg/t Kilograms per metric tonne

Klondex Klondex Mines Ltd.

km Kilometre(s)

km/hkilometres per hourktThousands of tonnes

LiDAR Light Detection and Ranging

LOM Life-of-mine

M Million m Metre(s)

M\$ Millions of dollars

m3 Cubic metres
Ma Millions of Years

masl Metres above sea level meas. Measured Resources

mm Millimetres

Mt Millions of tonnes

N North

N/A Not applicable

NAG Non-potentially acid generating rock

NE North-East

NI 43-101 National Instrument 43-101 NN Nearest neighbour method

NPV Net Present Value NSR Net Smelter Return

opt Troy ounces of gold per short ton OSC Ontario Securities Commission

oz Troy ounce

oz/T Au Troy ounces of gold per short ton
P&E P&E Mining Consultants Inc.
PAG Potentially acid generating rock

Q4 Fourth Quarter

QA/QC Quality Assurance/Quality Control

QP Qualified Person as defined by NI 43-101

RAR Return air raises

ROM Run-Of-Mine: Material produced during mining

S South

Website Developed by the CRA, that provides access to public securities

SEDAR documents and information filed by public Companies and investment

funds in Canada

t Metric tonne(s)

t/m<sup>3</sup> Metric tonnes per cubic metre

tpd Tonnes per Day tph Tonnes per Hour

TSF Tailings Storage Facility
US\$ United States dollars
WMT Wet metric tonne

#### 3.0 RELIANCE ON OTHER EXPERTS

Statements in this Technical Report and Pre-Feasibility Study with regard to the status and legal title of the Project, are reliant on information provided by Klondex legal counsel.

The status of the Klondex environmental program and the permitting process was provided by the Environmental Superintendent for the Project. The corporate Manager of Metallurgy, provided information regarding metallurgical testing and process operating statistics. These contributions have been reviewed, edited and accepted by the Authors of this report and are accurate portrayals of True North, as of the effective date of this Technical Report.

Operating and capital cost projections related to the production and sale of doré gold have been provided by Klondex. This information has been reviewed and accepted by the Authors as being reasonable, as of the effective date of this Technical Report.

Estimates of the taxation rates that will be payable on production from the Project, were provided by D. Scott Farmer, Mining Tax Plan LLC

P&E has assumed, and relied on information and technical documents listed in the References section of this Technical Report as being accurate and complete in all material aspects. While P&E carefully reviewed the available information provided, P&E cannot guarantee its accuracy and completeness.

P&E reserves the right, but will not be obligated, to revise this Technical Report and the conclusions if additional information becomes known to P&E subsequent to the date of this Technical Report.

A draft copy of this Technical Report has been reviewed for factual errors by Klondex, and the Authors have relied on Klondex's historical and current knowledge of True North in this regard.

Any statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading as of the effective date of this Technical Report.

#### 4.0 PROPERTY DESCRIPTION AND LOCATION

#### 4.1 PROPERTY LOCATION

The Project is located adjacent to the township of Bissett on the north shore of Rice Lake in southeastern Manitoba, 190 miles (235 km) northeast of the city of Winnipeg (Figure 4.1). The Project includes the mine, mill, and tailings management area. Klondex's property holdings in Manitoba, Canada include a larger regional exploration boundary as outlined in Figure 4.2 of this Technical Report.

Bissett can be accessed from Winnipeg via all-weather provincial highways. A small emergency gravel airstrip is located 12 miles (19 km) east of Bissett. Rice Lake serves as a base for float-equipped aircraft during the ice free months.

Geographical co-ordinates are:

latitude 51° 01' 19.6" N longitude 95° 40' 44.9" W UTM WGS84 Zone 15U 312,110 m E 5,655,700 m N

Figure 4.1 Location of the True North Gold Mine, Bissett, Manitoba



The locations of all mineralized zones, mineral resources, mineral reserves, mine workings, tailings management area (TMA), and waste deposits are shown on various figures in other sections of this Technical Report.

The boundaries of the mining lease (ML-063) and of the patented mining claims have been surveyed, whereas the boundaries of other, un-surveyed mining claims, are sourced from government claim maps.

#### **4.2 PROPERTY DESCRIPTION**

The Project consists of claims, patents and a mineral lease owned 100% by the Company (Figure 4.2). The total area covered by the Project is 40,257 ha (Table 4.1).

Table 4.1 Summary of Mineral Property Holdings and Surface Areas									
Item Claims/Patents/Leases Hectares									
Unpatented Mining Claims	300	39,195							
Patented Mining Claims	18	296							
Mineral Lease	1	766							
Total	319	40,257							

Klondex retains a 100% recorded interest in mineral lease ML-063 ("ML-063"). This lease covers 766 hectares (ha) and, subject to annual payments, expires April 1, 2034.

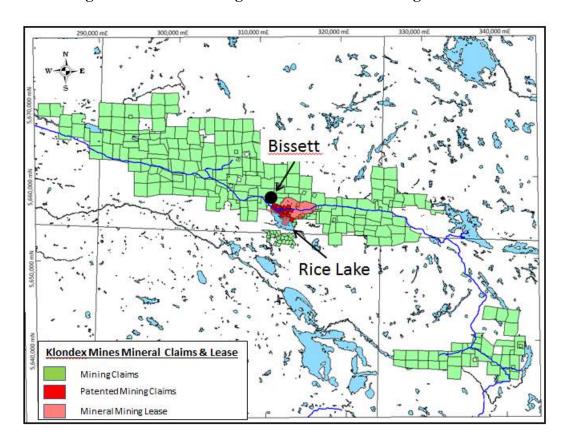
In addition to ML-063, Klondex also holds 18 Patented Mining Claims covering an area of 296 ha and 300 Mining Claims covering an area of 39,195 ha. The Company owns 100% of 273 of the Mining Claims.

Klondex owns 50% of the remaining 27 Mining Claims through a Joint Venture Agreement with Greenbelt Gold Mines Inc. (see Appendix I for full listing of claims information).

#### 4.3 LIABILITIES AND PERMITS

All environmental liabilities are disclosed in Section 20, which covers the mine closure plan. All permits required to perform work are also disclosed in Section 20.

Figure 4.2 Regional Klondex Mining Claim and Lease Holdings



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

#### 5.1 ACCESSIBILITY

Bissett can be accessed from Winnipeg via all-weather provincial highways. A small emergency gravel airstrip is located 12 miles (19 km) east of Bissett. Rice Lake itself serves as a base for float-equipped aircraft during the ice free months.

#### 5.2 CLIMATE AND PHYSIOGRAPHY

Average relief in the Project area is approximately 130 feet to 200 feet (40m to 60m), with elongated outcrop ridges separated by low lying ground with swamps, rivers and lakes.

This area of eastern Manitoba has average annual precipitation of approximately 17 inches (430 mm) of rain. Winter snow accumulations of up to 57 inches (145 cm) occur between October and March. Average winter temperature is 3°F (-16°C) with extended periods of -4°F to -13°F (-20°C to -25°C). Average summer temperature is 61°F (16°C).

The vegetation consists of typical Canadian Shield boreal forest. Poplar, balsam, spruce, and pine are the main tree species. Rock outcrop exposure is abundant in most areas, although there is a thin cover of organics and lichen growth that can restrict detailed observation.

#### 5.3 LOCAL RESOURCES AND INFRASTRUCTURE

Bissett is an established mining community, located adjacent to the mine, with a fluctuating population of approximately 340 people. The township was established to service the emerging mines that developed after 1911, but has remained home to permanent residents during periods of mine closure and now provides a healthy recreational sport base as well as servicing the Project.

Mining supplies, equipment, and services and a skilled mining and mineral exploration workforce are readily available in southern Manitoba and across the border to the established mining communities in northeast Ontario. The Project has a long history of mining, which helps to attract employees and contractors from throughout the area.

Manitoba Hydro provides electrical power to site via twin transmission lines. Fuel is trucked in from Winnipeg and the area is well serviced by access roads.

Klondex owns 100% of the mine shaft, declines, mobile and crushing equipment, mineral processing mill, TMA, and storage areas (Figures 5.1, 5.2 and 5.3).

The process plant is licensed to operate at up to 2,500 tons (2,268 tonnes) per day. The Company has sufficient accommodation on-site for all personnel and provides cafeteria services for employees housed in the Project's bunkhouse accommodation.

A small school provides education up to grade six. A bar, hotel, restaurant, and convenience store provide services for residents and visitors to the town. The township has recreational infrastructure such as a curling rink, outdoor ice skating rink and a baseball diamond.

Figure 5.1 Photograph of the True North Gold Mine Looking South

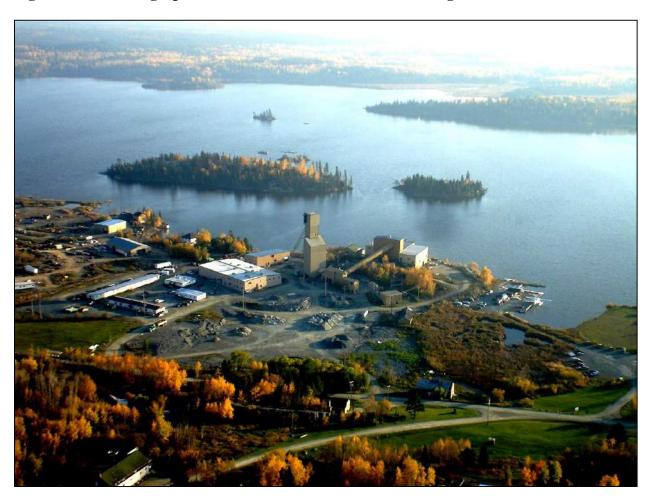


Figure 5.2 Plan View of Surface Infrastructure at the True North Gold Mine

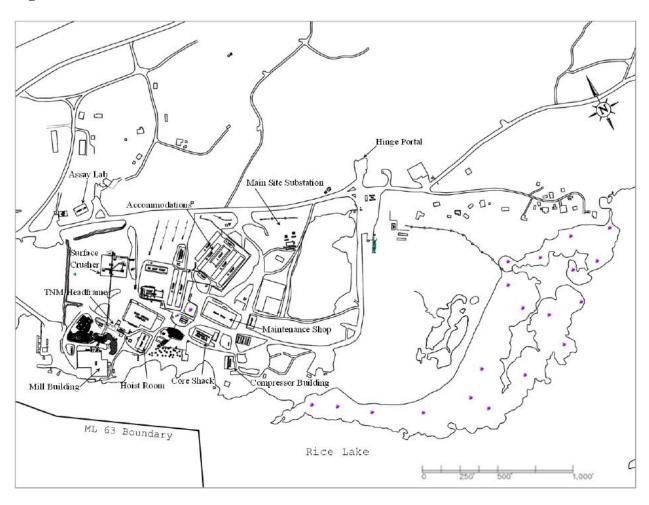


Figure 5.3 Tailings Pond Facility at the True North Gold Mine



#### 6.0 HISTORY

For the historic estimates in this section of the Technical Report, Qualified Persons from either P&E or Klondex have not done sufficient work to classify the historical estimates as a current Mineral Resource or Mineral Reserve, and P&E and Klondex are not treating these historical estimates as current Mineral Resources or Mineral Reserves. The historical estimates cannot be fully verified. These values cannot and should not be relied upon and are only referred to herein as an indication of previously defined gold mineralization. The relevance of the historical estimates is not known. Key assumptions, parameters and methods used to estimate these Mineral Resources and Mineral Reserves are not known. The historical Mineral Resource and Mineral Reserve estimates described in this Technical Report section have been superseded by the Mineral Resource and Mineral Reserve estimates described herein (see Section 14 and 15 of this Technical report).

#### 6.1 PRE 1989 ERA

Gold was originally discovered at the shore of Rice Lake in 1911. The first attempt at underground development was undertaken by a syndicate in 1927, when No.1 exploration shaft was sunk to 164 feet (50 m) and No.2 Shaft was sunk to 300 feet. (91 m). Approximately 2,000 feet (610 m) of lateral development was completed in 1927, but results failed to meet expectations. Nevertheless, during 1928 the syndicate proceeded to deepen the No.2 Shaft to 600 feet (183 m) and the No. 1 Vein was discovered on that level. However, it was not until 1929, with discovery of the No. 9 Vein on the 725-foot (221 m) level, that the deposits became economically viable.

Sufficiently encouraging underground results were obtained by 1931, and the newly formed San Antonio Gold Mines Ltd. ("San Antonio") commenced construction of a process plant and power line. Production began in May 1932 at a rate of 150 tons (136 tonnes) per day, increasing to 350 tons (318 tonnes) per day in 1935, and subsequently increased to 550 tons (500 tonnes) per day by 1948. Access to the mine was primarily through the No.1 Shaft (now called the A-Shaft) and three internal winzes; 3A, 3B, and 3C (now called B-Shaft, C-Shaft, and D-Shaft).

Underground development was carried out by driving footwall drifts on each level. Flat exploration drill-holes on 50-foot (15 m) centres were used to establish the location of veins on the level prior to establishing drifts along the full length of ore zones. Shrinkage mining was used utilized with a minimum mining width of 4 feet (1.2 m).

The 550-ton (500-tonne) per day process plant consisted of a crushing plant adjacent to the collar of No.1 Shaft with a conveyor to the process plant building. After grinding, concentrating, and blanket tables, an amalgam table recovered approximately 12% of the total gold. Then the material from the gravity circuit passed through a Merrill Crowe cyanide plant to recover the balance of the gold.

The No.1 Shaft surface hoist was destroyed by fire in July 1968 and production ceased. San Antonio declared bankruptcy and the assets were acquired by New Forty Four Mines ("New Forty Four"). In 1980, the process plant was destroyed by fire.

In 1980, Brinco Mining Limited ("Brinco") entered into a Joint Venture with New Forty Four. Brinco undertook a program of underground exploration drilling during the period 1980 through 1983 and approximately 100,000 ore tons (91,000 tonnes) were mined and trucked to Hudson

Bay Mining & Smelting Co Ltd. in Flin Flon, Manitoba, for processing. Brinco earned a 100% interest in the project, however, after 1983 did no significant work.

In 1987, a subsidiary of Inco Ltd. ("Inco") entered into an agreement with Brinco and completed over 20,000 feet. (6,096m) of drilling. Inco opted out of the venture in 1988.

#### 6.2 POST 1989 ERA

In 1989, Rea Gold Corp. ("Rea Gold") acquired the Property from Brinco. Wright Engineers and Dolmage Campbell completed a due diligence study for Rea Gold prior to their acquisition of the Project in 1989. At that time, the historic (non NI 43-101 compliant) Mineral Reserve was estimated to be 1,226,000 tons (1,114,000 tonnes) grading 0.22 opt Au (7.5 g/t Au). A Pre-Feasibility study by Kilborn Engineering Ltd. (Kilborn) in 1993 recommended that the resource base be increased prior to a production decision.

In 1994, Rea Gold undertook a \$3.1 million underground rehabilitation and exploration program to gain access to the lower levels of the mine and delineate additional Mineral Resources. This program resulted in an increase in the historic (non NI 43-101 compliant) Mineral Reserves to 1,977,000 tons (1,797,000 tonnes) grading 0.21 opt Au (7.2 g/t Au).

A Feasibility Study was completed by Rea Gold and Simmons Engineering Inc. in 1995, and construction and development of a 1,000 ton (907 tonne) per day mining operation was initiated. Rea Gold established a new mine access system that significantly streamlined the mining operation. Previously, the mine was accessed by A-Shaft and three internal winzes (B-Shaft, C-Shaft, and D-Shaft). Ore from the D-Shaft area had to be trammed and hoisted via four shafts in order to transport it to surface. Rea Gold deepened the principal A-Shaft to link the surface directly with the upper level of the D-Shaft area, thereby eliminating two cycles of tramming and hoisting.

By 1997, Rea Gold had established a modern 1,000 ton (907 tonne) per day gold mining and processing facility at a total cost of approximately \$90 million. Prior to the start of production, Rea Gold was placed into receivership and the receiver put the assets up for sale. Harmony Gold (Canada) Inc. ("Harmony") was the successful bidder and took over the project in 1998.

After acquiring the assets from the receiver, Harmony invested approximately \$30 million to build a ramp system in the lower part of the D-Shaft area, in order to establish a long-hole mining operation. Harmony operated the mine for three years, and subsequently put the project on care and maintenance in August, 2001. Compared to the previously employed shrinkage mining operation, the Harmony operation produced fewer ounces of gold from more tons processed per day and failed to achieve the corporate objectives set by Harmony's parent company, Harmony Gold Mines Limited of South Africa.

In January, 2002, Harmony entered into an option agreement with Wildcat Exploration Ltd. of Winnipeg, Manitoba ("Wildcat"). Wildcat's objective was to re-establish the mine as a smaller scale shrinkage stope operation delivering ore to a surface stock pile to feed the 1,250 ton (1,136 tonne) process plant which operated on a two week-on two week-off cycle.

In April 2002, A. C. A. Howe International ("Howe") (Titaro et al 2002) completed a report on the Harmony assets on behalf of Wildcat. The report included an audit of the mineral resources and mineral reserves, a review of the operating and capital costs, and preparation of a financial evaluation of the economic feasibility of reopening the mine. Howe concluded that a viable

shrinkage mining operation could be operated at a mining rate of 550 tons (500 tonnes) per day was feasible. Ore was delivered to a surface stockpile to feed the 1,250 ton (1,136 tonne) per day process plant operating on a two week on, two week off cycle. Gold at that time was US\$300/oz.

Howe further concluded that based on well-founded historical estimation practices at the Rice Lake Mine (as it was then called), that as of April 2001, the mine, had a historical (not NI 43-101 compliant) Measured and Indicated Mineral Resource of 1,267,000 tons (1,149,000 tonnes) grading 0.26 opt Au (8.9 g/t Au) plus Inferred Mineral Resource of 735,000 tons (668,000 tonnes) grading 0.31 opt Au (10.6 g/t Au). All of the above mentioned Mineral Resources were situated above the 4,630 Level (5,370 feet or 1,637 m below the collar of A-Shaft) in the C and D-Shaft areas of the Rice Lake Mine.

Within the Measured and Indicated Mineral Resources, Howe concluded that the Rice Lake Mine had Proven and Probable Mineral Reserves of 901,800 tons (820,000 tonnes) with an average grade of 0.27 opt Au (9.3 g/t Au). In determining this reserve, Howe used dilution, cutting, and cut-off practices which were based on over 38 years of mining experience at the Rice Lake Mine (now True North Gold Mine). All of these mineral reserves had existing development drifts and were accessible on levels within the C-Shaft and D-Shaft areas.

Despite this work by Howe, Wildcat was unable to complete the acquisition of the Rice Lake Mine.

On March 5, 2004, San Gold Resources Corporation ("Old San Gold") and Gold City Industries Ltd. ("Gold City"), entered into a joint venture agreement to acquire 100% of the issued and outstanding shares of Harmony through a newly formed corporation, Rice Lake Joint Venture Inc. ("RLJV"). RLJV was owned and controlled jointly by Gold City (50%) and Old San Gold (50%). Effective March 17, 2004, RLJV acquired the shares of Rice Lake Gold Corporation (formerly Harmony Gold Corporation (Canada) Inc.) from Harmony Gold Mining Company Limited of South Africa. The purchase price was \$7,757,961, including \$3,632,961 in cash and \$4,125,000 in shares and warrants of Gold City and Old San Gold. On June 30, 2005 Old San Gold and Gold City amalgamated to form a new corporation called San Gold Corporation.

The exploration drilling completed between the period from 2005 to 2013, (is summarized below and more fully described in Section 10 of this Technical Report). As part of San Gold's exploration program, a Light Detection and Ranging (LiDAR) survey was flown over the Rice Lake greenstone belt in 2009. From this a second mining trend called the Shoreline Basalt unit, which hosts the Hinge and 007 Zones, was recognized

A ramp to explore and develop the new, separate SG1 deposit commenced in the winter of 2005. Production from that deposit continued until mid-2008 when workings had reached a depth of 640 feet (195m) below surface. Work was suspended in 2008 due to diminishing economics and the mobile equipment was needed elsewhere to develop the recently discovered Hinge Zone.

A new surface ramp to explore and develop the Hinge Zone commenced in 2008 and reached the deposit in March 2009. Production started almost immediately as definition drilling continued.

In early 2010, a new internal ramp was started from a vertical depth of 800 feet (244m) in the Hinge Zone workings to access the 007 deposit. The ramp reached the 007 deposit in July 2010, and production started while definition drilling continued.

A second surface ramp was started near the old Wingold shaft in the second half of 2010. This ramp was to provide top access to the 007 deposit and provide access to develop the Cohiba

deposit. The ramp reached the Cohiba mineralization at a vertical depth of 108 feet (33m) below surface.

Under the San Gold operations, ore was mined along three active underground mining trends. The Rice Lake Mine (as the Project was previously named), formed the core of mining operations and provided extensive workings that extended deep below the surface to access these deposits situated within the mineralised host system. The A-Shaft head frame and extends 4,060 feet (1,249 m) below surface.

The second mining trend, the Shoreline Basalt mining unit, focused on the 007 deposit, began commercial production in 2010. The 007 mine portal is located 2,000 feet (600 m) from the process plant and provided the main access to San Gold's operations along the Shoreline Basalt mining unit and the Hinge Zone. The Hinge zone is hosted in intermediate rocks, is the third mining trend host and its portal provides access to the 007 deposit.

After investing approximately C\$375 million in capital since 2007, including the extensive underground development and modernising the process plant, San Gold ceased mining in May 2015, and placed operation on care and maintenance. San Gold declared bankruptcy and announced sale of all of its assets to secured creditors in June 2015.

In early 2016, Klondex Mines Ltd. announced acquisition of 100% of the Rice Lake Mine, process plant complex and a 400 km2 exploration land package from the creditors. In the first half of 2016, Klondex commenced refurbishment of the underground infrastructure and commenced trial mining on readily accessible ore.

Following sampling of the historic tailings storage facility, Klondex commenced a tailings reprocessing project. Reprocessing of the tailings will be carried out concurrently with processing of underground ore and when weather permits. Processing of stockpiled ROM ore is expected to commence in fourth quarter 2016.

A name change to True North Gold Mine was announced in May, 2016. In September 2016, Klondex announced the formal decision to resume production at True North.

TABLE 6.1 HISTORIC PRODUCTION AT RICE LAKE MINE: 1927-1968

	Mill Throughput Ore Reserves									
YEAR	Gold	(	covery of	Process Plant	Average	Head	Gold	Reserve		Notes
ILAK		Head	Stope	Feed		Grade				
	ozs	Grade	Grade	tons	tons/day	opt	ozs	tons	opt	
1927	27,008	181%	169%	30,419	83	0.49	34,992	74,450	0.47	Process Plant starts May 1932
1933	22,720	95%	94%	55,677	153	0.43	63,140	154,000	0.41	·
1934	21,638	93%	90%	64,294	176	0.36	87,750	225,000	0.39	Gold fixed at \$35/oz from \$20/oz
1935	32,250	92%	96%	102,712	281	0.34	77,070	226,675	0.34	
1936	29,040	96%	86%	112,416	308	0.27	59,351	197,836	0.30	
1937	30,035	93%	93%	115,765	317	0.28	71,824	256,516	0.28	Discovered 38 vein
1938	31,257	95%	96%	117,376	322	0.28	96,184	343,515	0.28	
1939	34,242	94%	94%	117,787	323	0.31	152,361	491,486	0.31	Start of World War 2
1940	36,745	94%	93%	122,365	335	0.32	242,150	756,718	0.30	
1941	43,121	95%	94%	138,097	378	0.33	312,501	945,609	0.30	
1942	58,869	95%	95%	199,203	546	0.31	285,481	920,908	0.31	
1943	48,568	95%	97%	164,307	450	0.31	256,612	916,471	0.28	
1944	40,669	97%	96%	140,085	384	0.30	256,735	855,784	0.30	
1945	38,326	98%	97%	135,000	370	0.29	213,562	736,419	0.29	End of World War 2
1946	43,819	97%	98%	149,875	411	0.30	214,738	715,794	0.30	
1947	42,326	99%	100%	137,867	378	0.31	215,173	694,105	0.31	
1948	52,764	114%	113%	154,953	425	0.30	214,826	716,087	0.30	Emergency Gold Mining Assistance started
1949	53,201	105%	104%	188,000	515	0.27	193,860	718,000	0.27	
1950	51,822	101%	102%	182,397	500	0.28	198,562	709,151	0.28	
1951	50,735	96%	96%	195,000	534	0.27	174,150	645,000	0.27	
1952	53,120	95%	95%	200,000	548	0.28	168,112	600,400	0.28	
1953	40,993	98%	99%	174,904	479	0.24	102,816	428,400	0.24	Gold free market ends
1954	43,868	97%	98%	180,599	495	0.25	86,900	347,600	0.25	
1955	41,211	98%	99%	174,631	478	0.24	70,800	295,000	0.24	First operating loss
1956	33,462	98%	99%	155,595	426	0.22	54,868	249,400	0.22	
1957	33,339	98%	98%	136,616	374	0.25	48,648	202,700	0.24	
1958	34,300	98%	98%	124,597	341	0.28	56,650	226,600	0.25	
1959	28,570	98%	98%	116,666	320	0.25	47,444	197,683	0.24	
1960	31,136	96%	95%	135,642	372	0.24	47,928	199,700	0.24	
1961	31,009	98%	99%	149,942	411	0.21	36,869	160,300	0.23	
1962	30,339	99%	98%	133,000	364	0.23	23,218	110,560	0.21	

<b>TABLE 6.1</b>
HISTORIC PRODUCTION AT RICE LAKE MINE: 1927-1968

			Mil	l Throughput			Ore Reserves			
YE A D	Gold		covery of	Process Plant	Average	Head	Gold	Reserve	Grade	Notes
YEAR		Head	Stope	Feed		Grade				
	ozs	Grade	Grade	tons	tons/day	opt	ozs	tons	opt	
1963	24,017	94%	94%	127,575	350	0.20	46,886	203,853	0.23	
1964	28,773	98%	98%	133,764	366	0.22	44,989	187,454	0.24	
1965	24,969	98%	97%	111,295	305	0.23	34,966	145,693	0.24	
1966	21,630	98%	97%	85,258	234	0.26	40,241	174,961	0.23	
1967	13,394	98%	98%	71,673	196	0.19	43,240	188,000	0.23	
1968	6,066	87%	93%	30,218	166	0.23	38,769	161,537	0.24	Fire destroys surface hoist; production ends July, 1968.

	Table 6.2											
	HISTORIC PRODUCTION AT RICE LAKE MINE: 1980-2001											
	Mill Throughput						(	re Reserves	;			
YEAR	Gold		very of	<b>Process Plant</b>	Average	Head	Gold	Reserve	Grade	Notes		
		Head	Stope	Feed	_	Grade				11000		
	ozs	Grade	Grade	tons	tons/day	opt	ozs	tons	opt			
1980-83	13,954	100%		104,135		0.13	146,085	664,024	0.22	New Forty Four/Brinco Joint Venture formed.		
	Mill des	troyed by	fire in 19	980. Production e	nds May 22	7, 1983, d	drilling con	tinues at dep				
1984							111,616	534,504	0.21	Lathwell/Brinco JV conducts limited program		
1985	Brinco c	hanges na	ame to Ca	ssiar Mining Cor	poration							
1986							350,196	1,522,591	0.23	Inco subsidiary drills 20,008 ft to test depth		
1987	Inco opt	s out. Cas	siar own	ership 100%								
1988							308,700	1,470,000	0.21	Kilborn reviews reactivation program for Mandor Gold		
1989							169,641	1,225,642	0.22	Rea Gold Corp. acquires project from Cassiar.		
1990	Wright l	Engineers	and Dolr	nage Campbell co	omplete due	diligence	on behalf	of Rea Gold	•			
1991		_				_						
1992												
1993	Pre-Feas	sibility of	Kilborn a	and Tonto recomm	nends mine	able reser	ves be incr	eased				
1994							415,149	1,976,901	0.21	Rehab, exploration and development in lower levels of mine		
1995							540,715	2,216,046	0.24	Feasibility studies by Rea Gold and Simmons completed. Drilling and development		

558,213 2,335,621 0.24

1996

Construction and development towards 1,000

underground.

# TABLE 6.2 HISTORIC PRODUCTION AT RICE LAKE MINE: 1980-2001

	Mill Throughput						Ore Reserves		<b>S</b>	
YEAR	Gold	% Reco	overy of	<b>Process Plant</b>	Average Hea	Head	Gold	Reserve	Grade	Notes
ILAK	Gold	Head	Stope	Feed	Average	Grade	Gold	Kesei ve	Graue	Notes
	ozs	Grade	Grade	tons	tons/day	opt	ozs	tons	opt	
										tons per day operation
1997	9,000			60,000		0.15	674,951	2,812,297	0.24	
1998	2,875			40,035		0.07				Rea Gold Corp. bankrupt. Receiver puts assets up for sale. Harmony Gold (Canada) Inc. acquires mining assets of Harmony.
1999	33,238			231,898		0.14				
2000	39,476			257,605		0.15				
2001	29,341	85%	79%	203,868		0.17	327,884	1,932,404	0.17	Project placed on care and maintenance August, 2001

TABLE 6.3						
HISTORIC PI	RODUCTION AT RICE	LAKE N	<u> </u>	007-2015		
Voor	Tong Dunggad	Head	Head Grade			
Year	Tons Processed	opt	g/t	oz		
2007	96,653	0.13	4.35	9,193		
2008	116,835	0.09	3.20	13,845		
2009	164,424	0.23	8.00	35,154		
2010	275,860	0.17	5.85	47,082		
2011	461,150	0.17	5.93	79,802		
2012	629,279	0.15	5.07	93,233		
2013	641,711	0.13	4.32	80,828		
2014	390,564	0.12	4.03	41,890		
2015 (Q1)	81,427	0.11	3.91	9,261		

#### 6.3 RICE LAKE GOLD MINE HISTORIC RESOURCE ESTIMATES

#### **6.3.1** Historic Resource Estimates

1989: Rea Gold estimated the historic (not NI 43-101 compliant) Mineral Reserve to be 1,226,000 tons (1,114,000 tonnes) grading 0.22 opt Au (7.5 g/t Au).

1994: Rea Gold increased the historic (not NI 43-101 compliant) mineral reserve to 1,977,000 tons (1,797,000 tonnes) grading 0.21 opt Au (7.2 g/t Au) based on the results of a C\$3.1 million underground rehabilitation and exploration program to delineate additional mineral resources.

2002: Howe (Titaro et al 2002) concluded that as of April 2001 the mine had a historic (not NI 43-101 compliant) Measured and Indicated Mineral Resource of 1,267,000 tons (1,152,000 tonnes) grading 0.26 opt Au (8.9 g/t Au) plus an Inferred Mineral Resource of 735,000 tons (668,000 tonnes) grading 0.31 opt Au (10.6 g/t Au).

#### **6.3.2** Most Recent Resource Estimate

2012: A summary of the 2013 Resource Estimate for the Rice Lake Mining Complex is given below in Table 6.4. Information from Table 6.4 was taken from a report completed under NI 43-101 standards and amended and filed on the System for Electronic Document Analysis and Retrieval, "SEDAR", (www.sedar.com), on February 25, 2013. The authors of the Rice Lake Technical Report, produced for SanGold, were Qualified Persons Dale Ginn, P.Geo. and Michael Michaud, P.Geo. San Gold.

TABLE 6.4 SUMMARY OF MINERAL RESOURCE (DEC 31, 2012)						
	Mineral Resource	Gold (		Total Gold		
Description	(tons)	(opt)	(g/t)	(ounces)		
	Rice Lake Mine					
Measured Resource	226,000	0.24	8.2	54,000		
Indicated Resource	770,000	0.24	8.1	181,000		
Measured and Indicated	996,000	0.24	8.1	235,000		
Inferred Resource	1,710,000	0.29	9.8	489,000		
	Hinge Zone Distric	et		<b>,</b>		
Measured Resource	96,000	0.16	5.7	16,000		
Indicated Resource	481,000	0.13	4.5	63,000		
Measured and Indicated	577,000	0.14	4.7	79,000		
Inferred Resource	1,564,000	0.13	4.5	205,000		
007 Zone						
Measured Resource	225,000	0.24	8.2	54,000		
Indicated Resource	869,000	0.15	5.1	130,000		
Measured and Indicated	1,094,000	0.17	5.7	183,000		
Inferred Resource	8,513,000	0.14	4.9	1,215,000		
		_				
0	all Zones (Cohiba, C					
Measured Resource	39,000	0.16	5.6	6,000		
Indicated Resource	336,000	0.19	6.6	64,000		
Measured and Indicated	375,000	0.19	6.5	71,000		
Inferred Resource	3,509,000	0.19	6.6	680,000		
	1 01 (0.01 0.	Z				
	andy Shear (SG1, So	<b>32, SG</b> 3	5) 	T		
Measured Resource	0	0.22	7.7	07.000		
Indicated Resource	387,000	0.22	7.7	87,000		
Measured and Indicated	387,000	0.22	7.7	87,000		
Inferred Resource	1,221,000	0.22	7.4	265,000		
	Total Davidant					
	Total Project					
Measured and Indicated	3,430,000	0.19	6.5	655,000		
ivicasureu anu muicateu	3,430,000	0.19	0.5	055,000		
Inferred Resource	16,517,000	0.17	5.9	2,853,000		
Interior Resource	10,517,000	0.17	ار. ی	2,055,000		

<sup>(1)</sup> Mineral Resource estimate is based on cut-off grades of 0.09 oz/ton to 0.12 opt and gold price of US\$1300-US\$1500/oz

At that time, the total project Proven and Probable Mineral Reserve was estimated at 1,699,000 tons (1,541,000 tonnes) grading 0.15 opt (5.14 g/t) Au.

2014: In a press release dated March 31, 2015, San Gold announced an updated Mineral Reserve and Mineral Resource estimate for the Rice Lake Mining Complex effective December 31, 2014

<sup>(2)</sup> Some values have been rounded. The totals are accurate summations of the columns and rows of data.

(Table 6.5). The update was based on mine depletion or previous resources and definition drilling of new resources.

TABLE 6.5							
SUMMARY OF	SUMMARY OF MINERAL RESOURCES (DEC 31, 2014)						
	Mineral Resource   Gold Grade   Total Gold						
Description	(tons)	(opt) (g/t)		(ounces)			
Rice Lake Mine							
Measured Resource	212,000	0.24	8.1	50,000			
Indicated Resource	1,111,000	0.23	8.0	260,000			
Measured and Indicated	1,323,000	0.23	8.0	310,000			
Inferred Resource	2,015,000	0.25	8.4	495,000			
	Hinge Zone Distric	et					
Measured Resource	12,000	0.13	4.3	1,000			
Indicated Resource	871,000	0.19	6.5	164,000			
Measured and Indicated	883,000	0.19	6.4	165,000			
Inferred Resource	1,174,000	0.17	5.9	202,000			
	007 Deposit						
Measured Resource	0			0			
Indicated Resource	305,000	0.14	5.0	44,000			
Measured and Indicated	305,000	0.14	5.0	44,000			
Inferred Resource	1,000,000	0.15	5.1	150,000			
	Other Deposits						
Measured Resource	0			0			
Indicated Resource	662,000	0.17	5.9	114,000			
Measured and Indicated	662,000	0.17	5.9	114,000			
Inferred Resource	1,640,000	0.16	5.3	254,000			
Total Project							
Measured and Indicated	3,173,000	0.20	6.8	633,000			
Inferred	5,829,000	0.19	6.5	1,101,000			

<sup>(1)</sup> Mineral Resource estimate is based on cut-off grades of 0.08 opt (2.74 g/t) and 0.10 opt (3.43 g/t) and a gold price of US\$1350/oz

At that time, total Project Proven and Probable Reserves were estimated at 2,629,000 tons (2,385,000 tonnes) grading 0.173 opt Au (5.93 g/t Au).

Note: the Resource Estimate above is not current and has since been superseded by the 2016 P&E NI 43-101 compliant Resource Estimate, as described in Section 14 of this Technical Report.

<sup>(2)</sup> Some values have been rounded. The totals are accurate summations of the columns and rows of data.

#### 6.4 RICE LAKE PROPERTIES FEASIBILITY STUDIES

Information in this Section is taken from the February 4, 2013 San Gold report titled "Technical Report on the Rice Lake Mining Complex, Bissett, Manitoba".

## 6.4.1 Historic Feasibility Studies

1993: Based on a historic (non NI 43-101 compliant) Mineral Reserve estimated to be 1,226,000 tons (1,114,000 tonnes) grading 0.22 opt Au (7.5 g/t Au), a Pre-Feasibility study by Kilborn Engineering in 1993 for Rea Gold recommended that the Mineral Resource base be increased prior to a production decision.

1995: A Feasibility Study was completed by Rea Gold and Simmons Engineering in 1995 and construction and development of a 1,000 ton (907 tonne) per day operation was initiated.

2002: Howe (Titaro et al 2002) completed a report on the Harmony assets, which included an audit of the mineral resources and mineral reserves, review of the operating and capital costs, and preparation of a financial evaluation of the economic feasibility for reopening the Rice Lake Mine. Howe concluded that a viable shrinkage mining operation could be run at a mining rate of 550 tons (500 tonnes) per day, which delivered ore to a surface stockpile to feed the 1,250 ton (1,136-tonne) per day process plant. The process plant would operate on a two-week on, two-week off cycle. Gold was US\$300 per ounce at this time.

Howe further concluded that based on established estimation practices at the Rice Lake Mine, the mine had a historic (not NI 43-101 compliant) Measured and Indicated Mineral Resource of 1,267,000 tons (1,149,000 tonnes) grading 0.26 opt Au (8.9 g/t Au) plus Inferred Mineral Resources of 735,000 tons (668,000 tonnes) grading 0.31 opt Au (10.6 g/t Au) as of April 2001. All resources were located above the 4,630 Level 5,370 feet (1,637 m) below the collar of A-Shaft) in the C-Shaft and D-Shaft areas of the mine.

Within the Measured and Indicated Mineral Resources, Howe concluded that the Rice Lake Mine had Proven and Probable Mineral Reserves of 901,800 tons (820,000 tonnes) grading 0.27 opt Au (9.3 g/t Au). In determining this Mineral Reserve, Howe used dilution, cutting, and cut-off practices based on more than 38 years of mining at the Rice Lake Mine. All reserves had existing development drifts and were accessible on levels within the C-Shaft and D-Shaft areas.

## **6.4.2** Existing Feasibility Studies

Technical Reports on NI 43-101 compliant Feasibility Studies have not been completed for True North.

#### 6.5 PREVIOUS MINERAL PROCESSING & METALLURGICAL TESTING

A mineral processing plant has been operated intermittently in conjunction with mining since the 1930s. The details of mineral processing and metallurgical testing are disclosed in Section 13 of this Technical Report.

#### 7.0 GEOLOGICAL SETTING AND MINERALIZATION

#### 7.1 REGIONAL GEOLOGICAL SETTING

True North is underlain by the Archean Rice Lake greenstone belt located at the west end of the Uchi Volcanic-Plutonic Subprovince of the Superior Province (Figures 7.1 and 7.2). The Rice Lake greenstone belt is bound to the north and south by the Wanipigow Shear Zone and the Manigotagan Shear Zone, respectively.

The Manigotagan Shear Zone is marked by a regionally continuous zone of faults (Manigotagan-Lake St. Joseph Fault) which separates the volcanic-plutonic terrain of the Uchi Subprovince from the English River (Ontario) - Manigotagan (Manitoba) gneissic belts. The Manigotagan gneissic belt, which occurs immediately south of the Rice Lake greenstone belt, consists of a lithologic gradation from low-grade metavolcanic and metasedimentary rocks, through paragneiss and migmatite, to quartz diorite and granodiorite gneiss.

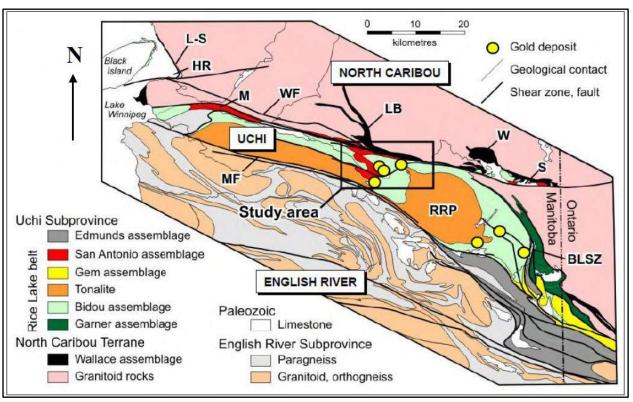
The Wanipigow Shear Zone is marked at True North by regional-scale fault structures and elsewhere by increasing metamorphic grade into the metamorphic-plutonic terrain of the Wanipigow (Manitoba) Subprovinces and Berens River (Ontario). The Wanipigow River Plutonic Complex, which forms the northern boundary of the Rice Lake greenstone belt, is composed mainly of hornblende and biotite-bearing quartz diorite, granodiorite and locally quartz monzonite intrusions and gneisses. Several large gabbro intrusions are also present.

The rocks in the True North area were affected by at least three and possibly four major periods of deformation (Anderson, 2008). The resulting fold pattern is complex with overturned, doubly-plunging folds in the Rice Lake Group rocks. The late Archean San Antonio Formation sedimentary rocks may have been affected by only the last major period of deformation.

Many major regional fault structures are present in the True North area. The most prominent are the major structures that trend generally east-west. Movement along these structures formed conjugate shear zones which splay off to the north and south. Thrust faulting likely occurred in the early stages of the deformation, but these structures are difficult to identify.

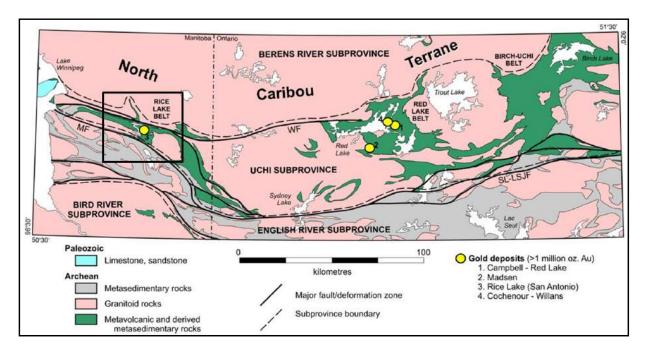
All the major gold occurrences in the Project area occur as quartz veins or quartz vein systems formed during structural deformation of the host rocks. Significant gold production has occurred from the Uchi Subprovince in the Rice Lake area to the west in Manitoba and in the Red Lake, Birch-Uchi Lake and Pickle-Dona Lake areas to the east in Ontario (Figure 7.1).

Figure 7.1 Regional Geologic Map showing the Location of True North Gold Mine in the Archean Uchi Subprovince, Manitoba



\*(Anderson, 2008). Abbreviations: MSZ, Manigotagan Shear Zone; SL-LSJF, Sydney Lake-Lake St. Joseph Fault; WSZ, Wanipigow Shear Zone

Figure 7.2 Geologic Map showing the Location of Gold Deposits and Lithotectonic Assemblages in True North Gold Mine Area



#### 7.2 LOCAL GEOLOGIC SETTING

All of the gold mineralized zones at True North are hosted in rocks of the Bidou Lake Assemblage (Figure 7.3). The Bidou Lake Assemblage forms a north-facing stratigraphic sequence of tholeitic basalt to intermediate volcanic flows, dacite crystal tuffs and breccias overlain by well stratified felsic epiclastic rock interpreted to be of pyroclastic and sedimentary origin. The stratigraphic sequence is intruded by tholeitic gabbro sills and dykes and felsic porphyry dykes.

The best known gabbro sill is the San Antonio Unit, host rock of the gold mineralization at the True North deposit. The Bidou Lake Assemblage is unconformably overlain by feldspathic sandstone of the San Antonio Assemblage.

In the Project area, gold mineralization is controlled by quartz-carbonate veins and vein systems in brittle- ductile structures with related hydrothermal alteration halos within or at the margin of particular host rock units (Figure 7.4).

#### 7.2.1 Host Rock Units

The gold mineralized veins show a high degree of structural control and are best developed in competent host rock units. Since 2009, three main host units have produced the most gold ore at True North (Figures 7.3, 7.4):

- 1) The SAM, a gabbro sill from which gold has been mined for more than 80 years from the True North deposit;
- 2) The Shoreline Basalt unit, which hosts the 007, L10 and SG zones; and
- 3) The Intermediate Volcanic unit, which hosts the Hinge, L13, L08 and Cohiba Zones.

The SAM unit is a layered tholeitic gabbro sill which intrudes the Bidou Lake Assemblage and dips moderately to the north. The SAM has been interpreted to be a subvolcanic feeder for the overlying mafic volcanic rocks. SAM hosted all the gold mineralization mined prior to 2004 in the True North Mine and the Cartwright zone, for a total of 1.5 million oz.

The Shoreline Basalt is a steeply dipping mafic volcanic rock unit that is geologically similar and subparallel to the SAM unit, and hosts the 007, L10 and possibly the SG gold zones (Figure 7.4).

The Intermediate Volcanic Unit occurs to the north of the Shoreline Basalt and hosts the Hinge and Cohiba Zones.

In addition to these three rock unit, an unnamed intermediate to mafic volcanic unit situated in the footwall to the Shoreline Basalt unit hosts the 710 Zone which was discovered in 2013.

5657000N Mapping limit (2011) kilometres B Gold deposits 1. Cartwright 1. Cartwright
2. Cohiba
3. Gold Standard/Hinge
4. L10
5. L13
6. 007
7. San Antonio/Rice Lake
8. SG1
9. Wingold Rice Lake Round Lake unit Townsite unit

Townsite dacite'
Intermediate to felsic volcaniclastic rocks

8a Crystal-lithic lapilli tuff 'SAM unit' Gabbro (T) Fold-axial trace 12 Quartz-feldspar porphyry Shear zone, fault Diorite, quartz diorite 'Hares Island formation' Felsic volcanic conglomerate Geological contact Volcanic conglomerate Felsic volcanic sandstone Gabbro (C) Volcanic conglomerate, sandstone Rainy Lake Road unit 'Shoreline basalt' Basalt flows (F) Basalt and basaltic-andesite flows (T) Gabbro (F)

Figure 7.3 Local Geology of True North Gold Mine Area

(Anderson, 2008, 2011). Deposits of the True North Mine Area are hosted in three main geologic units of the Bidou Lake Assemblage: 1) San Antonion Mafics (SAM) Unit; 2) Shoreline Basalt; and 3) Intermediate volcanic unit.

Mafic volcaniclastic rocks (T)

Rice Lake

Syncling

Gold Creek Shear Zone

Rice Lake

One

Rice Lake

Syncling

Syncl

Figure 7.4 The Structural Geological Setting of Gold Mineralization at True North Gold Mine

The mine area is bound by the Wanipigow Fault Zone to the north; the Normandy Creek Sheer Zone to the east and the Gold Creek Shear Zone to the south. The general north-northeast shortening of the True North Mine area rocks produced a conjugate set of northeast-trending and northwest-trending shear and tensional brittle-ductile structures.

#### 7.2.2 Structures

The structures that control the gold mineralization are brittle-ductile shear zones which strike from parallel to transverse to the host rock units and dip steeply northwest or northeast. The shear zones are marked by intensely foliated and lineated interlayered sericite and chlorite schists, which range from <100m to 6 km long and from 1m to >10m thick (Figure 7.5A).

Structures trending east-northeast have kinematic features indicative of sinistral-reverse movement, whereas those trending northwest have kinematic features indicative of dextral-normal movement.

The sinistral and dextral structures are interpreted to have been generated during a single protracted areal deformation event – D3 (Anderson, 2011; SRK, 2013). Stretching lineation and fold plunges tend to be orthogonal to movement on the host shear zone (SRK, 2013). The structures contain a main, banded (laminated) quartz vein and subsidiary veins in the schist on either side (Figure 7.5B). The main vein can be situated anywhere in the structure.

## **7.2.3** Veins

According to Anderson (2008), shear-hosted veins include massive, laminated and brecciated varieties, commonly within the same vein, and typically pinch and swell along strike and downdip. Thicker veins are associated with inflection points in the host shear zones, which suggests hydrothermal infill of dilational jogs.

Most of the shear zones are associated with fringing arrays of kinematically linked extension and oblique-extension quartz veins, which locally intensify into complex peripheral stockwork-breccia systems. Considered with the geometry of the vein arrays, the vein textures indicate synkinematic emplacement under brittle-ductile conditions. Most deposits are arrays of sub-horizontal extension veins, which suggests emplacement accompanied by transiently supralithostatic fluid pressures.

In the True North deposit, the gold-bearing quartz veins occur mainly as either "16-type" shear zone veins or "38-type" tensional fracture stockwork veins (Figures 7.6, 7.7 and 7.8) or, where they intersect, as a combination of the two vein types. The 16-type appear to be fault fill veins with generally higher grades and more continuity, which are laminated with pressure solution seams (stylolites) and trend north-northeast.

The stylolites consist of intergrown pyrite-chlorite-tourmaline-muscovite. Compared to the 16-type, the 38-type are stockwork breccia veins that are wider and arranged in an en-echelon pattern along the strike and down the dip of the host gabbro unit, but gold mineralization is more irregular and grades difficult to predict. In some deposits, for example SG-1 and SG-3, the gold mineralized veins were intensely transposed during ductile deformation (Anderson, 2008), presumably later in D3.

A. SW

Shear zone foliation (257/54)

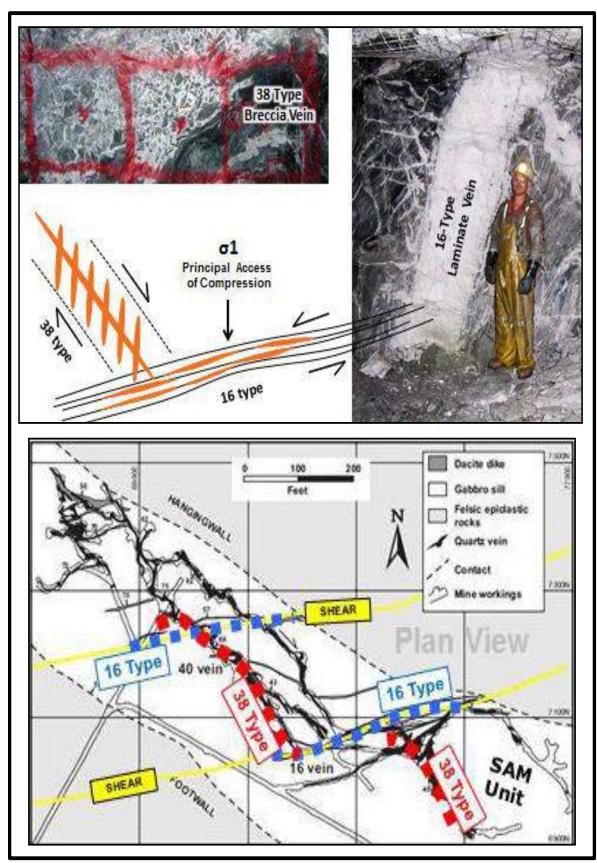
Fold in 98 vein shallowly plunges to the west

B. N S

Figure 7.5 Shear Zones and Quartz Veins

(SRK, 2013), A) East-NE trending shear zone foliation at the 98 vein (16-type) in the True North Mine. B) The main laminated (16-type) 84 vein and subsidiary veins in the True North Mine.

Figure 7.6 Example of 16-Type Shear and 38-Type Breccia Gold Mineralized Quartz Veins in the SAM Unit at True North



(San Gold Corporation, 2015)

In addition to quartz, the veins contain subordinate carbonate, minor albite, chlorite and sericite, and rare tourmaline and fuchsite (a.k.a. mariposite). The carbonate is dolomite-ankerite in composition (Ross & Rhys, 2010). Sulphide minerals consist of pyrite with minor chalcopyrite and rare sphalerite, galena and gold-silver telluride minerals. Pyrite generally comprises <5% of individual veins and occurs as scattered grains and irregular blebs within and along vein margins, and is concentrated along planar slip surfaces or stylolites.

Gold typically occurs are free grains associated with or as inclusions in pyrite. Gold grades tend to be highly erratic within individual quartz veins. The gold ores have high Au/Ag ratios of >5:1 and low concentrations of Copper, Lead, Zinc, Arsenic, Bismuth, Boron, Antimony and Tungsten, as is typical for Archean lode-gold deposits.

#### 7.2.4 Wall Rock Alteration

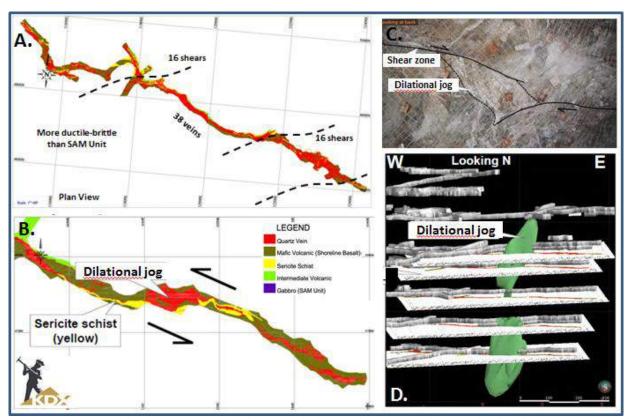
Wall rock alteration spatially associated with the quartz veins varies from minor to intense and is generally zoned outward from proximal albite + ankerite + sericite + quartz +pyrite through medial chlorite + ankerite ± sericite to distal chlorite + calcite (Anderson, 2008). These alteration mineral assemblages overprint the regional greenschist facies metamorphic mineral assemblage (Ames et al., 1991). Many veins show evidence of wall rock sulphidization in the form of coarse euhedral pyrite grains.

In the True North deposit, thick zones of altered and sulphidized wall rock with minor vein quartz contain ore grade gold. Complex and antipathetic distribution patterns of phengitic white mica and muscovite-paragonite are reported by SRK (2013), and appear to be controlled by second order faults and near-mine shear zones.

The True North and SG-1 deposits show close spatial relationship with laterally continuous zones of ankerite-sericite phyllite and phyllonite, which represent reliable guides to ore. Deformation structures in the phyllonite preserve evidence of a complex deformation history, increments of which pre-date and post-date vein formation.

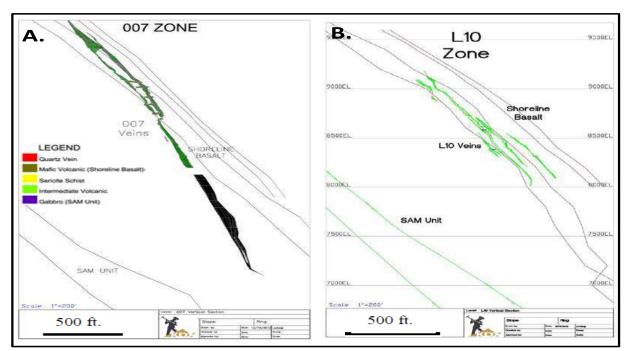
Despite vertical extents of up to >2 km, the True North deposit shows only minor variation in vein mineralogy, texture and structure.

Figure 7.7 Controls on Gold Mineralization in the 007 Zone



(SRK, 2013; San Gold Corp., 2015). A) and B). Level plan geologic maps showing the distribution of veins and alteration, relationship to 16-type shear zones and 38-type breccia zones, and formation of high-grade dilational jogs. C) Photograph of a dilational jog at the L10 zone. D) Three-dimensional image showing the steep northnorthwest plunge of the dilational jog.

Figure 7.8 Interpreted Cross-Sections of 007 and L10 Zones Looking West



A) cross-section of 007 zone. Note that the 007 veins crosscut stratigraphy. B) Cross-section of the L10 zone. The veins here appear to be largely confined to the Shoreline Basalt

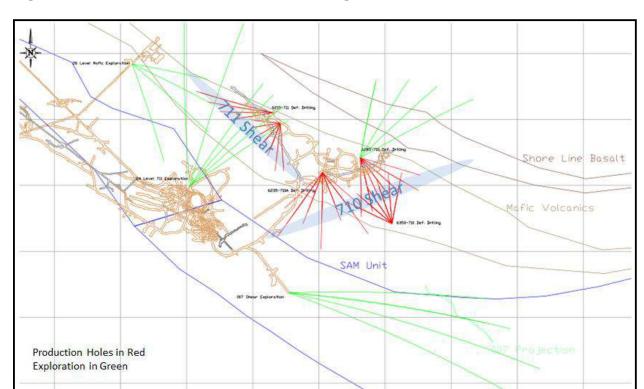


Figure 7.9 Level Plan of the 710 Zone showing the Location of the 710 and 711 Veins.

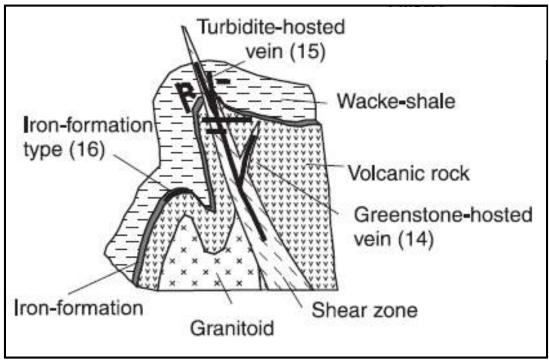
Note the near-orthogonal orientation of the two veins and the host intermediate-mafic volcanic unit between the SAM unit to the south and the Shoreline Basalt unit to the north

#### 8.0 DEPOSIT TYPES

The association of gold at True North with quartz-carbonate veins in brittle-ductile shear zones and laterally extensive hydrothermal alteration zones indicates that the deposits represent epigenetic mesothermal lode gold-type (Poulsen et al., 2000) or orogenic-type gold mineralization (Groves et al., 1998).

Such gold deposits form from metal-bearing fluids generated during accretionary processes and prograde regional metamorphism at depth in greenstone belt terrains. In this model (Figure 8.1), the resulting fluids migrate and are channelled upward along transcrustal fault systems to subsidiary shear and fracture structures developed in the middle to upper crust. Gold is deposited in quartz carbonate veins as a result of pressure-temperature, pH and other physiochemical changes, phase separation and fluid-rock reactions. The reactions commonly involve sulphidization of precursor oxide, carbonate and silicate minerals and mineral assemblages.

Figure 8.1 Schematic Cross-Section Representation of the Geometry and Structural Setting of Shear Zone Hosted Gold-Bearing Quartz Vein Networks in Greenstone Belt Terrains like True North Gold Mine



(Poulsen et al., 2000)

#### 9.0 EXPLORATION

Klondex has yet to commence near mine and regional exploration work at True North. Limited underground diamond drilling exploration, has been completed for ore definition. Most of the exploration work at the Project was completed previously during the San Gold ownership.

Based on the orogenic gold model (Figure 8.1), exploration targets at True North are areas or zones selected based on the criteria listed below:

- Presence of gold
- Favourable structure (shear zones and breccia zones)
- Significant quartz vein material
- Hydrothermal alteration minerals and assemblages
- Proximity to unconformities and disconformities; and
- Proximity to oxidation/reduction boundaries of regional scale

On surface, favourable structures are identified utilizing the 2009 LiDAR survey and the 2011 airborne magnetometer survey. The LiDAR survey products include a high-resolution digital elevation model which has been used to map geological contacts, bedding planes, faults, shears, lineations and joints. Follow-up ground geological mapping is employed to identify fabrics, offsets and abrupt changes in rock types that indicate structure.

Mineral prospecting is used to identify indicative mineral alteration, particularly sericite and carbonate minerals and mineral assemblages. Many surface targets meeting some or all of the relevant criteria remain to be tested by drilling.

Underground exploration has been and continues to be guided by drilling mineralized structures along strike and updip and down-dip from mine workings and development, particularly within the SAM unit, Shoreline Basalt unit, Intermediate Volcanic Unit, and the 710 host mafic unit. At least seven underground targets have been identified by Klondex for exploration drilling.

#### 10.0 DRILLING

Drilling at True North has been completed both on surface and underground. The majority of the drilling was done previously by San Gold. Klondex commenced drilling underground and sampling the historic tailings in the spring of 2016.

#### 10.1 DIAMOND CORE DRILLING

Underground drillholes are planned by the Geology Department using three-dimensional Amine software applying length, dip, and anticipated deviation. The front and back sights are setup by the survey department and on completion of the hole, the collar location is surveyed.

Downhole survey measurements are taken at 70 feet (20m) from the collar, and then every 100 feet (30m) for underground drillholes and 200 feet (60m) for surface drillholes. For infill drilling, the typical hole spacing is 50 feet (15m).

Underground air diamond drills produce AQ size core and underground electric diamond drills produce BQ and NQ size core. Surface diamond drills produce NQ size core, except for the first 500 feet (150m) of some of the deeper holes, for which HQ size core is produced to minimize drillhole deviation.

Underground exploration and definition drilling completed, by previous owners, along the SAM unit was for near and mid-term production planning purposes. Definition drilling also continued at the 007 and L10 zones within the Shoreline Basalt unit and at the L13 and Hinge Zones in order to advance Mineral Resources from Inferred to Measured and Indicated categories and to increase the Mineral Reserve.

In 2011, the L08 zone was discovered to the northwest of the Hinge Zone. The L08 zone was traced vertically in drilling from 1,000 feet to 2,300 feet below surface and is in close proximity to the Hinge Zone and True North workings at the 16 Level. In 2013, the 710 Zone was discovered as part of underground drilling of an unnamed intermediate mafic volcanic unit between the SAM unit to the south and the Shoreline Basalt unit to the north. Underground drilling of the 710 Zone and other zones continued in 2014 through the spring of 2015.

Klondex commenced underground diamond drilling which, in early 2016, was focused on the 710 Zone. By the spring of 2016, approximately 5,700 underground exploration holes were drilled collectively by San Gold and Klondex with an approximate total of 2,482,000 feet (756,500 m).

It is important to note that the apparent drop in the Mineral Reserves and Resources from early publicly released numbers (not NI -43-101 compliant) is not the result from drilling, but due to a more conservative approach to resource modelling and categorizing.

Surface diamond drilling has occurred at the Project since 1912, which includes more than 2,190 holes and 2,605,000 feet (794,000 m) (Table 10-1). San Gold's largest surface drilling exploration program was in 2011-2012 and included drilling approximately 1,024,000 feet (336,000 m) in 602 surface holes. The exploration drill program focused on the SAM unit, Shoreline Basalt unit, and Intermediate Volcanic Rock unit.

TABLE 10.1
SUMMARY OF SURFACE EXPLORATION ON THE TRUE NORTH GOLD MINE

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2015 San Gold Corporation includes Mine Lease diamond drilling 0 2016 Klondex includes Mine Lease diamond drilling 0	2013	San Gold Corporation	includes Mine Lease	diamond drilling	170	316,901
2016 Klondex includes Mine Lease diamond drilling 0	2014	San Gold Corporation	includes Mine Lease	diamond drilling	0	
	2015	San Gold Corporation	includes Mine Lease	diamond drilling	0	
TOTAL 2194 2,605,929	2016	Klondex	includes Mine Lease	diamond drilling	0	
				TOTAL	2194	2,605,929

## 10.2 CHANNEL CHIP SAMPLING

The face sampling procedure described below is used for grade control at the Project is derived from a 2016 document provided by Klondex. The sampling procedure consists of the following steps:

- Ensure that the face to be sampled is secure and safe prior to chipping;
- Wash the face thoroughly to remove loose material and expose rock type boundaries;

- Delineate sample intervals using a measuring stick and paint. The sample line should be perpendicular to the orebody dip and run from left to right;
- Sample widths should not exceed 3 feet in waste and 2 feet in ore, with a minimum sample width of 0.5foot (0.15m);
- Sample intervals should not cross lithologic boundaries; and
- Cumulative sample intervals should encompass the entire width of the face.

Samples are collected by chipping rock from the interval utilizing a sharp rock hammer pick. Rock chips are placed in a clean plastic 12 inch x 12 inch sample bag. The bag is filled to an approximate ¼ capacity. Sample information is recorded on a sample tag and the numbered end placed in the corresponding sample bag.

On a chip sample face sheet, a scaled picture is drawn of the face and the sampled intervals. In addition, the date, sampler, heading, dimension, orientation, position relative to the nearest survey station, samples, sampled intervals, and materials (host rock or vein) are all recorded.

The channel chip sample information is entered into the database and stored as pseudo drillholes with collar, survey and assay values.

#### 10.3 HISTORIC TAILINGS POND DRILLING/SAMPLING

Prior to committing to a trial of the re-processing of the historic tailings an extensive sampling program was undertaken to determine the distribution of recoverable gold within the tailings mass. In the spring and summer of 2016, Klondex drilled 138 holes and hand dug 214 holes on the historic tailings for which is a total of 352 holes with a total footage of 3,714 feet (1,132 m) (Table 10.2). The holes ranges in depth from <5 feet at the margins up to 35 feet in the centre.

On the historic tailings, two phases of drilling have been completed using a 200-foot by 100-foot grid. Phase 1 drilling was completed using a stem auger. The hollow stem auger sampling method employed by SanGold is not well documented. Brief descriptions indicate that the holes were drilled and sampled in 5-ft (1.5m) increments through a hollow stem auger.

Phase 2 drilling was performed with a percussion probe (Geo Probe). Holes were planned, located, and staked with a differential global positioning system (GPS), and drilled with a dual tube system. An outer tube is pushed down inside the drill rod by percussion, and then an inner tube with a sampling polyvinyl chloride (PVC) cylinder is pushed down inside of the tube. A continuous 5-foot sample is collected within the PVC cylinder. The inner PVC cylinder and the sample are retrieved through the outer tube, which remains in place. When drilling resumes, the drill pushes down an additional 5-foot section of outer tube, and the processes is repeated in continuous 5- foot intervals until the total depth of the hole is reached.

In addition to the drilling, samples were also collected from hand dug holes. Holes were planned on a grid spacing of 50-foot by 50-foot and staked and located with a differential GPS. The holes were dug to the diameter of the shovel blade and to a depth at which the hole is stable. The geologist logs lithologic units that are >0.5 foot in thickness, based on grain size (sand, clay, or mixed). Hand dug hole collars are imported into the database as pseudo drillholes with an azimuth of 0 degrees and dip of -90 degrees.

TABLE 10.2
SUMMARY OF TAILINGS DRILLING AT TRUE NORTH GOLD MINE

Hole Type	<b>Grid Spacing</b>	No. Holes	Footage	Assay Lab
Stem Auger	200 ft x 100 ft	39	818.8	AcmeLabs
Geo Probe	200 ft x 100 ft	99	2351.5	TSL Lab
Hand Dug	50 ft x 50 ft	214	543.5	Site Lab

#### 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

This section of the report summarizes the sampling methods, sample preparation, assay analysis, and security procedures for surface and underground drill core, underground face sampling, and historic tailings sampling.

For core and face sampling, the procedures were developed and documented by the previous operator San Gold have largely been adopted by Klondex. Any changes made by Klondex are noted within this Technical report. The procedures for tailings sampling were developed entirely by Klondex.

#### 11.1 CORE SAMPLING METHODS

Surface and underground drilling at the Project is completed by contractors. Diamond drill core is placed in labelled wooden trays and depth marker blocks are inserted by drilling contractor personnel prior to the removal of the core from the drill site by the project geologist. Upon arrival at the secure core logging facility, the core boxes are sequentially placed in a core rack and the spatial information on each box of core is checked for accuracy and consistency. If necessary, remedial action is undertaken to correct deficiencies and errors in the spatial information prior to entry into the database. The drill core is digitally photographed prior to logging and marked for sampling.

## 11.1.1 Surface Core Sampling Methods

Exploration geologists log the core and record observations in a digital drill log database prior to sample selection for assay analyses (Figure 11.1). Core intervals are selected for sampling based on the following presence of mineralization, favourable structure and quartz veining. They are then marked and measured for sampling and identified with one part of a three-part assay tag placed at the end of the sample interval.

Samples are taken by sawing the core perpendicular to the core axis, with one-half of the core returned to the core box and the other half placed in a clean plastic bag along with part two of the three-part assay tag. Information on the third part of the assay tag is entered into the database and the drill log, at which time accuracy and consistency are checked again and corrected for discrepancies.

San Gold submitted core samples for assay analysis to TSL Laboratories Inc. in Saskatoon, Saskatchewan. Check assays were performed at Accurassay Laboratories Ltd. in Thunder Bay, Ontario. As of the publication date of this Technical Report, Klondex has not completed any surface drilling. Both labs are independent of Klondex.

#### 11.1.2 Underground Core Sampling Methods

Drill programs planned by the Projects's Department are typically underground definition drilling of known zones rather than exploration. The core sampling method differs from that for the surface exploration holes.

The interval to be sampled is determined and marked by the geologist logging the core (Figure 11.1). Most samples, particularly those from known zones, range between 0.5 foot (0.15m) and 4.0 foot (1.2m) in length. Every sample is bracketed by a minimum of 1.0 ft. (300 mm) for small veins and structures and 6 feet (1.8m) in each of the footwall and hanging wall of known zones.

The entire core sample is placed in a bag by the geologist and identified with an assay tag, which has a copy that remains in the sample book, and the sample number is recorded in the database. If core is to be cut, the sampling procedure is the same as the surface exploration procedure. Approximately 10 feet (3.05m) of core above and below the sampled portion is kept to ensure that sufficient material remains if a re-bracket is required. The remainder of the core is stored at the Project.

Underground core samples are submitted to TSL Laboratories Inc. (TSL) in Saskatoon, Saskatchewan. The check assay laboratory was ALS Global (ALS) in Vancouver, British Columbia. San Gold also submitted core samples to the Project's Assay Lab. In which case, check assays were performed by TSL. Klondex submits underground core samples to TSL. Their check assay lab is ALS. Both labs are independent of Klondex.

Surface Underground Drill Drill CORE SHACK Logged by exploration/mine geologist Sampled Tagged Insert blanks and standards Packaged to be sent for analysis **Surface** Underground Core Core Whole core samples Split core samples TSL Rice Lake Assay Lab Laboratories

Figure 11.1 Flow Chart for Surface and Underground Core Sampling Methods

In general, all sections with quartz veining and/or alteration are sampled. Sample lengths in mineralized core, characterized by silicification, carbonate alteration, sulphide minerals, quartz veins and visible gold, are variable and based on geological considerations.

Blind standards are routinely inserted into the sample sequence prior to delivery to the assay laboratory. Blanks (also routinely inserted every 50 samples and after all noted visible gold) consist of intervals of un-mineralized core which are identified and flagged prior to shipment to the assay lab.

Sealed sample bags are transported to the assay laboratory in a timely manner. Upon arrival at the assay lab, samples are received by laboratory personnel and transferred to the laboratory's chain of custody procedures and protocols. (Klondex keeps a chain of custody as well which is updated throughout the process)

## 11.2 FACE SAMPLING METHODS

The face sample preparation methodology is outlined below:

- Channel chip samples are bagged on-site at the face as described in Section 10.2;
- The samples are delivered to the Project's assay lab for analysis; and
- The internal lab inserts their own QAQC into the chip sample stream.

## 11.3 TAILINGS SAMPLING METHODS

Preparation of the tailings drillhole samples is summarized in the following text. The tailings samples and QAQC samples are placed in rice bags and sealed with security tags and zap-straps. Each sample bag has a sample ID and a bag number written on it. There is one sample shipment ID per hole. Each rice bag weighs approximately 30 pounds.

Security tags are recorded in an Excel tracking spreadsheet separate from the Chain of Custody. Phase 1 samples were sent to Acme Analytical Labs Ltd ("Acme") in Vancouver, British Columbia for assay. Phase 2 samples went to TSL.

The assay lab breaks opens, dries and screens the sample at 80 mesh. Approximately 1,000 grams are riffle split, pulverized to -200 mesh. Thirty grams are taken for fire assay. The reject and pulp portions are returned to the Project and stored in the QAQC compound at the SG1 Zone compressor building or retained at the TSL

Preparation of the hand dug hole samples from the tailings pond is as follows. The samples are delivered to the Project's Assay Lab where the lab inserts their own QAQC into the tailings sample stream. The samples then are dried are subsequently rolled with a steel rolling pin to break down any lumps. The samples are then split to size in a Jones riffle. After reducing the size of the sample to between 200 and 250 grams, they are pulverized for 30 seconds in a ring pulverizer, rolled and placed in a pulp bag for assaying. Forty grams are taken for fusion.

## 11.4 SAMPLE QUALITY, REPRESENTATIVENESS AND SAMPLE BIAS

- The sampling methods used by Klondex are similar to the current industry standards for mineralization of this type. P&E recognizes that there exists serious issues related to gold deposit sampling because of the non-uniform distribution of gold within the vein systems. P&E does not believe this to be the case in this instance.
- P&E consider that the sampling methods utilized meet NI43-101 standards.

#### 11.5 SAMPLE PREPARATION, ANALYSIS AND SECURITY

## 11.5.1 Core Sample Preparation and Analysis

The primary independent assay laboratory used by San Gold and Klondex is TSL. When pulps and rejects are returned by TSL, selected samples are sent by the Company to ALS to cross check the TSL assay results. TSL and ALS are each ISO/IEC 17025 certified laboratories and have long histories within the Canadian mining industry. Each laboratory uses similar sample preparation, analytical methods, and QAQC procedures.

On receipt by TSL, samples are sorted and verified according to the sample submittal form shipped with the samples by the Company. Security ties on the sample bags are checked with records sent electronically to TSL and the shipment is assigned a TSL reference number and worksheet. Sample labels are produced with the client sample number and the TSL reference number. Sample preparation procedures involve oscillating jaw crushing to 75% -10 mesh. A 1,000-gram sub-sample is riffle split from the -10 mesh sample and pulverized to >95% -150 mesh in a ring mill pulverizer. Between each sample, the crushers, rifflers, and pans are cleaned with compressed air. Pulverizing pots and rings are brushed, hand cleaned and air blown.

Samples without visible gold are subject to normal fire assay analytical procedures. The gold concentration is determined for a homogenized 30-gram sample using a fire assay collector and atomic absorption finish. Samples are assayed in batches of 24, comprised of 20 client samples, two duplicate client samples, one TSL standard and one TSL blank.

Each sample with visible gold is subject to total metallic and fire assay procedures. The whole sample is crushed and pulverized to 95% passing 150 mesh. The +150 mesh fraction (including the sieve cloth) is assayed for the coarse gold content and two 30-gram samples of the -150 mesh are assayed. The weighted average of the three assays determines the reported assay grade for the sample.

#### 11.5.2 Channel Chip Sample Preparation and Analysis

Channel chip samples are analyzed by the Project's Assay Lab at True North. When chip samples are received in the laboratory, they are sorted and placed into numerical order and the sample tag number written on the outside of the plastic bag. Wet samples are dried. All information on the samples received is entered into the logbook.

All dry samples are put through a Rhino Crusher. The crusher reduces the size of the sample to 50% -10 mesh. Crushed samples are reduced in size to approximately 200 grams by splitting, utilizing the sample riffle until one side contains the 200 gram sample to be pulverized. The remaining sample (reject) is returned to the original sample bag and stored for 6 months.

All crushed samples are pulverized for 90 seconds in a ring pulverizer to 90% -150 mesh. The sample pulps are rolled to ensure that they are homogenous and then placed in pulp bags for assay.

Pulp samples are subject to normal lead fire assay analytical procedures. A 20 gram sample is placed with 60 millilitres flux in a 30 gram crucible for fusion and fire assay of gold. Klondex does not insert standards or blanks with the chip samples.

The past production of greater than 1.5 million oz of gold from the True North Gold Mine supports the validity of the channel sampling and assay procedures. P&E consider the assays to be accurate. The Project's Assay Lab inserts a standard with every set of samples and the results are checked and tracked internally. The Project's Assay Lab also runs check assays with each batch of chip samples.

#### 11.5.3 Tailings Sample Preparation and Analysis

The sample cylinders are split by the driller for the geologist. The geologist wearing latex gloves photographs the sample, and then scoops it from the cylinder into a doubled sample bag using a spoon. The sample is tagged, the inner bag is rolled down and the outer bag is sealed. After each hole is completed, the geologist changes gloves and washes the spoon with distilled water.

## 11.6 CORE QUALITY ASSURANCE & QUALITY CONTROL

A QA/QC program was implemented by San Gold and adopted by Klondex to monitor the contamination, precision and accuracy at the various stages of core sample analysis. Klondex systematically inserts sample standards, blanks and duplicates into its sampling stream.

After every 25<sup>th</sup> sample, the company inserts a QA/QC control sample alternating between a standard, a field duplicate and a blank. (Standards are every 25<sup>th</sup> sample, Blanks are every 50<sup>th</sup> sample or after any noted visual gold, Duplicates are inserted every 20 samples.) When assays are received, the data are plotted to ensure that all the results are within acceptable limits and any remediation, if required, is carried out.

## 11.6.1 Sample Standards

Under Klondex procedures all exploration core is subject to data verification procedures through the insertion of four blind sample standards at regular intervals in every one hundred samples.

Standards consist of Standard Reference Material (SRM) purchased from CDN Resource Laboratory Ltd. located in British Columbia, Canada. Four different standards are employed with contents of gold ranging from low grade to high grade (Table 11.1).

Assay results for the standards are illustrated in Figures 11.2 to 11.5. Results are routinely reviewed. If the results plot outside the acceptable limits for standards or blanks, the sample batch is rerun.

TABLE 11.1
CERTIFIED GOLD ASSAY VALUES FOR COMMERCIAL STANDARDS

<b>CRM Standard</b>	Laboratory	Recommended Value (g/t)	2 x StdDev
CDN-GS-1P5C	CDN Resource Laboratory Ltd.	1.56	0.13
CDN-GS-6B	CDN Resource Laboratory Ltd.	6.45	0.33
CDN-GS-13A	CDN Resource Laboratory Ltd.	13.20	0.72
CDN-GS-22	CDN Resource Laboratory Ltd.	22.94	1.12

P&E considers that all potential gold mineralized zones in drill core have been sampled. Security of the samples at the core logging facility and at the analytical lab appear to be adequate to ensure the integrity of the samples and assays.

Figure 11.2 Assay Results of Standard CDN-GS-1P5C

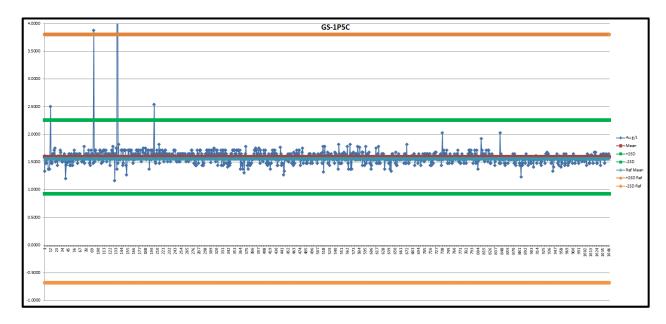
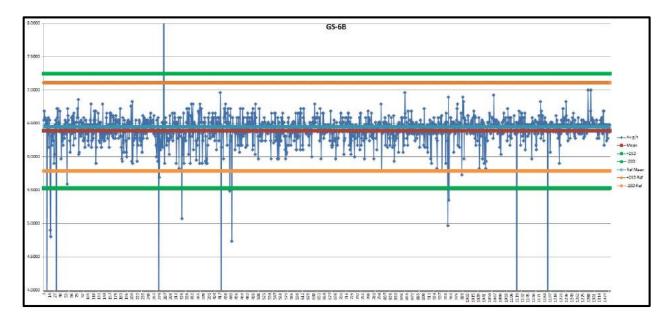
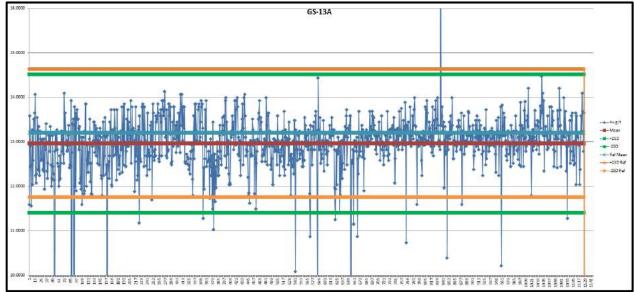


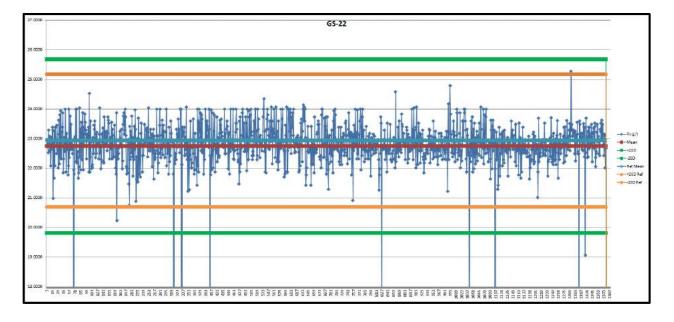
Figure 11.3 Assay Results for Standard CDN-GS-6B



**Figure 11.4** Assay Results for Standard CDN-GS-13A GS-13A



**Figure 11.5 Assay Results for Standard CDN-GS-22** 



#### 11.6.2 **Core Sample Blanks and Duplicates**

Sample blanks consist of un-mineralized, unaltered and un-deformed drill core from True North. Two blanks are inserted at regular intervals for every 100 samples. Additional blanks are inserted after each sample with visible gold. The blanks are employed to monitor contamination during the sample preparation step in the assay lab.

Review of assay results for 4,178 blanks indicates that only 28 (<0.7%) exceed the upper threshold assay value set by San Gold of 0.05 opt Au (Figure 11.6). An upper threshold assay value of 0.02 opt Au is utilized by Klondex. Otherwise, the core sample blank analysis protocols remain unchanged from those used previously by San Gold.

Five duplicate samples are inserted by TSL at regular intervals in every 100 samples by cutting un-mineralized intervals of whole drill core in half. The procedure also includes TSL submitting selected sample rejects to ALS for duplicate analysis. The duplicate sample assay results reflect the heterogeneous distribution of gold in the core (Figure 11.7).

Figure 11.6 Assay Results for Blanks

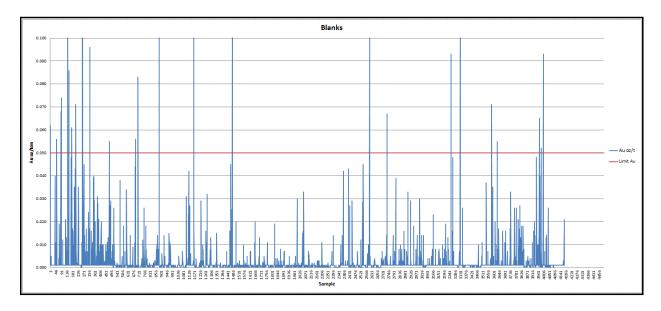
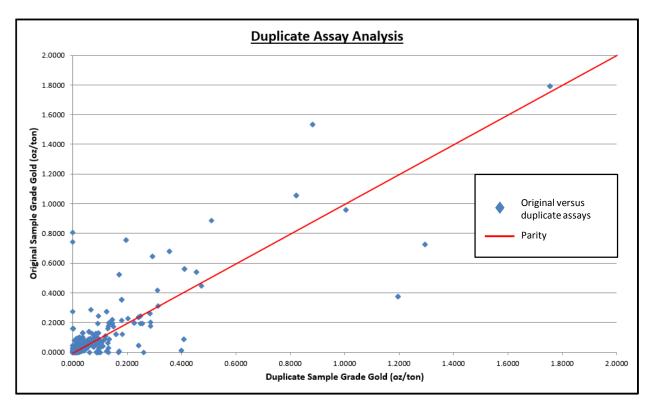


Figure 11.7 Assay Results for Duplicates



## 11.7 CHIP QUALITY ASSURANCE & QUALITY CONTROL

## 11.7.1 Sample Standards

The standards inserted by the Project's Assay Lab consist of Certified Reference Materials (SRM) produced by Rocklabs of Auchland, New Zealand and sold in Canada previously by Anachemia Science and currently by VMR's mining division (Table 11.2). The standards are ordered with a sulphur matrix and a gold value of approximately 1 part per million (ppm) to 10 ppm.

Results are routinely reviewed by the Project's Assay Lab.

TABLE 11.2
CERTIFIED GOLD ASSAY VALUES FOR COMMERCIAL STANDARDS

<b>CRM Standard</b>	Laboratory	Recommended Value (ppm)	95% CI
SG31	Rocklabs	0.996	0.011
SG40	Rocklabs	0.976	0.009
SG66	Rocklabs	1.086	0.009
SK52	Rocklabs	4.107	0.029
SK62	Rocklabs	4.075	0.045
SL61	Rocklabs	5.931	0.057
SN38	Rocklabs	8.576	0.061
SN50	Rocklabs	8.685	0.062
SN60	Rocklabs	8.595	0.073
SN74	Rocklabs	8.981	0.065
SN75	Rocklabs	8.671	0.054

## 11.7.2 Chip Sample Duplicates

Duplicate assays are run with every set of chip samples. Assay results for the original samples versus duplicates are illustrated in Figure 11.8. Results are routinely reviewed by the Projects's Assay Lab.

Duplicate Chip Assay Analysis

5.000
4.500

1.500

1.500

1.500

1.500

1.500

1.500

Figure 11.8 Assay Results for Chip Sample Duplicates

## 11.8 TAILINGS QUALITY ASSURANCE-QUALITY CONTROL

2.000

1.500

## 11.8.1 Sample Standards

0.500

1.000

0.000

For QAQC of the historic tailings samples, blind standards are inserted every 25<sup>th</sup> sample. The standards utilized are Canadian Research Lab standards GS-1L, GS-1P5C, and GS-P6 on an alternating basis. At this stage, the majority of the data are available for GS-1P5C and GS-1L. Assay results for the standards are illustrated in Figures 11.9 to 11.10. Results are routinely reviewed. If the results plot outside the acceptable limits for standards and for blanks, the sample batch is rerun.

2.500

Duplicate Chip Sample Grade Gold (oz/ton)

3.000

3.500

4.000

4.500

5.000

## 11.8.2 Tailings Sample Blanks and Duplicates

Sand blanks are inserted at the sample numbers ending in 40 and 90. The blanks are composed of beach sand, which has been prepared and assay tested at the Project's Assay Lab. Assay results for the blank are illustrated in Figure 11.11. Assay results for duplicates are illustrated in Figure 11.12. Blank and duplicate results are routinely reviewed.

Figure 11.9 Tailings Assay Results for Standard GS-1P5C

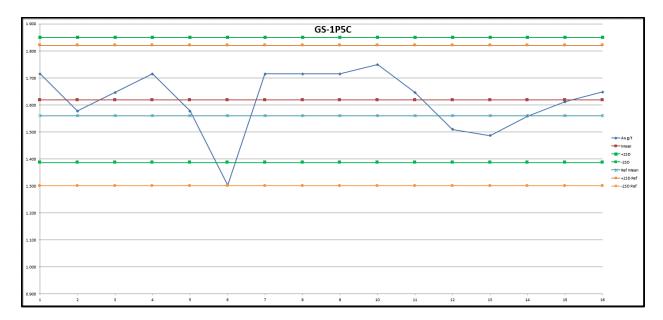


Figure 11.10 Tailings Assay Results for Standard GS-1L

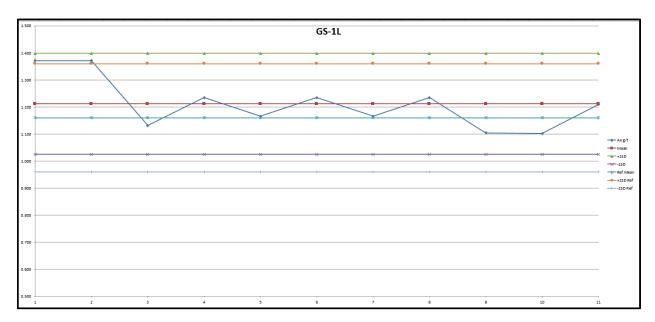


Figure 11.11 Tailings Assay Results for Blanks

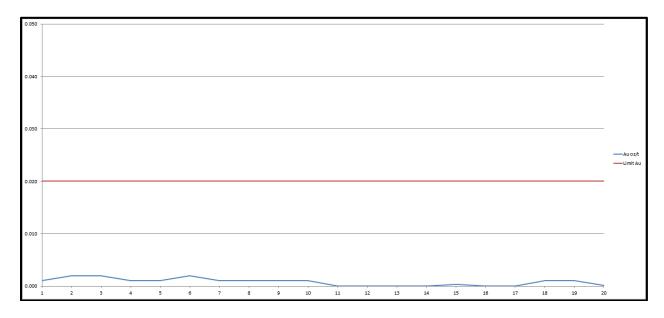
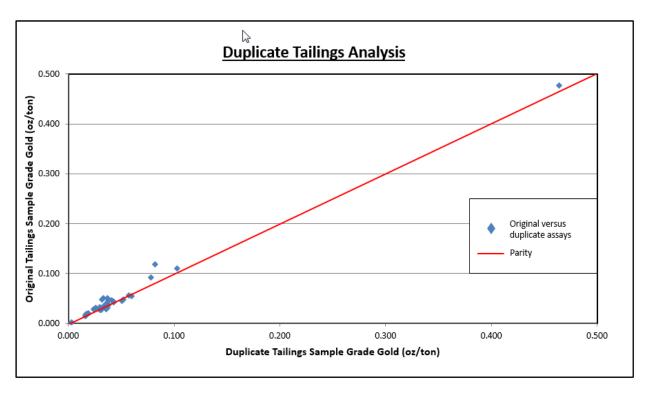


Figure 11.12 Tailings Assay Results for Duplicates



## 11.9 RECOMMENDATIONS AND CONCLUSIONS

P&E is of the opinion that the core, channel chip and tailings sample assay data have been adequately verified for the purposes of a mineral resource estimate. All data included in the resource estimate appear to be of adequate quality.

## Recommendations are as follows:

- 4) Technical Database: All Project data collected needs to be stored and archived in a permanent and reliably retrieval manner. A full-time database administrator is recommended.
- 5) Quality Assurance/Quality Control: Timely follow-up for any and all QA/QC assay deviations and re-assay requests should be performed in a timely manner. The process should be automated when the database is up and running.
- Sample Storage and Retrieval: Half-core remaining from sample assays should be retained for reference and check assay purposes. All assay sample rejects and pulps should be stored in a safe, secure and sheltered manner and properly catalogued to ease retrieval.
- 7) Project Assay Lab: Standard operating procedures should be updated, particularly in regards to assay data generation, storage and retrieval.

#### 12.0 DATA VERIFICATION

This section of the report summarizes the results of P&E's due diligence for the data verification for the True North Gold Mine.

#### 12.1 DRILL DATA REVIEW

True North Gold Mine was visited by Dr. Bill Stone, P.Geo., a Qualified Person as defined in National Instrument NI 43-101 Standards of Disclosure for Mineral Projects. Dr. Stone visited the Project of three occasions on May 21-25, June 20-23 and September 20-22, 2016. The categories of data reviewed for the three datasets include collar location surveys, down-hole surveys, assay results and geology.

#### 12.1.1 Collar Location Checks

Comparison of 130 underground collar survey reports to easting, northing, elevation and hole length values in the database revealed no errors. Collar locations of the underground holes are considered to be reliable.

Comparison of 55 surface collar survey reports to easting, northing, elevation and hole length values in the database revealed no errors. Collar locations for the surface holes are considered to be reliable.

## 12.1.2 Hole Survey Checks

Comparison of 51 underground hole borehole survey reports to azimuth and dip values in the database found no errors. Borehole surveys of the underground holes are considered to be reliable.

Comparison of 13 surface hole borehole survey reports to azimuth and dip values in the database found no errors.

## 12.1.3 Core Assay Checks

P&E conducted verification of the drillhole assay database by comparison of the database entries with the assay certificates. The assay certificates were obtained in digital format directly from the assay laboratories and compiled.

Assay data ranging from 2009 through 2016 were verified for the True North Gold Mine. Approximately 40% (6,220 out of 15,494) of the constrained drilling assay data were checked for Au against the original laboratory certificates from TSL, ALS, and the Project's Assay Lab. A very few minor data errors were observed and corrected, with the overall impact to the database considered negligible.

## 12.1.4 Geology Checks

The digital core logging system developed by San Gold has been adapted by Klondex for True North. In the lithology database, 14,292 intervals logged as 75% or greater quartz were checked for vein codes. As a result, only <1% of the quartz rich intervals were coded as rock types other than quartz veins.

Many of these intervals are coded as chert or cherty sediments, or structures such as faults and shear zones that are commonly associated with quartz veins. In addition, 6,728 intervals logged as shears or shear zones in the structure database were also checked and only a single error was found.

#### 12.2 CHANNEL CHIP DATA REVIEW

#### 12.2.1 Collar Location Checks

The location of the channels on the original face map sheets and the Klondex database show positive correlation.

## 12.2.2 Down Hole Survey Checks

The location of the channel chip samples on the face map sheets and the database show positive correlation.

## 12.2.3 Assays Checks

P&E conducted verification of the channel chip database by comparison of the database entries with the assay certificates. The assay certificates were obtained in digital format directly from the assay laboratories and compiled.

Assay data ranging from 2009 through 2016 were verified for the True North Gold Mine. Approximately 66% (3,739 out of 5,697) of the constrained chip channel assay data were checked for Au against the original laboratory certificates from the Project's Assay Lab. A very few minor data errors were observed and corrected, with the overall impact to the database considered negligible.

#### 12.3 TAILINGS DATA REVIEW

Tailings sample procedures are described in Section 10.3 of this report. All the holes are located by differential GPS and are vertical. Sand and clay lithological units >0.5 feet thick are logged.

## 12.3.1 Assays Checks

P&E conducted verification of the tailings assay databases by comparison of the database entries with the assay certificates. The assay certificates were obtained in digital format directly from the assay laboratories and compiled. Approximately 87% (882 out of 1,012) of the tailings assay data were checked for Au against the original laboratory certificates from TSL, ACME and the Projects's Assay Lab. A very few minor data errors were observed and corrected, with the overall impact to the database considered negligible.

#### 12.4 DUE DILIGENCE SAMPLING

Data verification assays were carried out for three separate batches of samples:

- Pulp samples of diamond core from 14 drillholes of three mineralized zones;
- Half-core samples of diamond core from 6 drillholes of three mineralized zones;
   and
- Rejects of 20 samples from the tailings pond.

As part of the due diligence, sampled intervals of a variety of low grade, average grade, and high grade mineralized material. Selected core intervals were sampled by taking the entire pulp sample or the entire half core, whichever was available.

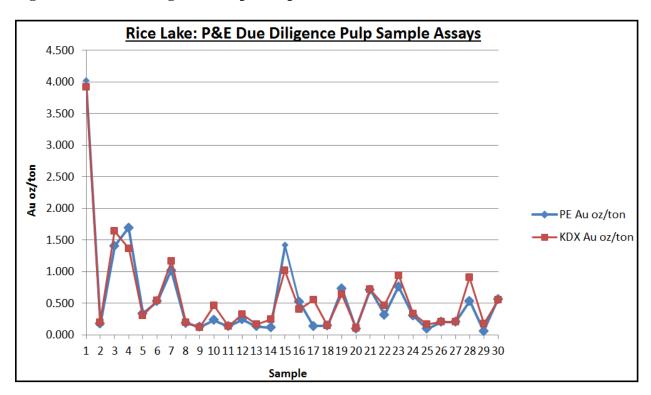
For due diligence of the historic tailings, samples were selected from stored sample bags. The bagged materials were sampled by taking half or the entire sample, whichever was available. Prior to sampling, employees or other associates of Klondex were not informed of the location or identification of any of the samples to be collected. The objective of these check samples was to verify the presence and approximate grades of gold encountered during drilling, rather than to provide exhaustive independent verification of the original assay results.

The samples were collected by Dr. Stone or under his direct supervision. They were placed by Dr. Stone in appropriately numbered sample bags with pre-packaged standards, sealed in rice bags with lock ties and packing tape, and taken by him to Burlington for courier transport to the P&E office in Brampton, Ontario. From there, the samples were sent by courier to AGAT Laboratories Ltd. (AGAT) in Mississauga, Ontario for analysis. Gold was analyzed by fire assay on a 30 gram aliquot with an AAS finish. Samples yielding values >10 g/t Au were re-assayed and quantitatively determined by the gravimetric method.

AGAT employs a quality assurance system to ensure the precision, accuracy and reliability of all results. The best practices have been documented and are consistent with:

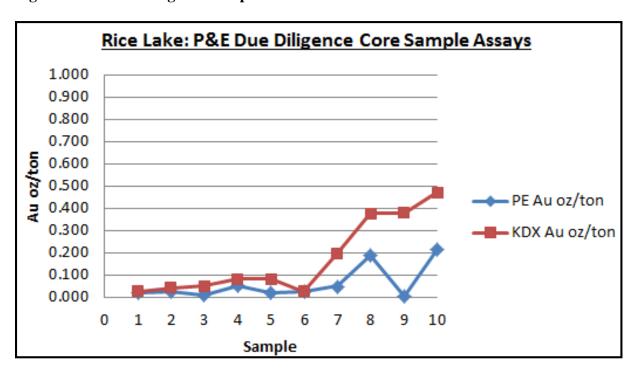
- The International Organization for Standardization's ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories' and the ISO 9000 series of Quality Management standards";
- All principles of Total Quality Management (TQM);
- All applicable safety, environmental and legal regulations and guidelines;
- Methodologies published by the American Society for Testing and Materials (ASTM), National Institute for Occupations Safety and Health (NIOSH), United States Environmental Protection Agency (EPA) and other reputable organizations; and
- The best practices of other industry leaders.

Figure 12.1 Due Diligence Sample Pulp Results for Gold



P&E's independent comparisons of the core sample verification results to the original assay results are illustrated in Figures 12.1 and 12.2. The P&E results for the pulps are satisfactory, but those for cores exhibit a low bias consistent with what could be anticipated for different sample volumes of a relatively heterogeneous sample from a high-grade, narrow vein gold deposit like True North.

Figure 12.2 Due Diligence Sample Core Results for Gold



Comparisons of the P&E independent tailings sample verification results to the original assay results are illustrated in Figure 12.3.

True North: P&E Due Diligence Tailings Sample Assays 0.120 0.100 0.080 Au oz/ton 0.060 KDX Au oz/ton PE Au oz/ton 0.040 0.020 0.000 6 11 16 21 26 31 Sample

Figure 12.3 Due Diligence Tailings Sample Results for Gold

# 12.5 CONCLUSIONS TO DATA VERIFICATION

Based on the evaluation of the QA/QC program undertaken by Klondex and the due diligence sampling and assay program performed by P&E, it is P&E's opinion that the results are suitable for use in the current Mineral Resource estimate.

#### 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Mining and ore processing has been carried out at True North intermittently since the early 1930's. The original process used a gravity concentration step and whole-ore cyanidation using Merrill Crowe gold precipitation. Recoveries with this original plant and process were generally 96%.

In 1980, the original process plant was destroyed by fire except for the crushing plant and fine ore bin feed conveyor. A new process plant was constructed with the same throughput as the original; however, the process was changed to incorporate gravity concentration and a bulk sulphide flotation process.

It was found that by floating the sulphides, a "throwaway: tail" could be achieved. The concentrate was reground and upgraded through a cleaner circuit and filtered. The high grade concentrate was then shipped to a local smelter. Recovery using this process was generally 93%.

In the mid-1990's, the mine was restarted and the process plant was expanded by adding a larger 12.5 foot x 14 foot (3.8m x 4.3m) grinding mill and a cyanide leach circuit for concentrate leaching. The operation was short lived.

In 1998, the operation was restarted again and this time ran for three years at a rate of 1,000 tonnes (907 tonnes) per day. The process used two-stage crushing followed by grinding, concentration using a centrifugal concentrator, and a bulk sulphide flotation process. This flotation concentrate was reground and sent to a leach/CIP gold recovery plant. The carbon was eluted using a conventional pressure strip followed by electrowinning and subsequent refining. Recovery for the period was calculated as generally 92%.

TABLE 13.1							
HARMONY GOLD – RICE LAKE DEPOSIT METALLURGICAL RESULTS							
Tons Milled 1990's							
994,830							

When the Hinge Zone was developed, a 3,700 ton (3,357 tonne) bulk sample was treated through the process circuit with no changes having been made to that process. Recovery from this bulk sample was generally 92%. Subsequent samples were processed in May and June of 2009 with recoveries at 96.6% and 97.2% respectively, not shown.

	TABLE 13.2						
	HINGE ZONE METALLURGICAL RESULTS						
Tons Milled	Gravity	Gravity EW Gold Prod'n Overall Loss Calc. Grade Gravity Overall					
Tons Willed	(oz. Au)	(oz. Au)	(oz. Au)	(oz. Au)	(opt Au)	Recovery	Recovery
154,229	6,712	16,608	23,320	1,826	.163	27.30%	92.74%
27,543	742	3,385	4,127	348	.162	16.59%	92.23%
258,469	10,462	21,418	31,880	2,605	.133	27.61%	92.45%

In August 2010, the first bulk sample from the 007 Zone ore was processed. This represented 6,245 tons (5,667 tonnes) grading 0.139 opt Au (4.77 g/t Au) gold with a general recovery of 92%. Additional samples in the months of September and October of 2010 yielded recoveries between 95% and 92%, not shown. Current process plant recovery from all ore is 93.3%, not shown.

	TABLE 13.3 007 Zone Metallurgical Results							
		00 / 2	LONE WIETALI	LUKGICAL NE	SULIS			
Tons	Gravity	$\mathbf{EW}$	Gold Prod'n	Overall Loss	Calc. Grade	Gravity	Overall	
Processed	(oz. Au)	(oz. Au)	(oz. Au)	(oz. Au)	(opt Au)	Recovery	Recovery	
24,734	24,734 1,015 1,944 2,959 270 0.131 65.78% 91.65%							
248,475	17,782	27,716	45,498	3,026	0.195	36.65%	93.76%	

Although current operations employ a conventional ball mill as a primary grinding unit, the potential of Semi-Autogenous Grinding (SAG) milling was investigated. Samples of both True North and Hinge Zone mineralized material were sent to both SGS Mineral Services' Lakefield Laboratory (SGS Lakefield) and Starkey & Associates Inc. (Starkey Associates) for testing. Results are listed below.

TABLE 13.4 SGS LAKEFIELD AND STARKEY ASSOCIATES SAG MILL TESTING RESULTS								
Sample Name	Relative	Parameters			Pherson Test	Work Indices (kWh/t)		
Name	Density	Axb	ta	(kg/h)	(kWh/t)	AWI	RWI	BWI
Rice Lake Ore	2.77	74.5	0.34	9.7	8.2	13.9	15.7	14.9
Hinge Ore	2.71	64.4	.038	10.9	7.5	14.5	13.2	16.7

TABLE 13.5 JKTECH DROP-WEIGHT TEST SUMMARY							
Sample Name A b Axb Hardness ta Hardness Percentile Percentile Density							
Rice Lake Ore	161/10//14/5 1 50 10341 /3 1 2// 1						
Hinge Ore	91.9	1.04	64.4	30	0.38	65	2.71

Table 13.6 shows additional SGS Lakefield and Starkey & Associates SAG Mill Testing Results.

	TABLE 13.6 MORE SGS LAKEFIELD AND STARKEY & ASSOCIATES SAG MILL TESTING RESULTS													
Proj Identifi	•	SAG	Mill Data	from SA	G Desig	n Test	t Ball Mill Data from SAG Design Test				Total			
Project Sample No.	Client Sample Info	Initial Weight grams	No. of Revs	Bulk SG g/cc	SG Solids g/cc	Calc SAG W to 1.7mm kWh/t	Initial Weight grams	Test Feed F80µ	Test Product F80 µ	Gpb (Avg last 3 cycles)	SAG Dis. Bond BWI kWh/t	Macro/ Micro Ratio	Calc BMW to P80 kWh/t	Pinion W to P80 kWg/t
1	Zone 1 - Hinge	7715	1123	1.71	2.71	7.72	1303	1409.7	1163	1.516	16.67	0.46	12.23	19.94
2	Zone 2 Rice	7650	1306	1.70	2.84	9.03	1294	1348.4	112.6	1.705	14.93	0.60	10.95	19.97
Average		7682	1214	1.71	2.78	8.37	1298	1379.0	114.4	1.610	15.80	0.53	11.59	19.96
Std. deviation		46	130	0.01	0.09	0.93	7	43.3	2.7	0.134	1.23	0.10	0.90	.002
Design data											16.67	0.54	12.23	21.25
	SAGDesign Equation for Pinion Energy:  W = Revolutions * (grams+16000)/(447.3*grams)  Note: Calc SAG pinion kWh/t equation calibrated  for feed  F80 152mm and transfer size T80 170mm			Note: Ca Fines	Bond Equation W = (10*Wi/ lc BM pinion Factor = (P8 Bond BM Wi	P80^0.5)*fi kWh/t is ba 0 + 10.3)/(1	nes factor sed on P80 (.145*P80)	1.00						

In 2012 several flotation tails samples were leached in cyanide to understand the potential need for building a flotation tails leach circuit at the Project. The samples were tested during two test programs with both programs employing a 24-hour leach on as-received samples at a pH above 10.0. The first program used a cyanide concentration of 2.5 grams per litre cyanide (gpl NaCN) and the second program a concentration of 0.5 gpl NaCN. The results of these two programs are summarized in the tables below:

RESULTS LEACHIN		LE 13.7 24 Hours at 2.5 G	SPL NACN CONCENTRATION
Date Sampled	Calc. Head, opt Au	% Recovery	opt Recoverable Gold
10/09/12	0.0100	90.04%	0.0090
10/10/12	0.0062	84.00%	0.0052
10/11/12	0.0074	86.52%	0.0064
10/12/12	0.0071	85.96%	0.0061
10/13/12	0.0100	90.04%	0.0090
10/14/12	0.0086	88.35%	0.0076
10/15/12	0.0119	66.31%	0.0079
10/16/12	0.0157	55.55%	0.0087
10/17/12	0.0071	85.96%	0.0061
10/18/12	0.0081	75.38%	0.0061
10/19/12	0.0083	87.94%	0.0073
10/20/12	0.0092	89.09%	0.0082
10/21/12	0.0095	89.43%	0.0085
10/22/12	0.0077	87.03%	0.0067
10/23/12	0.0077	87.03%	0.0067
10/24/12	0.0083	87.94%	0.0073
10/25/12	0.0105	85.77%	0.0090
10/26/12	0.0271	87.10%	0.0236
10/27/12	0.0103	90.32%	0.0093
10/28/12	0.0095	94.76%	0.0090
10/30/12	0.0071	85.96%	0.0061
10/31/12	0.0088	82.94%	0.0073
11/01/12	0.0065	76.77%	0.0050
11/02/12	0.0097	89.74%	0.0087
Avg.	0.0097	84.58%	0.0081

RESULTS LEACHIN	TABLE 13.8 RESULTS LEACHING FLOTATION TAILS FOR 24 HOURS AT 0.5 GPL NACN CONCENTRATION						
Date Sampled	Calc. Head, opt Au	% Recovery	opt Recoverable Gold				
11/08/12	0.0060	83.22%	0.0050				
11/09/12	0.0045	77.78%	0.0035				
11/12/12	0.0054	81.39%	0.0044				
11/14/12	0.0060	83.22%	0.0050				
11/15/12	0.0067	70.00%	0.0047				
11/16/12	0.0070	71.25%	0.0050				
11/17/12	0.0093	78.47%	0.0073				
11/18/12	0.0065	84.71%	0.0055				
11/19/12	0.0080	87.50%	0.0070				

TABLE 13.8
RESULTS LEACHING FLOTATION TAILS FOR 24 HOURS AT 0.5 GPL NACN
CONCENTRATION

Date Sampled	Calc. Head, opt Au	% Recovery	opt Recoverable Gold
11/16/12	0.0070	71.25%	0.0050
11/17/12	0.0093	78.47%	0.0073
11/18/12	0.0065	84.71%	0.0055
11/19/12	0.0080	87.50%	0.0070
11/20/12	0.0092	89.09%	0.0082
11/21/12	0.0068	85.36%	0.0058
11/22/12	0.0086	88.35%	0.0076
11/23/12	0.0080	87.50%	0.0070
11/24/12	0.0080	87.50%	0.0070
11/25/12	0.0092	89.09%	0.0082
11/26/12	0.0092	89.09%	0.0082
11/29/12	0.0118	91.52%	0.0108
11/29/12	0.0210	57.05%	0.0120
11/29/12	0.0117	74.47%	0.0087
11/30/12	0.0176	94.33%	0.0166
12/01/12	0.0060	83.22%	0.0050
12/02/12	0.0085	58.62%	0.0050
12/03/12	0.0068	85.36%	0.0058
12/04/12	0.0089	88.73%	0.0079
12/13/12	0.0071	85.96%	0.0061
12/14/12	0.0071	85.96%	0.0061
12/15/12	0.0054	81.39%	0.0044
12/16/12	0.0097	89.74%	0.0087
12/17/12	0.0100	90.04%	0.0090
12/18/12	0.0089	88.73%	0.0079
12/19/12	0.0092	89.09%	0.0082
12/20/12	0.0083	87.94%	0.0073
12/21/12	0.0080	87.50%	0.0070
12/22/12	0.0086	71.01%	0.0061
12/23/12	0.0146	89.74%	0.0131
12/24/12	0.0124	91.92%	0.0114
12/27/12	0.0074	86.52%	0.0064
12/28/12	0.0065	84.71%	0.0055
12/29/12	0.0074	86.52%	0.0064
12/30/12	0.0098	59.32%	0.0058
12/31/12	0.0067	85.05%	0.0057
Avg.	0.0087	82.91%	0.0072

Solid samples have been collected from the tailings storage facility and leached to document potential recoverable gold present. Three as-received samples were leached for 72 hours with 1.0 gpl NaCN concentration at a pH of above 10.0. Results from these three tests are given in the table below:

	TABLE 13.9					
RESULTS	RESULTS FROM LEACHING SAMPLES FROM TAILINGS STORAGE FACILITY					
Sample	Calc. Head, opt Au					
1	0.0408	80.1%	85.4%			
2	0.0204	67.7%	72.4%			
3	0.0408	78.1%	85.8%			

#### 14.0 MINERAL RESOURCE ESTIMATE

#### 14.1 INTRODUCTION

The Mineral Resource estimate presented herein has been prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1 and in conformity with generally accepted "CIM Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral Resources have been classified in accordance with the "CIM Standards on Mineral Resources and Reserves: Definition and Guidelines":

Measured Mineral Resource: "A 'Measured Mineral Resource' is that part of a mineral resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity."

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

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

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted into Mineral Reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure.

All Mineral Resource estimation work reported herein was carried out or reviewed by Fred Brown, P.Geo., an independent Qualified Person as defined by NI 43-101 by reason of education, affiliation with a professional association and past relevant work experience. This Mineral Resource estimate is based on information and data supplied by Klondex.

Mineral Resource modelling and estimation were carried out using Maptek Vulcan (version 9.1.8) and Snowden Supervisor (version 7.10.11) software programs.

The effective date of this mineral resource estimate is June 30, 2016.

#### 14.2 PREVIOUS RESOURCE ESTIMATES

Previous public Mineral Resource estimates for portions of the True North deposits have been reported in 2010 and 2013. Historically, in excess of 70 mineralized Au bearing veins have been identified, of which only 36 are included in the mineral resource estimates that are the subject of this report. Klondex has identified an additional five veins not included in this report for possible conversion to mineral resources in the near future.

P&E notes that all previous mineral resource estimates for the True North deposits are superseded by this report.

#### 14.3 **DATA SUPPLIED**

Sample data were provided electronically by Klondex. Distance units are reported in feet, and assay grade units are reported as ounce per short ton. The supplied drilling database contains 7,746 unique collar records and 335,973 assay records (Table 14.1). A total of 6,526 drillhole assay records are reported at zero grade. The chip sample database contains 28,763 unique collar records and 106,322 assay records. A total of 1,817 chip assay records are reported at zero grade.

TABLE 14.1 True North Database Records						
Data Type	<b>Record Count</b>	<b>Total Footage</b>	<b>Total Metres</b>			
Drillhole Samples	335,973	699,496.2	213,206.4			
Chips	28,763	243,940.6	74,353.1			
Total	364,736	943,436.8	287,559.5			

Industry standard validation checks were completed on the supplied databases, and minor corrections made where necessary. P&E typically validates a mineral resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-ofsequence intervals, intervals or distances greater than the reported drillhole length, inappropriate collar locations, and missing interval and coordinate fields. A small number of trivial errors were noted and corrected, including three drillhole assay overlapping sample intervals and nine duplicate chip sample intervals.

No significant discrepancies with the supplied data were noted, and P&E considers that the databases are suitable for mineral resource estimation.

<sup>&</sup>lt;sup>1</sup> George PT (2010). Technical report mineral reserves, mineral resources and economic assessment, Rice Lake Project, Rice Lake Greenstone Belt, Bissett, Manitoba. Technical report for SanGold Corporation released on SEDAR with an effective date of June 30, 2010.

#### 14.4 BULK DENSITY

Klondex supplied a total of 6,193 bulk density measurements, with an average value of 0.086 tons per cubic foot (2.76 tonnes per cubic metre [t/m³]) (Table 14-2). Bulk density was determined by immersion of dried core samples in distilled water.

No correlation between assay grade and bulk density was noted by P&E. The average reported bulk density of 0.086 short tons per cubic foot; 11.7 cubic feet per short ton (2.76 t/m<sup>3</sup>) was used for Mineral Resource estimation.

TABLE 14.2 BULK DENSITY STATISTICS						
	<b>Tonnes per cubic metre</b>	tons per cubic foot				
Minimum	2.30	0.072				
Maximum	4.14	0.129				
Average	2.76	0.086				
Median	2.75	0.086				
Mode	2.74	0.086				
Standard Deviation	0.08	0.002				
Number of Samples						

### 14.5 VEIN MODELLING

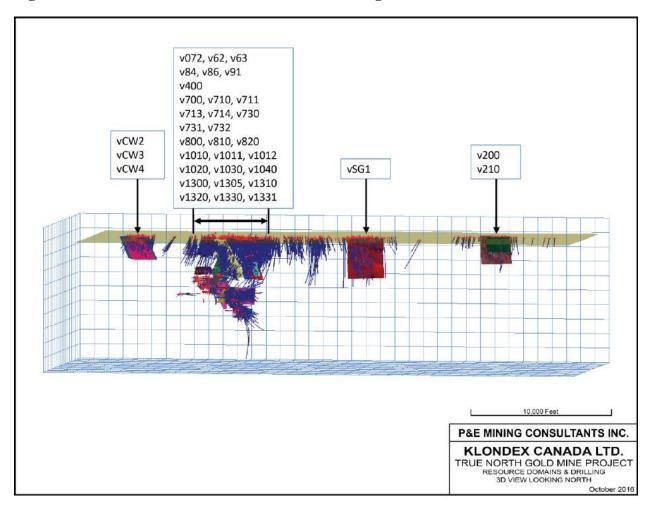
The updated P&E Mineral Resource estimate is based on 36 modelled veins, with a total volume on the order of 271 million cubic feet. See Figures 14.1 and 14.2.

Figure 14.1 Plan View of Modelled Veins

Note: Not all veins are shown

10000 E

Figure 14.2 3D View of Modelled Veins and Drilling



Vein models were developed by Klondex based on a scripted grid modelling workflow using Maptek Vulcan software. Grid modelling is applicable to modelling narrow, continuous geological features such as precious metal veins and coal seams and creates a surface by interpolating a regular grid of points over a modelling area. These grid points are combined with the input intercepts to create output triangulated surfaces that represent the vein hanging wall and footwall contacts. The contacts are combined to create a valid solid triangulation for use in building the resource block model. See vein modelling cross sections for V91, V710 and V711 in Appendix III.

The modelling methodology as implemented by Klondex can be summarized as follows:<sup>2</sup>

- Set the vein to be modelled, its overall dip and dip direction, and the drillhole and channel databases to be used.
- Extract the hanging wall (HW) and footwall (FW) vein intercepts from the drillhole and channel databases.
- Combine interpreted or surveyed HW and FW points to control the vein model interpretation where required.
- Use the dip and dip direction settings to rotate the intercepts to a local flat plane.

<sup>&</sup>lt;sup>2</sup> Anthony Bottrill, Klondex Corporate Resources Manager, personal communication August 16, 2016 .

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- Use inverse distance to contour HW and FW grid surfaces from the input data and perform grid mathematics to ensure HW grid points are always above FW grid.
- Create a triangulation of the HW contact that combines the grid model points with the input intercepts to ensure the final surface is snapped to the input data. Repeat this process for the FW contact. Model specific settings are attached as attributes to the triangulations and also written to a text file for future auditing. Where chip samples are present, chip sampling may override drillhole sampling in generating the vein model as drillhole intercepts may be found to be locally inaccurate. Drillholes to be ignored are flagged to allow chip samples will take precedence over drilling.
- Produce boundary polygons of the vein contact surfaces to create a boundary triangulation that can be appended to the vein contacts to create a valid solid triangulation.
- Un-rotate the triangulations and intercepts back to their true spatial location.
- Clip the solid vein triangulation to the topography and other vein surfaces as required.
- Build the vein block model. The block model specifications are read directly from the vein extents and overall dip and dip direction used in the vein model creation process. Block sizes along strike and down dip are set to 5.0 foot by 5.0 foot (1.5m by 1.5m) to represent local variations in orientation of the vein. Block sizes across the thickness of the vein are designated as a single block across the true width of the vein to a minimum thickness resolution of 0.2 foot (0.06m) This ensures the local vein orientations and volumes are representative and also rationalizes the size of the final block model.
- The modelling technique as implemented by Klondex produces a series of valid triangulated wireframes oriented to the plane of the vein, as well as a corresponding rotated and plunging block model for each vein. The block model corresponding to the vein has constant strike and dip dimensions of 5.0 foot (1.5m), and a variable vein thickness perpendicular to strike.

P&E has reviewed the 36 resulting wireframes and considers them to be suitable for mineral resource estimation. The vein wireframes were used for sample coding, statistical analysis and compositing limits (Table 14.3). See resource wireframes for V91, V710 and V711 veins in Appendix II.

P&E recommends that alternative estimation techniques, such as utilizing accumulation with a fixed-height block model, be considered as a check on the seam-based model output.

	TABLE 14.3 MODELLED VEINS	
Vein	Wireframe Volume (cubic feet)	Wireframe tons
v072	4,388,991	377,453
v1010	14,507,150	1,247,615
v1011	1,547,129	133,053
v1012	1,170,844	100,693
v1020	5,974,179	513,779
v1030	12,788,126	1,099,779
v1040	239,926	20,634

	TABLE 14.3 MODELLED VEINS	
Vein	Wireframe Volume (cubic feet)	Wireframe tons
v1300	4,291,264	369,049
v1305	1,115,306	95,916
v1310	2,079,014	178,795
v1320	1,542,305	132,638
v1330	774,116	66,574
v1331	567,757	48,827
v200	25,549,080	2,197,221
v210	11,320,757	973,585
v400	8,079,136	694,806
v62	696,313	59,883
v63	3,425,009	294,551
v700	12,088,160	1,039,582
v710	12,693,819	1,091,668
v711	8,080,407	694,915
v713	2,114,464	181,844
v714	2,082,142	179,064
v730	12,526,653	1,077,292
v731	2,482,616	213,505
v732	1,115,264	95,913
v800	5,977,193	514,039
v810	7,359,619	632,927
v820	2,105,643	181,085
v84	5,863,299	504,244
v86	3,988,093	342,976
v91	3,501,065	301,092
vCW2	6,389,382	549,487
vCW3	7,081,996	609,052
vCW4	11,431,644	983,121
vSG1	64,501,083	5,547,093
TOTAL	271,438,943	23,343,749

## 14.6 ASSAY DATA

Summary assay statistics were calculated separately by vein for drill-hole assay samples (Table 14.4) and chip assay samples (Table 14.5). Chip sample strings have been converted to pseudo-drill-holes.

	TABLE 14.4 SUMMARY DRILLHOLE ASSAY STATISTICS						
	No. of	Minimum	Maximum	Mean	Std.		
Vein	Samples	opt Au	opt Au	opt Au	Deviation	CV	
v072	426	0.0001	4.051	0.195	0.401	2.062	
v1010	1,573	0.0001	49.673	0.268	2.258	8.422	
v1011	252	0.0001	4.295	0.180	0.425	2.366	
v1012	62	0.0001	2.265	0.252	0.429	1.705	
v1020	454	0.0001	3.459	0.139	0.340	2.441	
v1030	666	0.0001	35.062	0.179	1.395	7.787	
v1040	113	0.001	13.684	0.245	1.294	5.271	
v1300	258	0.0001	1.826	0.123	0.191	1.545	
v1305	42	0.0001	0.438	0.073	0.082	1.128	
v1310	183	0.0001	24.701	0.374	1.880	5.031	
v1320	39	0.001	0.450	0.104	0.123	1.185	
v1330	16	0.001	2.623	0.282	0.641	2.279	
v1331	15	0.001	0.989	0.208	0.295	1.423	
v200	192	0.0001	1.569	0.093	0.210	2.260	
v210	112	0.0001	1.988	0.084	0.214	2.545	
v400	667	0.0001	13.900	0.219	0.988	4.508	
v62	69	0.0009	2.760	0.313	0.613	1.956	
v63	415	0.0001	2.732	0.174	0.304	1.746	
v700	1,986	0.0001	188.785	0.286	4.508	15.754	
v710	1,281	0.0001	14.429	0.193	0.620	3.221	
v711	521	0.0001	6.391	0.139	0.495	3.568	
v713	364	0.0001	3.647	0.125	0.360	2.876	
v714	112	0.0001	1.646	0.134	0.337	2.511	
v730	2,562	0.0001	47.662	0.223	1.286	5.769	
v731	98	0.0001	2.825	0.152	0.414	2.727	
v732	127	0.0001	5.229	0.159	0.536	3.364	
v800	700	0.0001	2.574	0.145	0.290	2.006	
v810	453	0.0001	3.900	0.173	0.433	2.505	
v820	81	0.001	2.284	0.132	0.332	2.516	
v84	732	0.0001	17.290	0.149	0.699	4.702	
v86	338	0.0001	2.220	0.174	0.307	1.763	
v91	469	0.0001	6.580	0.168	0.394	2.347	
vCW2	262	0.0001	1.356	0.086	0.169	1.968	
vCW3	350	0.0001	6.948	0.149	0.558	3.759	
vCW4	331	0.0001	1.632	0.103	0.173	1.683	
vSG1	1,632	0.0001	1.209	0.061	0.126	2.067	
Total	17,953	0.0001	188.785	0.187	1.209	5.319	

		SUMMAD	TABLE 14.5 Y CHIP ASSAY			
Vein	No. of Samples	Minimum opt Au	Maximum opt Au	Mean opt Au	Std. Deviation	CV
v064	7	0.260	1.000	0.569	0.293	0.515
v065	10	0.030	0.720	0.250	0.241	0.964
v072	833	0.000	23.020	0.485	1.368	2.822
v1010	1,370	0.000	45.835	0.258	1.427	5.541
v1011	211	0.001	3.477	0.218	0.488	2.242
v1013	17	0.003	0.634	0.103	0.152	1.476
v1020	337	0.001	7.753	0.211	0.538	2.544
v1030	830	0.000	5.188	0.184	0.406	2.208
v1040	12	0.001	0.052	0.008	0.016	2.002
v11020	1	0.067	0.067	0.067	0.000	0.000
v1300	17	0.020	0.510	0.158	0.138	0.870
v1310	468	0.001	48.038	0.754	3.403	4.511
v1331	4	0.011	0.119	0.040	0.053	1.330
v400	1,037	0.000	28.044	0.279	1.311	4.693
v62	5	0.001	0.170	0.046	0.070	1.509
v63	83	0.000	3.780	0.320	0.632	1.971
v700	293	0.001	9.436	0.215	0.774	3.599
v710	566	0.000	15.707	0.261	0.827	3.164
v711	219	0.001	4.107	0.305	0.670	2.199
v713	51	0.001	0.742	0.073	0.142	1.945
v730	201	0.000	25.830	0.254	1.846	7.267
v731	1	0.005	0.005	0.005	0.000	0.000
v732	3	0.017	0.046	0.029	0.015	0.534
v7400	1	0.055	0.055	0.055	0.000	0.000
v800	341	0.001	19.269	0.334	1.243	3.726
v810	257	0.001	7.527	0.286	0.710	2.477
v84	556	0.001	60.500	0.748	4.216	5.632
v86	293	0.001	16.810	0.401	1.056	2.634
v91	255	0.000	2.019	0.144	0.215	1.496
v99	73	0.006	1.358	0.295	0.322	1.093
vSG1	3202	0.000	3.890	0.120	0.207	1.732
Total	11,557	0.000	60.500	0.277	1.458	5.261

Of the 14,140 constrained drill-hole assay samples available, only 28 assay samples have a grade higher than 10.0 opt Au (343 g/t Au), and these drillhole assay samples were capped at 10.0 opt Au prior to compositing (Table 14.6).

Of 11,557 constrained chip samples available, only 24 assay samples have a grade higher than 10.0 opt Au (343 g/t Au). Chips samples are only utilized during the first estimation pass and

their influence is restricted to 50 feet (15m) Chip samples were therefore not capped prior to compositing.

#### 14.7 COMPOSITING

Drillhole assay sample lengths within the defined veins range from 0.10 foot (0.03m) to 15.03 feet (4.58m), with an average sample length of 1.55 feet (0.47m) Chip assay sample lengths within the defined veins range from 0.10 foot (0.03m) to 12.18 feet (3.71m), with an average sample length of 1.95 feet (0.59m) A maximum length of 10.0 feet (3.05m) was selected for compositing in order to generate single intercept composites across the width of the vein.

Klondex geologists identified where drill-holes oriented sub-parallel to the strike of specific veins were not representative of local mineralization, and these were excluded from the compositing process. Klondex geologists also identified a small number of assay intervals that were not captured by the vein modelling process, and these were manually flagged for inclusion in the compositing process.

Length-weighted composites were calculated within the defined vein. Missing sample intervals or zero-grade assay intervals were assigned a value of 0.001 opt Au (0.001 g/t Au) The compositing process started at the first point of intersection between the drillhole and the vein intersected, and halted on exit from the vein wireframe. All residual composites were retained. The wireframes that represent the interpreted veins were also used to back-tag a rock code field into the assay and composite workspaces. The resulting composite data were visually validated against vein wireframes. Summary statistics were calculated separately by vein for the composite samples (Table 14.6).

P&E notes that the compositing methodology results in composite samples with a variable support length corresponding to the thickness of the vein, producing variable-length single intercept composite samples where the modelled vein thickness is 10.0 feet (3.05m) or less and additional composite samples where the vein thickness is greater than 10.0 feet (3.05m).

	TABLE 14.6 SUMMARY COMPOSITE STATISTICS BY VEIN							
Statistic	Samples	Minimum opt Au	Maximum opt Au	Mean opt Au	Std. Deviation	CV		
v072	447	0.0003	6.451	0.417	0.640	1.534		
v1010	1,067	0.001	22.996	0.199	0.854	4.284		
v1011	204	0.0001	2.503	0.144	0.294	2.043		
v1012	21	0.00021	0.857	0.189	0.265	1.404		
v1020	382	0.0001	2.894	0.119	0.266	2.232		
v1030	658	0.001	3.407	0.115	0.271	2.344		
v1040	38	0.001	1.600	0.150	0.284	1.894		
v1300	163	0.001	0.709	0.078	0.113	1.444		
v1305	35	0.00011	0.168	0.040	0.050	1.257		
v1310	457	0.0001	48.038	0.633	2.865	4.524		
v1320	14	0.001	0.237	0.086	0.072	0.844		
v1330	6	0.001	1.348	0.291	0.526	1.807		
v1331	10	0.001	0.532	0.152	0.178	1.173		

	TABLE 14.6							
	SUMMARY COMPOSITE STATISTICS BY VEIN							
Statistic	Samples	Minimum opt Au	Maximum	Mean	Std. Deviation	CV		
200	00		opt Au	opt Au		2.051		
v200	99	0.0004	0.896	0.053	0.108	2.051		
v210	31	0.0001	1.988	0.139	0.357	2.571		
v400	551	0.001	17.738	0.246	0.947	3.845		
v62	35	0.001	2.760	0.265	0.589	2.225		
v63	171	0.001	2.000	0.178	0.239	1.348		
v700	646	0.0001	4.719	0.135	0.374	2.767		
v710	328	0.0006	4.8058	0.238	0.437	1.839		
v711	218	0.001	2.570	0.175	0.312	1.779		
v713	118	0.00034	2.516	0.103	0.286	2.788		
v714	70	0.001	1.019	0.077	0.200	2.591		
v730	634	0.001	25.830	0.218	1.107	5.071		
v731	40	0.0001	0.670	0.080	0.145	1.808		
v732	30	0.0001	0.721	0.105	0.173	1.651		
v800	410	0.00085	19.269	0.236	1.037	4.401		
v810	240	0.0001	3.900	0.163	0.390	2.386		
v820	56	0.001	0.793	0.054	0.130	2.394		
v84	390	.001	10.000	0.357	0.993	2.783		
v86	433	0.001	16.810	0.239	0.915	3.824		
v91	262	0.001	6.580	0.163	0.431	2.642		
vCW2	114	0.0001	0.675	0.070	0.104	1.484		
vCW3	162	0.0001	6.948	0.139	0.562	4.059		
vCW4	161	0.0001	0.868	0.073	0.118	1.610		
vSG1	1,656	0.001	1.639	0.101	0.131	1.302		

### 14.8 TREATMENT OF EXTREME VALUES

Grade capping analysis was conducted on the vein-coded and composited grade data in order to evaluate the potential influence of extreme values during Au grade estimation. The presence of high-grade outliers was identified by examination of histograms and log-probability plots. Composites were capped to the selected value prior to estimation.

In addition, due to the highly channelized nature of the mineralization, a 50.0 feet (15m) range restriction on samples greater than the 97.5<sup>th</sup> percentile of the local vein composite data set was used during the second and third Au grade estimation passes (Table 14.7).

	TABLE 14.7 COMPOSITE CAPPING LEVELS							
Vein	Cap (opt)	97.5 <sup>th</sup> Percentile (opt)	Vein	Cap (opt)	97.5th Percentile (opt)			
v62	NA	0.500	v732	NA	0.650			
v63	NA	0.500	v800	3.0	0.991			
v072	5.0	1.670	v810	2.0	0.976			
v84	7.0	0.889	v820	NA	0.361			
v86	5.0	1.350	v1010	5.0	1.184			
v91	3.0	0.715	v1011	1.4	0.994			
v200	NA	0.304	v1012	NA	0.500			
v210	NA	0.600	v1020	2.0	0.600			
v400	6.0	1.360	v1030	2.0	0.812			
v700	2.4	0.930	v1040	NA	0.600			
v710	2.6	1.150	v1300	NA	0.382			
v711	1.8	0.928	v1305	NA	NA			
v713	1.4	0.747	v1310	9.0	3.476			
v714	1.0	0.858	v1320	NA	NA			
v730	4.0	1.254	v1330	NA	0.100			
v731	NA	0.667	v1331	NA	0.100			

### 14.9 AU GRADE ESTIMATION, CLASSIFICATION & MINIMUM WIDTH

The mineral resource estimate reported herein was constrained by vein wireframes that form hard boundaries between their respective composite sample extents. All Au block grades were estimated using a triple pass Inverse Distance cubed ("ID<sup>3</sup>") weighting of between four and twelve capped composite grades from two or more drillholes. In addition, due to the varying sample support lengths generated by the compositing process, a variable weighting factor defined by the length of the composite samples was also implemented during Au grade estimation. A discretization level of 3 by 3 by 1 was used.

During the first pass, drillhole and chip samples were selected using an isotropic search with a radius of 50.0 feet (15m). All blocks estimated during the first pass were algorithmically assigned a classification of Measured.

During the second pass, drill-hole samples were selected using an isotropic search with a radius of 100.0 feet (30m) For the second pass, estimation was implemented using a 25.0 feet by 25.0 feet by 25.0 ft.(7.6m by 7.6m) parent block size. All blocks estimated during the second pass were algorithmically assigned a classification of Indicated.

During the third pass, drillhole samples were selected using an isotropic search with a radius of 500.0 feet (150m) For the third pass, estimation was implemented using a 50.0 feet by 50.0 feet by 50.0 feet (15m by 15m by 15m) parent block size. All blocks estimated during the third pass were algorithmically assigned a classification of Inferred.

See 3D classification models and cross sections for V91, V710 and V711 veins in Appendix III

Blocks that did not meet the minimum sample requirements were not estimated.

Klondex has defined a minimum mining width of 4.0 feet (1.2m) For blocks with a width less than 4.0 feet the estimated grade was diluted at zero grade to a 4.0 feet (1.2m) width with an associated increase in tonnage, and the adjusted grade and tonnage used for mineral resource reporting.

See Au grade models and cross sections for V91, V710, and V711 veins in Appendix IV.

A Nearest Neighbour model was also generated simultaneously using the same parameters as the third estimation pass.

#### 14.10 UNDERGROUND MINERAL RESOURCE ESTIMATE

Mineral resources are based on a cut-off grade of 0.09 opt (3.09 g/t) (Table 14-8). The cut-off grade has been calculated from the following parameters:

Gold Price: US\$ 1,400 per oz
Exchange Rate: C\$ to US\$: 0.80
Mine & Process Cost: C\$141.53 per ton

• Recovery: 94%

• Cut-off: 0.09 opt Au (3.09 grams per tonne)

TABLE 14.8 TOTAL UNDERGROUND MINERAL RESOURCES <sup>(1-7)</sup>						
Class	Grade Au opt	Grade Au g/t	tons	Au oz		
Measured	0.232	7.95	455,000	105,600		
Indicated	0.202	6.92	931,000	187,800		
Measured & Indicated	0.212	7.26	1,386,000	293,400		
Inferred	0.165	5.65	2,793,000	459,900		

- (1) Mineral Resource is inclusive of Mineral Reserve.
- (2) 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, marketing, or other relevant issues.
- (3) Mineral Resource was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
- (4) The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred 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.
- (5) Contained metal may differ due to rounding.
- (6) Cut-off grade = 0.09 opt Au (3.09 g/t Au).
- (7) A bulk density of 0.086 tons per cubic foot was utilized in Resource tonnage calculations.

	TABLE 14.9											
	Underground Mineral Resource Estimate by Vein <sup>(1-5)</sup>											
Vein		Measured			Indicated			Meas & Ind		Inferred		
vein	Au opt	tons	ozs	Au opt	tons	Au ozs	Au opt	tons	Au ozs	Au opt	tons	Au ozs
v62	0.304	3000	900	0.231	7,000	1,500	0.253	9,000	2,400	0.179	4,000	700
v63	0.191	34,000	6,400	0.211	26,000	5,500	0.200	59,000	11,900	0.167	75,000	12,500
v072	0.238	8,000	2,000	0.185	11,000	2,000	0.208	19,000	4,100	0.130	33,000	4,300
v84	0.181	23,000	4,200	0.155	28,000	4,300	0.167	50,000	8,400	0.139	24,000	3,300
v86	0.189	13,000	2,600	0.186	18,000	3,400	0.187	32,000	5,900	0.204	14,000	2,900
v91	0.199	52,000	10,300	0.194	50,000	9,700	0.197	102,000	20,100	0.156	24,000	3,700
v200	0.301	4,000	1,200	0.252	9,000	2,200	0.268	13,000	3,400	0.138	207,000	28,600
v210	0.147	0	0	0.194	12,000	2,300	0.193	12,000	2,300	0.209	181,000	37,800
v400	0.272	5,000	1,300	0.226	16,000	3,600	0.237	21,000	5,000	0.250	51,000	12,800
v700	0.197	11,000	2,200	0.136	22,000	3,100	0.156	34,000	5,300	0.170	210,000	35,700
v710	0.289	93,000	26,800	0.302	101,000	30,400	0.296	193,000	57,200	0.187	259,000	48,400
v711	0.229	21,000	4,700	0.224	50,000	11,100	0.225	70,000	15,900	0.169	249,000	42,000
v713	0.229	15,000	3,300	0.108	12,000	1,300	0.174	27,000	4,700	0.123	0	0
v714	0.188	8,000	1,500	0.197	26,000	5,200	0.195	35,000	6,700	0.180	2,000	400
v730	0.240	18,000	4,200	0.206	90,000	18,500	0.212	107,000	22,700	0.128	76,000	9,700
v731	0.235	3,000	700	0.217	19,000	4,000	0.219	22,000	4,700	0.151	110,000	16,600
v732	0.279	5,000	1,500	0.183	19,000	3,400	0.204	24,000	4,900	0.137	30,000	4,100
v800	0.222	6,000	1,300	0.154	27,000	4,100	0.166	32,000	5,400	0.129	23,000	3,000
v810	0.250	7,000	1,700	0.215	28,000	6,000	0.222	35,000	7,800	0.185	42,000	7,800
v820	0.197	5,000	1,000	0.179	13,000	2,300	0.184	18,000	3,300	0.135	3,000	400
v1010	0.223	19,000	4,100	0.195	55,000	10,800	0.202	74,000	14,900	0.181	167,000	30,300
v1011	0.256	2,000	600	0.277	1,000	200	0.262	3,000	800	0.133	0	0
v1012	0.327	2,000	500	0.232	14,000	3,200	0.241	15,000	3,700	0.194	26,000	5,000
v1020	0.194	24,000	4,600	0.269	37,000	9,800	0.239	60,000	14,400	0.181	59,000	10,700
v1030	0.260	14,000	3,700	0.174	39,000	6,900	0.197	54,000	10,600	0.190	125,000	23,800
v1040	0.247	1,000	200	0.250	8,000	1,900	0.250	9,000	2,100	0.196	4,000	800
v1300	0.148	13,000	2,000	0.167	28,000	4,800	0.161	42,000	6,700	0.142	33,000	4,700
v1305	0.116	0	0	0.096	2,000	200	0.099	2,000	200	0.000	0	0
v1310	0.390	21,000	8,200	0.153	5,000	700	0.347	26,000	9,000	0.147	37,000	5,500
v1320	0.000	0	0	0.170	4,000	600	0.170	4,000	600	0.103	50,000	5,100
v1330	0.000	0	0	0.198	1,000	200	0.198	1,000	200	0.333	8,000	2,700
v1331	0.267	0	0	0.230	1,000	200	0.231	1,000	200	0.235	12,000	2,900
vcw2	0.126	0	0	0.129	10,000	1,300	0.129	10,000	1,300	0.152	80,000	12,100
vcw3	0.157	4,000	600	0.173	35,000	6,000	0.171	38,000	6,600	0.159	69,000	11,000
vcw4	0.183	1,000	200	0.196	30,000	5,800	0.196	31,000	6,000	0.195	70,000	13,600
vsg1	0.136	21,000	2,800	0.140	81,000	11,300	0.139	102,000	14,200	0.131	438,000	57,400
TOTAL	0.232	455,000	105,600	0.202	931,000	187,800	0.212	1,386,000	293,400	0.165	2,793,000	459,900

<sup>(1)</sup> 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, marketing, or other relevant issues.

<sup>(2)</sup> Mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.

<sup>(3)</sup> The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these inferred 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.

<sup>(4)</sup> Contained metal may differ due to rounding.

<sup>(5)</sup> Cut-off grade = 0.09 opt Au(3.09 g/t.)

### 14.11 BLOCK MODEL VALIDATION

The block models were validated visually by the inspection of successive section lines in order to confirm that the block models correctly reflect the distribution of high-grade and low-grade values. An additional validation check was completed by comparing the average grade of the composites to the model block grade estimates at zero cut-off. Unadjusted block grades were also compared to the de-clustered composite mean as well as to an unadjusted Nearest Neighbour (NN) model generated using the same search criteria as that used for the mineral resource estimate (Table 14.10).

	TABLE 14.10						
	BLOCK MODEL VALIDATION GRADES						
Vein	ID <sup>3</sup> Mean	NN Mean	<b>Declustered Mean</b>				
	Au opt	Au opt	Au opt				
v072	0.152	0.163	0.209				
v1010	0.089	0.090	0.148				
v1011	0.069	0.067	0.112				
v1012	0.125	0.167	0.189				
v1020	0.085	0.095	0.082				
v1030	0.081	0.079	0.091				
v1040	0.222	0.205	0.150				
v1300	0.054	0.058	0.067				
v1305	0.041	0.040	0.038				
v1310	0.176	0.151	0.383				
v1320	0.087	0.072	0.086				
v1330	0.077	0.234	0.281				
v1331	0.224	0.208	0.152				
v200	0.048	0.053	0.049				
v210	0.083	0.127	0.111				
v400	0.103	0.082	0.193				
v62	0.090	0.188	0.225				
v63	0.129	0.104	0.157				
v700	0.074	0.071	0.121				
v710	0.163	0.205	0.176				
v711	0.115	0.093	0.126				
v713	0.046	0.033	0.082				
v714	0.053	0.045	0.077				
v730	0.066	0.067	0.176				
v731	0.122	0.104	0.065				
v732	0.112	0.109	0.090				
v800	0.089	0.089	0.139				
v810	0.071	0.069	0.122				
v820	0.042	0.030	0.050				
v84	0.072	0.135	0.225				

TABLE 14.10 BLOCK MODEL VALIDATION GRADES							
Vein	ID <sup>3</sup> Mean NN Mean Declustered Me Au opt Au opt Au opt						
v86	0.075	0.090	0.157				
v91	0.114	0.110	0.150				
vCW2	0.071	0.061	0.068				
vCW3	0.081	0.086	0.109				
vCW4	0.061	0.056	0.074				
vSG1	0.052	0.049	0.074				

Swath plots were generated to check the block model estimates global bias by comparing the (NN) block estimate to the ID<sup>3</sup> estimate for Measured and Indicated Resources (see Appendix).

As a further check of the Mineral Resource model the total volume reported at zero Au cut-off was compared by vein with the calculated volume of the defining mineralization wireframe (Table 14.11). All reported volumes fall within acceptable tolerances.

	TABLE 14.1	1						
	VOLUME COMPARISON							
Vein	Resource Volume	Wireframe Volume						
	(cubic ft)	(cubic ft)						
v072	4,388,856	4,388,991						
v1010	14,318,142	14,507,150						
v1011	1,547,795	1,547,129						
v1012	1,170,010	1,170,844						
v1020	5,975,060	5,974,179						
v1030	11,931,908	12,788,126						
v1040	240,220	239,926						
v1300	4,288,995	4,291,264						
v1305	1,115,260	1,115,306						
v1310	2,079,285	2,079,014						
v1320	1,539,625	1,542,305						
v1330	772,756	774,116						
v1331	193,962	567,757						
v200	23,078,214	25,549,080						
v210	9,920,635	11,320,757						
v400	7,896,820	8,079,136						
v62	695,815	696,313						
v63	3,330,105	3,425,009						
v700	12,000,717	12,088,160						
v710	9,644,615	12,693,819						
v711	8,030,502	8,080,407						
v713	2,114,117	2,114,464						
v714	2,082,206	2,082,142						
v730	12,317,510	12,526,653						
v731	2,482,877	2,482,616						
v732	1,115,265	1,115,264						
v800	5,977,515	5,977,193						
v810	7,311,945	7,359,619						
v820	2,103,755	2,105,643						

TABLE 14.11 VOLUME COMPARISON							
Vein	Wireframe Volume (cubic ft)						
v84	6,724,538	5,863,299					
v86	3,981,750	3,988,093					
v91	3,501,150	3,501,065					
vCW2	5,575,025	6,389,382					
vCW3	6,303,789	7,081,996					
vCW4	9,005,981	11,431,644					
vSG1	54,522,427	64,501,083					
TOTAL	249,279,147	271,438,943					

#### 14.12 TAILINGS MINERAL RESOURCE ESTIMATE

All mineral resource estimation work reported in this section was carried out or reviewed by Fred Brown, P.Geo., an independent Qualified Person as defined by NI 43-101 by reason of education, affiliation with a professional association and past relevant work experience. This Mineral Resource estimate is based on information and data supplied by Klondex.

Mineral Resource modelling and estimation reported in this section were carried out using Gemcom GEMS (version 5.4.1) and Snowden Supervisor (version 7.10.11) software programs.

#### 14.13 PREVIOUS RESOURCE ESTIMATES

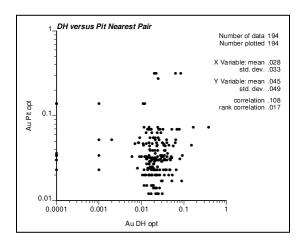
P&E is not aware of a previous public mineral resource estimate for the True North tailings.

#### 14.14 TAILINGS DATA SUPPLIED

Sample data were provided electronically by Klondex. Distance units are reported in feet, and Au assay grade units are reported opt. The supplied drilling database contains records for 138 drillholes, of which 39 are stem auger drillholes and 99 are percussion probe drillholes. The drilling grid as completed is on the order of 200 feet by 100 feet (60m x 30m) (See Appendix V).

The supplied database also included results for 210 pit samples recovered from hand-dug excavations. Pit samples were examined visually during modelling, but were not used for estimation due to differences in support size, sample quality and assay results compared with adjacent drillhole samples (Figure 14.3).

Figure 14.3 Nearest Pair Plot of Pit Samples



Industry standard validation checks were completed on the supplied tailings database, and minor corrections made where necessary. P&E typically validates a mineral resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drillhole length, inappropriate collar locations, and missing interval and coordinate fields. No significant discrepancies with the supplied data were noted, and P&E considers that the database is suitable for mineral resource estimation.

#### 14.15 TAILINGS DRY BULK DENSITY

Klondex submitted two samples to ALS Environmental Laboratories for dry bulk density measurements, with an average value of 0.044 tons per cubic foot (1.395 tonnes per cubic metre) (Table 14.12). The average dry bulk density value of 0.044 tons per cubic foot was used for Mineral Resource estimation.

TABLE 14.12 TAILINGS DRY BULK DENSITY RESULTS									
Test Units Sample 1 Sample 2 Average									
% Moisture % 42.0 40.5 41.3									
Dry Weight	g	427.6	262.1	344.9					
Total Sample Weight	g	738	440	589.0					
Dry Bulk Density t/m <sup>3</sup> 1.260 1.530 1.395									

#### 14.16 DEPOSIT MODELLING

Klondex supplied a three-dimensional AutoCAD format drawing file of the tailings volume which was reviewed by P&E. The upper surface of the tailings volume was constructed from collar elevations and the lower surface was defined by drillhole intersection of the underlying clay/peat horizon. The modeled tailings volume is on the order of 30 feet (9m) thick.

#### 14.17 ASSAY DATA

Summary assay statistics were calculated from the drilling assay grades (Table 14.13). The difference in mean grade between the auger and percussion sample populations is due to the smaller area associated with the auger drilling.

TABLE 14.13 SUMMARY TAILINGS DRILLHOLE ASSAY STATISTICS							
STEM AUGER	Length (ft)	Au (opt)					
Mean	4.20	0.029					
Median	4.00	0.021					
Mode	4.00	0.015					
Standard Deviation	0.68	0.032					
CV	0.16	1.104					
Minimum	2.00	0.0001					
Maximum	5.00	0.379					
Count	194	194					
PERCUSSION	Length (ft)	Au (opt)					
Mean	4.94	0.019					
Median	5.00	0.016					
Mode	5.00	0.013					
Standard Deviation	0.41	0.015					
CV	0.08	0.782					
Minimum	0.50	0.0000					
Maximum	5.00	0.211					
Count	476	476					
TOTAL	Length (ft)	Au (opt)					
Mean	4.73	0.022					
Median	5.00	0.017					
Mode	5.00	0.013					
Standard Deviation	0.60	0.022					
CV	0.13	0.997					
Minimum	0.50	0.0001					
Maximum	5.00	0.379					
Count	670	670					

#### 14.18 COMPOSITING

Drillhole assay sample lengths within the defined tailings volume range from 0.5 feet to 5.0 feet, (0.15m to 1.52m) with an average sample length of 4.73 feet (1.44m). A compositing length of 10.0 feet (3.05m) was selected for compositing, equivalent to the model block height. Residual sample lengths less than 5.0 feet (1.52m) were merged with the preceding composite interval. The resulting composite lengths range from 5.0 feet to 14.0 feet (1.52m to 4.27m) with an average length of 9.4 feet (2.87m).

The resulting composite data were visually validated and summary statistics were calculated for the resulting composite samples (Table 14.14).

TABLE 14.14 SUMMARY COMPOSITE STATISTICS FOR TAILINGS ASSAYS								
Length (ft) Au (opt)								
Mean	9.37	0.021						
Median	10.0	0.018						
Mode	10.0	0.018						
Standard Deviation	2.02	0.016						
CV	0.22	0.747						
Minimum	5.00	0.0001						
Maximum	14.00	0.206						
Count	338	338						

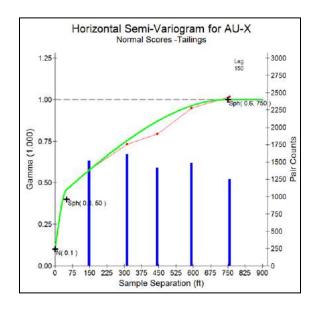
### 14.19 SPATIAL ANALYSIS

A horizontal experimental semi-variogram was modeled from uncapped composite samples. Standardized spherical models were used to model the experimental semi-variogram in normal-score transformed space (Figure 14.3), and the modeled variance contributions were then backtransformed to:

0.17 + 0.30 Spherical 50 + 0.60 Spherical 750

The resulting semi-variogram suggests a maximum range on the order of 750 feet (230m) (Figure 14.4).

Figure 14.4 Experimental Semi-Variogram



#### 14.20 TREATMENT OF EXTREME VALUES

Grade capping analysis was conducted on the composited grade data in order to evaluate the potential influence of extreme values during grade estimation. The presence of high-grade outliers was identified by examination of histograms and log-probability plots (Figure 14.5). Composites were capped to the selected threshold value prior to estimation:

• Capping Threshold: 0.060 opt (2.06 g/t)

• Average Uncapped Au Grade: 0.021 opt (0.72 g/t)

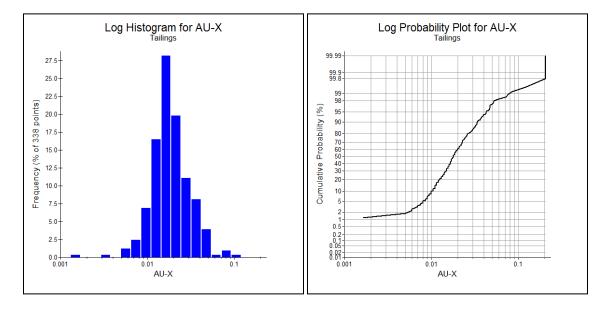
• Maximum Au Grade: 0.206 opt (7.06 g/t)

• Number Capped: 5

• Average Au Capped Grade: 0.020 opt (0.69 g/t)

• Percent Change: 4.8%

Figure 14.5 Histogram and Probability Plots for Uncapped Tailings Composites



## 14.21 BLOCK MODEL EXTENTS

A rotated block model was established across the Project with the block model limits selected so as to cover the extent of the defined volume and reflect the generally general dimensions of the drilling grid (Table 14.15). The block model consists of separate models for estimated grades, rock code, percent, density and classification attributes. A percent block model was used to accurately represent the volume and tonnage contained within the constraining tailings volume.

TABLE 14.15 BLOCK MODEL SETUP											
Dimension	Origin	Origin Count Size (ft)									
X	6,800	6,800 90 50									
Y	9,000 60 50										
Z	10,000 6 10										
Rotation	-20° counter-clockwise from the origin.										

#### 14.22 GOLD TAILINGS GRADE ESTIMATION & CLASSIFICATION

The tailings mineral resource estimate was constrained within the extents of the modeled tailings volume. Au block grades were estimated using a single pass Inverse Distance Cubed ("ID<sup>3</sup>") weighting of between three and twelve capped composite grades from two or more drillholes. A NN model was also generated simultaneously using the same search parameters.

Blocks within 250 feet (76m) of a drillhole sample were classified as Inferred, and blocks within 250 feet (76m) of at least three drillhole samples were classified as Indicated. This ensures that blocks classified as Indicated were largely interpolated between drillholes, while Inferred blocks were not extrapolated beyond a reasonable limit (See Appendix V), and that all block estimates are within the spatial range defined by the experimental semi-variogram. Approximately 25% of the blocks contained by the tailings volume are outside these limits and remain un-estimated.

#### 14.23 TAILINGS MINERAL RESOURCE ESTIMATE

The tailings Mineral Resource estimate is based on a gold cut-off grade of 0.015 opt Au (0.51 grams per tonne), which has been calculated from the following parameters:

Gold Price: US\$ 1,400 per oz
Exchange Rate: C\$ to US\$: 0.80
Process Cost: C\$18.01 per ton
G&A Cost: C\$6.40 per ton

Process Recovery: 90%

The tailings Mineral Resource estimate for the project is tabulated in Table 14.16.

TABLE 14.16 TAILINGS MINERAL RESOURCE <sup>(1-7)</sup>										
Class	Class Grade Grade Tons Au Au opt Au g/t (k) (k) oz									
Indicated	0.024	0.82	2,138	51.0						
Inferred	0.022	0.75	47	1.1						

- (1) Tailings Mineral Resource is inclusive of Tailings Mineral Reserve.
- (2) 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, marketing, or other relevant issues.
- (3) Mineral Resource was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
- (4) The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been 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.
- (5) Contained metal may differ due to rounding.
- (6)  $Cut\text{-off } grade = 0.015 \ opt \ Au \ (0.51 \ g/t \ Au).$
- (7) A dry bulk density of 0.044 pcf was utilized in the tailings Mineral Resource estimate tonnage calculation.

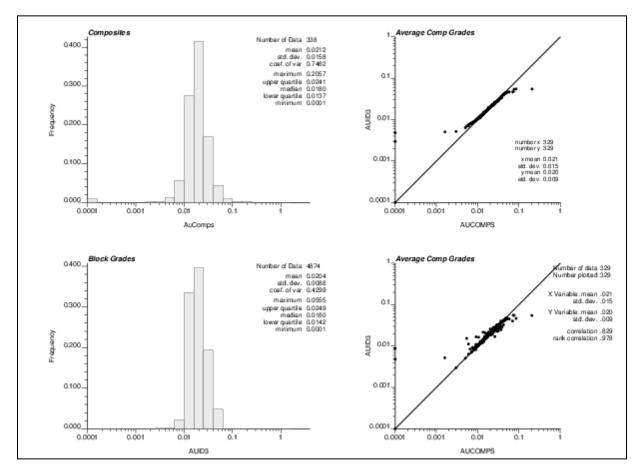
See tailings Au block model in Appendix V.

#### 14.24 TAILINGS BLOCK MODEL VALIDATION

The block models were validated visually by the inspection of successive cross sections in order to confirm that the block model correctly reflects the distribution of high-grade and low-grade values (See Appendix IV) and Figure 14.6. An additional validation check was completed by comparing the average grade of the informing composites to the model block grade estimates at zero cut-off. Block grades were also compared to the NN model generated using the same search criteria as that used for the ID<sup>3</sup> Mineral Resource estimate:

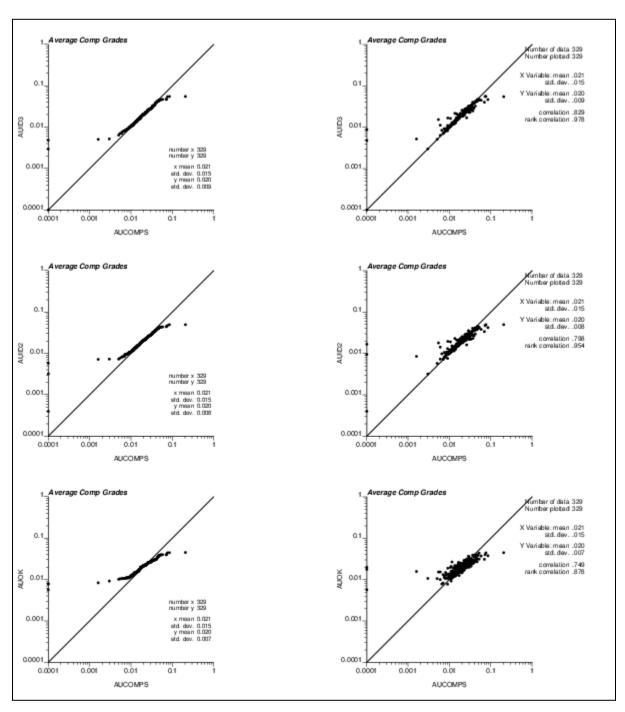
- Avg. Capped Au Composite Grade: 0.02 opt Au (0.69 g/t Au);
- Avg. Au ID<sup>3</sup> Block Grade: 0.02 opt Au (0.69 g/t Au); and
- Avg. Au NN Block Grade: 0.02 opt Au (0.69 g/t Au)

Figure 14.6 Model and Composite Comparisons



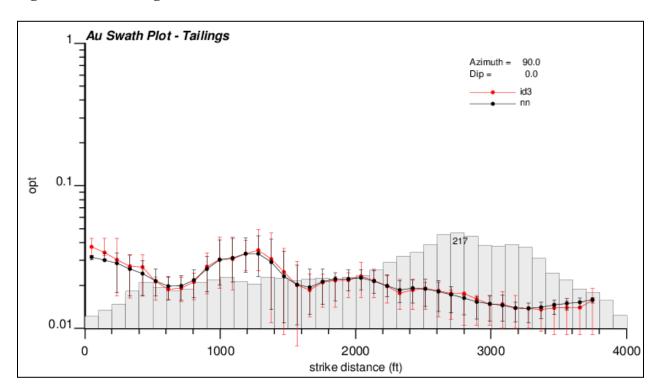
As a check on the selected methodology, the results were also generated by Ordinary Kriging (OK) and Inverse Distance Squared (ID<sup>2</sup>) estimation. In both cases, it was noted that the ID<sup>3</sup> estimates compared better with regards to the average block composite grade (Figure 14.7).

Figure 14.7 Comparison of Estimation Results



Swath plots were generated to check the block model estimate for global bias by comparing the NN block estimate to the ID<sup>3</sup> estimate (Figure 14.8).

Figure 14.8 Tailings Swath Plot



#### 15.0 MINERAL RESERVE ESTIMATES

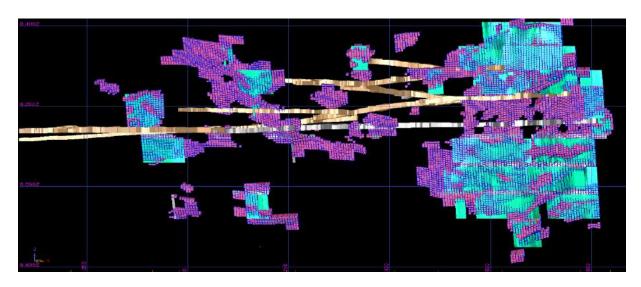
Table 15.1 summarizes the True North Mineral Reserve estimate which includes a combination of underground ore and high grade tailings for re-reprocessing. Also in its respective subsections, there is additional explanation about the mineral reserve determination and parameters utilized.

	TABLE 15.1 TOTAL PROJECT MINERAL RESERVE ESTIMATE								
Reserve Area	Prov	en Rese	rve	Prob	able Rese	rve	Proven d	& Probab	le Reserve
District	tons	Au (opt)	Au (Ozs)	tons	Au (opt)	Au (Ozs)	tons	Au (opt)	Au (Ozs)
26L -710	89,000	0.269	23,900	101,000	0.294	29,600	190,000	0.282	53,500
16L 810	2,000	0.221	500	13,000	0.213	2,800	15,000	0.214	3,300
16L - L10	18,000	0.194	3,500	32,000	0.193	6,100	50,000	0.193	9,600
26L - SAM	44,000	0.203	8,900	53,000	0.191	10,200	97,000	0.196	19,100
Subtotal True North Underground	153,000	0.241	36,800	199,000	0.245	48,700	352,000	0.243	85,500
Tailings Reprocessed	0	0.000	0	1,170,000	0.028	32,400	1,170,000	0.028	32,400
Total True North including Tailings	153,000	0.241	36,800	1,369,000	0.059	81,100	1,522,000	0.077	117,900

#### 15.1 UNDERGROUND MINERAL RESERVE ESTIMATES

Mineralization wireframes are cut along level boundaries, and subsequently cut along typical stope dimensions were applicable. This leaves a series of shapes (created with Vulcan Stope Optimizer software) with various dimensions of 60 feet (18m) high access level intervals (access level spacing), various lengths along strike stopes, and then full width of the orebody which varies from 4 feet (1.2m) to 30 feet (9.1m) This is illustrated below in Figure 15.1. The minimum mining width considered when creating stopes shapes is 5 feet (1.5m). This minimum mining width was introduced due to existing mobile equipment limitations or requirements and previous experience with the proposed mining methods to extract these stopes i.e. long-hole, captive long-hole and retreat uppers without backfill.

Figure 15.1 Reserve Block X-Section for Economic Viability Analysis (710/710A Veins)



These blocks were reported from the grade model with grade and resource category as outputs. Blocks where the ore was classified as Measured or Indicated were moved to the next phase of assessment. Blocks with Stope dilution and mining recoveries were subsequently applied to each of these shapes. Only blocks that are above BCOG were considered economic.

Subsequently, these blocks were considered only when creating the stopes shapes for further evaluations taking in account the following parameters, level accesses and vertical development or level spacing every 60 feet (18m), stope length varies and is mainly dictated by the positioning of above break-even cut-off grade blocks. Where applicable, captive stopes have been considered with multiple level extraction that can be mined and extracted from one development horizon (access) which makes these stopes dependent on one another.

Figure 15.2 Created Stope Shapes for Economic Viability Analysis

Stopes were subsequently assessed individually or in groups to determine if they were economically mineable. The stopes that passed this test were added to the reserve totals, as shown in the evaluation sample below. The parameters used to assess the economic viability of the reserve shapes are listed below in Table 15.2. These values and parameters were provided by Klondex, reviewed/accepted by P&E, and are understood to be derived from actual operations.

# **TABLE 15.2**

# OPERATING AND REVENUE PARAMETERS True North Cost Sheet



Unit costs last updated as of

Area

Ву

Date

2016-08-10

710 5860-5930

Robert Swanson August

30

2016

March   Peterfor Star   Fast   Torn   Cont April   Show play	Production Statistics									
Resolvery March Contention		Heading Size	E	ent	Tone				Gold (Au)	Silver (Ag)
Rese Size Development	Waste Development					1		Recovery		Sliver (Ag)
Recovered Process		12.412	, ''	30		1			0.170	\$ -
Estage Lador (Comn)   St Development Company   St Development Company					0	1		Recovered Price		\$ -
Con-Advance			1	02	319	1				
Sit Development - Value						ļ	_			
SED Development - Wasto   S. Y.F.   20   125.2		8! V 0!	4	17	722 F	4	0 /			
Langhois Stope Derif Footspare						1				
Cache for Frostage		0 7 0			120.2	1				
Cate Bolf Feetage					10,767					
Second Age   Sec	Cable Bolt Footage		1,3	350		]			Grade	Ounces
Content for Basciff						1				
Total Au Eg Oz   2,276						ł	Stoni			
Cost Calculator	Cement for Backing	l				ı	эшрі	rig Au Eq O2	0.000	
Wint Development   Unit Cost									Total Au Eq Oz	2,276
Unit Cost	Cost Calculator									
Wash Development 1212										
Wash Development 1212										
Waste Development 1/212   \$ 1,133,97			Unit	Cost	Units	Quantity		Cost	Cost per Ore Ton	Cost per Au Ounce
Raise Bore			¢	1 122 07	6	190	¢	214 220 22	¢ 19.64	¢ 04.1
Almah Raise			Ф	1,133.97						
Excepany Landers - Selescapes										
Excipency Ladders - Safescape   R			\$	421.27						
Total										
Urg Ore Advance					πt		_			
Second Common	Total						a a	257,269.67	\$ 22.31	3 113.0
Visit   State   Stat	U/G Ore Advance									
Total										
UG Longhole Stoping			\$	441.03	ft	20				
Dilling	Total						\$	60,421.11	\$ 5.25	\$ 26.5
Dilling	U/G Longhole Stoping									
Cable Bolting			\$	14.01	ft	15,120	\$	211,831.20	\$ 18.42	\$ 93.0
Vic   Material Handling			\$							
Material Handling	_		\$	2.07	ft	1,350	-			
Material Handling	Total						\$	389,597.22	\$ 33.88	\$ 171.1
Material Handling	U/G Material Handling									
UiG Backfilling			\$	6.42	tons	13,992	\$	89,827.52	\$ 7.81	\$ 39.4
Second   S	Total						\$	89,827.52	\$ 7.81	\$ 39.4
Second   S										
Cament   S			¢		tone	0	¢		¢	¢
S				_						
Workplace Services			-				_	-		
Workplace Services										•
Main Dewatering				4.00		44.500		40.000.00	* 100	T
Mobile Maintenance										
Light Vehicle Maintenance										
Total Operating Variable Costs   \$ 979,525.73   \$ 85.18   \$ 430.37	Light Vehicle Maintenance		\$	-	tons	11,500	\$		\$ -	\$ -
Total Operating Variable Costs   \$ 979,525.73   \$ 85.18   \$ 430.37			\$	3.79	tons	11,500				
Fixed Costs	Total						\$	182,390.00	\$ 15.86	\$ 80.1
Fixed Costs	Total Operating Variable Costs						\$	979 525 73	\$ 85.18	\$ 430.3
Administration + IT \$ 23.07 tons 11,500 \$ 265,305.00 \$ 23.07 \$ 116.57   Health and Safety \$ 2.50 tons 11,500 \$ 28,750.00 \$ 2.50 \$ 12.63   Environmental \$ 0.25 tons 11,500 \$ 2,875.00 \$ 2.50 \$ 12.63   Engineering and Survey \$ 2.39 tons 11,500 \$ 27,485.00 \$ 2.39 \$ 12.08   Geology \$ 14.35 tons 11,500 \$ 165,025.00 \$ 14.35 \$ 72.51   Surface Support Services \$ 2.10 tons 11,500 \$ 24,150.00 \$ 2.10 \$ 10.61   Sustaining Capital \$ 12.15 tons 11,500 \$ 23,250.00 \$ 12.15 \$ 61.39   Processing/Milling \$ 28.00 tons 11,500 \$ 322,000.00 \$ 28.00 \$ 14.14.88    Total Fixed Operating Costs \$ 975,315.00 \$ 84.81 \$ 428.52    Total Cost \$ 975,315.00 \$ 84.81 \$ 428.52    Total Revenue \$ \$ 3,209,160.00 \$ 279.06 \$ 1,410.00	Total Operating Variable Costs						4	313,323.13	\$ 05.10	9 430.3
Administration + IT \$ 23.07 tons 11,500 \$ 265,305.00 \$ 23.07 \$ 116.57   Health and Safety \$ 2.50 tons 11,500 \$ 28,750.00 \$ 2.50 \$ 12.63   Environmental \$ 0.25 tons 11,500 \$ 2,875.00 \$ 2.50 \$ 12.63   Engineering and Survey \$ 2.39 tons 11,500 \$ 27,485.00 \$ 2.39 \$ 12.08   Geology \$ 14.35 tons 11,500 \$ 165,025.00 \$ 14.35 \$ 72.51   Surface Support Services \$ 2.10 tons 11,500 \$ 24,150.00 \$ 2.10 \$ 10.61   Sustaining Capital \$ 12.15 tons 11,500 \$ 23,250.00 \$ 12.15 \$ 61.39   Processing/Milling \$ 28.00 tons 11,500 \$ 322,000.00 \$ 28.00 \$ 14.14.88    Total Fixed Operating Costs \$ 975,315.00 \$ 84.81 \$ 428.52    Total Cost \$ 975,315.00 \$ 84.81 \$ 428.52    Total Revenue \$ \$ 3,209,160.00 \$ 279.06 \$ 1,410.00	Fixed Costs									
Environmental   \$ 0.25	Administration + IT				tons	11,500		265,305.00		
Engineering and Survey										
Surface Support Services   \$ 14.35   tons   11,500   \$ 165,025.00   \$ 14.35   \$ 72.51										
Surface Support Services   \$ 2.10   tons   11,500   \$ 24,150.00   \$ 2.10   \$ 10.61										
Processing/Milling   \$ 28.00   tons   11,500   \$ 322,000.00   \$ 28.00   \$ 141.48	Surface Support Services		\$	2.10		11,500	\$	24,150.00	\$ 2.10	\$ 10.6
Total Fixed Operating Costs   \$ 975,315.00   \$ 84.81   \$ 428.52										
Revenue Calculator           Mine Variable Operating Costs         \$ 979,525.73         \$ 85.18         \$ 430.37           Fixed Operating Cost         \$ 975,315.00         \$ 84.81         \$ 428.52           Total Cost         \$ 1,954,840.73         \$ 169.99         \$ 858.89           Total Revenue         \$ 3,209,160.00         \$ 279.06         \$ 1,410.00	Processing/Milling		\$	28.00	tons	11,500	\$	322,000.00	\$ 28.00	\$ 141.4
Revenue Calculator           Mine Variable Operating Costs         \$ 979,525.73         \$ 85.18         \$ 430.37           Fixed Operating Cost         \$ 975,315.00         \$ 84.81         \$ 428.52           Total Cost         \$ 1,954,840.73         \$ 169.99         \$ 858.89           Total Revenue         \$ 3,209,160.00         \$ 279.06         \$ 1,410.00	Total Fixed Operating Costs						s	975 315 00	\$ 84.81	\$ 428.5
Cost         per Ore Ton         per Au Ounce           Mine Variable Operating Costs         \$ 979,525.73         \$ 85.18         \$ 430.37           Fixed Operating Cost         \$ 975,315.00         \$ 84.81         \$ 428.52           Total Cost         \$ 1,954,840.73         \$ 169.99         \$ 858.89           Total Revenue         \$ 3,209,160.00         \$ 279.06         \$ 1,410.00	. c.a operading ovoto						. *	0.0,010.00	04.01	420.3
Mine Variable Operating Costs         \$ 979,525.73         \$ 85.18         \$ 430.37           Fixed Operating Cost         \$ 975,315.00         \$ 84.81         \$ 428.52           Total Cost         \$ 1,954,840.73         \$ 169.99         \$ 858.89           Total Revenue         \$ 3,209,160.00         \$ 279.06         \$ 1,410.00	Revenue Calculator									
Fixed Operating Cost         \$ 975,315.00         \$ 84.81         \$ 428.52           Total Cost         \$ 1,954,840.73         \$ 169.99         \$ 858.89           Total Revenue         \$ 3,209,160.00         \$ 279.06         \$ 1,410.00										
Total Cost \$ 1,954,840.73 \$ 169.99 \$ 858.89  Total Revenue \$ 3,209,160.00 \$ 279.06 \$ 1,410.00										
Total Revenue \$ 3,209,160.00 \$ 279.06 \$ 1,410.00										
	Total Cost							1,954,840.73	a 169.99	a 858.8
	Total Revenue						\$	3,209,160.00	\$ 279.06	\$ 1,410.0
Net \$ 1,254,319.27 \$ 109.07 \$ 551.11										
	Net						\$	1,254,319.27	\$ 109.07	\$ 551.11

The main areas at True North where stope shapes were deemed economic after valuation and included in the current reserve statement are distributed across a few mining areas (districts) and lenses in the three main accessible mining districts; the 16L-08/L10, 26L- SAM and the 26L-710/711. Out of the total reserve at True North, 43% Proven and 57% Probable distribution occurs with 62.5% of ounces located in the 710/711 area.

The total dilution shown was modelled into the mining shape as external dilution of 0.5feet (0.15m) over-break on the long-hole stopes which have minimum of 4 feet (1.2m) width and internal dilution in areas where waste or marginal grade blocks along strike must be taken as part of the mining shape.

Additionally, the Mining Recovery was considered at 98% and was also applied to the model with the understanding the stope shapes already include a mining loss which is significant. The mining recovery was considered somewhat high due to the narrow vein nature of the True North Deposit and after review it is considered acceptable for all stopes. See underground mineral reserve estimation parameters in Table 15.3.

TABLE 15.3 PARAMETERS USED TO ASSESS ECONOMIC VIABILITY OF UNDERGROUND MINERAL RESERVE							
Reserve Parameters UM Value							
Break Even Cut-Off Grade (BCOG)	opt	0.131					
Resource Cut-Off Grade (RCOG)	opt	0.090					
Au Price	US\$/Oz	1,200					
Au Price	C\$/Oz	1,500					
Exchange Rate USD:CAD	US\$:C\$	0.80					
Total Operating Cost	C\$/t	184.01					
Stope Dilution	%	21%					
Stope Mining Recovery	%	98%					

Blocks that are below the BCOG, but above the RCOG are reported as Mineral Resources (see Section 14.10). The underground Mineral Reserve developed for the Project is summarized in Table 1543.

TABLE 15.4 UNDERGROUND MINERAL RESERVE ESTIMATE									
Reserve Area Proven Reserve Probable Reserve Proven & Probable Reserve							le Reserve		
District	tons	Au (opt)	Au (Ozs)	tons	Au (opt)	Au (Ozs)	tons	Au (opt)	Au (Ozs)
26L -710	89,000	0.269	23,900	101,000	0.294	29,600	190,000	0.282	53,500
16L 810	2,000	0.221	500	13,000	0.213	2,800	15,000	0.214	3,300
16L - L10	18,000	0.194	3,500	32,000	0.193	6,100	50,000	0.193	9,600
26L - SAM	44,000	0.203	8,900	53,000	0.191	10,200	97,000	0.196	19,100
Total	153,000	0.241	36,800	199,000	0.245	48,700	352,000	0.243	85,500

<sup>(1)</sup> Mineral Resource is inclusive of Mineral Reserve shapes, mining recovery, mining dilution and stope preproduction development costs. Mineral Reserve estimate includes dilution and is constrained to a minimum mining width of 5 feet.

<sup>(2)</sup> Mineral Reserve was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.

- (3) Mining losses of 2% have been applied to the designed mine excavations and no additional unplanned dilution has been included.
- (4) Contained metal may differ due to rounding.
- (5) Cut-off grade = 0.13 opt Au (4.46 g/t Au).
- (6) A bulk density of 0.086 tons pcf was utilized in Mineral Reserve tonnage calculations.

The calculation of the underground Mineral Reserve BCOG was based on the parameters provided in Table 15.5.

Table 15.5 Underground Mineral Reserve BCOG Calculation Criteria					
Unit Cost	Units	BCOG			
Metal Price	C\$/Oz	1,500			
Metallurgical Recovery	%	94%			
Payable Metal	%	100%			
Conversion Factors		31.1035			
True North – Cost Summary					
Mining Operating Cost	C\$/t	49.09			
Sustaining Capital Cost	C\$/t	42.49			
Process Operating Cost	C\$/t	27.77			
Mine Indirect Cost	C\$/t	49.04			
Site G&A Cost	C\$/t	15.62			
<b>Total BCOG Operating Cost</b>	C\$/t	184.01			
Royalty*	%	0.00%			
True North - LOM BCOG	opt	0.131			
True North – LOM BCOG	g/t	4.49			

\*Note: True North operation does not pay Royalties

# 15.2 TAILINGS MINERAL RESERVE ESTIMATION

The tailings Mineral Reserve estimation is based on separate cut-off grades of 0.026 opt Au (0.89 g/t Au) for 2016 to 2018 and 0.020 opt Au (0.69 g/t Au) for 2019 to 2023 as shown in Tables 15.6 and 15.7. The tailings reserve cut-off grade has been calculated from the following parameters:

Gold Price: US\$ 1,200 per oz.
Exchange Rate: C\$ to US\$: 0.80:1
Operating Cost: C\$34.60 per ton

• Recovery: 90%

• Cut-off: 0.026 opt Au (0.89 g/t Au)

TABLE 15.6 2016 TO 2018 TAILINGS RESERVE BCOG CALCULATION CRITERIA								
Unit Cost Units BCOG								
Metal Price	C\$/Oz	1,500						
Metallurgical Recovery	%	90%						
Payable Metal	%	100%						
Conversion Factors		31.1035						
True North - Cost Summary								
Process Operating Cost	C\$/t	\$ 25.06						
Sustaining Capital Cost	C\$/t	\$ 6.39						
Site G&A Cost	C\$/t	\$ 3.15						
<b>Total BCOG Operating Cost</b>	C\$/t	\$ 34.60						
Royalty*	%	0.00%						
True North – Tailings BCOG	opt	0.026						
True North – Tailings BCOG	g/t	0.89						

<sup>\*</sup>Note: True North operation does not pay royalties

Gold Price: US\$ 1,200 per oz.
Exchange Rate: C\$ to US\$: 0.80:1
Operating Cost: C\$26.97 per ton

• Recovery: 90%

• Cut-off: 0.020 opt Au (0.69 g/t Au)

TABLE 15.7 2019 TO 2023 TAILINGS RESERVE BCOG CALCULATION CRITERIA							
Unit Cost Units BCOG							
Metal Price	C\$/Oz	1,500					
Metallurgical Recovery	%	90%					
Payable Metal	%	100%					
Conversion Factors		31.1035					
True North – Cost Summary							
Process Operating Cost	C\$/t	18.01					
Sustaining Capital Cost	C\$/t	2.56					
Site G&A Cost	C\$/t	6.40					
<b>Total BCOG Operating Cost</b>	C\$/t	26.97					
Royalty*	%	0.00%					
True North -Tailings BCOG	opt	0.020					
True North –Tailings BCOG	g/t	0.69					

<sup>\*</sup>Note: True North operation does not pay royalties

In addition to the underground Mineral Reserve estimate, there are 1,278,000 tons (1,159,000 tonnes) of tailings Mineral Resource containing 36,000 Indicated oz of Au that were converted to Mineral Reserves and considered for processing as indicated below in Table 15.8 and described in section 16. The tailings re-processing project will be continued during May to October when outside conditions permits to recovered the material and will be transferred for processing in order to increase True North process plant utilization and generate additional revenue. The tailings Mineral Reserve represents an economic upside to the project.

TABLE 15.8 TAILINGS MINERAL RESERVE ESTIMATE <sup>(1-6)</sup>									
Reserve Area Proven Reserve Probable Reserve Proven & Probable Res				le Reserve					
District	tons	Au (opt)	Au (Ozs)	tons	Au (opt)	Au (Ozs)	tons	Au (opt)	Au (Ozs)
Tailings Reprocessed				1,170,000	0.028	32,400	1,170,000	0.028	32,400

- (1) Tailings Resource is inclusive of Mineral Reserves.
- (2) Tailings Mineral Reserve was estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.
- (3) No mining losses of have been applied to the designed mine excavations and no additional unplanned dilution has been included.
- (4) Contained metal may differ due to rounding.
- (5) Cut-off grade = 0.026 opt Au (0.89 g/t Au) for 2016 to 2018 and 0.020 opt Au (0.69 g/t Au) for 2019 to 2023
- (6) A dry bulk density of 0.044 tons pcf was utilized in the tailings Mineral Reserve tonnage calculation.

#### 16.0 MINING METHODS

# 16.1 MINE DEVELOPMENT

# **16.1.1** Access Development

True North is an underground mining operation that has been in almost continuous operation since the early 20<sup>th</sup> century. Over the years, the mine has employed many mining methods including shrinkage, sublevel stoping, cut and fill and panel stoping.

Currently, the Project has two main production levels, namely 16L and 26L, which are accessed via a 4,400 foot (1,341m) two compartment shaft (A-Shaft). The 710 Zone mining complex is the main mining area and is located approximately 6,600 feet (2,000m) from the main shaft along the 26L access level.

The main haulage track drift on 26L is used to access the 710 Vein. In order to access above and below the 26L, the 710 Vein has a 12 foot by 12 foot (3.7m x 3.7m) incline and decline driven at a maximum gradient of +/-15% with access cross-cuts into the ore body every 60 feet (18m) vertically. Additional infrastructure along the incline includes a vertical ventilation and escape raise and an ore and waste pass system.

A longitudinal section through the mine is provided in Figure 16.1.

#### 16.1.2 Geotechnical

Rock characteristics at True North are typical northern Canadian shield conditions with very little water and very competent with RMR ranging from 65% to 85%. In large areas and stopes all necessary joint sets are mapped and a ground support standards are reviewed using Unwedge.

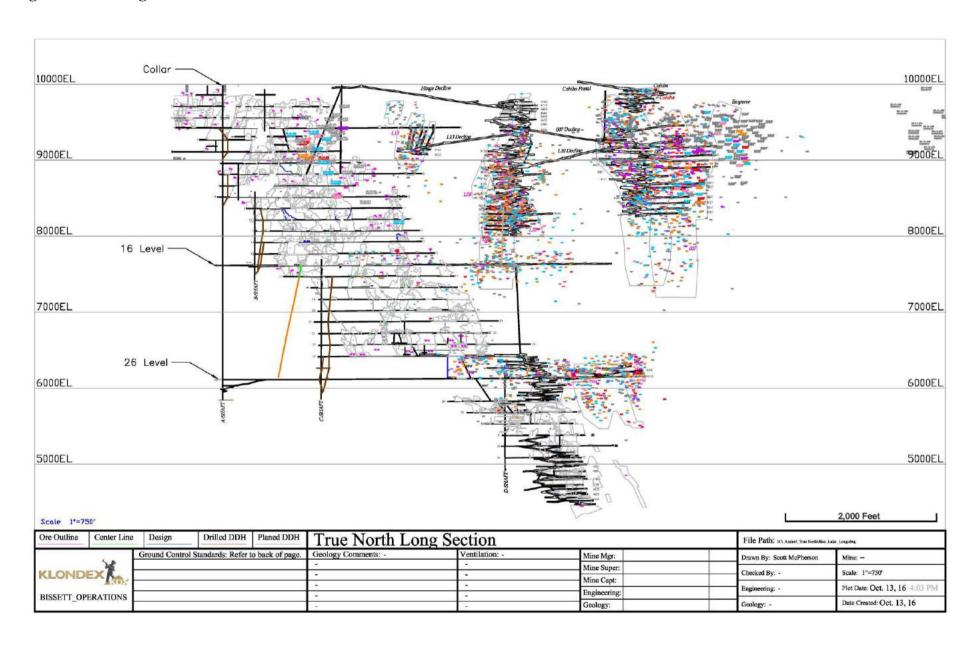
The Uniaxial Compressive Strength (UCS) of the ground is 200 million pascal (MPa), due to the depth of the 710 vertical stress will range from 30MPa to 40MPa with maximum horizontal stress being 1.3\*vertical stress.

# 16.1.3 Ground Support

The ground conditions at True North are typical of those found elsewhere in the northern shield, with typically dry and very competent conditions. The main ground support system is resin encapsulated 6 ft (1.8m) #6 rebar bolted in a 4 foot by 4 foot (1.2m by 1.2m) pattern, supporting 4 inch (0.1m) welded wire mesh. In areas wider than 18 feet (5.5m), 8 feet (2.4m) #6 rebar bolts replace the 6 foot (1.8m) rebar bolts.

Where more adverse conditions are encountered in long-hole stopes, 20 feet (6m) and 30 feet (9m) long grout encapsulated cable bolts are installed as well as in intersections with span between 20 feet and 30 feet (6m to 9m). The cable bolt pattern is determined from the specific conditions and are drilled with a long-hole drill and then fully grouted.

Figure 16.1 Longitudinal Section



# 16.1.4 Ventilation and Secondary Egress

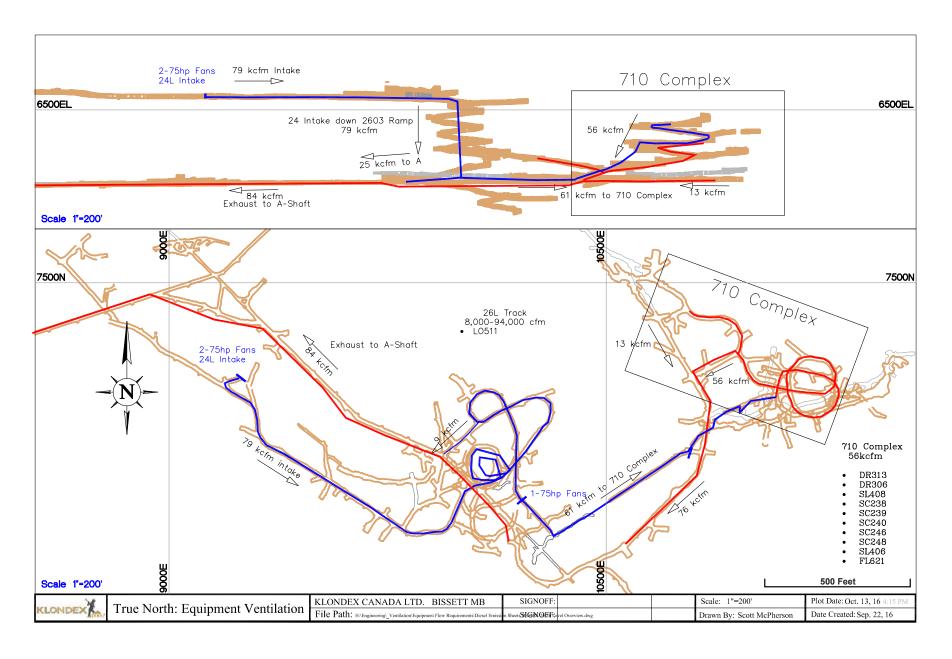
Underground mining relies on diesel equipment in the process to extract the ore and waste rock and to transport backfill to the stopes. The Project is ventilated through an intake connection to surface. This air route includes travel through historic mining areas and from there, it is directed to the 24L and distributed to the main 710 Zone mining horizon via horizontal and vertical openings. All of the air eventually exhausts out through A- shaft. Fans located in development headings ventilate working faces. The surface intake fan is powered by two 150 horsepower (hp) (110 kilo Watt [kW]) fans and the 24L main ventilation fans deliver 75,000 cubic feet per minute (cfm) (5.7 m³/sec) to the 710 Zone. A ventilation schematic is provided in Figure 16.2.

Two means of secondary egress are available at the project including a man-way with ladders and landings in A-shaft. A second man-way connection to surface is via a timbered raise from 26L to 16L, which continues on to a man-way up B shaft to 8L and then on to a series of other raises from 8L to surface.

#### 16.2 POWER DISTRIBUTION AND DEWATERING

Electrical power to the mine is provided by a 4,160-volt feeder connection which is stepped down to 480 volts for distribution. Step down transformers and circuit protection are provided by 22 load centers located throughout the mine. Excess mine water is dewatered from 26L to 16L to 10L and then to the process plant where is it sent to tailings. The mine purges water on a weekly basis at approximately 300 gallon (1.36m<sup>3</sup>)/week, however, most water is recycled and inflow from the surrounding rock is minimal.

Figure 16.2 True North Gold Mine 710 Complex Ventilation System



#### 16.3 MINING METHODS

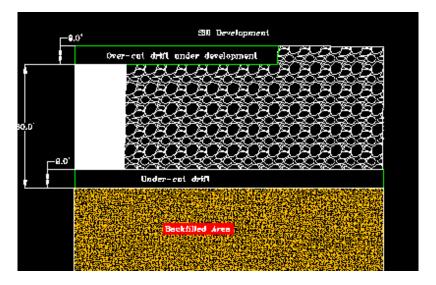
The primary mining method at the Project is long-hole stoping which is a cost effective method to mine the complex geology at the Project, and benefits from a quick stope cycle time. In areas where mineralization does not warrant the development of a ramp access system, Klondex employs captive sublevel stoping methods.

# 16.3.1 Long-hole Stoping

Long-hole stoping is the lowest cost method used at the Project and generally also provides the lowest total cost per ounce of gold produced.

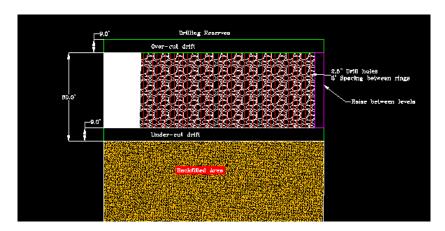
Level accesses are driven perpendicular towards the ore body every 60 feet (18m) vertical. From these access drifts, 8 foot x 9 foot (2.4m x 2.7m) sills are developed along the strike of the mineralized zone (Figure 16.3).

Figure 16.3 Long-hole Open Stope Sill Development



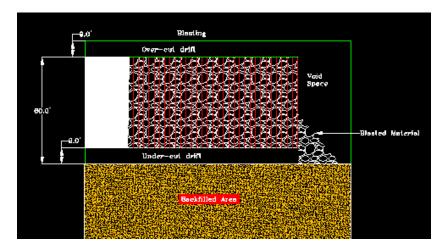
Once the levels are developed, a slot raise is driven between the levels which provides the free face necessary for long-hole blasting. Subsequently, long-hole drilling is carried out with 2.5 inch (64mm) holes on a 3foot (0.9m) ring burden. The actual drill pattern is determined by the stope shape. (Figure 16.4).

Figure 16.4 Long-hole Open Stope Raise and Drilling



Once all long-hole drilling is completed, the stope is loaded with explosives and blasted. A diesel powered load-haul-dump machine (LHD) is used to move the blasted material from the undercut. The LHD is equipped with line-of-sight remote control mechanism to allow the removal of all blasted rock without exposing operating personnel to the open stope and the potential risk of ground falls (Figure 16.5).

Figure 16.5 Long-hole Open Stope Blasting



After all blasted material has been extracted, the remaining void is backfilled with waste rock (Figure 16.6).

Figure 16.6 Long-hole Open Stope Backfilling

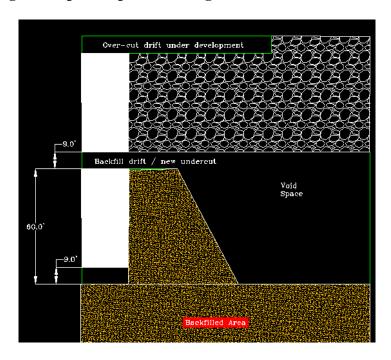


Figure 16.7 shows a fairly typical over-cut and undercut access and sill in plan view, and Figure 16.8 shows a typical drill ring section.

Figure 16.7 Over-cut and Under-cut Plan View

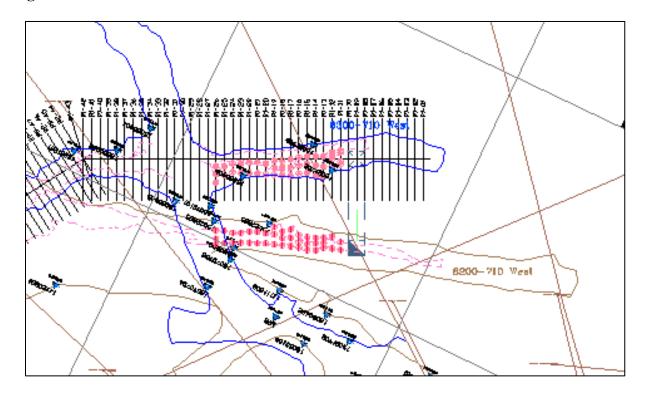
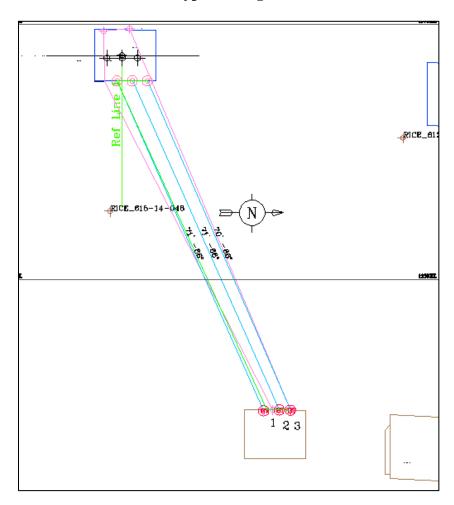


Figure 16.8 True North Gold Mine Typical Long-hole Drill Section



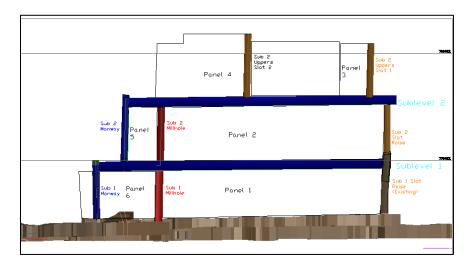
# 16.3.2 Captive Sub Level Long-hole Stoping

Captive sub level long-hole stoping is used in situations where an up-ramp access cannot be economically justified. This mining method uses three 6 foot by 6 foot (1.8m by 1.8m) raises up to 60 feet (18m) in length. One raise acts as a slot raise for the long-hole blasts to slash into; the second raise acts as a mill-hole for muck from the sublevel where broken ore is slushed into; and the last is a access man-way. At the top of the raises an 8 foot by 9 foot (2.4m by 2.7m) sublevel is driven along the strike of the ore body. An air slusher is used to move the development muck from the sublevel over to and down the mill hole. If the mineralization warrants, another series of raises and a sublevel are developed.

After all of the raises and sublevels are developed, long-hole drilling is carried out with an air drill capable of drilling 2.5 inch (64mm) holes on a 3 foot (0.9m) ring burden. These rings are blasted into the slot raises. The material drops to the bottom level and a remote controlled LHD removes the blasted ore without exposing the operator to the open stope and the potential risk of ground falls.

Figure 16.9 shows an arrangement of two sub-levels of a sub level captive long-hole stope.

Figure 16.9 True North Gold Mine Sub-Level Captive Long-hole Stope



# **16.3.3 Haulage**

Ore and waste rock generated from the incline of the 710 Zone mining complex is hauled with LHDs to the vertical ore and waste chute system which connects to the 26L haulage drift. The material is then loaded into rail cars and hauled from the rock passes along the haulage drift with a diesel locomotive and 5 ton (4.5 tonne) rail cars. The cars are dumped at a grizzly equipped with a rock breaker and the material is sent to the loading pocket below 26L, from where it is hoisted in the shaft to surface in a 5 ton (4.5 tonne) capacity skip.

In the 710 Zone mining complex decline, ore and waste are hauled to the 26L haulage drift via two 13 ton (12 tonne) rubber tired underground mining haul trucks. These haul trucks deliver the ore and waste rock to the 710 ore and waste bins. From these ore bins, the follows the same route as described in the above paragraph.

# 16.3.4 Backfilling

Waste rock is moved from development to stoping whenever possible and major fill zones are created in the mining through the down hole long-hole method on the 710 incline. The decline will not create fill void and will require sill pillars at certain level intervals. With the mining in the incline being filled, a percentage of waste rock will need to be removed from the mine but there will be sufficient material to fill the created void as per Table 16.1.

TABLE 16.1 WASTE ROCK BACKFILL AND STOPE VOIDS						
Period Q4 - 2016 2017 2018 Total						
Waste Rock Backfill Created - tons	34,000	119,000	70,000	223,000		
Stope Voids Created - tons	14,000	98,000	56,000	168,000		

# 16.4 SCHEDULING

For all waste lateral development and stoping scheduling, the following parameters are utilized.

# Waste development:

- Incline Face 6.5 feet/day
- Incline Auxiliary 8.5 feet/day
- Decline Face 6.5 feet/day
- Decline Auxiliary 8.5 feet/day

# Ore development:

• Ore Sills – 14 feet/day

# Conventional raising:

• 8 feet/day

# Backfilling:

• 129 tons/day

# Long-hole drilling:

• 597 feet/day

# Total Waste tons:

• 594 tons/day

# **Total Ore Tons:**

• 604 tons/day

Total tons brought to surface via shaft

• 1,070 tons/day

TABLE 16.2								
Undergroun	Underground Mining Schedule Summary							
Period Q4 - 2016 2017 2018								
Tons Mined	29,000	206,000	117,000					
Au opt Mined	0.241	0.243	0.244					
Au Ounces Mined	7,000	50,000	28,500					
Au Oz Recovered	6,600	47,000	26,800					

# 16.5 EQUIPMENT FLEET UNDERGROUND

A summary of all underground mining equipment requirements are listed in Table 16.3.

TABLE 16.3 REQUIRED MINING EQUIPMENT				
	Description	Quantity		
	3.5yd <sup>3</sup> (2.7m <sup>3</sup> ) scoop	4		
	2.5yd <sup>3</sup> (1.9 m <sup>3</sup> )scoop	1		
Development	1 boom jumbo	3		
	scissor decks	2		
	13 ton (12 tonne) haul trucks	2		
	Air powered long-hole drill	2		
Production	2.5yd <sup>3</sup> (1.9m <sup>3</sup> ) remote controlled	4		
	scoop	т		
Trammina	Locomotive	4		
Tramming	5 ton (4.5 tonne) rail cars	20		
	Scissor lift	1		
	Boom truck	1		
Ancillary	grease truck	1		
	Telehandler	1		
	Kubota RTV or Toyota Land Cruiser	3		

#### 16.6 TAILINGS REPROCESSING

Tailings reprocessing will be carried out from 2016 to 2023, initially during the underground mining operations (2016 to 2018) and subsequently following cessation mining operations (2019 to 2023), as a stand-alone operation. This seasonal reprocessing operation will be conducted at a process plant throughput of 1,200 tpd (1,189 tonnes per day).

Dry tailings material is extracted throughout the historic tailings and moved to the pump station using a dozer. The pump station consists of a 50 HP (37 kW) pump, a reclamation water supply and a water reservoir. During operation, dry material can be moved at a rate of 39 tons (35 tonnes) per hour from the tailings pump. The material is fed into a reservoir and is diluted into slurry with high pressure water jets. The slurry is pumped from the historic tailings pond and into a holding tank located at the tailings substation, on the bank of the historic tailings pond. The tailings substation consists of a holding tank with a 75 HP (56kW) pump inside, valves to direct process water, electrical controls for the pumps and auxiliary equipment and a diesel powered generator.

From the holding tank, the slurry is pumped through a 10 inch (250mm) line to the grinding bay at the process plant. A flow rate is maintained using the pump located in the tank and a 50 HP (37 kW) booster pump located approximately 3,000 feet (1 km) along the reprocessing line. Process water is added to the holding tank as required in order to maintain a consistent suspended solids level, heading to the process plant. Tailings slurry is pumped to the process plant with a flow rate above 600 gallons (2.7m³) per minute maintained and a typical suspended solids rating of 20%. Tailings material is sent to a de-watering cyclone located in the process

plant grinding bay where the overflow from the cyclone is returned to the new tailings pond and the underflow is sent into the grinding circuit.

A schedule for tailings reprocessing is shown in table 16.4.

TABLE 16.4							
TAILINGS REPROCESSING SCHEDULE Period 2017 2018 2019-2023*							
Tons Reprocessed	80,000	115,000	195,000				
Au opt Reprocessed	0.036	0.036	0.026				
Au Oz Reprocessed	2,900	4,100	5,100				
Au Oz Recovered	2,600	3,700	4,600				

<sup>\*</sup> Annual figures for 2019 to 2023

Figures 16.10 and 16.11 respectively depict the tailings recovery flow diagram and an aerial view of the tailings recovery site.

Figure 16.10 Tailings Recovery Flow Diagram

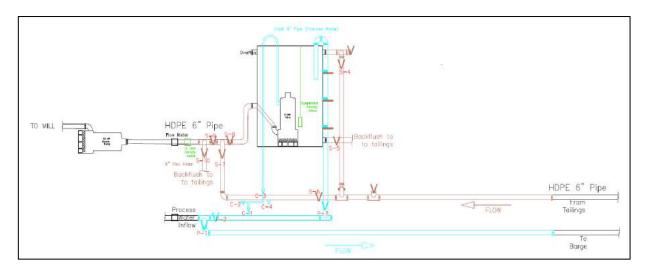


Figure 16.11 Aerial View of Tailings Recovery Site



#### 17.0 PROCESS PLANT AND PROCESS RECOVERY

In 2011, the process crushing plant was expanded by adding a new primary 30 inch by 42 inch (760mm by 1067mm) jaw crusher, a GP300 gyratory crusher as a secondary breaker and a Barmac B8000 VSI (vertical shaft impact) crusher as a tertiary unit. There units are all in line with a 7 foot by 20 foot(2.1m by 6.1m) triple deck vibrating screen. See Figure 17.1

The process plant feed is ground in an AC 12 ½ foot by 14 foot (3.8m by 4.3m), 1,250 HP (933 kW) ball mill to 67% passing Tyler 200 mesh (74 microns). A portion of the process plant circulating load is passed through one of two 20" (500mm) gravity concentrators. Concentrate from these units s upgraded on an 8 foot (2.4m) shaking table. The table concentrate is direct smelted. Tails from the concentrators and the shaking table are returned to the head end of the grinding mill. The fines from the grinding circuit are fed to one of two rows of 10m3 OUTOTEC tank cells producing both a rougher concentrate grading between 5 and 10 opt (171 and 343 g/t Au) and a scavenger concentrate that is very low grade. The scavenger concentrate is circulated to the main grinding circuit. Rougher concentrate is collected and reground through an 8 foot by 6 foot (2.4m by 1.8m) ball mill to 98% passing Tyler 400 mesh (37 microns), thickened and leached in a three stage leach circuit of 12 foot by 24 foot (3.6m by 7.2 m) tanks. Dissolved gold is recovered using a six stage carbon-in-pulp circuit using 12ft. x 14ft (3.6m x 4.3m) vessels. The carbon is then eluted in a stainless steel pressure strip vessel. The elution liquor is passed through an electrowinning cell fitted with stainless steel anodes and cathodes. Gold sludge from this cell is then smelted in an electric induction furnace.

Current process plant recovery is name plated at 93.5% based on a feed grade of 0.16 opt (5.5 g/t). This recovery is grade dependent and has been as high as 96.5% with higher feed grades.

Past and current processing analyses have shown that the process plant feed is clean displaying no evidence of any deleterious constituents such as arsenic, mercury or antimony that would otherwise affect gold recovery in the leach circuit. Copper in solution is sometimes high.

The process plant operates on a 14 day on, 14 day off, 12 hour per day schedule utilizing four crews. See process plant production schedule in Table 17.1.

An economic assessment is underway looking into leaching the flotation tails and solids from the tailing storage facility. According to the potential future flow sheet the existing flotation concentrate leach circuit would remain intact with flotation tails reporting to a new pre-leach thickener. Slurry would be pumped from the existing tailings storage facility over a new trash screen. The flotation tails and trash screen undersize would be combined and thickened using the new thickener. The thickener underflow would be pumped to a series of six CIL tanks for cyanide leaching. The CIP tails from the flotation concentrate leach circuit will be pumped to the new CIL circuit. Carbon would be transferred counter current from the slurry with the carbon from the first CIL tank being pumped either to the acid wash vessel or to the flotation concentrate CIP circuit depending upon operational conditions. Material from the tailings storage facility would be pumped back to the process plant for processing as weather allows. It is estimated that the tailing pumping would operate approximately six months of the year. During the winter months only the flotation underflow alone would report to the new thickener and then pumped to the new CIL circuit. The CIP tails from the flotation concentrate leach would continue to be pumped to the new CIL circuit.

Figure 17.1 True North Gold Mine Process Plant Flow Sheet

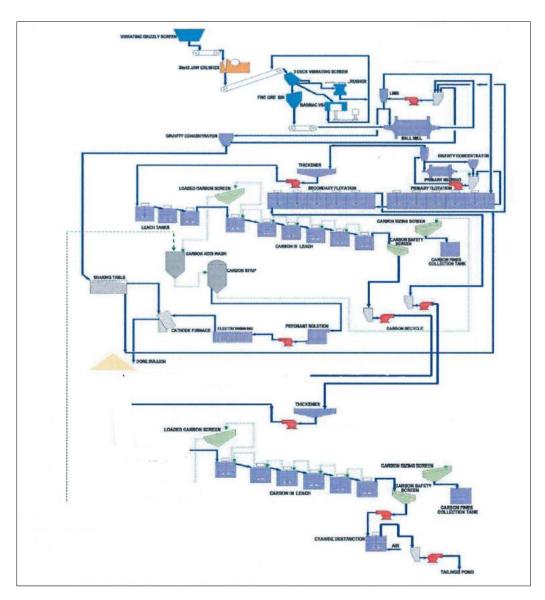


TABLE 17.1 PROCESS PLANT PRODUCTION SCHEDULE								
Period Q4 - 2016 2017 2018 2019 - 2023*								
Tons Processed	29,000	286,000	232,000	195,000				
Au opt Processed	0.241	0.185	0.141	0.026				
Au Oz Processed	7,000	52,900	32,600	5,100				
Au Oz Recovered	6,600	49,600	30,500	4,600				

<sup>\*</sup> Annual figures for 2019 to 2023

In 2019, the underground mining operation will cease. However, the processing plant will continue to take historic tailings for reprocessing for another 5 years until 2023. This material will not require grinding therefore the processing plant will be able to operate at a rate of 1,200 tpd (1,189 tonnes per day) for this period, however, it will only be a seasonal operation, running from May to Oct each year.

#### 18.0 PROJECT INFRASTRUCTURE

True North has been an active mine for almost 90 years except for some periods of inactivity. During this timeframe the onsite infrastructure has been updated, upgraded and improved continuously by its respective historic owners. Figure 18.1 illustrates the current layout of the surface infrastructure.

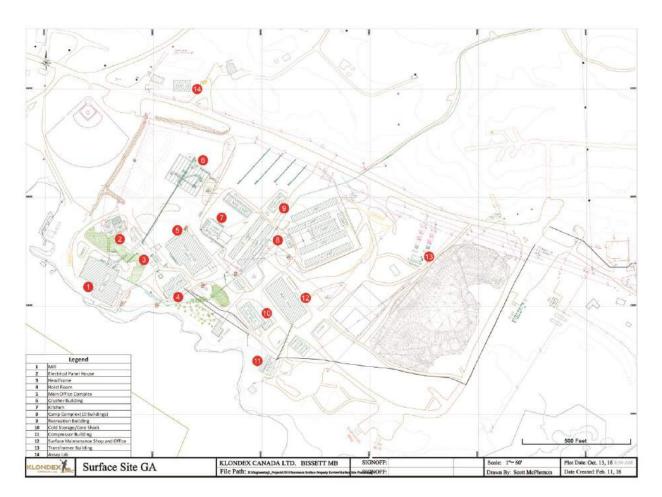


Figure 18.1 Surface Infrastructure Plan View

# 18.1 LOCATION AND ACCESS

The Project is located adjacent to the town of Bissett Manitoba, which is 235km northeast from Winnipeg Manitoba. Bissett and the Project are accessible via provincially maintained public roads connecting to Winnipeg. Bissett provides employee housing and support services to the Project.

# 18.2 ACCOMMODATIONS AND CAMP FACILTIES

The Project has a 300 room camp facility located near the main administration offices which includes a kitchen and dining facility, and recreation and fitness facilities. The majority of employees and contractors working on site are currently accommodated at this facility during shift rotations. In addition, the town of Bissett offers options for employee room and board.

#### 18.3 ELECTRICAL POWER AND ON-SITE DISTRIBUTION

The Project is supplied power by Manitoba Hydro grid through two power lines which provides 20MW to the Project transformer station. The twin power line provides a redundancy such that in the event of a single line power outage, the mine, process plant and surface facilities can still function in a limited capacity on 10MW.

# 18.4 WATER SUPPLY AND RETICULATION

Potable water is supplied from the town of Bissett's water supply.

Process water for the mine is reclaimed from the tailings pond and water recovered from the underground workings.

# 18.5 AIR COMPRESSORS

Compressed air for the underground workings is provided by five 300hp (224kW) and two 150hp (122kW) compressors located in a central compressor house. The compressed air is distributed throughout the Project through a network of 10 inch and underground and plant smaller airlines.

#### 18.6 DIESEL FUEL AND ON-SITE STORAGE FACILITY

Diesel fuel is supplied to the onsite storage tanks by commercial road tanker from a major fuel supplier's central depot in Winnipeg. The diesel fuel for the underground machinery is transported from the onsite storage tanks to the underground SasStat fuel storage facility via fuel cars on the mine cage.

# 18.7 WAREHOUSING AND MATERIAL HANDLING

The Project is serviced from a two-story, heated,  $445\text{m}^2$  (4,800 ft<sup>2</sup>) warehouse building, a 223 m<sup>2</sup> (2,400 ft<sup>2</sup>) cold storage area, as well as three cold storage tents and a 9,290 m<sup>2</sup> (100,000 ft<sup>2</sup>) secured yard storage. There is also a gravel surfaced storage area that is unsecured.

# 18.8 SITE SECURITY

The Company employs an external security contractor, who monitors the Project from a central security outpost at the main gate. There are also roaming security personnel. Currently, the Project is surrounded by chain link fencing.

# 18.9 COMMUNICATION

Voice and data communications are routed through the Bissett Manitoba Telephone System microwave tower. This tower also provides cell phone coverage for the Project and town site. On-site and underground communications is via a radio over leaky feeder network which is maintained and extended as need it by the Project personnel.

#### 18.10 ON SITE TRANSPORT AND INFRASTRUCTURE

The Company provides bus transportation from Winnipeg to site on scheduled shift rotations. Light vehicles and pickups are provided on-site to transport mine workers from accommodations to their respective work areas.

# 18.11 SOLID WASTE DISPOSAL

Waste is managed in dumpsters and other appropriate waste containers. Waste and materials for recycling are disposed of off-site by an external contractor located in Pine Falls. Additionally the external contractor removes waste hydrocarbons for disposal or recycling.

# 18.12 PARTS AND MINE SUPPLY FREIGHT

All supplies and other consumables required to operate the mine, process plant and surface facilities are brought in via all season access road from approximately 235 Km NW of Winnipeg, Manitoba by various freight-forwarding contractors.

# 18.13 MOBILE AND FIX EQUIPMENT MAINTENACE FACILITY

There are 5 maintenance bays, welding and tire facilities at the Project which have been upgraded by the previous owner to accommodate and provide an enclosed facility for all maintenance activities. This is especially useful during winter season when temperature can plunge as low as -31°F (-35°C).

#### 18.14 FIRST AID AND AMBULANCE

The Project has a first-aid clinic, ambulance and trained personnel on stand-by for any medical attention or emergency that may arise. An air ambulance service is readily available from the nearby Winnipeg Emergency Rescue Service.

#### 18.15 OFFICE AND ADMINISTRATION BULDINGS

The Project hosts a recently constructed (by the previous operator) modern office and administration facility that is capable of accommodating the necessary engineering, geological, accounting, safety, environmental, and administrative personnel.

#### 18.16 TAILINGS STORAGE

The Tailings Management Area (TMA) is located approximately 1 mile (1.6 km) north of the process plant in an area naturally defined by bedrock ridges around the perimeter of a previously flat boggy area. The original ground surface of the bog was near elevation 889 feet above sea level (asl) (271 m asl) (geodetic) with bedrock ridges on the south and west sides up to 920 feet asl (280 m asl) and bounded to the north by bedrock up to elevation 985 feet asl (300 m asl).

Since the development of the TMA, tailings have been pumped from the process plant to the TMA via an approximate 1 mile (1.6 km) pipeline. It is understood that during mine operation, the tailings are transported as slurry, with 34% (approx.) solids by weight. The TMA currently consists of 8 dykes with a number of the embankments separated by bedrock outcroppings such that they follow an A/B nomenclature. The embankments have been designed and constructed in various stages and phases from 1997 onwards to the most recent raises and improvements

completed from 2012 to 2014. The current configuration of the TMA consists of a tailings pond and polishing pond, separated by dyke 7. The west half (approx.) of the tailings pond has reached its capacity, with tailings placed up to the crest of dykes 1, 2, 8 and a portion of dyke 3, while the east half of the tailings pond contains tailings submerged beneath water ranging in depth from less than 3 feet (1m) to several feet (metres). No spillway or low level outlet structures are present in the TMA. It is understood that the TMA has been designed to safely retain water from the mill discharge, runoff, and storm events.

In order to increase the capacity to retain tailings beyond the current capacity of the TMA, a new area, termed the East Tailings Management Area (ETMA) was currently undergoing development until the most recent mining operations ceased in 2015. The ETMA is located directly east of the TMA and currently consists of dyke 9 along its south perimeter, with dyke 6 of the TMA forming the containment along the west side. The natural contours to the north and east provide containment of the remainder of the ETMA.

Dyke 9 has an overall length of nearly 5,000 feet (1,500m) and at its current constructed elevation, has a height of 10 feet to 13 feet (3m to 4 m). No spillway or low level outlet structures are present in the ETMA. It is understood that the TMA has been designed to safely retain water from the process plant discharge, runoff, and storm events.

A dam safety review was conducted by Stantec Consulting Ltd. geotechnical engineers in 2015.

# 18.17 STOCKPILES

The True North site has an existing waste rock stockpile which currently contains approximately 200,000 tons (180,000 tonnes) on an area of 4.6 acres (1.9 ha). This waste material is utilized to construct the tailings containment berms

The site is permitted to stockpile up to 10,000 tons (9,000 tonnes) of ore permanently and 50,000 tons (45,000 tonnes) of ore on surface as outlined in the 2016 temporary permit.

#### 19.0 MARKET STUDIES AND CONTRACTS

Gold and silver doré bars are the principal commodities produced at the Project. The Project also produces a small amount of certain gold and silver bearing by-products, such as loaded carbon. All gold and silver doré bars and by-products are sent to third parties for refining to produce bullion that meets the required London Bullion Market Association standards of 99.95% pure gold and 99.90% pure silver. Doré bars are transported to a refinery via secure transportation ("armored car"). Under the terms of Klondex's refining agreements, their share of the refined gold and the separately-recovered silver are credited to their account or delivered to buyers based on instructions provided to the refiner from the Company.

For the purpose of this study, trailing average prices for gold were investigated as possible gold price indicators for future production. Whereas the Mineral Resource estimates were based on a gold selling price of C\$1,750 per oz (US\$1,400 per oz), the Mineral Reserve Estimates were based on a selling price of C\$1,500 per oz (US\$1,200 per oz).

Gold and silver has two main categories of use: fabrication and investment. Gold and silver prices are quoted in active world spot markets in US dollars per troy ounce. The prices of gold and silver are variable and sometimes volatile in nature. Prices are affected by many factors beyond Klondex's control, such as the sale or purchase of gold by central or reserve banks or other monetary authorities and financial institutions such as commercial banks; inflation or deflation and monetary policies; fluctuation in the value of the US dollar and other foreign currencies; global and regional demand; and the political and economic conditions of countries throughout the world.

A description of the Company's material contracts is as follows:

- Asahi Refining Canada Ltd. Refines gold and silver doré bars.
- Brinks Canada Limited Securely transports gold and silver doré bars to the refinery.
- Auramet International LLC Trading Purchases gold and silver.
- Investec Bank plc Purchases gold and silver.

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

# 20.1 SUMMARY

The previous mine operator San Gold held an Environmental Act License covering mining, processing and tailings management area operations for the Project. San Gold also held an accepted Mine Closure Plan and had pledged certain fixed assets to provide financial security for closure. Klondex has since obtained a revised Environmental Act Licence for the Project and approvals of minor alternations required for its Project. The San Gold Mine Closure Plan (2012) and the pledged fixed-asset financial security for the mine closure plan were transferred to Klondex in January 2016.

Klondex has been conducting required environmental monitoring including water quality sampling and environmental effects monitoring work; developing procedures for its environmental management system; and is in the process of re-initiating First Nations and Aboriginal community engagement including final effluent release reporting.

In consideration of the historic activities and planned activities at this Project, the Author has reviewed historic and current information on the Project including: current legislation affecting mine permitting, operations and closure in Manitoba; the revised Environment Act License for mining, processing and tailings management recently issued to Klondex; relevant reports prepared as part of a harmonized federal-provincial environmental assessment for a tailings management expansion project approved in 2013 including public comments and First Nations and Aboriginal community consultation conducted at that time; and other information. The Author also contacted the Author of the metallurgical components of this report in regard to the process plant complex and Klondex's Environmental Superintendent about the current environmental–social status of the Project.

Based on the available information, P&E is of the opinion that there do not appear to be any insurmountable environmental and/or social barriers to the Project.

# 20.2 SCOPE OF THE PROJECT

The scope of True North Gold Mine includes:

Underground mine development and production. True North includes six underground mines (i.e. Cohiba Zone, SG-1, 710/711 Zone, 007 Zone, Hinge Zone, Rice Lake), a vertical shaft, two decline ramps, a mill, an ore feed pad, mill feed crushing and conveying, a waste rock management area, and a tailings management area ("TMA").

Klondex commenced ramp-up activities in early 2016 including test stope mining and stockpiling in advance of a production decision. This underground work has included underground mining using conventional narrow vein long-hole stoping methods at the 710/711 and Cohiba Zones. It is projected that underground mining would produce about 800 tpd using conventional drill and blast methods, rail load and haul technologies, and a vertical shaft and two decline ramps.

The re-processing of historic process plant tailings for gold and silver recovery commenced earlier this year with approval from the Province of Manitoba - historic tailings are being

dredged, pumped to the process plant for treatment. The re-processed tailings are re-deposited in another section of the TMA.

# 20.3 ONGOING EXPLORATION AND PROJECT DEVELOPMENT

Klondex acquired Mineral Lease ML-63 (formerly known as the Rice Lake Gold Mine) at Bissett, Manitoba in 2015 when the Project was inactive under a temporary suspension of operations. Mineral exploration and mining activities have been undertaken at the Project since about 1932 with ownership having changed numerous times over time.

In the present process plant flowsheet, the comminution stage includes crushing and a closed grinding circuit with hydrocyclones. The hydrocyclone overflow is directed to gravity concentrators and the resulting gravity concentrate is further processed using a shaking table with the table concentrate sent to the smelting furnace. The crushing circuit feeds the flotation circuit. The rougher concentrate is re-ground, dewatered and pumped to the carbon-in-leach ("CIL") circuit. The rougher cell tailings are pumped to scavenger cells, and the scavenger concentrate is fed back to the grinding circuit. Rougher flotation concentrate is leached in a three tank leach circuit followed by a six stage CIL circuit. Loaded carbon is eluted in a conventional strip circuit and gold is electrowon from the eluate. An Inco SO2-air cyanide destruction process is used to treat CIL circuit wastewater. Natural degradation is used to destroy residual cyanide in the tailings pond water. The six-stage CIL circuit is currently being used as part of Klondex's tailings re-processing project.

The present TMA includes a designed tailings storage containment area and a water polishing pond. Water quality is monitored through sampling and excess pond water is pumped and released to No Name Creek over a specified effluent release time line. TMA water pond levels, water quality, available water storage capacity and available freeboard are monitored by Klondex's environmental staff.

# 20.4 INFORMATION REVIEW AND ASSESSMENT

# **20.4.1** Documentation reviewed

The documentation reviewed by the Author included:

The regulatory regime affecting mine permitting, operations and mine closure in Manitoba.

Revised Environment Act License 2628 RRR issued to Klondex Canada Ltd. for the "True North Gold Mine" on September 16, 2016, and Klondex's April 2016 request for a minor alteration to allow early discharge from the East Tailings Pond and tailings re-processing – the latter document provides East Tailings Pond water quality data for a February 18, 2016 water sampling event. The QP also reviewed historical Environment Act License 2628 R which applied to Rice Lake Gold Corporation's "Bissett Gold Mine" operations in 2004.

Relevant parts of the Environmental Assessment Proposal (EAP) filed in 2012 for a Class 2 development comprised of the expansion and operation of the TMA. That development included the construction of an additional main tailings pond, a polishing pond and three access roads. Treated water from the new polishing pond would be pumped to the existing polishing pond for discharge to No Name Creek from June 15 to November 30. The Author also reviewed comments on the EAP received from:

- Environment Canada, the Canadian Environmental Assessment Agency and Health Canada:
- Manitoba departments and branches including Manitoba Conservation & Water Stewardship, Climate change and Environmental Protection Division, Mines Branch, Community Planning Services, Sustainable Resource and Policy management Branch, Aboriginal Relations, Workplace Safety and Health Division:
- The Kookum's of Hollow Water First Nation and a trapper from the Hollow Water First Nation; and
- The Wanipigow Lake East End Cottager's Association.

Environmental Act License 2628 RR issued in 2012 allowed for the construction and operation of the East TMA. Stage 1 of the East TMA was completed in November 2014 and provided a year of tailings storage capacity based on a process plant throughput of 2,500 tons per day (2,268 tonnes per day).

A 2010 Notice of Alteration for San Gold's Cartwright Mine and Hinge Zone Bulk Sample Collection submitted to Manitoba Conservation. It included an assessment of environmental impacts and proposed mitigation measures in regard to air, noise, runoff and wastewater.

Other information describing the existing infrastructure, environment, and the Project.

# **20.4.2** Licenses, Permits and Approvals

The licenses, permits and approvals obtained to operate the Project are shown in Table 20.1.

	TABLE 20.1 OBTAINED LICENSES AND KEY PERMITS AND APPROVALS							
UBTAINE License/Permit/Approval	D LICENSES AND	KEY PERMITS AND Act/Regulation	Description	Issued to				
License 2628 RRR. Minor alteration.	Manitoba Sustainable Development Environmental Approvals	Environment Act.	Environmental Act License – main license.	Klondex (September 2016)				
Minor alteration.	Manitoba Sustainable Development Environmental Approvals	Environment Act.	Early discharge of the East Tailings Pond and tailings reprocessing.	Klondex (May 2016)				
Minor alteration.	Manitoba Sustainable Development Environmental Approvals	Environment Act.	Ore stockpile increase to 50,000 tons.	Klondex (May 2016)				
Minor alteration.	Manitoba Sustainable Development Environmental Approvals	Environment Act.	Tailings reprocessing – trucking tailings.	Klondex (August 2016)				
Water Rights License	Manitoba	Water Rights	License to use	Klondex				

TABLE 20.1 OBTAINED LICENSES AND KEY PERMITS AND APPROVALS					
		<b>Description</b>	Issued to		
2016 – 003.	Sustainable Development Water Licensing	Act, Water Rights Regulation.	water from lake.		
Hazardous Waste registration.	Manitoba Sustainable Development Environmental Services	Hazardous Waste Regulation, Dangerous Goods Handling & Transportation Regulation.	Hazardous waste registration.	Klondex.	
Petroleum Storage Facility Permit.	Manitoba Sustainable Development Manitoba Conservation Environmental Services	Storage and Handling of Petroleum Products and Allied Products Regulation, Technical Bulletins.	Above ground storage tanks with a capacity of 5,000 L or more.	Penner Oil	
Crown Lands Permit GP0003073.	Crown Lands and Property Agency	Crown Lands Act.	Ventilation raise building situated within the Town of Bissett	Rice Lake Gold Corporation*	
Crown Lands Permit GP0005737.	Crown Lands and Property Agency	Crown Lands Act.	TMA	Rice Lake Gold Corporation*	

<sup>\*</sup>Klondex has requested the permit holder name be changed to Klondex Canada Ltd.

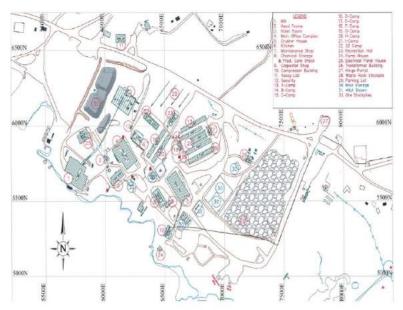
Source: Klondex Canada Ltd.

# **20.4.3** Revised Environmental License and Minor Alterations

# Revised Environmental Act License 2628 RRR

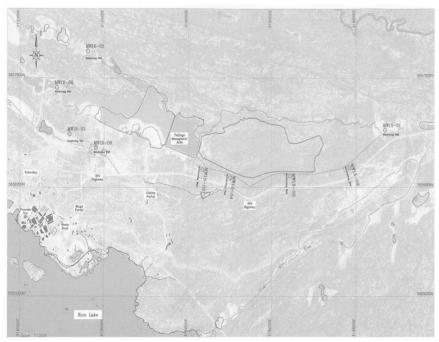
The Environmental Stewardship Division, Environmental Approvals Branch of Manitoba Sustainable Development issued revised Environmental Act License No. 2628 RRR to Klondex Canada Ltd. on September 16, 2016 for the operation of the "Development" being a 2,273 tonnes per day (2,500 tons per day) gold and silver mining, processing and refining operation known as the True North Gold Mine and including the existing and expanded TMA. Plans of mine, process plant, and the TMA are shown in Figures 20.1 and 20.2. Figure 20.3 provides an aerial view of the mine, process plant and TMA.

Figure 20.1 True North Gold Mine Site Plan



Source: Revised Environmental Act License No. 2628 RRR for the True North Gold Mine, Appendix B.

Figure 20.2 TMA Site Plan



Revised Environmental Act License No. 2628 RRR for the True North Gold Mine, Appendix A.

Figure 20.3 Aerial View of the Mine, Plant Site and TMA



Source: Google Maps

# Minor Alterations

Section 14 of The Environment Act requires notification and approval for alterations to a licensed Development. A notice of alteration submitted by a License holder is assessed by the Director as either minor, having insignificant environmental effects, or major, having significant environmental effects. Minor alterations may be approved through a revised Environment Act License or by a letter from the Director for Class 1 and 2 projects. Recent examples of requested alterations and approvals are provided below.

In March 2016, the Director of Manitoba Mineral Resources approved Klondex's notice to recommence mining and processing operations. Since receiving approval Klondex has undertaken a range of preparatory works such as shaft guide replacement, underground track repair, narrow vein long-hole layout testing, development of a new underground shop and mining gear storage cut-outs, and metallurgical testwork on historical tailings based on using the existing flow sheet.

In April 2016 Klondex issued a notice of alteration to the Development as licensed for early discharge of effluent (to commence on May 9, 2016) from the East TMA and the implementation of a tailings re-processing project. The ETP contained about 780,000 m<sup>3</sup> of water which met effluent discharge criterion. The proposed tailings re-processing alteration included the construction and operation of a tailings dredging system, a pumping station, booster pumps and a pipe line to be used to pump the tailings slurry to the existing process plant for re-processing. It was projected that 80,000 m<sup>3</sup> to 150,000 m<sup>3</sup> of tailings would be dredged in 2016 commencing on June 1<sup>st</sup>. The regulator determined that the potential effect of the proposed alteration would be a minor in accordance with the Environment Act and approved the proposed alteration.

In May 2016 Klondex issued a notice of alteration for a one-year temporary increase in the ore stockpile limit from 10,000 tons to 50,000 tons (9,000 tonnes to 45,000 tonnes). The regulator determined that the potential effect request was a minor alteration in accordance with the Environment Act and approved the alteration.

# **20.4.4** Current Status / Mitigative Measures

The current status of the Project as well as associated environmental aspects and mitigative measures are summarized in Table 20.2 based on the information obtained and P&E's experience at other mine properties internationally.

TABLE 20.2			
POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS AND CURRENT STATUS / MITIGATIVE			
Measures			
Area	Current Status / Mitigative Measures		
Environmental Management System	The revised Environmental Act License requires Klondex to establish and implement an Environmental Management System ("EMS"). An EMS is a comprehensive system that would be expected to require without being limited to the development and communication of an environmental policy, the identification of significant environmental aspects, the identification of legal and other requirements, procedures, training, records, change management, consultation and complaint response, monitoring, EMS and compliance reviews, a corrective and preventative measures procedure to deal with a non-conformance, and emergency preparedness and response planning.  As part of other conditions of the environmental license it is expected that the EMS would also include solid waste reduction and recycling efforts; contingency plans for spills, ruptures and unexpected TMA seepage losses;		
Acid Rock	and require spill recovery equipment. In addition, solid waste and hazardous wastes are to be disposed of in accordance with regulatory requirements; petroleum products are to be stored in accordance with regulatory requirements; and the sewage management system is subject to the Onsite Wastewater Management Systems Regulation.		
Drainage	that waste rock and tailings are not acid generating. The revised environmental license requires ongoing scheduled acid:base account testing.		
Final effluent	Klondex is to reclaim as much water as possible from the TMA to supply the process water demands of the mill.  Mine water is directed to the TMA. Treated effluent can only be released from the TMA polishing pond to No Name Creek and subsequently to the Wanipigow River between June 15 and November 30 each year at a rate not to exceed 0.20 m³/sec. Treated effluent cannot be released if the quality or toxicity of the effluent results in, or is likely to directly or cumulatively results in, a downstream water quality degradation beyond a maximum 10% mixing zone (by volume) within No Name Creek and/or the Wanipigow River relative to the Manitoba Water Quality Standards, Objectives and Guidelines Regulation under the Water Protection Act.  Elevated levels of ammonia in mine water / polishing pond water occurred in years past possibly in part as a result of the dissolution of mine explosives and blasting agents. Best practices including improved blasting practices and reducing / avoiding ANFO use are now used to help avoid this potential issue.		
Air emissions	Klondex would maintain its diesel-powered equipment and mine air heater. As required by the environmental license: distinct plume forming fugitive emissions are not to exceed 5% opacity whilst non-plume forming fugitive emissions are to be not visible. Downwind off Project, point of impingement		

<b>TABLE 20.2</b>
POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS AND CURRENT STATUS / MITIGATIVE
MEASURES

MEASURES (2.5)			
Area	Current Status / Mitigative Measures		
	suspended particle matter ground level concentrations are not to exceed a 24		
	hour average of 120 μg/m <sup>3</sup> or an annual geometric mean of 70 μg/m <sup>3</sup> .		
Cyanide	Cyanide transfer, storage and mixing activities would be conducted in		
transportation	conformance with regulatory requirements and Klondex's procedures and		
and storage	EMS requirements.		
Tailings management	Tailings from the original San Antonio Gold Mine were discharged into Rice Lake from about 1932 to 1968. Tailings produced when the mine was reopened in 1981 to 1983 were placed in a containment constructed over the previously disposed tailings. The TMA is located north north-east of the mine and plant site and includes a tailings pond and a polishing pond. The final treated effluent is pumped and annually released to No Name Creek which flows to the Wanipigow River. The historic tailings that are being reprocessed as part of the Project are located in the TMA. The revised Environmental Act License 2628 RRR requires Klondex to engage the services of licensed professional geotechnical engineers for engineering and quality control during dyke construction and submit a construction performance and quality control report to the Director for approval. Klondex's Environmental Superintendent would monitor dykes and assess conditions / geotechnical monitoring data with input from competent geotechnical engineers.		
Waste rock storage	New waste rock is to be stockpiled in the designated "waste rock stockpile area". Ore is to be stored in the designated "ore rock stockpile area". The License also requires the company to conduct acid:base accounting testing as indicated above.		
Environmental monitoring  Solid waste	Klondex uses the existing TMA and the water polishing ponds to manage surface water storage / release. An Inco SO2-air process and natural degradation continue to be used for cyanide destruction. TMA water management controls include polishing pond levels, water quality monitoring and a surface water management program.  Surface water samples (i.e. mine water samples to be collected from the tailings ponds, polishing pond, treated effluent, downstream receiving water quality sampling stations) are to be sampled at frequencies and for parameters specified in the License while groundwater quality is to be monitored at specified groundwater wells and at additional wells as may be requested by the Director. Treated effluent toxicity testing is also required. Sediment core samples are to be collected at two downstream water quality sampling station locations and analyzed for total metals, total organic carbon, moisture content and pH.  Klondex will continue to conduct scheduled downstream water quality sampling, sediment sampling, and environmental effects monitoring. Klondex has undertaken two environmental effects monitoring studies and has scheduled a third.		
Solid waste	Solid non-hazardous waste that is not re-used / recycled would be disposed in an off-site licensed solid waste landfill.		
Hazardous	Hazardous waste would be disposed of in accordance with regulatory		
1142414045	Table double with regulatory		

TABLE 20.2 POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS AND CURRENT STATUS / MITIGATIVE MEASURES		
Area	Current Status / Mitigative Measures	
waste	requirements.  Klondex is currently working to confirm that there are no electrical transformers that contain PCB in use or stored on the Project and that asbestos had been removed several years ago from all surface buildings with the exception of one secured unused old building.	
Terrestrial and avian wildlife	Klondex is aware of its responsibilities to protect wildlife. It is expected that this would be reflected in the EMS procedures.	
Social consultation	Klondex has as a priority re-initiated community engagement activities with local First Nations, the Town of Bissett, other interested communities and persons, and regulatory authorities.	

# **20.4.5** Community Engagement

As part of 2012 TMA expansion project EAP, the Manitoba Mines Branch requested that First Nations and Aboriginal communities whose traditional activities could be impacted be identified and engaged and that community issues be incorporated into the environmental assessment for the TMA. Winsor (2013) reported on the outcome of that consultation process and reported that:

Most of the concerns from constituents were a result of misinformation.

The Manitoba Mines Branch had determined that there are three Anishinaabe (Ojibwa) First Nations situated within an 80 mile (130 km) radius of the mine: the Hollow Water First Nation, the Little Black River First Nation, and the Sagkeeng First Nation. The Hollow Water First Nation is situated downstream of the confluence of No Name Creek and the Wanipigow River which flows to Lake Winnipeg.

It was recommended that an Environment Act Licence be issued to San Gold in 2013 for the proposed TMA expansion subject to it accommodating community concerns and issues. As such, the draft License included a clause requiring the operator to submit an environmental monitoring report to the Hollow Water First Nation after each effluent discharge campaign summarizing monitoring data and impacts on the receiving waterways.

The Hollow Water Chief and Council encouraged direct negotiations between San Gold and two trappers. San Gold negotiated a confidential compensation settlement with one of the trappers (Trap Line #11) for loss of opportunity to trap in the proposed TMA expansion area, and at the time of reporting was negotiating a settlement with the second trapper (Trap Line #12).

San Gold had met with Hollow Water First Nation residents in June 2012 and discussed the potential impacts of the proposed TMA expansion. San Gold participated in the Hollow Water First Nation's Traditional Area Advisory Committee (TAAC). The Kookom's who opposed the TMA expansion did not have official standing in the community. San Gold had attempted to arrange an information meeting with the Little Black River First Nation situated in the O'Hanley and Black Rivers area on the eastern shore of Lake Winnipeg.

Klondex is in the process of re-initiating community engagement activities and aims to maintain contact and communication with local First Nations and Aboriginal communities, and continue to sponsor community events and undertakings and recruit and train local First Nations and *P&E Mining Consultants Inc.*, Report No. 315

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Aboriginal workers. The Town of Bissett is also kept informed of environmental matters that could potentially impact residents or community services. Klondex participates in Town of Bissett council meetings and has held community information sessions.

# 20.4.6 Mine Closure

Mine closure planning and financial security provisions that apply to advanced exploration and mining projects are described in the Mine Closure Regulation (MR 67/99) under The Mines and Minerals Act (C.C.S.M. c.M162).

Responsibility for the accepted San Gold Corporation Mine Closure Plan (2012) for Mineral Lease ML-63 which includes pledged fixed assets financial security was transferred to Klondex Canada Ltd. on January 13, 2016 by the Mines Branch Director (Manitoba, 2016). The Author reviewed sections of the Mine Closure Plan (2012) and estimated mine reclamation and rehabilitation costs presented in Gibson (2015). The estimated reclamation and rehabilitation costs amounted to \$4.4M. There is a possibility that the Mines Branch may require an alternate form of financial security at some point in the future when the closure plan is updated.

As indicated in Section 10 "Expected Site Conditions" of the closure plan, the Project would be rehabilitated to a predevelopment state as a wilderness area with primarily conservation and recreational value. An additional crown pillar assessment would be completed at close-out to assure surface stability. The surface of the tailings in the TMA would be revegetated at closure. Pond water quality would continue to be monitored and excess water would be pumped / released to No Name Creek until the pond water quality is shown to improve to a level whereby a weir system could be used to direct excess run-off to No Name Creek. Environmental monitoring would continue to be conducted through each stage of closure to ensure that the mine remains compliant with environmental and safety requirements.

#### 21.0 CAPITAL AND OPERATING COSTS

True North has been in operation continuously from 2007 to 2015 by a previous owner and was restarted in mid-2016 by Klondex. The mine operated intermittently for many years before 2007. The forecasted costs presented in this section are based on both actual cost information from the Project and Klondex's operating experience at their other operating mines.

All currency units are in Canadian dollars unless otherwise noted.

Where historical operating costs have been provided by Klondex, P&E have not audited the financial records or cost details but consider the costs are acceptable for this type of mining operation.

# 21.1 CAPITAL COSTS

The capital costs summarized for the project represent the future capital expenditures required to be incurred over the remainder of the project life. Previous development costs are considered to be sunk costs and do not directly impact on the future cash flows.

The ongoing capital costs for the life-of-mine are summarized in Table 21.1 and total \$32.1 million until 2023.

TABLE 21.1 SUSTAINING CAPITAL COSTS					
Dogovintion	(000's of dollars)				
Description	Q4 - 2016	2017	2018	2019-2023	Total
Ramp Development	2,493	6,798	4,079		13,370
Capital Development	553	3,952	2,253		6,758
Capital Drilling	231	1,649	940		2,820
Mobile Fleet	90	641	365		1,096
Site Infrastructure & Processing Plant	297	2,119	1,208		3,624
Underground Services	53	382	217		652
Tailings Reprocessing	0	511	735	2,500	3,746
Total	3,717	16,052	9,797	2,500	32,066

Sustaining capital for the five years following mine closure when historic tailings reprocessing will be continuing on a stand-alone basis will be approximately \$400,000 per year. In addition, an allowance for winterization of the processing plant and reopening in the spring has been included at \$100,000 per year. These total annual \$500,000 costs are included in Table 21.1.

Mine closure & reclamation costs are not included in Table 21.2 and estimated to be \$4.4 million commencing in 2019.

#### 21.2 OPERATING COSTS

The Project operating costs estimates are based on both actual costs and cost projections for the future. Since the project is continuing to ramp up to nameplate production rates, historical operating costs may not be truly representative of future costs. Therefore some costs projections

have been used to estimate future unit costs assuming that production rates are achieved at design rates.

The average total operating cost per underground ore ton during the mining years (2016-2018) is approximately \$141.52/ton.

Table 21.2 summarizes the total operating cost per Underground Mineral Reserve ton.

TABLE 21.2 UNDERGROUND OPERATING COST SUMMARY		
Description	\$/ton	
Mining	49.09	
Processing	27.77	
Indirect Mine	49.04	
G&A	15.62	
Total	141.52	

The average total operating cost during underground mining for the historic Tailings Mineral Reserve tonnage is \$25.06 per ton reprocessed. G&A costs during this period are \$3.15 per ton in addition to the G&A carried by the underground mining operation. Capital costs are included in the capital cost summary (Section 21.1).

Following the cessation of the mining operation in 2018, the historic tailings reprocessing program will continue for another five years until 2023. Process plant operating costs during this period will be \$18.01 per ton and G&A costs will be \$6.40 per ton. Sustaining capital costs are included in the capital cost summary (Section 21.1).

# 21.3 UNDERGROUND MINING COSTS

Mining operations are performed by Klondex and its contractors. The mine operating cost shown Table 21.3 is a cost per ton processed and includes the cost for all associate waste rock production. The mine operating cost is \$49.09 per ton. This cost is broken down into component costs in Table 21.3.

TABLE 21.3		
MINE OPERATING COST		
Description	\$/ton	
U/G Ore Advance	17.92	
U/G Long-hole Stoping	28.56	
Material Movement	2.61	
Total	49.09	

# 21.4 PROCESSING COSTS

The processing cost during underground mining at the Project is \$27.77 per ton. This is composed of the costs listed in Table 21.4.

TABLE 21.4 PROCESS PLANT OPERATING COST		
Description	\$/ton	
Operation Administration	14.64	
Maintenance Admin	7.23	
Consumables	3.16	
Circuit Maintenance	2.74	
Total	27.77	

In 2019, the underground mining operation will cease, however, the processing plant will continue to treat tailings at a rate of 195,000 tons (177,000 tonnes) per annum, as a seasonal operation from May to October. The total processing cost during this period will be \$18.01/ton.

# 21.5 INDIRECT MINING COSTS

The indirect mining costs at the Project totals \$49.04 per ton processed and includes mine maintenance, support services and hoisting, plus engineering, geology, administration and supervision. This total dollar cost is treated as a fixed cost. A breakdown of the indirect mining costs is provided in Table 21.5.

TABLE 21.5		
INDIRECT UNDERGROUND MINE OPERATING COST		
Description	\$/ton	
Hoisting	4.14	
Underground Support Services	4.59	
Mobile Maintenance	7.48	
Electrical Maintenance	3.79	
Mine Admin and Supervision	12.30	
Geology	14.35	
Engineering/Survey	2.39	
Total	49.04	

# 21.6 **G&A COSTS**

The G&A costs (including salaries, labour costs) during the underground mining as a fixed cost. A breakdown of the G&A costs is provided in Table 21.6.

TABLE 21.6 G&A COST (DURING UG MINING)	
Description	\$/ton
Site Administration	10.07
IT	0.70
Surface Support Services	2.10
Health and Safety	2.50
Environmental	0.25
Total	15.62

In 2019, the mining operation will cease, however, the processing plant will continue to treat historic tailings at a rate of 195,000 tons (177,000 tonnes) per annum, as a seasonal operation from May to October until 2023. During 2016 to 2018 there will be a G&A cost of \$3.15 per ton incurred. During 2019 to 2023 G&A costs will be \$6.40 per ton due to the reduced site requirements and the higher processing rate of 1,200 tpd (1,089 tonnes per day).

#### 22.0 ECONOMIC ANALYSIS

The True North Gold Mine is currently in production and the objective of this Technical Report is to provide a confirmation of the mineral resource and mineral reserve estimate. A mineral reserve can be declared if the project is deemed economic based on projected future cash flows.

Since this Project has been built and the economics are forward looking, the sunk costs to initially develop the project are not included in this economic analysis.

## 22.1 CASHFLOW MODEL INPUT PARAMETERS

A simplified cash flow model has been developed to assess the economics of the Project as of the effective date of this Technical Report. The basis for the cash flow analysis is listed below.

## 22.1.1 Production

- Underground mine production schedule commencing the fourth quarter of 2016 and continuing through to 2018;
- An combined underground mine and tailings Proven and Probable Mineral Reserve of 1.522 million tons (1.381 million tonnes) containing 117,900 ounces of gold at 0.077 opt Au (2.64 g/t Au);
- Included dilution in underground Mineral Reserve of 21%; and
- Gold process recovery 94% for underground ore and 90% for tailings.

#### **22.1.2 Revenue**

• A fixed gold price of C\$1,500/oz.;

## 22.1.3 Royalties and Taxes

- The Project pays no royalties; and
- Taxes are included in the operating cash flow analysis.

## 22.1.4 Interest, Principal, and Other Payments

Financing charges, land lease payments, interest or price escalation considerations have not been included the operating cash flow analysis.

## 22.2 CAPITAL COSTS

- No pre-production capital costs or Project acquisition costs have been included;
- Sustaining capital costs of \$32.1 million over the life of Project have been included. Included is \$500,000 per year that has been included for sustaining capital during the tailings reprocessing that will occur after cessation of the underground mining operation in 2018;
- Reclamation and closure cost of \$4.4 million after mine closure have been included in 2023.

#### 22.3 OTHER PARAMETERS

Discount rates of 0% and 7% are applied to assess the cash flow results.

## 22.4 ECONOMIC ANALYSIS RESULTS

The results of the economic analysis indicate a 7% discounted positive NPV of \$26.3 million (after-tax) for the Project, as shown in Table 22.1. Since this economic analysis does not include any pre-production costs, the IRR and payback period are not pertinent to this analysis.

TABLE 22.1 FINANCIAL EVALUATION

FINANCIAL EVALUATION											
Description	Factors	Units	Q4 2016	2017	2018	2019	2020	2021	2022	2023	Total
Production											
Underground Ore Reserve		Tons	29,000	206,000	117,000	0	0	0	0	0	352,000
Contained Gold	0.4.007	OZ	7,000	50,000	28,500	0	0	0	0	0	85,500
Recovered Gold	94.0%	OZ	6,600	47,000	26,800	0	0	0	0	0	80,400
Tailings Reserve		Tons	0	80,000	115,000	195,000	195,000	195,000	195,000	195,000	1,170,000
Contained Gold		OZ	0	2,900	4,100	5,086	5,086	5,086	5,086	5,086	32,430
Recovered Gold	90.0%	OZ	0	2,600	3,700	4,577	4,577	4,577	4,577	4,577	29,187
Total Processed Reserves		Tons	29,000	286,000	232,000	195,000	195,000	195,000	195,000	195,000	1,522,000
Contained Gold		OZ	7,000	52,900	32,600	5,086	5,086	5,086	5,086	5,086	117,930
Recovered Gold		OZ	6,600	49,600	30,500	4,577	4,577	4,577	4,577	4,577	109,587
Revenue from Gold Sales	\$1500/oz	000's of \$	9,900	74,400	45,750	6,866	6,866	6,866	6,866	6,866	164,381
Operating Costs											
UG Mining	\$49.09/Ton	000's of \$	1,424	10,113	5,744	0	0	0	0	0	17,280
UG Ore Processing	\$27.77/Ton	000's of \$	805	5,721	3,249	0	0	0	0	0	9,775
UG Ore Indirect Mining	\$49.04/Ton	000's of \$	1,422	10,102	5,738	0	0	0	0	0	17,262
UG Mining G&A	\$15.62/Ton	000's of \$	453	3,218	1,828	0	0	0	0	0	5,498
Total UG Operating Cost	\$141.52/Ton	000's of \$	4,104	29,153	16,558	0	0	0	0	0	49,815
Tailings Processing Cost (2016-2018)	\$25.06/Ton	000's of \$	0	2,005	2,882	0	0	0	0	0	4,887
Tailings Processing Cost (2019-2023)	\$18.01/Ton	000's of \$	0	0	0	3,512	3,512	3,512	3,512	3,512	17,560
Tailings Only, G&A Cost (2016-2018)	\$3.15/Ton	000's of \$	0	252	362	0	0	0	0	0	614
Tailings Only, G&A Cost (2019-2023)	\$6.40/Ton	000's of \$	0	0	0	1,248	1,248	1,248	1,248	1,248	6,240
Total Tailings Operating Cost		000's of \$	0	2,257	3,244	4,760	4,760	4,760	4,760	4,760	29,301
Total Operating Costs		000's of \$	4,104	31,410	19,802	4,760	4,760	4,760	4,760	4,760	79,116
Capital Costs											
Sustaining Capital Costs (UG)		000's of \$	3,717	15,541	9,062	0	0	0	0	0	28,320
Sustaining Capital Costs (Tailings)		000's of \$	0	511	735	500	500	500	500	500	3,746
Total Capital Cost		000's of \$	3,717	16,052	9,797	500	500	500	500	500	32,066
Closure and Reclamation		000's of \$	0	0	0	0	0	0	0	4,400	4,400
Net Pre-tax Cash Flow (undiscounted)		000's of \$	2,079	26,938	16,151	1,606	1,606	1,606	1,606	-2,794	48,799
Income Tax Expense		000's of \$	1,671	13,206	6,676	-1,068	-594	-258	0	0	19,633
Net Post-tax Cash Flow (undiscounted)		000's of \$	408	13,732	9,475	2,674	2,200	1,864	1,606	-2,794	29,166
Net Post-tax Cash Flow (discounted at 7%/yr from end of 3Q 2016)		000's of \$	403	12,997	8,363	2,201	1,688	1,334	1,072	-1,740	26,318

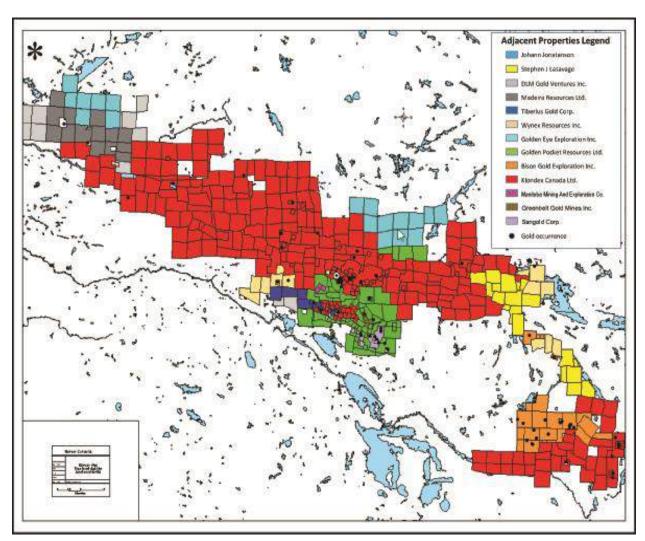
## 23.0 ADJACENT PROPERTIES

There are a number of mineral exploration properties adjacent to Klondex's True North (Figure 23.1), but most appear to be inactive.

Gold Pocket Resources Ltd. owns the Bissett Project exploration property south adjacent to True North. Maps on their website show numerous gold mineralized zones, drillhole collar locations, and historic shafts. In 1998, Golden Pocket drilled 131 diamond holes for a total of (68,652 feet) 20,925 metres. The drilling returned high grade gold intersects, particularly from the Nevada Zone. Currently, Golden Pocket has sufficient assessment credits to keep the Bissett Property in good standing.

Bison Gold Exploration Inc. owns the Cryderman Central property about 15 miles (25 km) to the southeast of True North, but adjacent to Klondex owned ground in that area. An NI 43-101 technical report dated November 15, 2013 for the Ogama-Rockland Mine deposit lists Inferred Mineral resources of 1.28 million tons (1.16 million tonnes) grading 0.24 opt Au (8.17 g/t Au). The style of gold mineralization is dominated by gold-bearing quartz-carbonate veins associated with shear zones in granite host rocks.

Figure 23.1 Adjacent Properties to the True North Gold Mine



## 24.0 OTHER RELEVANT DATA AND INFORMATION

P&E	is	not	aware	of	any	other	relevant	data	or	information	as	of	the	effective	date	of	this
Tech	nica	al Re	eport.														

#### 25.0 INTERPRETATIONS AND CONCLUSIONS

This Technical Report and Pre-Feasibility Study confirms the positive economics of continuing operations at True North. On this basis, the Mineral Reserve estimate is confirmed.

The Project hosts a Proven and Probable underground Mineral Reserve of 352,000 tons (319,000 tonnes) at average grades of 0.243 opt (8.33 g/t), at a 0.13 opt (4.46 g/t) Au cut-off grade. In addition, the tailings reprocessing project contains a Mineral Reserve of 1.17 million tons (1.06 million tonnes) at an average grade of 0.028 opt Au (0.96 g/t Au), with a 0.026 opt Au (0.89 g/t Au) for 2016 to 2018 and 0.018 opt Au (0.62 g/t Au) for 2019 to 2023.

P&E is of the opinion that the core, channel chip and tailings sample assay data have been adequately verified for the purposes of a mineral resource estimate. All data included in the resource estimate appear to be of adequate quality.

The operation of the Project appears to be financially sound. Capital expenditures for construction will not be required and the Project components will require only limited rehabilitation and refurbishment. Based on cash flows using estimated costs of production and revenue factors, the Project will generate a pre-tax net cash flow of \$48.8 million over the LOM. At a discount rate of 7%, this corresponds to an NPV of \$26.3 million (after tax).

P&E also offers the following interpretation and conclusions:

The Project is situated adjacent to a well-established mining community and has an existing infrastructure of underground openings, operating and maintenance equipment and operations personnel that can be used for future operations.

In future operations, Klondex intends to apply technologies or methods that have already been accepted and previously implemented at the Project.

Klondex intends to continue to investigate extensions to the currently defined resource base.

The pre-existing mine closure plan that estimated closure costs at \$4.4 million was transferred to Klondex in January 2016 along with an assignment of fixed-assets as financial security. It may be beneficial for Klondex to review the technical basis of the TMA closure approach presented in the 2012 mine closure plan and update the associated closure costs.

Klondex is aware of the importance of an effective community engagement process to the Project. Klondex is currently in the process of re-initiating community engagement activities with local Aboriginal communities, the Town of Bissett, other interested stakeholders, and regulatory authorities, on a priority basis

#### 26.0 RECOMMENDATIONS

This Technical Report and Pre-Feasibility Study describes a viable mining and processing operation at the True North Gold Mine.

Technically, the Project presents no fatal flaws.

It is recommended that the Project continue with its current production plan with a combination of long-hole mining methods as detailed in Section 16 and the on-site processing of ore. It is also recommended that Klondex continue with its plans to reprocess of the existing tailings on site.

Specifically, it is recommended that Klondex take the following actions to develop and operate the Project:

## Geology

- 1) Technical Database: All True North project data collected need to be stored and archived in a permanent and reliably retrieval manner. A full-time database administrator is recommended.
- 2) Quality Assurance/Quality Control: Timely follow-up for any and all QA/QC assay deviations and re-assay requests should be performed in a timely manner. The process should be automated when the database is up and running.
- 3) Sample Storage and Retrieval: Half-core remaining from sample assays should be retained for reference and check assay purposes. All assay sample rejects and pulps should be stored in a safe, secure and sheltered manner and properly catalogued to ease retrieval.
- 4) Project Assay Lab: Standard operating procedures should be updated, particularly in regards to assay data generation, storage and retrieval.

#### Environmental and Mine Closure

It is recommended that Klondex review the technical basis of the TMA closure approach presented in the 2012 mine closure plan and update the associated closure costs. A provisional amount for a \$250k study that would be carried out over four years commencing in 2016 is recommended. This amount has not been included in the cash flow model presented in this Technical Report. This exercise will review and confirm the technical basis of the proposed TMA closure plan and estimated costs and possibly identify opportunities to improve upon the currently proposed approach.

#### Other

P&E also recommends that other exploration targets in the area continue to be identified and investigated to provide supplemental process plant feed in the future.

#### 27.0 REFERENCES

Ames, D. E., Franklin, J.M and Froese, E. 1991. Zonation of hydrothermal alteration at the San Antonio Gold Mine, Bissett, Manitoba, Canada. Economic Geology 86, 600-619.

Anderson, S.D. 2008. Geology of the Rice Lake area, Rice Lake greenstone belt, south-eastern Manitoba (Parts of NTS 52L13, 52M4), Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, Geoscientific Report GR2008-1, 97p.

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Gibson, 2015. Exhibit "J" referred to in an affidavit of Greg Gibson dated January 16, 2015. Available under San Gold Corporation at the MNP Ltd. website – www.mnpdebt.ca. January 16, 2015.

Groves, D.I., Goldfarb, R.J., Gebre-Mariam, M., Hagemann, S.G. and Robert, F. 1998. Orogenic gold deposits: a proposed classification in the context of their crustal distribution and relationship to other gold deposit types. Ore Geology Reviews 13, p. 7–27.

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Manitoba Sustainable Development, 2016. Revised Environment Act Licence No. 2628 RRR, revised September 16, 2016. Issued to Klondex Canada Ltd. Available at www. gov.mb.ca. September 16, 2016.

Poulsen, K.H., Robert, F. and Dube, B. 2000. Geological classification of Canadian gold deposits. Geological Survey of Canada Bulletin 540. 106p.

Ravenelle, J.-F. and Fonseca, A. 2013. Structural controls on gold mineralization at the and surrounding area. Unpublished report for San Gold Corporation by SRK Consulting (Canada) Inc., 77p.

Ross, K. and Rhys, D. 2010. Petrographic and SEM study of vein samples from the and Hinge Zone, Bissett, Manitoba. Unpublished report for San Gold Corporation by Panterra Geoservices Inc., 50p.

San Gold Corporation 2015. DRAFT – Rice Lake Mining complex – Summary of Mineral Resource Estimation. April 2015.

Winsor, Jennifer, 2013. Summary of Comments/Recommendations for the San Gold Tailings Management Area Expansion. File No. 2435.40. Available at www.gov.mb.ca. July 9, 2013.

#### 28.0 CERTIFICATES

## CERTIFICATE OF QUALIFIED PERSON

#### EUGENE J. PURITCH, P. ENG.

- I, Eugene J. Puritch, P. Eng., residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:
- 1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
- 2. This certificate applies to the technical report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016.
- 3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen's University. In addition I have also met the Professional Engineers of Ontario Academic Requirement Committee's Examination requirement for Bachelor's Degree in Engineering Equivalency. I am a mining consultant currently licensed by Association of Professional Engineers and Geoscientists New Brunswick (License No. 4778), Association of Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 5998), Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216) the Professional Engineers of Ontario (License No. 100014010) and Association of Professional Engineers and Geoscientists British Columbia (Licence No. 192893). I am also a member of the National and Toronto Canadian Institute of Mining and Metallurgy.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

I have practiced my profession continuously since 1978. My summarized career experience is as follows:

- 5. I visited the Property that is the subject of this report on June 23 and July 18, 2016.
- 6. I am responsible for co-authoring Section 15, 16, 18, 21 and 22 of the Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 7. I am independent of Klondex Mines Ltd. applying the test in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the project that is the subject of this Technical Report.
- 9. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
- 10. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016
Signed Date: October 27, 2016

{SIGNED AND SEALED}
[Eugene J. Puritch]

Eugene J. Puritch, P.Eng.

#### ALEXANDRU VERESEZAN, P. ENG.

- I, Alexandru Veresezan of 25 Stookes Crescent, Richmond Hill, Ontario, L4E 0J4, and Senior Associate Mining Engineering with P&E Mining Consultants Inc. of Brampton, Ontario., do hereby certify that:
  - 1. This certificate applies to the technical report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016.
  - 2. I am a graduate of Mining Engineering with a Master of Engineering, Honors Underground Mining degree from the University of Petrosani in 1993. I have practiced my profession as a Professional Engineer since graduation. I am a Registered Professional Engineer in good standing with the Professional Engineers Ontario (License No. 100078587).
  - 3. I have read the definition of "qualified person" set out in NI 43-101 and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.

My summarized career experience is as follows:

•	P&E Mining Consultants Inc.: (Sr. Associate Mining Engineer)	2016-Present
•	Barrick Gold Corp, Copper Division: (Mine Manager/ Alternate GM)	2012-2015
•	Barrick Gold Corp. (Manager, Underground Mining, Corporate Office)	2008-2012
•	Wardrop Engineering Inc.: (Sr. Mining Engineer)	2006-2008
•	Cementation SKANSKA Canada Inc.: (Mining Eng/Estimator/ Pro Cost Control)	2002-2006
•	Dynatec Corp: (Estimator / EIT)	2001-2002
•	S.C. Grandemar S.A.: (Open Pit Manager)	1999-2000
•	Cluj, Romania Various: (Junior-Senior Project Engineer)	1993-1999

- 4. I am responsible for co-authoring Sections 15, 16 and 18 of the Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 5. I am not aware of any material fact or material change with respect to the subject matter of this technical report which is not reflected in the technical report.
- 6. I am independent of Klondex Mines Ltd. applying the test in Section 1.5 of NI 43-101.
- 7. I visited the Property that is the subject of this report from July 18 to 21, 2016.
- 8. I have had no prior involvement with the project that is the subject of this Technical Report.
- 9. I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.
- 10. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016 Signed Date: October 27, 2016

{SIGNED AND SEALED}

Alexandru Veresezan, P.Eng.

[Alexandru Veresezan]

#### FRED H. BROWN, P.GEO.

I, Fred H. Brown, residing at Suite B-10, 1610 Grover St., Lynden WA, 98264 USA, do hereby certify that:

- 1. I am an independent geological consultant and have worked as a geologist continuously since my graduation from university in 1987.
- 2. This certificate applies to the technical report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016.
- 3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. I am registered with the South African Council for Natural Scientific Professions as a Professional Geological Scientist (registration number 400008/04), the American Institute of Professional Geologists as a Certified Professional Geologist (certificate number 11015) and the Society for Mining, Metallurgy and Exploration as a Registered Member (#4152172).
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101

This report is based on my personal review of information provided by Shore Gold Inc. and on discussions with its representatives. My relevant experience for the purpose of the Technical Report is:

•	Underground Mine Geologist, Freegold Mine, AAC	1987-1995
•	Mineral Resource Manager, Vaal Reefs Mine, Anglogold	1995-1997
•	Resident Geologist, Venetia Mine, De Beers	1997-2000
•	Chief Geologist, De Beers Consolidated Mines	2000-2004
•	Consulting Geologist	2004-Present

- 5. I have not visited the Property that is the subject of this Technical Report.
- 6. I am responsible for authoring Section 14 of this Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 7. I am independent of Klondex Mines Ltd. applying the test in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the project that is the subject of this Technical Report.
- 9. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
- 10. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016 Signed Date: October 27, 2016

{SIGNED AND SEALED} [Fred H. Brown]

Fred H. Brown, P.Geo

#### WILLIAM STONE, Ph.D., P.Geo.

I, William Stone, Ph.D., P.Geo, residing at 4361 Latimer Crescent, Burlington, Ontario, do hereby certify that:

- 1. I am an independent geological consultant
- 2. This certificate applies to the technical report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016.
- 3. I am a graduate of Dalhousie University with a Bachelor of Science (Honours) degree in Geology (1983). In addition, I have a Master of Science in Geology (1985) and a Ph.D. in Geology (1988) from the University of Western Ontario. I have worked as a geologist for a total of 31 years since obtaining my M.Sc. degree. I am a geological consultant currently licensed by the Association of professional Geoscientists of Ontario (License No 1569).
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify, by reason of my education, affiliation with a professional organization (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. My relevant experience for the purpose of the Technical Report is:
  - Contract Senior Geologist, LAC Minerals Exploration Ltd
     1985-1988
     Post-Doctoral Fellow, McMaster University
     1988-1992
     Contract Senior Geologist, Outokumpu Mines and Metals Ltd
     1993-1996
     Senior Research Geologist, WMC Resources Ltd
     1996-2001
     Senior Lecturer, University of Western Australia
     2001-2003
     Principal Geologist, Geoinformatics Exploration Ltd
     Vice President Exploration, Nevada Star Resources Inc
     2005-2006
     Vice President Exploration, Goldbrook Ventures Inc
     Vice President Exploration, North American Palladium Ltd
     2008-2009
     Vice President Exploration, Magma Metals Ltd
     2010-2011
     President & COO, Pacific North West Capital Corp
     2011-2014
     Consulting Geologist
     2013-Present
- 5. I visited the Property that is the subject of this report from May 21-25, June 20-23 and September 20-22, 2016.
- 6. I am responsible for authoring Sections 4-12 and 23 of this Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 7. I am independent of Klondex Mines Ltd. applying the test in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the project that is the subject of this Technical Report.
- 9. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith
- 10. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016 Signed Date: October 27, 2016

(SIGNED AND SEALED)

[William Stone]

Dr. William E. Stone, P.Geo.

#### ALFRED S. HAYDEN, P. ENG

I, Alfred S. Hayden, P. Eng., residing at 284 Rushbrook Drive, Ontario, L3X 2C9, do hereby certify that:

- 1. I am currently President of: EHA Engineering Ltd., Consulting Metallurgical Engineers Box 2711, Postal Stn. B. Richmond Hill, Ontario, L4E 1A7
- 2. This certificate applies to the technical report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016.
- 3. I graduated from the University of British Columbia, Vancouver, B.C. in 1967 with a Bachelor of Applied Science in Metallurgical Engineering. I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum and a Professional Engineer and Designated Consulting Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 40 years since my graduation from university.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

My summarized career experience is as follows:

- EHA Engineering Ltd: (President) 1990-Present A.H. Ross & Associates Ltd. (Senior Associate) 1976-1985
- 5. I visited the Property that is the subject of this report on September 20 and 21, 2016.
- 6. I am responsible for authoring Sections 13 and 17 of this Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 7. I am independent of Klondex Mines Ltd. applying the test in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the Property that is the subject of this Technical Report.
- 9. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
- 10. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016 Signed Date: October 27, 2016

*{SIGNED AND SEALED}* [Alfred Hayden]

Alfred S. Hayden, P.Eng.

#### DAVID A. ORAVA, P. ENG.

I, David A. Orava, M. Eng., P. Eng., residing at 19 Boulding Drive, Aurora, Ontario, L4G 2V9, do hereby certify that:

- 1. I am an Associate Mining Engineer at P&E Mining Consultants Inc. and President of Orava Mine Projects Ltd.
- 2. This certificate applies to the technical report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016.
- 3. I am a graduate of McGill University located in Montreal, Quebec, Canada at which I earned my Bachelor Degree in Mining Engineering (B.Eng. 1979) and Masters in Engineering (Mining Mineral Economics Option B) in 1981. I have practiced my profession continuously since graduation. I am licensed by the Professional Engineers of Ontario (License No. 34834119).
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

My summarized career experience is as follows:

- 5. I have not visited the Property that is the subject of this report.
- 6. I am responsible for authoring Section 20 of the Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 7. I am independent of Klondex Mines Ltd. applying all of the tests in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the project that is the subject of this Technical Report.
- 9. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
- 10. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016 Signed Date: October 27, 2016

{SIGNED AND SEALED}
[David Orava]

David Orava, M. Eng., P. Eng.

## KIRK RODGERS, P.ENG.

## **CERTIFICATE OF AUTHOR**

- I, Kirk H. Rodgers, P. Eng., residing at 146 Royal Beech Drive, Wasaga Beach, Ontario, do hereby certify that:
- 1. I am an independent mining consultant, contracted as Vice President, Engineering by P&E Mining Consultants Inc.
- This certificate applies to the Technical Report titled "Technical Report and Pre-Feasibility Study on the True North Gold Mine, Bissett, Manitoba, Canada" (the "Technical Report"), with an effective date of June 30, 2016
- 3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining. I subsequently attended the mining engineering programs at Laurentian University and Queen's University for a total of two years. I have met the Professional Engineers of Ontario Academic Requirement Committee's Examination requirement for Bachelor's Degree in Engineering Equivalency. I have been licensed by the Professional Engineers of Ontario (License No. 39427505), from 1986 to the present. I am also a member of the National and Toronto Canadian Institute of Mining and Metallurgy.
- 4. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- 5. I am responsible for authoring Sections 1, 2, 3, 19 and co-authoring sections 21 and 22 of the Technical Report along with those parts of the Executive Summary, and Sections 25 and 26 pertaining thereto.
- 6. I have not visited the Property that is the subject of this report.
- 7. I am independent of Klondex Mines Ltd. applying the test in Section 1.5 of NI 43-101.
- 8. I have had no prior involvement with the Property that is the subject of this Technical Report.
- 9. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
- 10. As As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: June 30, 2016 Signed Date: October 27, 2016

{SIGNED AND SEALED} {Kirk Rodgers}

Kirk Rodgers, P.Eng

## APPENDIX I. TRUE NORTH CLAIMS INFORMATION

Туре	Number	Name	Area (ha)	Expiry Date	NTS Sheet	Holder
Mineral Lease	ML63	N/A	766	01-May-2017	52M04SE	Klondex Canada Ltd. 100%
TOTAL	1	Mineral Lease	766			
Patent	P10_8	Emma		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P12_227	Gabrielle		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P15_64	Goldcup		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P16_65	old Cup No. 2 F	L.	31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P2_11	Annex		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P20_7	Goldfield		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P26_15	Jumping Cat		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P3_66	Big Four FL.		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P32_14	Mite FL.		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P35_47	Rachel		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P38_951	Ross FL.		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P39_12A	Ross Fr. (N200)		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P4_6	Cartwright		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P41_46	San Antonio		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P42_9	Scarabe		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P47_10	West Scarabe		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P48_45	Island FL.		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
Patent	P9_13	Deluxe		31-Dec-2016	52M04SE	Klondex Canada Ltd. 100%
TOTAL	18	Patents	296			

Type	Number	Name	Area (ha)	Expiry Date	NTS Sheet	Recorded Holder & Ownership
Claim	M89152	TOM 5	256	25-Oct-2016	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M89154	TOM 6	256	25-0 ct-2016	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 85035	GOLDRIDGE 1	256	07-Mar-2017	5 2M04N W, 52 M04SW	Klond ex Canada Ltd. 100%
Claim	M 85037	GOLDRIDGE 3	256	77-Mar-2017	52M04SW	Klond ex Canada Ltd. 100%
Claim	M 85038	GOLDRIDGE 4	256	07-Mar-2017	5 2M04N W, 52 M04SW	Klond ex Canada Ltd. 100%
Claim	M 85039	GOLDRIDGE 5	256	07-Mar-2017	52M04NW, 52M04SW, 62P01NE, 62P01SE	Klond ex Canada Ltd. 100%
Claim	M 83040	GOLDRIDGE 6	256	07-Mar-2017	52M04SW,62P01SE	Klond ex Canada Ltd. 100%
Claim	W 527 79	ERIC	95	23-Apr-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 52780	HENRIKSON	95	23-Apr-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 895 22	GOLD HORSE 10	256	25-Apr-2018	52M04 €	Klond ex Canada Ltd. 100%
Claim	M 895 23	GOLD HORSE 6	150	25-Apr-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 895 24	GOLD HORSE 9	256	25-Apr-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 893 26	GOLD HORSE 5	240	25-Apr-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 893 27	GOLD HORSE 8	256	25-Apr-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB3433	GOLDRI DGE 15	256	01-Jun-2018	62P01NE, 62 P01SE	Klond ex Canada Ltd. 100%
Claim	MB3437	GOLDRI DGE 14	256	01-Jun-2018	62P01NE, 62 P01SE	Klond ex Canada Ltd. 100%
Claim	M 897 32 W 470 00	SAN 2 FR GOLD CREEK #5	102	02-Sep-2018	52M04 SE	Klond ex Canada Ltd. 100%
Claim				26-Dec-2018	52M04 9E	Klond ex Canada Ltd. 100%
Claim	W 444 96	KAREN NU PIC 1 FR.	80 17	28-Jan-2019 30-Mar-2019	52M04 SE 52M04 SE	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W 444 97	NUPIC 2 FR.	15	30-Mar-2019	52M04 SE	Klondex Canada Ltd. 100% Klondex Canada Ltd. 100%
Claim	W44498	NUPIC 2 PK.	17		52M04 SE	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W 444 98 W 444 99	NUPIC 3 NUPIC 4	9	30-Mar-2019 30-Mar-2019	52M045E	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W44500	NUPIC 5	9	30-Mar-2019	52M04 9E	Klondex Canada Ltd. 100%
Claim	W44501	NUPIC 6	16	30-Mar 2019	32M04 SE	Klond ex Canada Ltd. 100%
Claim	W44502	NUPIC 7	19	30-Mar 2019	52M045E	Klond ex Canada Ltd. 100%
Claim	W48116	ALIX	121	04-Apr-2019	52M04 SE	Klondex Canada Ltd. 100%
Claim	W44509	NUPIC 14	19	13-Apr-2019	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W44512	NU PIC 17 FR.	7	13-Apr-2019	52M04 SE	Klondex Canada Ltd. 100%
Claim	W44513	NUPIC 18	9	13-Apr-2019	52M045E	Klondex Canada Ltd. 100%
Claim	W44514	NUPIC 19	17	13-Apr-2019	52M04 SE	Klondex Canada Ltd. 100%
Claim	W44515	NUPIC 20	17	13-Apr-2019	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 895 25	GOLD HORSE 11	140	25-Apr-2019	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 883 84	ROSS 1 FR.	5	20-Jun-2019	52L1 3NE	Klond ex Canada Ltd. 100%
Claim	M 893 79	ROSS 2	36	05-Sep-2019	52L1 3NE, 52M04SE	Klond ex Canada Ltd. 100%
Claim	M 86643	RICK FR.	6	09-Sep-2019	52L1 3NE, 52M04SE	Klond ex Canada Ltd. 100%
Claim	W48247	ZORRO	17	22-Nov-2019	52M04SE	Klond ex Canada Ltd. 100%
Claim	MB2101	BU B 1	128	21-Jan-2020	52M045E	Klond ex Canada Ltd. 100%
Claim	W 538 46	SAN 2	192	10-Mar-2020	52M045E	Klond ex Canada Ltd. 100%
Claim	W53803	SAN 4	240	10-Mar-2020	52M04 5E	Klond ex Canada Ltd. 100%
Claim	W 538 47	SAN 3	192	10-Mar-2020	52M045E	Klond ex Canada Ltd. 100%
Claim	W49484	BISSETT 3 FR	15	11-Apr-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 895 21	GOLD HORSE 7	64	25-Apr-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB4498	SAN 9	192	28-Apr-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	P2169F	SAN 11	144	16-May-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	P2170F	SAN 12	32	16-May-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 528 40 M 895 75	FLASH BILL 31 FR	205 54	31-May-2020 13-Jun-2020	52M04 SE 52M04 SE	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M 875 06	ULTRA 24	208	24-Jun-2020	62P015E	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M 875 07	ULTRA 26	128	24-Jun-2020	62P015E	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M 875 08	ULTRA 25	256	24-Jun-2020	62P 015E	Klondex Canada Ltd. 100%
Claim	M 875 09	ULTRA 21	256	24-Jun-2020	62P 015E	Klond ex Canada Ltd. 100%
Claim	M 855 89	CONTACT 1	227	04-Jul-2 020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M 859 35	SAN 18	96	08-Jul-2 020	52M04SE	Klond ex Canada Ltd. 100%
Claim	M 839 49	HURON #1	16	12-Jul-2 020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M 871 68	888	176	01-Oct-2020	62P01SE	Klond ex Canada Ltd. 100%
Claim	W 533 14	SAN 1	137	17-Oct-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M89150	TOM 4	256	25-0 ct-2020	52M04SE	Klond ex Canada Ltd. 100%
Claim	M89151	TOM 3	136	25-0 ct-2020	52M04SE	Klond ex Canada Ltd. 100%
Claim	M89155	TOM 7	220	25-0 ct-2020	52M04SE	Klond ex Canada Ltd. 100%
Claim	W48763	BISSETT 1	64	14-Dec-2020	52M04SE	Klond ex Canada Ltd. 100%
Claim	W48796	BISSETT	240	14-Dec-2020	52M04 SE	Klondlex Canada Ltd. 100%
Claim	MB2102	BU B 2	128	21-Jan-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 821 03	BU B 3	192	21-Jan-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 821 04	BU B 4	128	21-Jan-2021	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	MB2105	BU B 5	192	21-Jan-2021	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	M 82106	BU B 6	192	21-Jan-2021	52M03SW	Klond ex Canada Ltd. 100%
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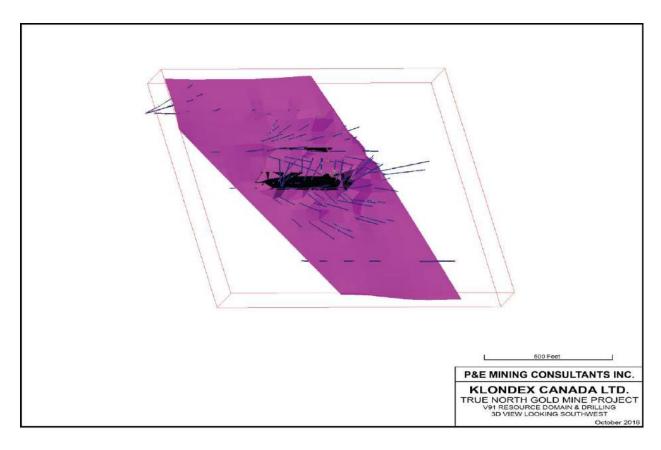
Туре	Number	Name	Area (ha)	Expiry Date	NTS Sheet	Recorded Holder & Ownership
Claim	M 834 63	AAA	89	28-Jan-2021	52M04SE	Klond ex Canada Ltd. 100%
Claim	W52781	SCUD	78	28-Mar-2021	52M045E	Klond ex Canada Ltd. 100%
Claim	W 483 37	LU AN A # EXT	52	09-Apr-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 484 42	LUANA	255	09-Apr-2021	52M04 SE	Klondex Canada Ltd. 100%
Claim	M 819 28	SANANTONIO JR 4	212	27-Apr-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 494 44	SHARON	187	05-May-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 494 45 W 490 83	WAWA O DESSA	29 242	05-May-2021 08-May-2021	52M045E 52M045E	Klondlex Canada Ltd. 100% Klondlex Canada Ltd. 100%
Claim	W 490 83 W 494 41	JADE 2	195	24-May-2021	52M04 SE	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W 52841	RUM	16	31-May-2021	32M04 SE	Klondex Canada Ltd. 100%
Claim	W 503 55	JADE #1	222	01-Jun-2021	32M043E	Klond ex Canada Ltd. 100%
Claim	W 533 91	BEA	47	09-Jun-2021	52M04 SE	Klondex Canada Ltd. 100%
Claim	W46385	RICE NO 5	17	24-Jun-2021	52M04 SE	Klondex Canada Ltd. 100%
Claim	CB11704	RICE NO 4	31	24-Jun-2021	52M045E	Klond ex Canada Ltd. 100%
Claim	W 52077	LODE	104	01-Jul-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 845 63	VAN	93	07-Aug-2021	52M045E	Klond ex Canada Ltd. 100%
Claim	W 528 42 <sup>L/</sup>	0 BEAR	16	21-Aug-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 81846	JADE 3	16	11-Sep-2021	52M045E	Klond ex Canada Ltd. 100%
Claim	M 81847	JADE 4	16	11-Sep-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W51793	DANCER	48	27-0 ct-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 891 62	TOM 8	248	28-Nov-2021	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 528 43 W 528 44	SPIDER FLY	162	15-Dec-2021 15-Dec-2021	52M045E 52M045E	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W 32844 W 32843	WEB FRACTION	104	15-Dec-2021	52M04 SE	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W 31799	LUANA FR.	6	22-Dec-2021	52M04 9E	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M 85036	GOLDRIDGE 2	240	07-Mar-2022	52M045W	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	W 48797	RICE 45	126	01-Apr-2022	32M04SE	Klond ex Canada Ltd. 100%
Claim	W53116	PATRIOT	195	29-Apr-2022	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W 52076	FLORA	182	01-Jul-2022	52M045E	Klondlex Canada Ltd. 100%
Claim	M 859 32	JILL FRACTION	1	23-0 ct-202 2	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 88111	CUD 3	84	16-Mar-2023	52M04 SE	Klond ex Canada Ltd. 100%
Claim	M 813 54	GOLD HORSE 4	96	18-May-2023	52M04SW	Klond ex Canada Ltd. 100%
Claim	M 859 31	ROSS FR	3	19-Jun-2023	52L1 3NE	Klond ex Canada Ltd. 100%
Claim	M 813 27	GOLD HORSE 1	96	14-Feb-2024	52M04SW	Klond ex Canada Ltd. 100%
Claim	M 813 28	GOLD HORSE 2	39	14-Feb-2025	52M04SW	Klond ex Canada Ltd. 100%
Claim	M 81296	GOLD HORSE 3	173	18-May-2025	52M04SW	Klondex Canada Ltd. 100%
Claim	W 494 40	JADE	219	24-May-2026	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB11576 MB11577	SAN 70 SAN 71	202 210	17-Aug-2017 17-Aug-2017	52L14N W 52L14N W	Klondlex Canada Ltd. 100% Klondlex Canada Ltd. 100%
Claim	MB11377	SAN 73	256	17-Aug-2017	52L14N W	Klond ex Canada Ltd. 100%
Claim	MB11379	SAN 74	231	17-Aug-2017	52L14N W	Klond ex Canada Ltd. 100%
Claim	M 89538	SAN 74	77	15-Sep-2017	32L14NW	Klondex Canada Ltd. 100%
Claim	M 895 40	SAN 30	57	15-Sep-2017	52L14NW	Klondex Canada Ltd. 100%
Claim	M 83737	BILL 100	176	21-Jan-2018	52L14SW	Klondex Canada Ltd. 100%
Claim	M 89433	SAN 29	188	30-Jan-2018	52L14NW, 52L149W	Klondex Canada Ltd. 100%
Claim	M 86646	SAN 31	108	13-Feb-2018	52L145W	Klond ex Canada Ltd. 100%
Claim	M 844 23	SAN 6	128	07-Apr-2018	52114NW, 521149W	Klond ex Canada Ltd. 100%
Claim	M 844 25	SAN 8	256	07-Apr-2018	52L14SW	Klond ex Canada Ltd. 100%
Claim	M 883 77	SAN 22	109	03-May-2018	52L14NW	Klond ex Canada Ltd. 100%
Claim	M 839 50	BILL 90	131	23-Dec-2018	52 L14N W, 52 L14 9W	Klond ex Canada Ltd. 100%
Claim	M 839 51	BILL 91	141	23-Dec-2018	52L14NW, 52L149W	Klond ex Canada Ltd. 100%
Claim	M 839 52	BILL 92	135	23-Dec-2018	52L14NW, 52L14SW	Klond ex Canada Ltd. 100%
Claim	M 839 53	BILL 93	192	23-Dec-2018	52L14NW, 52L149W	Klond ex Canada Ltd. 100%
Claim	M 839 54	BILL 94	192	23-Dec-2018	52 L14N W, 52 L14 SW	Klond ex Canada Ltd. 100%
Claim	M 839 55 M 839 56	BILL 9.5		23-Dec-2018	52L145W	Klondex Canada Ltd. 100%
Claim	M 839 57	BILL96 BILL97	160 120	23-Dec-2018 23-Dec-2018	52L14SW 52L14SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M 839 60	BILL98	168	23-Dec-2018 23-Dec-2018	52L145W 52L145W	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M 839 61	BILL 99	100	23-Dec-2018	52L145W	Klond ex Canada Ltd. 100%
Claim	M 883 78	SAN 23	225	03-May-2019	52L14NW	Klond ex Canada Ltd. 100%
Claim	M 893 83	SAN 28	192	08-Dec-2019	52L14SW	Klond ex Canada Ltd. 100%
Claim	W 496 05	NUG1	16	24-Jan-2 020	52L14SW	Klond ex Canada Ltd. 100%
Claim	W 533 41	NUG 2	228	03-Feb-2020	52L14SW	Klond ex Canada Ltd. 100%
Claim	M 86136	SAN 22 FR	8	26-Mar-2020	52L14NW	Klond ex Canada Ltd. 100%
Claim	M 883 79	SAN 24	180	03-May-2020	52L14SW	Klond ex Canada Ltd. 100%
Claim	M 883 80	SAN 25	228	03-May-2020	52L14SW	Klond ex Canada Ltd. 100%
Claim	M 883 81	SAN 26	164	03-May-2020	52L14SW	Klond ex Canada Ltd. 100%
		SAN 27	196	12-May-2020	52L14NW	Klond ex Canada Ltd. 100%
Claim	M 883 82					
Claim Claim Claim	M 883 82 M 834 33 W 542 55	BERE 6 BERE 1	36 238	27-May-2020 22-Jun-2020	52L14N W, 52L149W 52L14N E, 52L14N W, 52L14SE, 52L149W	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%

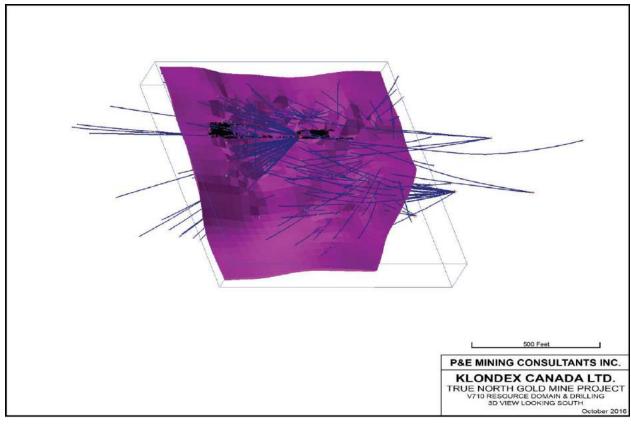
T	Nombre	Name	A /h-1	Frain Bata	time the ed	Bassadad Haldan & Green auchin
Claim	Number W33930	Name BERE 3	Area (ha)	25-Jun-2020	NTS Sheet 52L14SW	Recorded Holder & Ownership Klondex Canada Ltd. 100%
Claim	M 86135	SAN 20	168	27-Mar-2021	52L14NW	Klond ex Canada Ltd. 100%
Claim	M 894 34	SAN 30	161	30-Jan-2022	52L14NW, 52L149W	Klond ex Canada Ltd. 100%
Claim	W 534 47	ORO	16	04-Feb-2022	52L14NE, 52L14NW	Klond ex Canada Ltd. 100%
Claim	M 86134	SAN 21	207	27-Mar-2022	52L14SW	Klond ex Canada Ltd. 100%
Claim	M 849 42	SAN 16	92	15-Dec-2022	52L14SW	Klond ex Canada Ltd. 100%
Claim	W 533 40	ORE 1	50	04-Feb-2023	52L14NE, 52L14NW	Klond ex Canada Ltd. 100%
Claim	M 896 00	SGR	26	23-Dec-2016	52 L14N W, 52 L14 SW	Klond ex Canada Ltd. 100%
Claim	M 81756	REX 4	16	27-Jul-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2791	SABINA 1	89	19-Nov-2016	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB3897	REO 3897	241	06-Apr-2017	52M04NW, 52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1931	GOLD CANYON 4	256	27-Apr-2017	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1934	GOLD CANYON 5	256	27-Apr-2017	52M04SW 52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1945 MB2978	MOTHERLOAD 1 LAURALEE	256 128	27-Apr-2017	32M04SW 32M04SW	Klond ex Canada Ltd. 100%
Claim	MB1979	OLD PROSPECTOR 3	248	01-May-2017	52M04SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M83038	JACQUIE 3038	213	06-Jun-2017 13-Jul-2017	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2710	PAULA 10	226	19-Sep-2017	52M04SW	Klond ex Canada Ltd. 100%
Claim	M86113	RIO 3F	10	04-0 ct-2017	32M 04NW	Klond ex Canada Ltd. 100%
Claim	M86116	RIO 4	20	04-0 ct-2017	52M 04NW	Klond ex Canada Ltd. 100%
Claim	MB6117	RIO 3	173	04-0 ct-2017	52M 04NW	Klond ex Canada Ltd. 100%
Claim	M86118	RIO 2	255	04-0 ct-2017	52M 04NW	Klond ex Canada Ltd. 100%
Claim	M86119	RIO 1	256	04-0 ct-2017	52M 04NW	Klond ex Canada Ltd. 100%
Claim	MB4781	SABINA 7	154	15-Dec-2017	52M04SW	Klond ex Canada Ltd. 100%
Claim	M84782	SABINA 6	214	15-Dec-2017	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB4611	JARY 1	110	20-Aug-2018	52M045W	Klond ex Canada Ltd. 100%
Claim	M84612	JARY 2	90	20-Aug-2018	52M04SW	Klond ex Canada Ltd. 100%
Claim	W45949		17	12-Feb-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1924	SANANTONIO JR 1	239 240	26-Apr-2020	52M045E, 52M045W	Klond ex Canada Ltd. 100%
Claim	MB1925 MB1926	SANANTONIO JR 2 SANANTONIO JR 3	144	26-Apr-2020 26-Apr-2020	52M04SE, 52M04SW 52M04SE, 52M04SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	MB1926 MB1927	GOLDEN CANYONS 1	256	26-Apr-2020 26-Apr-2020	32M045E, 32M045W 32M045W	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	MB1935	GOLDEN CANYONS 2	256	26-Apr-2020	52M045W	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	MB1943	GOLD CANYON 1	256	26-Apr-2020	52M04SW	Klondex Canada Ltd. 100%
Claim	MB1944	GOLD CANYON 6	16	26-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M81946	GOLD TWINS 1	252	26-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1947	GOLD TWINS 2	66	26-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1930	GOLD CANYON 3	64	26-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1951	OLD PROSPECTOR 2	248	06-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1922	GOLD PERCULATOR 1	56	12-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1937	GOLD PERCULATOR 2	136	12-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2979	LAURALEE 2979	232	08-Jul-2 020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82980	LAURALEE 2980	170	08-Jul-2 020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2981	LAURALEE 2981	244	08-Jul-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB33 69	WANI 2	246	16-Jul-2020	52M04SW,62P01SE	Klondex Canada Ltd. 100%
Claim	M855 68 M850 07	WANI1 TATONGA 1	256 138	16-Jul-2 020 20-Aug-2 020	5 2M045W , 6 2P0 1SE 52M0 3SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	MB2712	PAULA 12	113	19-Sep-2020	52M04SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M82798	LAURALEE 8	224	29-Sep-2020	52M045E	Klond ex Canada Ltd. 100%
Claim	MB2801	LAURALEE 1	130	29-Sep-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB2802	LAURALEE 2	189	29-Sep-2020	52M04 SE	Klondex Canada Ltd. 100%
Claim	MB3036	DEB 36	80	13-Oct-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M84606	OLD EDKE 3	247	21-Nov-2020	52M045W	Klond ex Canada Ltd. 100%
Claim	MB4607	OLD EDKE 4	160	21-Nov-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2378	PAULA 2378	252	11-Feb-2021	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2379	PAULA 2379	166	11-Feb-2021	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82380	PAULA 2380	250	11-Feb-2021	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83895	REO 3895	252	06-Apr-2021	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82982	LAURALEE 2982	135	08-Jul-2021	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82983	LAURALEE 2983	181	08-Jul-2021	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2984	LAURALEE 2984	140	08-Jul-2021	52M04SE, 52M04SW	Klond ex Canada Ltd. 100%
Claim	MB3035	LAURALEE 3035	143	08-Jul-2021	52M04SE, 52M04SW	Klond ex Canada Ltd. 100%
Claim	M86113	JARY 6113	18	07-Oct-2021	52M04SW	Klondex Canada Ltd. 100%
Claim	M83261 M8632	SABINA 3 PAULA 632	159 249	11-Jan-2022 11-Feb-2022	52M045W 52M04SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	MB633	PAULA 632 PAULA 633	99	11-Feb-2022 11-Feb-2022	32M04SW 32M04SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	M83893	REO 3893	230	06-Apr-2022	52M04SW 52M04NW, 52 M04SW	Klond ex Canada Ltd. 100% Klond ex Canada Ltd. 100%
Claim	MB1948	GOLD TWINS 3	256	27-Apr-2022	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1949	GOLD TWINS 4	256	27-Apr-2022	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1930	GOLD TWINS 5	256	27-Apr-2022	52M04SW	Klond ex Canada Ltd. 100%
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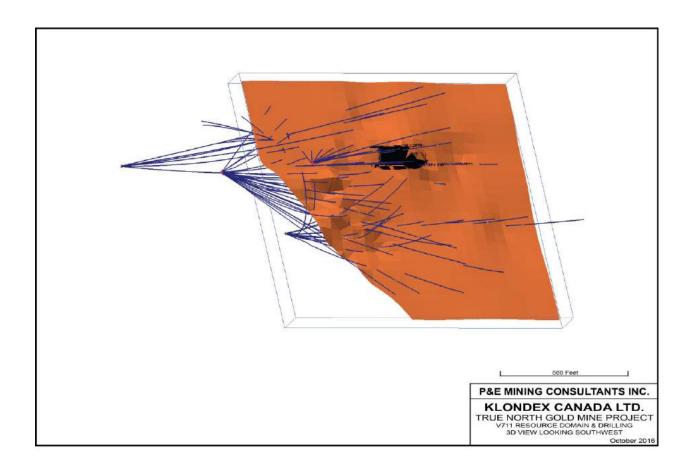
Туре	Number	Name	Area (ha)	Expiry Date	NTS Sheet	Recorded Holder & Ownership
Claim	MB6112	JARY 6112	40	07-0 ct-2022	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2787	SABINA 3	131	07-0 ct-202 2	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2733	PAULA 13	240	13-Oct-2022	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82792	SABINA 2	87	19-Nov-2022	52M04SW	Klond ex Canada Ltd. 100%
Claim	M84783	SABINA 4	149	15-Dec-2022	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82381	PAULA 2381	56	11-Feb-2023	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2175	PAULA 3	192	02-Sep-2018	52M04SW	Klond ex Canada Ltd. 100%
Claim	M82120	JADE	61	17-Mar-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2753	LOOKOUT	16	23-Mar-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83229	DEB 3 229	167	19-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83227	KIM 3227	58	19-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1936	GOLDEN CANYONS 3	224	26-Apr-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83031	MO NA 3031	114	25-May-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83028	MO NA 3028	80	01-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB3029	MO NA 3029	248	01-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83593	KIM 3593	194	13-Jun-2020	52M04SE, 52M04SW	Klond ex Canada Ltd. 100%
Claim	M83033	RACHELLE 3 033	161	25-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M83030	RACH ELLE 3 030	182	25-Jun-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB3032	RACHELLE 3 032	210	06-Jul-2 020	52M04SW	Klondlex Canada Ltd. 100%
Claim	MB2987	OX 2987	57	14-Jul-2 020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2067	Marleen	129	23-May-2020	52M04SW	Klondlex Canada Ltd. 100%
Claim	MB2180	KIM 10	96	19-Sep-2020	52M04SE, 52M04SW	Klondlex Canada Ltd. 100%
Claim	MB2181	KIM 1	108	24-Sep-2020	52M045E	Klond ex Canada Ltd. 100%
Claim	MB2707	KIM 8	60	24-Sep-2020	52M04 SE	Klondlex Canada Ltd. 100%
Claim	M82799	KIM 9	124	20-0 ct-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2991	YORK	20	03-Nov-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB4604	OLD EDKE	46	21-Nov-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	M84603	OLD EDKE 1	217	21-Nov-2020	52M04SW	Klond ex Canada Ltd. 100%
Claim	MB2975	KIM 2975	150	11-Feb-2021	52M04SE, 52M04SW	Klond ex Canada Ltd. 100%
Claim	M83694	MARA	115	04-Dec-2021	52M04SE, 52M04SW	Klond ex Canada Ltd. 100%
Claim	MB1357	GEO 3	144	18-May-2017	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	M82118	MALIBU FR.	12	05-Mar-2018	52M045E	Klond ex Canada Ltd. 100%
Claim	M82949	MO NA 2949	128	25-Mar-2018	52M03SW	Klond ex Canada Ltd. 100%
Claim	M83000	MO NA 3000	256	25-Mar-2018	52M03SW	Klond ex Canada Ltd. 100%
Claim	M82998	MONA 2998	75	27-Apr-2018	52M03SW	Klond ex Canada Ltd. 100%
Claim	M83001	MO NA 3001	214	27-Apr-2018	52M03SW	Klond ex Canada Ltd. 100%
Claim	M83596	REO 3596	80	29-Jun-2018	52M03SW	Klond ex Canada Ltd. 100%
Claim	MB1915	GEO 4	32	14-Feb-2019	52M045E	Klond ex Canada Ltd. 100%
Claim	MB2115	M ALIBU 1	256	04-Mar-2020	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	M82116	M ALIBU 2	256	05-Mar-2020	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	MB2945	MONA 2945	256	24-Mar-2020	52M03SW	Klond ex Canada Ltd. 100%
Claim	MB1932	GEO 5	16	26-Mar-2019	52M045E	Klond ex Canada Ltd. 100%
Claim	MB2002	GE0 7	32	08-Jun-2020	52M03SW	Klond ex Canada Ltd. 100%
Claim	MB2005	GEO 10	96	21-Jun-2020	52M03SW	Klond ex Canada Ltd. 100%
Claim	MB6123	AU DREY 6123	238	11-Dec-2020	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	MB6122	AU DREY 6122	256	11-Dec-2020	52M03SW	Klondlex Canada Ltd. 100%
Claim	MB2004	GEO 9	96	21-Jun-2021	52M03SW	Klond ex Canada Ltd. 100%
Claim	MB3006	ROBERT PETER	36	20-Aug-2023	52M03SW	Klond ex Canada Ltd. 100%
Claim	CB 8043		65	09-Sep-2026	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	MB5276	PRG 4	113	19-0 ct-2016	52M04 SE	Klond ex Canada Ltd. 100%
I	MB5278	PRG 6	167	19-0 ct-2016	52L13N E, 52L14N W	Klond ex Canada Ltd. 100%
Claim	MB5279	PRG 7	189	19-0 ct-2016	52L1 3NE	Klond ex Canada Ltd. 100%
Claim	W53619	GLORIA	201	07-Feb-2019	52M04 SE	Klond ex Canada Ltd. 100%
Claim	W53405	CHCALA1	48	30-Jun-2019	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB9378	BILL 34	93	10-Jul-2019	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB9231	BILL 31	192	01-May-2020	52L1 3NE, 52M04SE	Klond ex Canada Ltd. 100%
Claim	M89232	BILL32	192	01-May-2020	52M045E	Klondlex Canada Ltd. 100%
Claim	MB9233	BILL 33	64	01-May-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB5272	P RG	235	18-May-2020	52L1 3NE, 52M04SE	Klond ex Canada Ltd. 100%
Claim	MB2109	JONA	75	15-0 ct-2020	52M04 SE	Klond ex Canada Ltd. 100%
Claim	MB5277	PRG 5	256	19-0 ct-2020	52M03SW, 52M04SE	Klond ex Canada Ltd. 100%
Claim	MB5280	PRG 8	194	19-0 ct-2020	52M03SW	Klond ex Canada Ltd. 100%
Claim	M85281 L 270	PRG 9 Mining Claims	256 38284	27-Nov-2020	5 2L14 NW, 5 2M03 SW	Klond ex Canada Ltd. 100%

Туре	Number	Name	Area (ha)	Expiry Date	NTS Sheet	Recorded Holder & Ownership
Claim	W5856	I.X.L. FR.	6	12-Jun-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	28950	WOLVERINE FRACTIONAL	5	29-Jun-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W89	LOON	21	05-Jul-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W90	WHITE	13	05-Jul-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	15876	GOLDSTONE	8	31-Aug-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	25885	WOLF	20	17-Sep-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	25896	FISHER	21	28-Sep-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W46424	GOLDZONE FRAC	13	30-Sep-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W4464	GOLDZONE NO 12	17	20-Oct-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W232	SOUTH SIDE #1	17	23-Oct-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W233	SOUTH SIDE	15	23-Oct-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W44240	PAYUK	17	18-Nov-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W44242	MARQUIS	9	18-Nov-2019	52L13NE, 52M04SE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W44243	PRIME	11	18-Nov-2019	52L13NE, 52M04SE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	15922	FOX	17	29-Nov-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	31682	GOLDEN TRUTH FR	7	05-Dec-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	29940	LISGAR	18	12-Dec-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W1097	I.X.L.	13	16-Dec-2019	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	27506	GOLDEN STAR 1	12	20-Mar-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	27508	MARIGOLD	18	20-Mar-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	27510	GOLD FLY	12	20-Mar-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W14003	A.B. NO 1	22	27-Apr-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W14004	A.B. NO 2	23	27-Apr-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W14005	A.B. NO 3	20	27-Apr-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W14006	A.B. NO 4	19	27-Apr-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W14007	A.B. NO 5	21	27-Apr-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
Claim	W14008	A.B. NO 6	15	27-Apr-2020	52L13NE	GREENBELT GOLD MINES INC. 50%; KLONDEX CANADA LTD. 50%
TOTAL	27	Mining Claims	410			

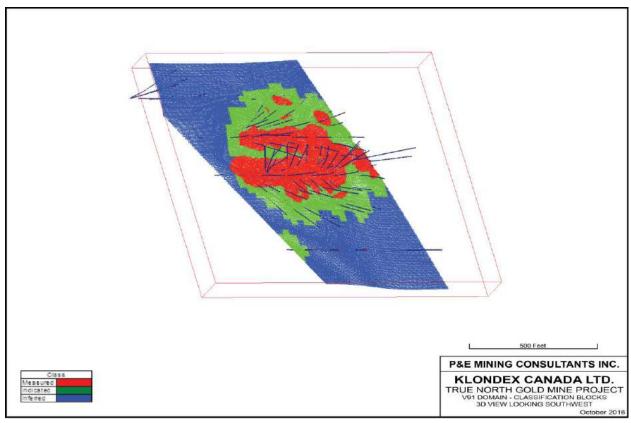


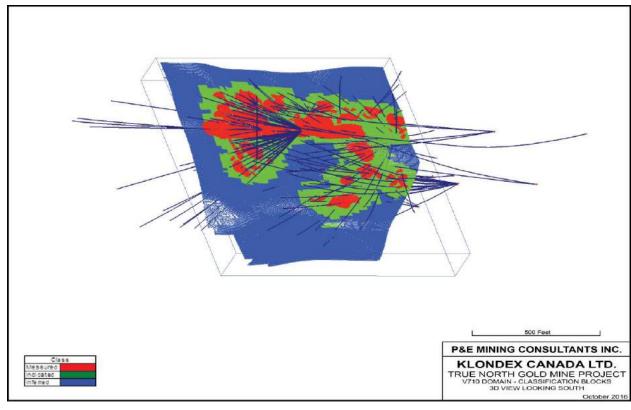


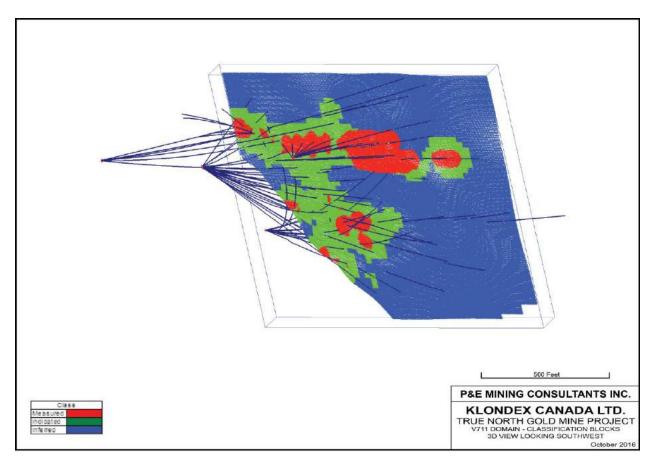


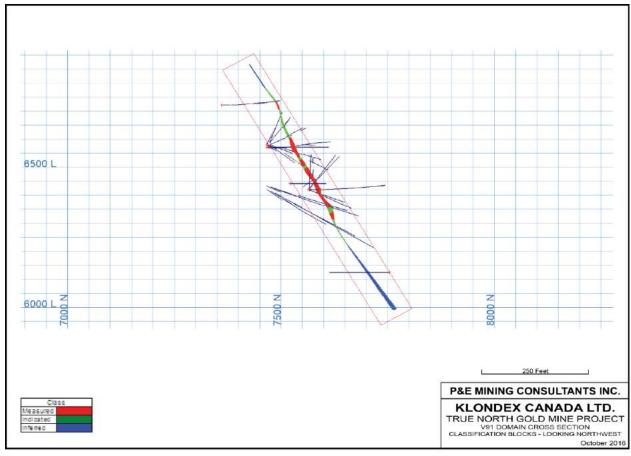


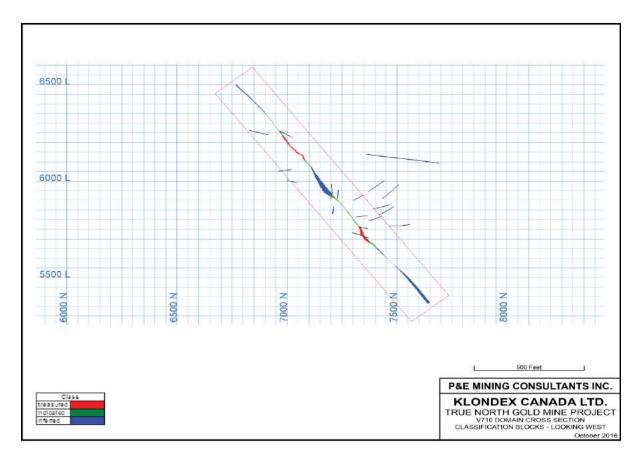
# APPENDIX III. CLASSIFICATION 3D MODELS AND CROSS SECTIONS FOR V91, V710 AND V711 VEINS

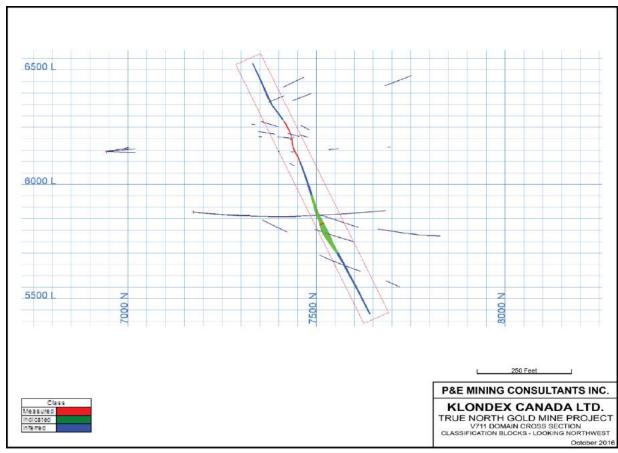




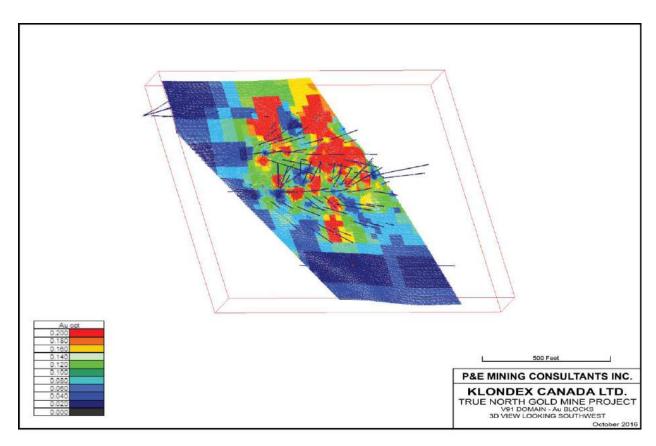


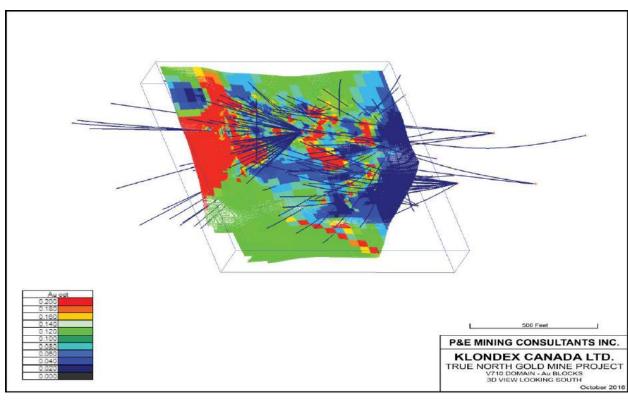


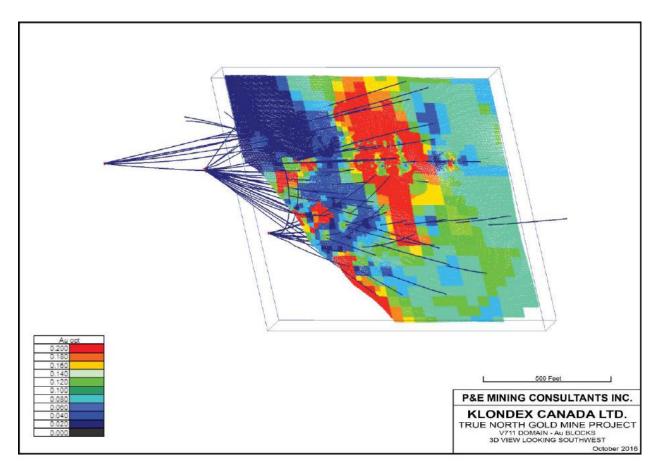


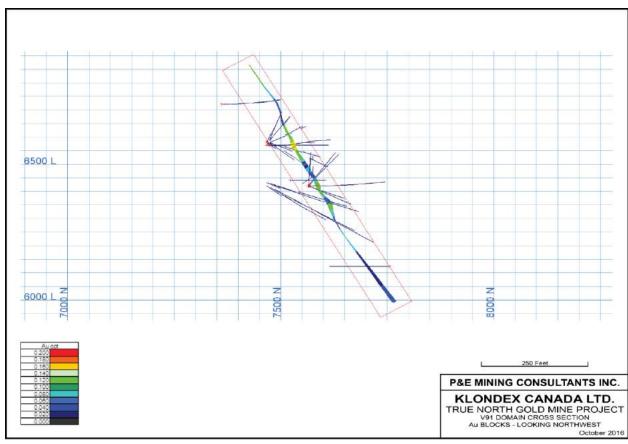


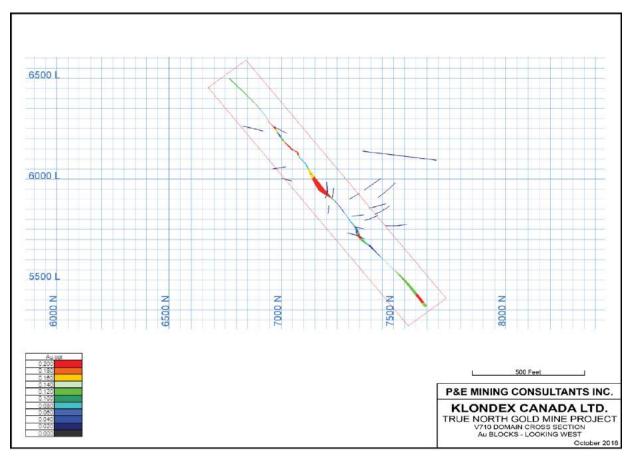
# APPENDIX IV. AU GRADE MODELS AND CROSS SECTIONS FOR V91, V710 AND V711 VEINS

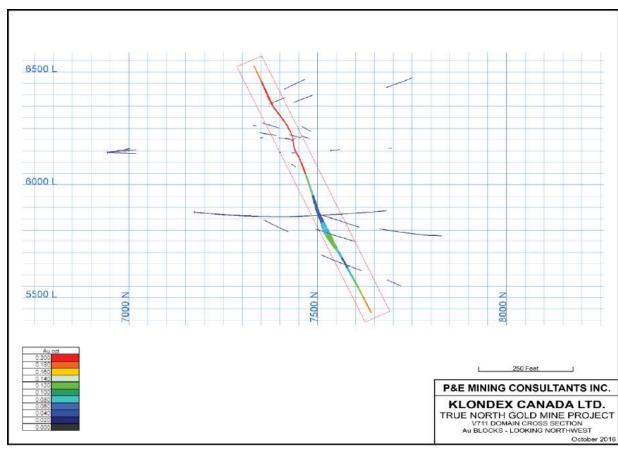












## APPENDIX V. TAILINGS DRILL PLAN, CLASSIFICATION AND AU BLOCKS

