NORTHCLIFF RESOURCES LTD.

TECHNICAL REPORT ON THE SISSON PROJECT, NEW BRUNSWICK, CANADA

NI 43-101 Report

Qualified Person:
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June 29, 2012

ROSCOE POSTLE ASSOCIATES INC.

RPA

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1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. was retained by Northcliff Resources Ltd. to prepare an independent Technical Report on the Sisson Project, New Brunswick, Canada. The Technical Report describes an audit conducted by RPA on an updated Mineral Resource estimate for the Project and conforms to NI 43-101 Standards of Disclosure for Mineral Projects. RPA visited the property on February 3, 2012.

The Mineral Resource estimate dated February 29, 2012, and audited by RPA is summarized in Table 1-1.

TABLE 1-1 MINERAL RESOURCE ESTIMATE - FEBRUARY 29, 2012
Northcliff Resources Ltd. - Sisson Project

Category	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3 (M mtu)	Mo (M lb)	WO_3Eq (%)	Avg NSR (US$/t)
Measured	107	0.072	0.024	7.7	56.6	0.101	21.11
Indicated	276	0.065	0.020	17.94	121.7	0.089	18.76
Measured + Indicated	**383**	**0.067**	**0.021**	**25.64**	**178.3**	**0.092**	**19.42**
Inferred	178	0.051	0.021	9.08	82.4	0.076	15.89

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a net smelter return (NSR) cut-off value of US$9.00/t.
3. Mineral Resources are estimated using a long-term metal prices of US$300 per mtu WO_3 and US$15/lb Mo, and a US$/C$ exchange rate of 0.9:1.
4. Metallurgical recoveries for the NSR calculation were 74% for WO_3 and 80% for Mo.
5. Numbers may not add due to rounding.

CONCLUSIONS

RPA has conducted an audit of the Mineral Resource estimate for the Sisson Project, and draws the following conclusions:

- For most of the history of exploration work on the Project, the drill core handling, logging, and sampling protocols have been properly recorded and carried out in a manner consistent with industry best practice.

- Similarly, the assay methods and external quality assurance/quality control (QA/QC) protocols have been properly documented. Assay methodology has changed somewhat over the history of the Project, but the various operators have employed conventional protocols, conducted by certified independent commercial laboratories.

- Reasonable and appropriate analytical QA/QC protocols have been observed for all programs since Geodex, and later Northcliff, assumed control, and the QA/QC results have been acted upon in a timely and acceptable fashion.

- Collar and downhole surveys have been conducted using conventional and appropriate methods and equipment.

- The database has been compiled and maintained in a competent manner, using a reasonable level of verification and validation.

- The geology of the deposit, mineralization styles, and controls to mineralization are well understood and have been applied in a reasonable fashion.

- In RPA's opinion, the assumptions, parameters, and methodology used in the Mineral Resource estimate are appropriate for the style of mineralization and proposed mining method.

- The block model and grade interpolations have been generated using generally appropriate assumptions and parameters.

- The net smelter return (NSR) cut-off has been derived using reasonable assumptions.

- The Mineral Resource classification has been done in a manner consistent with the CIM Definition Standards on Mineral Resources and Mineral Reserves (CIM definitions), and as such is consistent with NI 43-101.

- The Mineral Resource estimate shows a significant increase in tonnes and metal content from the previous estimate, dated February 2011. In RPA's opinion, the changes are due to the following factors:
    - Increase in tonnage and reduction in grade due to decrease in the cut-off grade from the previous estimate
    - To a lesser extent, an increase in tonnage and metal content due to additional drilling conducted since the last estimate.

RECOMMENDATIONS

At the time of writing, Northcliff was preparing a Feasibility Study on the Sisson Project.

RPA concurs that the study is warranted and recommends that it be completed.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The property is located in east-central New Brunswick, approximately 100 km northwest of Fredericton. The claims lie within National Topographic Series map sheets 21J2, 3, 6, and 7, and the approximate centre of the property is at UTM grid coordinates 5135500N, 650000E.

LAND TENURE

Tenure for the mineral rights is held via five contiguous claim groups comprising a total of 850 units. Northcliff secured a 70% interest in June 2012. In May 2012, Northcliff and Geodex entered into an agreement by which Northcliff could acquire the remaining 30% interest in the property. The transaction closed on June 21, 2012 and Northcliff holds 100% of the Project as of the date of this report.

HISTORY

The first significant work in the Sisson area was carried out in the late 1950s by Nashwaak Pulp and Paper Co. Twelve holes were completed in 1955 and 43 holes in 1959-1960 which resulted in the discovery of the Nashwaak polymetallic vein deposit.

From 1967 to 1969, Penarroya Canada Ltée conducted geological mapping, a ground magnetic survey, and soil sampling mostly south of the Sisson deposit. Texasgulf Inc. and Kidd Creek Mines Ltd. carried out exploration work from 1973 to1983 comprising soil sampling, geological mapping, trenching, ground geophysical surveys, and drilling. Relatively limited work was conducted by various operators between 1977 and 2001. From 2004 to 2009, Geodex, initially in joint venture with Champlain Resources Inc., carried out ground and airborne geophysical surveys, compilation of historical data, trenching, reanalysis of historical drill core, geological mapping and prospecting, and extension of previous soil and till sampling grids over and around the Sisson deposit. Approximately 210 drill holes were completed. Preliminary economic assessments with positive conclusions were completed by Wardrop Engineering Inc. in 2007 and Geodex in 2009. Northcliff signed a joint venture agreement with Geodex in October 2010. Northcliff has conducted diamond drilling and test pitting, and at the time of writing of this report, was preparing a Feasibility Study on the Project.

GEOLOGY AND MINERALIZATION

The Sisson deposit can be defined as an intrusion related, structurally controlled, bulk tonnage tungsten-molybdenum deposit. Deposits of this type have general hydrothermal similarities to porphyry copper deposits. They form in convergent margin to collisional tectonic environments and are related to highly evolved granitic melts formed from continental crust.

The Sisson deposit is centred on a north-trending contact between Acadian intrusions to the west and older metavolcanic and metasedimentary rocks to the east. Mineralization occurs in four contiguous zones. Zones I and II are narrow, structurally controlled zones that extend north from Zone III, which hosts the bulk of the deposit. The Ellipse Zone extends northwest from the southwest corner of Zone III. Metavolcanic and metasedimentary host rocks at Sisson formed during the Taconic Orogeny and are of Cambrian to Ordovician age. They include the predominantly clastic sedimentary sequences in the Miramichi Group overlain by Ordovician felsic to mafic volcanic strata and clastic sedimentary rocks of the Tetagouche Group.

Mineralization in the Sisson deposit is hosted by:

- the quartz diorite and gabbro phases of the Howard Peak Granodiorite
- felsic, mafic, and mafic crystal tuffs in the western part of the Turnbull Mountain Formation
- biotite wacke with minor interbeds of tuff in the eastern part of the Turnbull Mountain Formation
- volumetrically minor granite dykes and very rare mafic dykes

Low-grade mineralization on the eastern edge of the deposit is hosted by more siliceous biotite-sericite wackes that may be part of the Miramichi Group.

Stratified rocks within and near the Sisson deposit consistently strike north-northeast and dip steeply to the east.

Mineralization at Sisson occurs almost exclusively in quartz veins, fractures, and their alteration envelopes. Tungsten and molybdenum are the metals of principal economic interest, whereas several other metals, including copper, zinc, lead, arsenic, and bismuth, occur in geochemically anomalous but subeconomic concentrations.

EXPLORATION STATUS

Exploration potential in the immediate vicinity of the Sisson deposit is considered to be limited.

MINERAL RESOURCES

Northcliff personnel have updated the Mineral Resource estimate for the Sisson Project using a block model constrained with wireframe models of the principal geological domains. Values for bulk density, tungsten trioxide (WO_3), and molybdenum were interpolated into the blocks using Inverse Distance Squared (ID^2) weighting.

The Mineral Resource estimate for the Project is based primarily on information from surface drilling, supplemented in part by historical surface mapping and geophysical data to assist in the interpretations. The database provided to RPA contained collar records for 304 holes.

Samples were capped at 1.1% WO_3 and 0.65% Mo prior to compositing. Samples were composited in downhole intervals of four metres, starting at the wireframe pierce-point for each zone and continuing to the point at which the hole exited the zone.

The Mineral Resources were reported at a NSR cut-off value of US$9 per tonne. The estimate was constrained by a Lerchs-Grossmann pit shell.

ENVIRONMENTAL, PERMITTING AND SOCIAL CONSIDERATIONS

In April 2011, a Project Description for the Sisson Project was accepted by the Canadian Environmental Assessment Agency to launch the federal Environmental Impact Assessment (EIA) process. The Project will undergo a harmonized federal/provincial EIA review. The Terms of Reference (TOR) for the EIA were finalized in April 2012, and Northcliff has begun preparation of an EIA Report to meet the TOR requirements. Provincial and federal review and approval processes differ somewhat but are expected to result in EIA decisions in the third quarter of 2013.

Northcliff has initiated studies of air quality, water resources, environmental geochemistry, terrestrial and aquatic habitats, fish and wildlife, wetlands, land and resource uses, heritage resources, socio-economics, and traditional Aboriginal land uses. The purpose of these studies is to provide data for use in preparing the EIA Report.

A Tailings Storage Facility (TSF) is included in the Project to handle all tailings and waste rock, including the subaqueous disposal of potentially acid generating materials to prevent the generation of acidic conditions.

A comprehensive permitting plan is being developed so that the individual permits required for the Project will be obtained in a timely fashion to allow the start of construction. An approved closure and reclamation plan and a financial security for the reclamation costs are required by the province before approval for the mine is granted.

Since early 2011, Northcliff has had numerous meetings, presentations, and workshops with local communities, First Nations, and stakeholder groups to disseminate Project information and to learn about and help address specific concerns.

At this stage, RPA is not aware of any issues that may prevent the Project from advancing or would otherwise impact upon the Mineral Resource estimate.

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by Northcliff Resources Ltd. (Northcliff), to prepare an independent Technical Report on the Sisson Project (the Project), New Brunswick, Canada. The Technical Report describes an audit conducted by RPA on an updated Mineral Resource estimate for the Project. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

Northcliff is a publicly traded (stock symbol TSX:Northcliff) mineral development company, associated with Hunter Dickinson Inc. (HDI), a diversified, global mining group. Northcliff owns the Sisson Project, located near Fredericton, New Brunswick. Sisson is a tungsten-molybdenum deposit comprising disseminated scheelite and molybdenite occurring in sheeted and shear-hosted quartz veins associated with Devonian-aged granitic intrusions. Northcliff completed earn-in obligations in exploration, feasibility, and other Project costs to secure a 70% interest in June 2012. Northcliff entered into an agreement to acquire the remaining 30% interest in April 2012, which was completed in June 2012. At the time of writing of this report, Northcliff was conducting a Feasibility Study for the Project.

SOURCES OF INFORMATION

A site visit was carried out on February 3, 2012, by David Rennie, P. Eng., RPA Principal Geologist.

Discussions were held with personnel from Northcliff and HDI:

- Mr. David Gaunt, P. Geo., Vice President Resource and Database, HDI
- Dr. James Lang, P. Geo., Senior Vice President Geology, HDI
- Mr. Yuri Likhtarov, GIS/Database Specialist, HDI
- Mr. Drew Takahashi, P. Eng., Operations Manager, Northcliff
- Mr. Eric Titley, P. Geo., Senior Manager Resource Geology, HDI

Mr. Rennie was responsible for overall preparation of all sections of the report. RPA and Mr. Rennie are independent of Northcliff as defined by NI 43-101.

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 27 References.

LIST OF ABBREVIATIONS

Units of measurement used in this report conform to the SI (metric) system. All currency in this report is US dollars (US$) unless otherwise noted.

μ, μm	micron, micrometre
μg	microgram
°C	degree Celsius
°F	degree Fahrenheit
A	ampere
a	annum
bbl	barrels
Btu	British thermal units
C$	Canadian dollars
cal	calorie
cfm	cubic feet per minute
cm	centimetre
cm^2	square centimetre
d	day
dia.	diameter
dmt	dry metric tonne
dwt	dead-weight ton
ft	foot
ft/s	foot per second
ft^2	square foot
ft^3	cubic foot
g	gram
G	giga (billion)
Gal	Imperial gallon
g/L	gram per litre
g/t	gram per tonne
gpm	Imperial gallons per minute
gr/ft^3	grain per cubic foot
gr/m^3	grain per cubic metre
hr	hour
ha	hectare
hp	horsepower
in	inch
in^2	square inch
J	joule
k	kilo (thousand)
kcal	kilocalorie
kg	kilogram
km	kilometre
km/h	kilometre per hour
km^2	square kilometre
kPa	kilopascal
kVA	kilovolt-amperes
kW	kilowatt
kWh	kilowatt-hour
L	litre
L/s	litres per second
lb	pound
m	metre
M	mega (million)
m^2	square metre
m^3	cubic metre
m^3/h	cubic metres per hour
min	minute
MASL	metres above sea level
mm	millimetre
mph	miles per hour
mtu	metric tonne unit
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt-hour
opt, oz/st	ounce per short ton
oz	Troy ounce (31.1035g)
ppm	part per million
psia	pound per square inch absolute
psig	pound per square inch gauge
RL	relative elevation
s	second
st	short ton
stpa	short ton per year
stpd	short ton per day
t	metric tonne
tpa	metric tonne per year
tpd	metric tonne per day
US$	United States dollar
USg	United States gallon
USgpm	US gallon per minute
V	volt
W	watt
wt%	weight percent
wmt	wet metric tonne
yd^3	cubic yard
yr	year

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by RPA for Northcliff. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by Northcliff and other third party sources.

For the purpose of this report, RPA has relied on ownership information provided by Northcliff. The client has relied on an opinion by the law firm, Barry Spalding, dated March 24, 2011 (Barry Spalding, 2011), and this opinion is relied on in Section 4 and the Summary of this report. RPA has not researched property title or mineral rights for the Sisson Project and expresses no opinion as to the ownership status of the property.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.

4 PROPERTY DESCRIPTION AND LOCATION

The property is located in east-central New Brunswick, approximately 100 km northwest of Fredericton (Figure 4-1). The claims lie within National Topographic Series map sheets 21J2, 3, 6, and 7, and the approximate centre of the property is at UTM grid coordinates 5135500N, 650000E (Figure 4-2).

LAND TENURE

Tenure for the mineral rights is held via five contiguous claim groups comprising a total of 850 units. In New Brunswick, claims are staked online as blocks of units which measure 500 m x 500 m each. The list of claim groups as it appears on the New Brunswick Ministry of Natural Resource web site (www.gbn.ca) is provided in Table 4-1. The information in Table 4-1 is provided as it appeared on the Ministry web site as of the time of writing. RPA accepted the data as reported and cannot guarantee that the information is either accurate or current.

Northcliff reported that the claims were originally staked prior to the implementation of the map-based system now in place. The claims were converted to the newer system on February 3, 2011.

Northcliff provided a number of documents supporting the land tenure. These documents included a letter dated March 24, 2011, from the legal firm Barry Spalding of St. John, New Brunswick, which confirmed the ownership of the claims. Also provided were copies of the digital confirmations of the most recent assessment work filed on the claims to maintain them in good standing.

The Mineral Resources are all located within claim group number 3270.

TABLE 4-1 MINERAL CLAIMS LIST
Northcliff Resources Ltd. - Sisson Project

Right Number	Mineral Claim Name	Mineral Claim Type	Mineral Claim Sub Type	Issue Date	Expiry Date	Status	Units
5141	Turnbull Mountain	Mineral	Claim	2007-06-14	2012-06-14	Active	40
5839	Barker Brook West Branch	Mineral	Claim	2010-08-17	2012-08-17	Active	66
5838	Napadogan	Mineral	Claim	2010-08-17	2012-08-17	Active	77
5309	Napadogan Brook	Mineral	Claim	2007-11-28	2012-11-28	Active	106
3270	Sisson Brook	Mineral	Claim	1997-09-04	2012-09-04	Active	561
Total							**850**

Northcliff acquired the claims through a joint venture (JV) agreement with Geodex, which was signed on October 21, 2010. Under the terms of the JV, Northcliff could acquire a 70% interest in the Project by funding up to C$17 million in exploration and development costs. Northcliff was appointed the operator of the Project. Northcliff completed the earn-in obligations to secure a 70% interest in June 2012.

In May 2012, Northcliff and Geodex entered into an agreement by which Northcliff could acquire the remaining 30% interest in the property. Geodex agreed to sell its interest for 16,003,700 common shares of Northcliff, $1 million in cash, and the return of 3,333,333 Geodex common shares which had been purchased by Northcliff in 2010. Northcliff shareholders unanimously approved the acquisition at the company's Annual General Meeting held on May 30, 2012, and Geodex shareholder approval was received on June 18, 2012. The transaction closed on June 21, 2012. Northcliff now owns a 100% interest in the Project as of the date of this report. There are no royalties on the property or back-in rights.

Northcliff does not hold any surface rights. New Brunswick mining law allows for access and use of the surface for mining through the permitting process. Northcliff is currently compiling an Environmental Impact Assessment (EIA) Report in preparation for permitting, but Project permits have not yet been obtained.

RPA is not aware of any factors or risks that may affect access, title, or the right to perform work on the property.

Figure 4-1

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Location Map

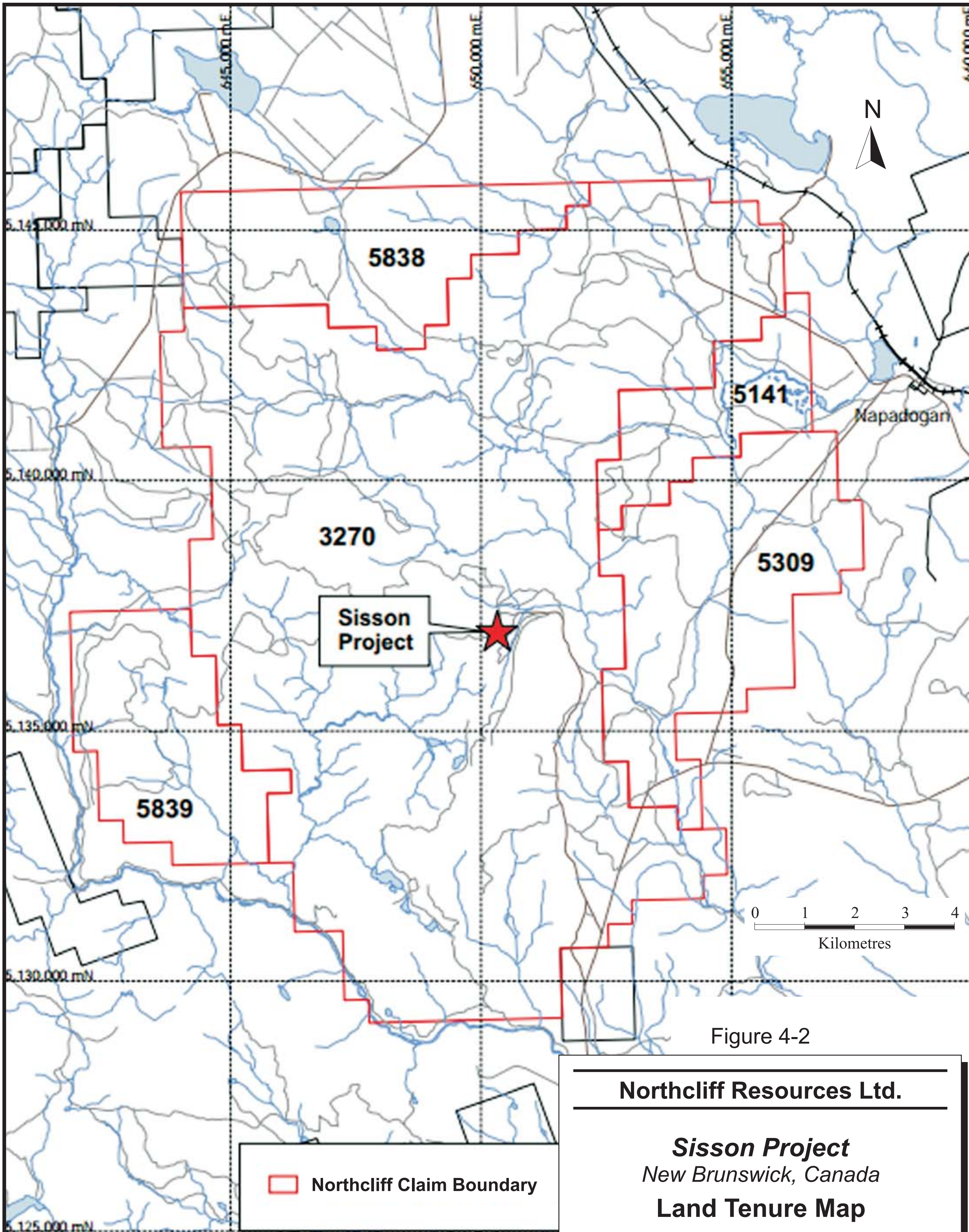


Figure 4-2

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Land Tenure Map

June 2012

Source: Northcliff Resources Ltd., 2011.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

Access to the Sisson property is gained via paved highway and good quality gravel forestry roads. The nearest large centre is Fredericton, which is the provincial capital of New Brunswick. From Fredericton, the property is accessible by travelling for approximately 60 km along Highway 1 (Trans-Canada Highway), and then via approximately 45 km of secondary highway and Valley Forest Products forestry roads. Forestry roads provide access to most areas of the property (Figure 5-1).

CLIMATE

Climate records for Fredericton can be obtained for the period 1971 to 2000 from the Environment Canada website (http://climate.weatheroffice.gc.ca). The highest average monthly temperature, which occurs in July, is 26°C. Lowest monthly temperatures are in January, and average -16°C. The average daily temperature ranges from a low of -10°C in January to a high of 19°C in July. Mean annual precipitation is 886 mm, of which 277 mm falls as snow. Snow can generally be expected from November to March, with accumulations remaining on the ground from December to February.

RPA notes that the Sisson property is somewhat higher in elevation than Fredericton and, as a result, temperatures are likely to be somewhat lower and precipitation higher. Mean annual precipitation at the town of Woodstock, located 75 km southwest of Sisson Brook, is 1,113 mm, with 833 mm falling as rain. Exploration and mining activities can be carried out year round.

LOCAL RESOURCES

Fredericton is the closest major centre, and third largest city in New Brunswick, with a population in 2011 of just over 56,000. The city is able to supply all necessary supplies and commercial services for exploration and mining. Daily international commercial air service operates out of Fredericton, as well as rail, bus, courier and truck transport.

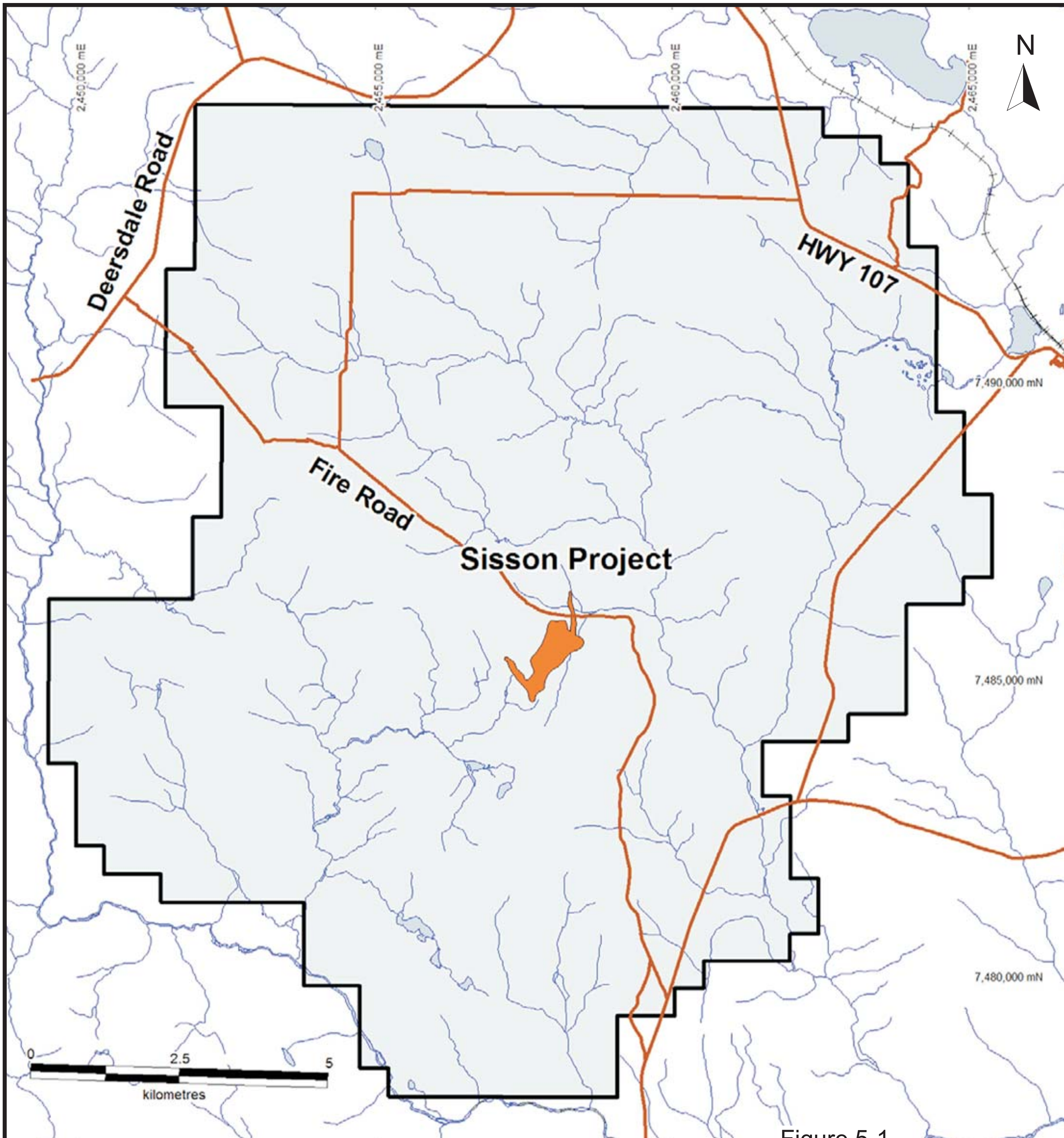


Figure 5-1

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Project Area Access

June 2012 **Source: *Northcliff Resources Ltd., 2011.***

Several smaller towns and villages are located in the Project area, and these can provide labour and minor services. The largest is Nackawic, a town of approximately 7,000 people, located 35 km from the property. Nackawic has been the site of a pulp mill since 1970, and is a likely source of skilled labour and heavy industrial services.

The property is traversed by power lines, and as stated, is readily accessible by paved and good gravel roads. The CN rail line is located approximately 15 km north of the Project.

INFRASTRUCTURE

There is no infrastructure on the property.

PHYSIOGRAPHY

The property lies in an area of moderate relief with surface elevations generally within the range of 200 masl to 350 masl. Hilltops are strongly glaciated and rounded, and drainage valleys tend to be broad and open. Most of the countryside is timbered, and forestry is the primary land use in the Project area at present. Clear-cut logging and reforestation operations are active on the property. Other land uses for the surrounding region include agriculture and recreation.

Local vegetation comprises deciduous and coniferous forests typical of Canadian boreal environments.

In RPA's opinion, the area and physiography do not present any impediment to exploration or the development of an open pit mining operation and its site infrastructure.

6 HISTORY

EXPLORATION HISTORY

This section was prepared by Dr. James Lang, P. Geo., Senior Vice President Geology, HDI and is a compilation from various assessment reports filed with the New Brunswick Department of Natural Resources and from a previous compilation by Giggi (2006).

NASHWAAK PULP AND PAPER CO. (1955-1960)

The first significant work in the Sisson area was completed in the late 1950s. The focus of this early work was east of Sisson and included prospecting, line cutting, geological mapping, trenching, ground (horizontal loop electromagnetic (EM) and magnetometer) and airborne (EM and magnetometer) geophysical surveys and diamond drilling. Twelve holes were completed in 1955 and 43 holes in 1959-1960 which resulted in the discovery of the Nashwaak polymetallic vein deposit.

PENARROYA CANADA LTÉE. (1967-1969)

Geological mapping, a ground magnetic survey, and soil sampling were completed, mostly south of the Sisson deposit. This work identified local zinc and copper soil anomalies. Four holes were drilled, including one near the Sisson deposit, but results were not encouraging.

TEXASGULF INC./KIDD CREEK MINES LTD. (1973, 1978-1983)

The work in 1973 focused on the area of the Nashwaak vein deposit east of Sisson and included soil sampling, geological mapping, trenching, ground geophysical surveys (magnetic and horizontal loop EM), and five short drill holes. In 1978, soil surveys in the area of the Sisson deposit returned strong geochemical anomalies for Zn, Cu, W, Bi, Pb, and Sn. Subsequent drilling of 40 holes between 1979 and 1983 led to discovery of Zones I and II in 1979 and Zone III in 1981. This work is summarized by Mann (1981, 1982).

VARIOUS OPERATORS (1977-2001)

Between 1977 and 2001, additional, comparatively limited work was completed by Canadian Nickel Company Ltd. (1977-1981), Riocanex Inc., and Rio Tinto Canadian Exploration Ltd. (1980-1982), Shell Canada Resources (1981), K.D.A. Whaley (1981-1982; 1989), Phelps Dodge Corporation of Canada Ltd. (1992-1993), Noranda Exploration Company Ltd. (1992-1996), and Nicon Holdings Ltd./Freegrant Silver Corporation Ltd./Champlain Resources Inc. (1999-2001). The work by these groups was mostly surface exploration and geophysical surveys, accompanied by very limited drilling. Most of this work was completed outside the Sisson deposit and did not result in any significant discoveries of mineralization.

GEODEX MINERALS LTD. AND CHAMPLAIN RESOURCES INC. (2004 – 2009)

The next period of significant exploration in the Sisson deposit was completed by Geodex Minerals Ltd. (Geodex), initially in joint venture with Champlain Resources Inc. Work included ground and airborne geophysical surveys, compilation of historical data, trenching, reanalysis of historical drill core, geological mapping and prospecting, and extension of previous soil and till sampling grids over and around the Sisson deposit. Approximately 210 drill holes were completed. The results of this work largely outlined the extent of mineralization in Zones I, II and III, and led to discovery of the Ellipse Zone in 2008. Several NI 43-101 compliant technical reports, Mineral Resource estimates, and Mineral Resource updates, using various tungsten trioxide (WO_3)-equivalent (WO_3Eq) cut-off values, were produced between 2007 and 2010. Preliminary economic assessments with positive conclusions were completed by Wardrop Engineering Inc. (Wardrop) in 2007 and Geodex in 2009. These Mineral Resource estimates are discussed in more detail in Section 14 of this report under Previous Resource Estimates.

NORTHCLIFF RESOURCES LTD. AND GEODEX MINERALS LTD. (2010 TO PRESENT)

Northcliff Resources Ltd. (Northcliff) signed a joint venture agreement with Geodex in October 2010. Under the terms of the agreement, Northcliff would be the operator with the opportunity to earn 70% of the Sisson Project for expenditures of about $17 million (see details in the section of this report entitled Land Tenure). The work completed by Northcliff following the JV agreement is described in Sections 9 and 10 of this report.

HISTORICAL RESOURCE ESTIMATES

The earliest Mineral Resource estimate referenced in the Geodex technical reports was compiled by Kidd Creek Mines Ltd. in or around 1980 (Mercator, 2007). This estimate was carried out for Zone I, and totalled 7.5 million tons of "Drill Indicated" material grading 0.21% WO_3 and 0.35% Cu. RPA notes that this is a historical estimate as defined by NI 43-101 and should not be relied upon. It is provided here for reference only.

Geodex subsequently prepared an estimate for Zone II which totalled 1.6 million tons grading 0.215% WO_3 and 0.41% Cu. Again, this is a historical estimate and should not be relied upon. The date for this estimate was not reported in the data provided to RPA, but it was apparently compiled prior to 2006.

In 2006, Geodex prepared an estimate for what was then termed a "Potential Mineral Deposit" within Zone III. This estimate comprised 26.0 million tonnes of Inferred Mineral Resources grading 0.05% MoS_2 and 0.102% WO_3. Once more, this was a historical estimate and should not be relied upon.

The first public disclosure of a Mineral Resource estimate for the Project under NI 43-101 was made in March 2007 (Mercator, 2007). The estimate was compiled for Zone III on behalf of Geodex by Mercator and is summarized in Table 6-1. Mercator prepared the estimate using a block model constrained by 3D wireframe solids, and grades were interpolated using ID^2 weighting.

RPA notes that the resources were reported at a range of WO_3-equivalent (WO_3Eq) cut-offs, however, the base-case cut-off grade was not specified, nor were the metal prices used to derive the WO_3Eq values and cut-offs.

TABLE 6-1 MINERAL RESOURCE ESTIMATE TO MARCH 28, 2007
Northcliff Resources Ltd. - Sisson Project

Cut-Off ($\%WO_3Eq$)	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3Eq (%)
0.025	167.4	0.059	0.021	0.122
0.075	126.3	0.069	0.025	0.143
0.125	64.4	0.084	0.034	0.186
0.175	28.9	0.098	0.045	0.233
0.225	12.3	0.110	0.057	0.281

An update of the Mineral Resource estimate, using data from an additional 18 holes drilled that year, was released in October 2007. All Mineral Resources were classified as Inferred. This estimate formed the basis for a preliminary economic assessment (PEA) on the Project, which was conducted by Wardrop in 2007. The updated 2007 estimate is summarized in Table 6-2.

TABLE 6-2 MINERAL RESOURCE ESTIMATE TO OCTOBER 15, 2007
Northcliff Resources Ltd. - Sisson Project

Cut-Off ($\%WO_3Eq$)	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3Eq (%)
0.025	290.8	0.059	0.020	0.118
0.075	215.0	0.069	0.024	0.140
0.125	109.0	0.084	0.032	0.179
0.175	43.4	0.100	0.043	0.227
0.225	15.8	0.121	0.054	0.281

Again, the base-case cut-off grade for the resource estimate was not specified in the Technical Report. RPA notes that in the PEA cut-off criteria were not explicitly stated either. The financial model was based on a total of 207 Mt of mill feed grading 0.063% WO_3 and 0.024% Mo. In RPA's opinion, this implies that the cut-off grade would be somewhere between the 0.025% WO_3Eq and 0.075% WO_3Eq cut-offs in Table 6-2.

Geodex continued with diamond drilling, which resulted in discovery of additional Mineral Resources as well as upgrades in classification to both Measured and Indicated categories (Mercator, 2008). An update was prepared in June 2008 and is summarized in Table 6-3.

TABLE 6-3 MINERAL RESOURCE ESTIMATE TO JUNE 5, 2008
Northcliff Resources Ltd. - Sisson Project

Cut-Off (% WO_3 Eq)	Tonnage (Mt)	WO_3 (%)	Mo (%)
	Measured		
0.025	18.6	0.067	0.025
0.075	15.2	0.075	0.029
0.125	10.3	0.086	0.036
0.175	5.6	0.099	0.047
0.225	3.0	0.109	0.060
	Indicated		
0.025	225.3	0.061	0.019
0.075	160.0	0.073	0.025
0.125	92.5	0.088	0.033
0.175	47.4	0.100	0.043
0.225	22.6	0.111	0.055
	Inferred		
0.025	154.4	0.049	0.020
0.075	103.4	0.059	0.027
0.125	55.4	0.072	0.036
0.175	25.7	0.085	0.047
0.225	11.4	0.094	0.060

Mercator concluded that the increase in tonnes from the previous estimate was due to additional resources discovered by drilling.

Following a 2008 drilling program, Mercator prepared an updated estimate, which included both Zone III and the Ellipse Zone (Mercator, January 2009). A summary of this estimate, which was current to January 28, 2009, is provided in Table 6-4. RPA notes that for the first time, a base-case cut-off was assigned to the estimate. This cut-off grade was 0.125% WO_3Eq and was derived using metal prices of US\$9.00/lb WO_3 and US\$15.00/lb Mo, plus recoveries of 70% for WO_3 and 85% for Mo. The tonnes and grade at the base-case cut-off are highlighted in Table 6-4.

TABLE 6-4 MINERAL RESOURCE ESTIMATE TO JANUARY 28, 2009
Northcliff Resources Ltd. - Sisson Project

Zone III				Ellipse Zone			
Cut-Off ($\%WO_3Eq$)	**Tonnage (Mt)**	**WO_3 (%)**	**Mo (%)**	**Cut-Off ($\%WO_3Eq$)**	**Tonnage (Mt)**	**WO_3 (%)**	**Mo (%)**
Measured				**Measured**			
0.025	26.6	0.072	0.025	0.025	1.10	0.082	0.023
0.075	19.4	0.086	0.030	0.075	0.90	0.092	0.027
0.125	**11.0**	**0.109**	**0.037**	**0.125**	**0.50**	**0.112**	**0.034**
0.175	5.1	0.135	0.044	0.175	0.20	0.135	0.044
0.225	1.8	0.168	0.053	0.225	0.10	0.146	0.068
Indicated				**Indicated**			
0.025	257.3	0.062	0.019	0.025	28.3	0.072	0.024
0.075	151.1	0.082	0.026	0.075	22.5	0.081	0.027
0.125	**69.1**	**0.107**	**0.034**	**0.125**	**10.4**	**0.105**	**0.038**
0.175	26.7	0.131	0.045	0.175	4.60	0.121	0.050
0.225	9.3	0.152	0.058	0.225	1.50	0.139	0.067
Inferred				**Inferred**			
0.025	223.6	0.055	0.018	0.025	36.5	0.055	0.018
0.075	118.7	0.073	0.027	0.075	23.4	0.073	0.027
0.125	**47.8**	**0.097**	**0.036**	**0.125**	**8.60**	**0.097**	**0.036**
0.175	15.9	0.120	0.049	0.175	3.40	0.120	0.049
0.225	5.4	0.138	0.064	0.225	0.90	0.138	0.064

Compared to the previous estimate, the January 2009 estimate was somewhat smaller in terms of tonnes in some categories and cut-off grades, but larger in others. Grades for WO_3 were moderately to significantly higher in all categories. Molybdenum grades were generally slightly higher with some categories showing a modest reduction. Mercator concluded that the change in the Mineral Resources was due to an increase in drilling information plus changes to the cut-off criteria applied to the model.

The January 2009 Mineral Resource estimate was used by Geodex in an update of the PEA for the Project, conducted during 2009 (Geodex, 2009). The financial model for the updated PEA used metal prices of US$10.00/lb WO_3 and US$15.00/lb Mo, with and exchange rate of C$1:US$0.85. Metallurgical recoveries were 73.9% for WO_3 and 70.4% for Mo. The cut-off grade derived from the PEA was reported to be 0.100% WO_3Eq, and this cut-off was applied to subsequent Mineral Resource estimates (see Table 6-5).

Geodex continued the drilling in 2009, and released another updated resource estimate in December of that year (Mercator, December 2009). This estimate is summarized in Table 6-5.

TABLE 6-5 MINERAL RESOURCE ESTIMATE TO DECEMBER 17, 2009
Northcliff Resources Ltd. - Sisson Project

Zone III				Ellipse Zone			
Cut-Off ($\%WO_3Eq$)	**Tonnage (Mt)**	**WO_3 (%)**	**Mo (%)**	**Cut-Off ($\%WO_3Eq$)**	**Tonnage (Mt)**	**WO_3 (%)**	**Mo (%)**
Measured				**Measured**			
0.025	47.4	0.073	0.025	0.025	2.70	0.069	0.021
0.075	34.6	0.088	0.031	0.075	1.80	0.086	0.027
0.100	**27.5**	**0.097**	**0.034**	**0.100**	**1.30**	**0.095**	**0.031**
0.125	20.2	0.110	0.038	0.125	0.90	0.104	0.037
0.175	9.50	0.133	0.048	0.175	0.40	0.124	0.048
0.225	3.80	0.157	0.061	0.225	0.10	0.134	0.071
Indicated				**Indicated**			
0.025	308.5	0.061	0.019	0.025	58.9	0.062	0.019
0.075	179.5	0.082	0.026	0.075	34.1	0.081	0.026
0.100	**125.4**	**0.094**	**0.030**	**0.100**	**23.2**	**0.092**	**0.032**
0.125	83.0	0.107	0.035	0.125	15.3	0.102	0.038
0.175	32.7	0.133	0.045	0.175	6.20	0.117	0.054
0.225	11.7	0.153	0.060	0.225	2.30	0.127	0.076
Inferred				**Inferred**			
0.025	168.1	0.055	0.020	0.025	22.9	0.057	0.017
0.075	91.3	0.075	0.029	0.075	13.0	0.073	0.024
0.100	**61.3**	**0.086**	**0.034**	**0.100**	**7.70**	**0.085**	**0.029**
0.125	39.4	0.098	0.040	0.125	4.60	0.092	0.036
0.175	15.8	0.117	0.055	0.175	1.30	0.093	0.060
0.225	6.10	0.133	0.072	0.225	0.40	0.088	0.085

As explained above, the cut-off grade for the December 2009 resource estimate was reduced from 0.125% WO_3 to 0.100% WO_3. This was reportedly done to reflect the base-case cut-off grade developed by Geodex in the update of the PEA.

The tonnage for Measured and Indicated Mineral Resources increased for all cut-off grades, and decreased for the Inferred. Grades for WO_3 tended to remain unchanged from the January 2009 estimate in Zone III but were generally lower in the Ellipse Zone.

This was particularly true for the higher cut-off grades (i.e., 0.175% WO_3 and 0.225% WO_3). Molybdenum grades were similar for both estimates in the Measured and Indicated categories in Zone III, but significantly higher for the Inferred. In the Ellipse Zone, molybdenum grades varied in both directions, ranging from an increase of 32.8% in the Inferred at the 0.225% WO_3 cut-off grade to a decrease of 20.8% in the Indicated at the 0.025% WO_3 cut-off grade. There were no opinions offered in the Mercator December 2009 Technical Report as to the reasons for the changes, but RPA assumes it was due primarily to the drilling done during 2009.

In 2011, Mercator was retained to prepare a NI 43-101 Technical Report on the property to support a reverse take-over agreement between Northcliff and Cabre (Mercator, 2011). The Mineral Resource estimate in this report was unchanged from the December 2009 report. The only modification made was the effective date, which was revised to February 4, 2011. This Mineral Resource estimate was the most current estimate prior to the update just completed by Northcliff.

2007 AND 2009 PRELIMINARY ECONOMIC ASSESSMENTS

In 2007, Wardrop prepared a PEA on the Project for Geodex. Geodex subsequently updated the PEA in 2009, with revised metal price and technical inputs. Both PEA Technical Reports are available on SEDAR (http://www.sedar.com). RPA has not reviewed either PEA in detail and cannot confirm whether the parameters used in the studies are reasonable or not. In RPA's opinion, however, neither of these PEAs is current, as metal price and cost parameters have changed since the reports were issued. At the time of writing of this report, a Feasibility Study was underway which will supplant the PEA's as the most current economic evaluation of the Project.

The results of the PEAs, with focus on the most recent one completed in 2009, are summarized in the following subsections.

INTRODUCTION

The 2009 PEA contemplated an open pit mining and milling operation producing at a rate of 20,000 tpd for a 20 year mine life, with a total pre-production capital cost of US$341 million. The general site layout comprised an open pit mine with plant site, offices, shops, and ancillary facilities located approximately 0.5 km northwest of the final mine pit outline. Tailings impoundment was proposed for the headwaters of Bird Brook, approximately one kilometre west of the plant site.

The Mineral Resource estimate for the 2009 PEA was prepared by Mercator for Geodex and is summarized in Table 6-5 of this report under Historical Resource Estimates.

Processing was by gravity (tungsten) and flotation (molybdenum and tungsten), producing separate WO_3 and MoS_2 concentrates. Metal prices used were $US40/t for tungsten gravity concentrate, $US65/t for tungsten flotation concentrate, and $US15/lb for molybdenum. Mill recoveries were 73.9% for tungsten and 70.4% for molybdenum.

CONCLUSIONS

The financial model in the 2009 study produced a positive pre-tax cash flow with an unleveraged Internal Rate of Return (IRR) of 23%. Using an 8% discount rate, the Net Present Value (NPV) was US$372 million. At a 10% discount rate, the NPV was US$277 million. Recovery of capital occurred in year four of production.

The study report concluded that the Project should proceed to a Pre-Feasibility Study (PFS).

MINERAL RESOURCES AND MINERAL RESERVES

The Mineral Resource estimate that formed the basis for the 2009 PEA was the January 2009 estimate (see Table 6-5). Total Measured and Indicated Mineral Resources were 91.0 Mt grading 0.107% WO_3 and 0.035% Mo, with an additional Inferred Mineral Resource of 56.4 Mt grading 0.097% WO_3 and 0.035% Mo. The Inferred Mineral Resources were included in the financial analysis for the PEA. The cut-off grade for the estimate was 0.125% WO_3Eq, which was based on the following formula:

$$WO_3Eq\ \% = \%WO_3 + (\%Mo \times Factor)$$

Where:

$$\begin{aligned} Factor &= (Mo\ Price/lb \times Mo\ Recovery) / (WO_3\ Price/lb \times WO_3\ Recovery) \\ &= (\$15/lb \times 85\%) / (\$9/lb \times 70\%) \\ &= 2.02 \end{aligned}$$

There were no Mineral Reserves for the Project.

MINERAL PROCESSING AND PLANT DESIGN

Plant design was based on 20,000 tpd grading 0.098% WO_3 and 0.031% Mo over a 20 year LOM. Ore sorting would remove almost 50% of the feed, with the sorted product containing 94% of the tungsten and 83% of the molybdenum. Mill recoveries were projected to be 77% for tungsten and 84% for molybdenum. The final metal recovered, including both the ore upgrading and gravity/flotation recoveries was planned to be 74% for tungsten and 70% for molybdenum.

The conceptual process developed during the PEA was to have incorporated UV and DEXRT sorting techniques to reduce the ore stream volume and upgrade the feed. The Run-of-Mine (ROM) feed was to be crushed to a nominal 200 mm, screened to three size ranges for sorting, then passed to the sorters. The finest size class was to be sorted using DEXRT, with the other two size classes processed via UV sorting. Sorting would reduce the ore stream to 10,150 tpd from 20,000 tpd mined.

The upgraded feed material was to have been ground to approximately 300 µm via a two-stage rod mill and screening circuit. Grinding mill product would then be thickened to a suitable density for molybdenum and bulk sulphide flotation.

Molybdenum rougher concentrate was to have been sent to a regrind circuit and upgraded in a column cleaner flotation unit. Final molybdenum concentrate, with 53% Mo content, would then be dewatered and bagged for shipment. Cleaner circuit tails were to have been sent to the tailings storage facility (TSF). Bulk sulphide flotation concentrate was also to have been sent to the TSF. Bulk sulphide tails would proceed to the tungsten gravity circuit.

Gravity separation of tungsten was to have been done via spirals, with the product upgraded on shaker tables. The concentrate would then be further upgraded by means of sulphide flotation and magnetic separation. A regrind circuit would provide further upgrade of gravity middlings. The tungsten gravity concentrate grade was estimated to be 65% WO_3. The gravity tail was to have been passed to the tungsten flotation feed thickener.

The tungsten flotation was to have comprised a conventional rougher-scavenger-cleaner circuit to yield a final product grading approximately 50% WO_3.

Tailings from two streams, the bulk sulphide concentrate and the tungsten flotation tails, would be combined and dispatched to the TSF. Recycled tailings water would be collected and pumped back to the mill.

MINING

The mining method proposed in the 2007 PEA was by conventional truck and shovel open pit methods, in a series of phased pits. The preliminary pit geometries were derived from a Whittle analysis using the following parameters:

Pit Slope:	45°
Mining cost:	US$1.30/t
Mining recovery:	95%
Dilution:	0%
G&A:	US$1.09
Mill recovery – molybdenum:	85%
Mill recovery – tungsten:	70%
Base case molybdenum price:	US$25.30/lb
Base case tungsten price:	US$9.40/lb

Geodex updated the pit shells for the 2009 study using the following parameters in the analysis:

Pit slope:	50°
Mining cost:	US$1.11/t ore and waste
Milling cost:	US$4.53/t
G&A:	US$0.93/t
Mill recovery – molybdenum:	70.4%
Mill recovery – tungsten:	73.9%

RPA notes that milling cost was listed as a parameter in 2009 but not in 2007. The reason for not including milling costs in the 2007 analysis is not known.

A mine schedule was developed based on a production rate of 7.0 million tpa with a total mining rate of ore and waste of 50,000 tpd in the first ten years.

All classes of Mineral Resources, including Inferred, were included in the analysis.

Details of the waste dump were included in the 2007 report but not in 2009, so it is assumed that no changes were made for the updated PEA. The 2007 PEA contemplated a waste dump located just west of the mill and pit. Design capacity of the dump was projected to be 80 million m^3. All waste dump material was assumed to be non-acid-generating.

TAILINGS IMPOUNDMENT

The 2007 PEA contemplated a TSF encompassing three dams with a capacity of 121 million m^3, and design provision for final storage of 100 million m^3. Final dam height was to be 60 m and the average elevation of the final tailings/water surface was 357 masl. The TSF was to be located on Bird Brook, just west of the proposed plant site.

PROJECT INFRASTRUCTURE

The principal design criteria for establishment of site infrastructure were as follows:

- Work force would be housed in local communities (i.e., no camp required)
- Electric power would be acquired from the grid
- Access to the site and operations would be year-round

General site facilities planned for the project were:

- Site roads and lay-down areas
- Waste and overburden stockpiles
- Settlement ponds for open pit drainage water
- Explosives bulk plant and magazine
- Primary crusher, coarse ore storage and conveyor system
- Process plant
- Tailings storage facility
- Power distribution system
- Service shops
- Warehouse

- Offices for administration, maintenance, warehouse, and technical services
- Administration complex with security, first aid, assay laboratory, and vehicles
- Water storage and distribution
- Sewage treatment and garbage handling
- Fuel storage and distribution

ENVIRONMENTAL STUDIES, PERMITTING, AND COMMUNITY IMPACT

PERMITTING

Geodex registered the Project for an EIA on September 5, 2008, and was advised in October of that year that owing to the size and scope of the Project, a cumulative environmental impact assessment (CEIA) would be required. The New Brunswick Department of Environment prepared draft CEIA guidelines which were made public for review in December 2008. Following closure of the public review period on January 30, 2009, the final guidelines were established and submitted to Geodex on March 1, 2009.

As of the time of writing of the PEA, Geodex was conducting environmental studies to support an EIA, and was working towards preparation of a Terms of Reference (TOR) document for the CEIA.

Geodex also filed a Project Description with the Canadian Environmental Assessment Agency on October 8, 2008. This document was distributed to the appropriate federal government authorities including Environment Canada, Fisheries and Oceans Canada, Health Canada, Indian and Northern Affairs Canada, Natural Resources Canada, and Transport Canada.

ENVIRONMENTAL STUDIES

The 2009 PEA reported that Geodex had retained Rescan Environmental Services Ltd. (Rescan) to initiate baseline studies for the Project. Monitoring work included collection of water samples (15 sites), automated measurement of surface water flows (six sites), and establishment of an automated weather station. Dust measurement sites were also set up at five sites in the Project area. Flora and fauna field data collection along with land use, archeological and socio-economic studies commenced in summer 2008.

COMMUNITY IMPACT

Social and economic impacts of the Project were included in the studies commenced by Rescan in 2008.

Geodex reportedly initiated public information sessions in April 2008 in the surrounding communities. The purpose of these meetings was to introduce the public at large to the Project.

MINE CLOSURE REQUIREMENTS

Mine closure was not addressed in the 2009 PEA. In the 2007 PEA, the mine reclamation goals were listed as follows:

- Long-term preservation of water quality within and downstream of the site.
- Long-term stability of engineered structures, such as open pit, waste dumps, and TSF.
- Long-term stabilization of erodible materials.
- Restoration of natural appearance to disturbed areas.
- Revegetation with self-sustaining flora that is consistent with forestry and wild-life needs.

CAPITAL COST ESTIMATE

Estimated capital costs from the 2009 PEA are summarized in Table 6-6. Note that they are from a table in the PEA Technical Report, and they do not match the numbers used in the financial model.

TABLE 6-6 CAPITAL COST ESTIMATE - 2009 PEA
Northcliff Resources Ltd. - Sisson Project

Item	Amount (US$ x 1,000)
Mine development	21,000
Ore Sorting & Crushing	53,000
Concentrator	80,000
Tailings	15,000
Site Prep, Water, Air, Sewage	11,000
Auxiliary Buildings	7,000
Plant Mobile	2,000
Subtotal Direct Costs	**189,000**
Total Indirect Costs	63,000
Owner's Costs	9,000
Subtotal Capital Costs	**261,000**
Contingency (30%)	78,000
Total Capital Costs	**339,000**

OPERATING COST ESTIMATE

Operating costs were not discussed in the 2009 PEA but were listed in a summary of inputs to the financial model. Costs are quoted in US$ per tonne of ore fed to the process plant, after sorting. The feed rate to the plant is stated at 7 million tpa, or 20,000 tpd, and it was expected that approximately 50% of the ore stream would be removed by sorting. Note that mining costs are quoted as US$2.22/t processed, which is equivalent to US$1.11/t mined.

Estimated operating costs from the 2009 PEA are summarized in Table 6-7.

TABLE 6-7 OPERATING COST ESTIMATE - 2009 PEA
Northcliff Resources Ltd. - Sisson Project

Item	Amount (US$/t milled)
Mining	2.22
Milling	3.96
G&A	0.56
Total Operating Costs	**6.74**

FINANCIAL MODEL

The financial model was based on a 20-year mine life processing of 7 million tpa. Total capital costs were US$341 million, which RPA notes, does not agree with the summary in Table 6-5. The reason for this difference is not known. The model indicates that pre-production capital would be returned by the fourth year of operations. Project IRR from Year Minus Two onwards was 23%, with an NPV at 8% of US$372 million. No taxes of any kind were included in the analysis.

Input parameters and key outputs from the base case financial model of the 2009 PEA are provided in Table 6-8. RPA has not reviewed the inputs in depth and has not checked the model to confirm the calculations.

TABLE 6-8 FINANCIAL MODEL - 2009 PEA
Northcliff Resources Ltd. - Sisson Project

Item	Units		Per Year	Total LOM
Ore Mined & Milled	Kt		7,000	140,000
Total Material Mined			14,038	280,751
Waste:Ore Ratio			1.10:1	
Tungsten Grade	% WO_3		0.091	
Molybdenum Grade	% Mo		0.032	
Tungsten Mined	K lb WO_3		14,014	280,287
Molybdenum Mined	K lb Mo		4,921	98,426
Tungsten Recovery	%		73.92	
Molybdenum Recovery	%		70.39	
Tungsten in Conc	K lb WO_3		10,359	207,188
Molybdenum in Conc	K lb Mo		3,464	69,284
Tungsten Price in Scheelite Conc	US$/mtu WO_3		$220.00	
Molybdenum Price in Molybdenite Conc	US$/lb Mo		$15.00	
Cash Flow Model		**US$/t Ore**	**US$ x 1,000**	**US$ x 1,000**
Gross Revenue: Tungsten		14.77	103,378	2,067,556
Gross Revenue: Molybdenum		7.42	51,963	1,039,257
Gross Revenue: Total		22.19	155,341	3,106,814
		US$/lb in Conc	**US$ x 1,000**	**US$ x 1,000**
Offsites & Transport: Tungsten		2.27	23,495	469,900
Offsites & Transport: Molybdenum		1.20	4,157	83,136
		US$/t Ore	**US$ x 1,000**	**US$ x 1,000**
Net Revenue: Tungsten		11.41	79,883	1,597,657
Net Revenue: Molybdenum		6.83	47,806	956,117
Net Revenue: Total		18.24	127,689	2,553,774
Mining Costs		2.22	15,511	310,230
Beneficiation Costs		3.96	27,727	554,540
Administration		0.56	3,927	78,540
Total Operating Costs		6.74	47,165	943,310
Operating Cash Flow			80,523	1,610,464
Capital Costs: Direct				190,000
Capital Costs: Owner's Costs				10,000
Capital Costs: Indirect				63,000
Capital Costs: Contingency				78,000
Total Capital Costs				341,000
Working Capital				-
Sustaining Capital			4,513	90,250
Net Cash Flow			58,961	1,179,214
Project Unleveraged IRR from Year-2		23%		
NPV @ 8% from Year -2		$372,341,000		
NPV @10% from Year -2		$277,102,000		
Preproduction Capital Repaid During Year		4		

7 GEOLOGICAL SETTING AND MINERALIZATION

This section was prepared by Dr. James Lang, P. Geo., Senior Vice President Geology, HDI.

REGIONAL GEOLOGY

The regional geological setting of southwest New Brunswick is illustrated in Figures 7-1 and 7-2. The summary which follows is based mostly upon work by Fyffe et al. (2008), Fyffe and Thorne (2010), and references contained therein.

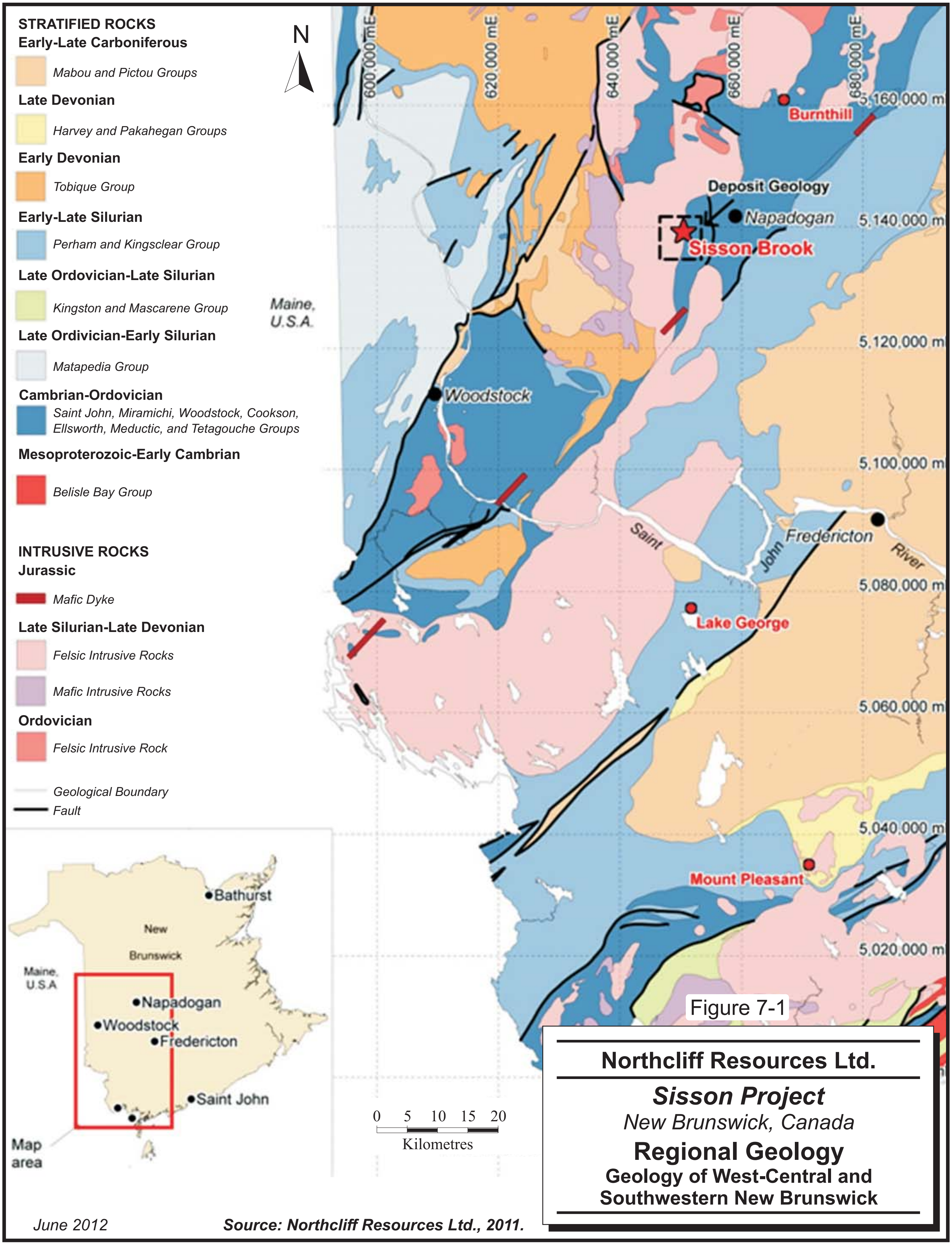
Mesoproterozoic to Earliest Cambrian basement rocks are exposed in southwest New Brunswick (Figure 7-1). They include carbonate and clastic sedimentary rocks of Mesoproterozoic to Neoproterozoic age in the Green Head Group and Neoproterozoic to earliest Cambrian mafic and felsic volcanic rocks and clastic sedimentary rocks in the Belleisle Bay Group. The tectonic setting comprised a comparatively stable volcanic and sedimentary continental margin that continued into the Cambrian. Intrusions related to the basement sequences were emplaced between 622 and 528 Ma and have calc-alkalic, continental margin geochemical signatures. These basement rocks are overlain by variably deformed and metamorphosed stratified sequences that were deposited in continental to marine environments between Early Cambrian and Early Devonian time.

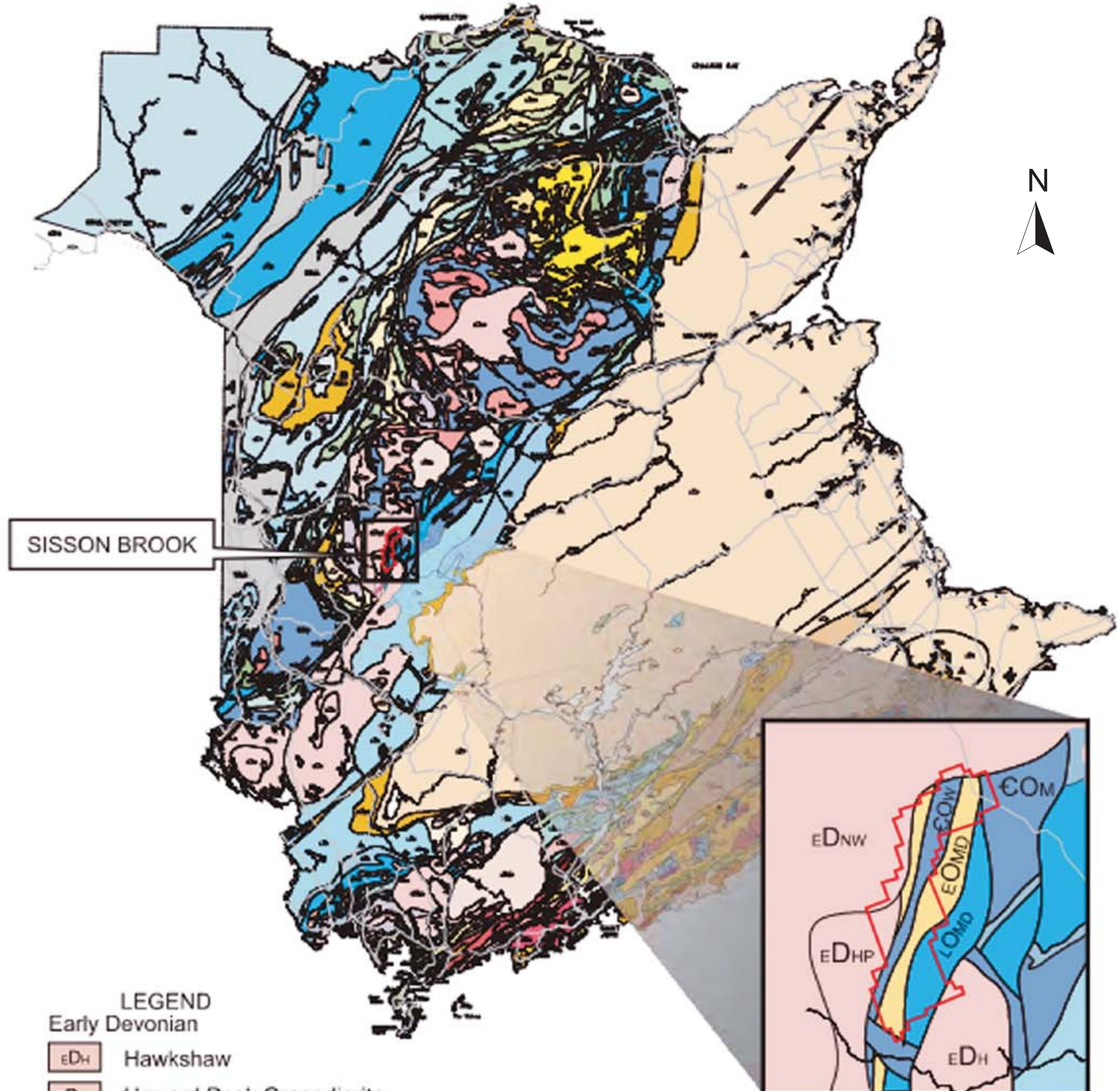
The Taconic Orogeny began by about 490 Ma, in the Early Ordovician, and continued into the Silurian. Tectonism was characterized by amalgamation of volcanic arcs during subduction of Iapetus (proto-Atlantic) oceanic crust. Sedimentary and volcanic rocks were deposited in volcanic arc and/or back-arc tectonic settings. Early Cambrian to Silurian sequences (Figure 7-1) are dominated by fine to coarse grained, clastic sedimentary rocks and lesser carbonate sequences which are, in many places, interlayered with mafic and felsic volcanic rocks. Metavolcanic and metasedimentary host rocks at Sisson formed during the Taconic Orogeny and are of Cambrian to Ordovician age. They include the predominantly clastic sedimentary sequences in the Miramichi Group overlain by Ordovician felsic to mafic volcanic strata and clastic sedimentary rocks of the Tetagouche Group.

The Acadian orogeny occurred from Late Silurian to Late Devonian and was a response to closure of the Iapetus Ocean and subsequent crustal thickening. Stratified sequences include both volcanic and clastic sedimentary rocks. The most important manifestation of the Acadian Orogeny is a north-northeast trending belt of plutons and batholiths that were emplaced between about 425 and 360 Ma (Figures 7-1 and 7-2; Fyffe et al., 2008). These intrusions have geochemical signatures consistent with volcanic arc and, less commonly, collisional tectonic settings (W. Zhang, pers. comm., 2011). Younger intrusions of this group have a spatial, and an interpreted genetic, relationship to base and lithophile element mineralization, including tungsten deposits (Figure 7-2). The most significant deposits in this group include Sisson (Re-Os dates of ~377 Ma on molybdenite; Zhang unpublished), Burnt Hill (Ar-Ar date on muscovite alteration of ~383 Ma; Taylor et al., 1987; MacLellan and Taylor, 1989), Mount Douglas (Ar-Ar date on alteration of ~362 Ma; McLeod, 1991); Lake George (alteration not dated; Seal et al., 1987, 1988) and Mount Pleasant (associated rock types between 360 and 365 Ma; Kooiman et al., 1986; Hunt and Roddick, 1990; Tucker et al., 1998).

Regional deformation during the Taconic and Acadian orogenies includes folding, thrust faults and normal, reverse and strike-slip faults. Regional metamorphic facies are typically greenschist or lower. Wide contact metamorphic aureoles surround many of the Late Silurian to Late Devonian intrusions.

Youngest rocks in the region form the nearly flat lying, Late Devonian to Carboniferous strata of the "Carboniferous platform", which extends across most of central and eastern New Brunswick (Figure 7-1).


STRATIFIED ROCKS
Early-Late Carboniferous
Mabou and Pictou Groups
Late Devonian
Harvey and Pakahegan Groups
Early Devonian
Tobique Group
Early-Late Silurian
Perham and Kingsclear Group
Late Ordovician-Late Silurian
Kingston and Mascarene Group
Late Ordivician-Early Silurian
Matapedia Group
Cambrian-Ordovician
Saint John, Miramichi, Woodstock, Cookson, Ellsworth, Meductic, and Tetagouche Groups
Mesoproterozoic-Early Cambrian
Belisle Bay Group
INTRUSIVE ROCKS
Jurassic
Mafic Dyke
Late Silurian-Late Devonian
Felsic Intrusive Rocks
Mafic Intrusive Rocks
Ordovician
Felsic Intrusive Rock
Geological Boundary
Fault
N
Maine, U.S.A.
600,000 mE
620,000 mE
640,000 mE
660,000 mE
680,000 mE
5,160,000 m
5,140,000 m
5,120,000 m
5,100,000 m
5,080,000 m
5,060,000 m
5,040,000 m
5,020,000 m
Burnthill
Deposit Geology
Napadogan
Sisson Brook
Woodstock
Saint John River
Fredericton
Lake George
Mount Pleasant
Bathurst
New Brunswick
Maine, U.S.A
Napadogan
Woodstock
Fredericton
Saint John
Map area
0 5 10 15 20
Kilometres
Figure 7-1
Northcliff Resources Ltd.
Sisson Project
New Brunswick, Canada
Regional Geology
Geology of West-Central and Southwestern New Brunswick
June 2012
Source: Northcliff Resources Ltd., 2011.



LEGEND

Early Devonian
- EDH Hawkshaw
- EDHP Howard Peak Granodiorite
- EDNW Nashwaak Granite

Late Ordovician
- LOMD MEDUCTIC GROUP Belle Lake Formation

Early Ordovician
- EOMD MEDUCTIC GROUP Eel River, Oak Mountain, and Porten Rd. Formations

Late Cambrian - Early Ordovician
- €OM MIRAMICHI GROUP Chain of Rocks, & Knights Brook Form.
- €OW WOODSTOCK GROUP Baskahegan Lake Form.

Geology after NB Dept. Natural Resources and Energy, Map NR-1(2000)

0 25 50 75 100
Kilometres

Figure 7-2

Northcliff Resources Ltd.

Sisson Project
New Brunswick, Canada

Geology Map of New Brunswick

June 2012 ***Source: Northcliff Resources Ltd., 2011.***

LOCAL AND PROPERTY GEOLOGY

The Sisson deposit is centred on a north-trending contact between Acadian intrusions to the west and older metavolcanic and metasedimentary rocks to the east (Figure 7-3; the ”meta” prefix is hereafter omitted for simplicity). Mineralization occurs in four contiguous zones (Figure 7-3). Zones I and II are narrow, structurally controlled zones that extend north from Zone III, which hosts the bulk of the deposit. The Ellipse Zone extends northwest from the southwest corner of Zone III.

There is very little outcrop in the area of the Sisson deposit and the geological interpretation is based primarily on results of drilling, exploration pits, and trenches and regional interpolation. From west to east (Figure 7-3), rock types progress through the following units, which use the formational assignments of Fyffe et al. (2008).

- **Nashwaak Granite.** A massive, probably multiphase, equigranular biotite granite batholith of Acadian age. The batholith is poorly dated with ages of 422±4 Ma (Rb-Sr) and 386±5 Ma (K-Ar) from Whalen and Theriault (1990) and an Ar-Ar date of ~379 Ma by Taylor et al. (1987).

- **Howard Peak Granodiorite – granodiorite phase.** An undated, equigranular biotite granodiorite that grades into quartz diorite to the east and is intruded by Nashwaak Granite to the west.

- **Howard Peak Granodiorite – quartz diorite phase.** Hosts mineralization in the western part of the Ellipse Zone at Sisson. It is an undated, medium grained, subporphyritic hornblende quartz diorite.

- **Howard Peak Granodiorite -- gabbro phase.** Hosts mineralization in the eastern part of the Ellipse Zone and the western part of Zone III at Sisson. It is an undated, medium grained, weakly porphyritic, pyroxene bearing hornblende gabbro. Its eastern contact with the Turnbull Mountain Formation is a vertical fault.

- **Turnbull Mountain Formation of the Ordovician Tetagouche Group.** This unit comprises bimodal tuffaceous volcaniclastic rocks and biotite wackes. It is the main host rock to mineralization in Zone III at Sisson and is further described in this section.

- **Cambrian to Early Ordovician Miramichi Group.** Dominated by siliceous wackes interbedded with siltstones and quartzites, with minor interbeds of intermediate volcaniclastic rocks. This rock sequence may host low grade mineralization on the eastern margin of the Sisson deposit.

- **Hayden Lake Formation of the Ordovician Tetagouche Group.** This unit contains black shales, flow banded felsic volcanic rocks, and fragmental mafic volcanic rocks which unconformably overlie the Miramichi Group. It is located east of the Sisson deposit.

- **Push and Be Damned Formation of the Ordovician Tetagouche Group.** These are clastic sedimentary rocks located east of the Sisson deposit.

Stratified rocks within and near the Sisson deposit consistently strike north-northeast and dip steeply to the east.

Mineralization in the Sisson deposit is hosted by:

- the quartz diorite and gabbro phases of the Howard Peak Granodiorite
- felsic, mafic and mafic crystal tuffs in the western part of the Turnbull Mountain Formation
- biotite wacke with minor interbeds of tuff in the eastern part of the Turnbull Mountain Formation
- volumetrically minor granite dykes and very rare mafic dykes (Figure 7-3)

Low grade mineralization on the eastern edge of the deposit is hosted by more siliceous biotite-sericite wackes that may be part of the Miramichi Group.

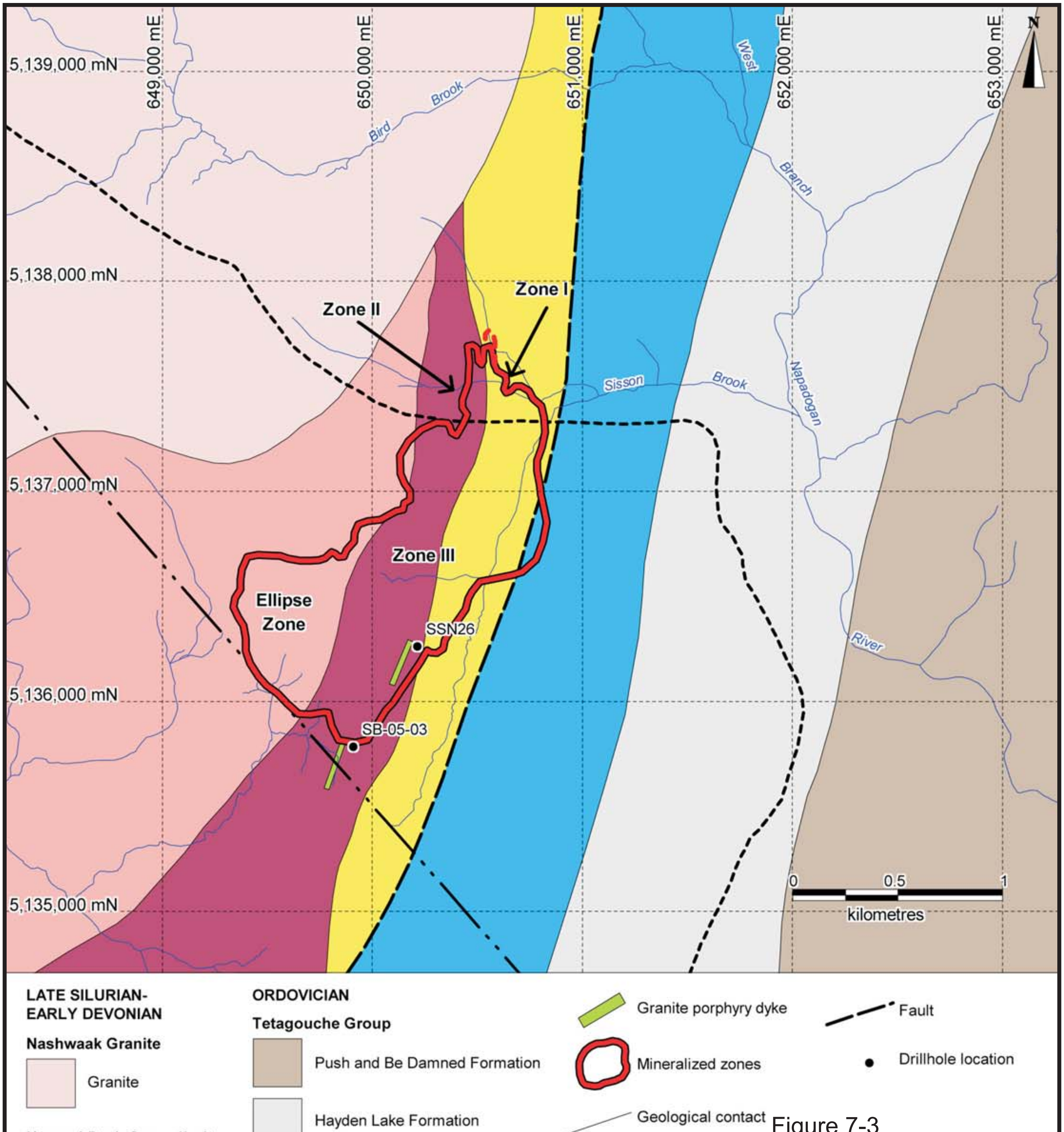


Figure 7-3

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Property Geology

Simplified Geology Map of the Sisson Deposit Area

June 2012

Source: Northcliff Resources Ltd., 2011.

ROCK TYPES WITHIN AND PROXIMAL TO THE SISSON DEPOSIT

Rock types within the Sisson deposit are described in this section in the context of the 3D geological model which has been constructed from drilling information. The geological model for the Sisson deposit comprises eight units, which are summarized in Table 7-1 and shown in plan and section on Figures 7-4 and 7-5. The gabbro and quartz diorite intrusive units and the biotite and biotite-sericite wacke units form comparatively thick, internally coherent units that can be traced laterally across the deposit. In contrast, felsic, mafic, and mafic crystal tuffs in the western part of the deposit comprise narrow, complexly interlayered beds, which may manifest significant lateral facies changes and whose lateral continuity has been further disrupted by deformation. In this light, individual rock types typically cannot be correlated confidently between sections and these sequences therefore have been subdivided into model units which contain distinct combinations of rock types that can be traced across the deposit.

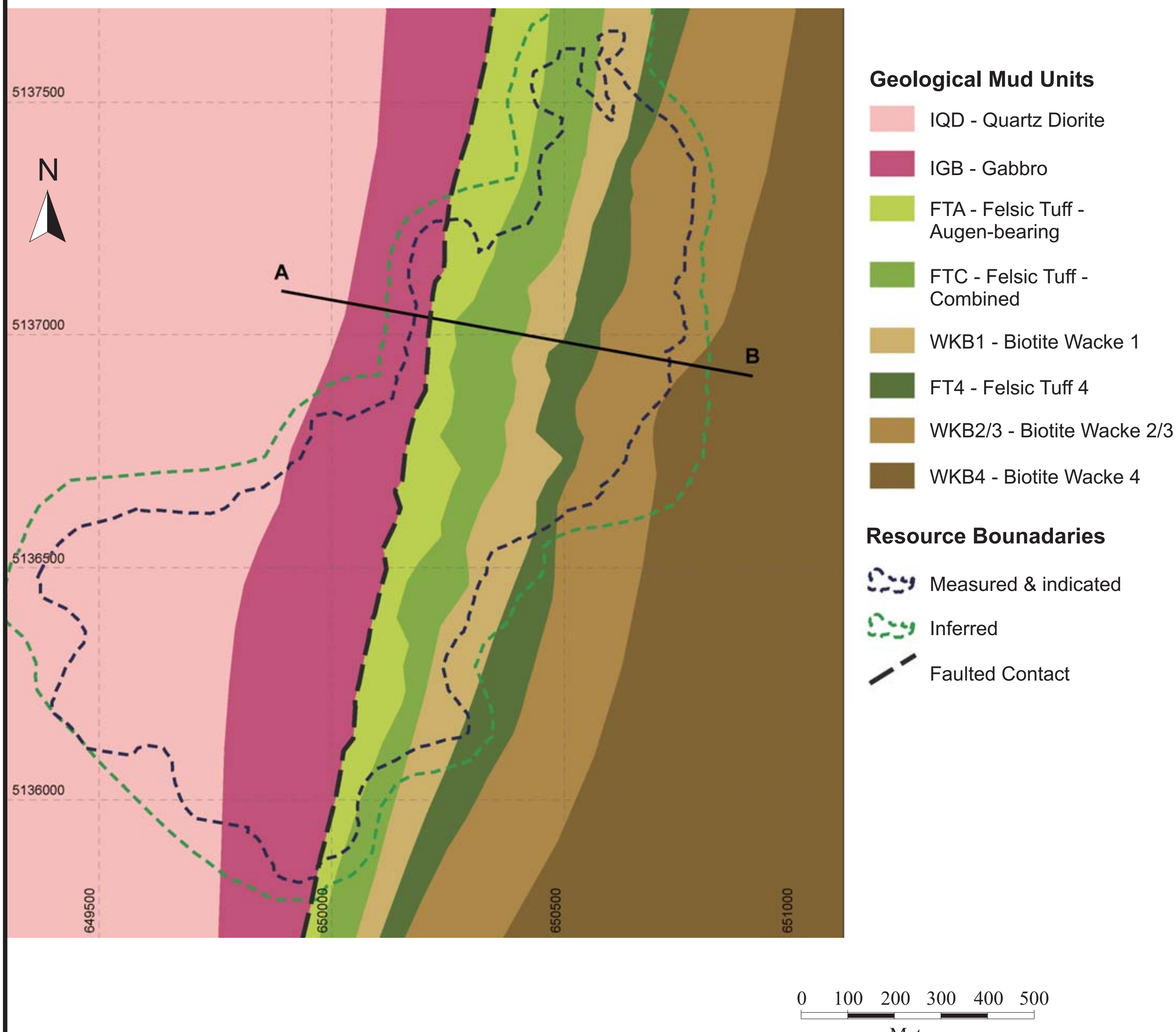


Figure 7-4

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Plan of 3D Geology Model for the Sisson Deposit

June 2012

Source: Northcliff Resources Ltd., 2011.

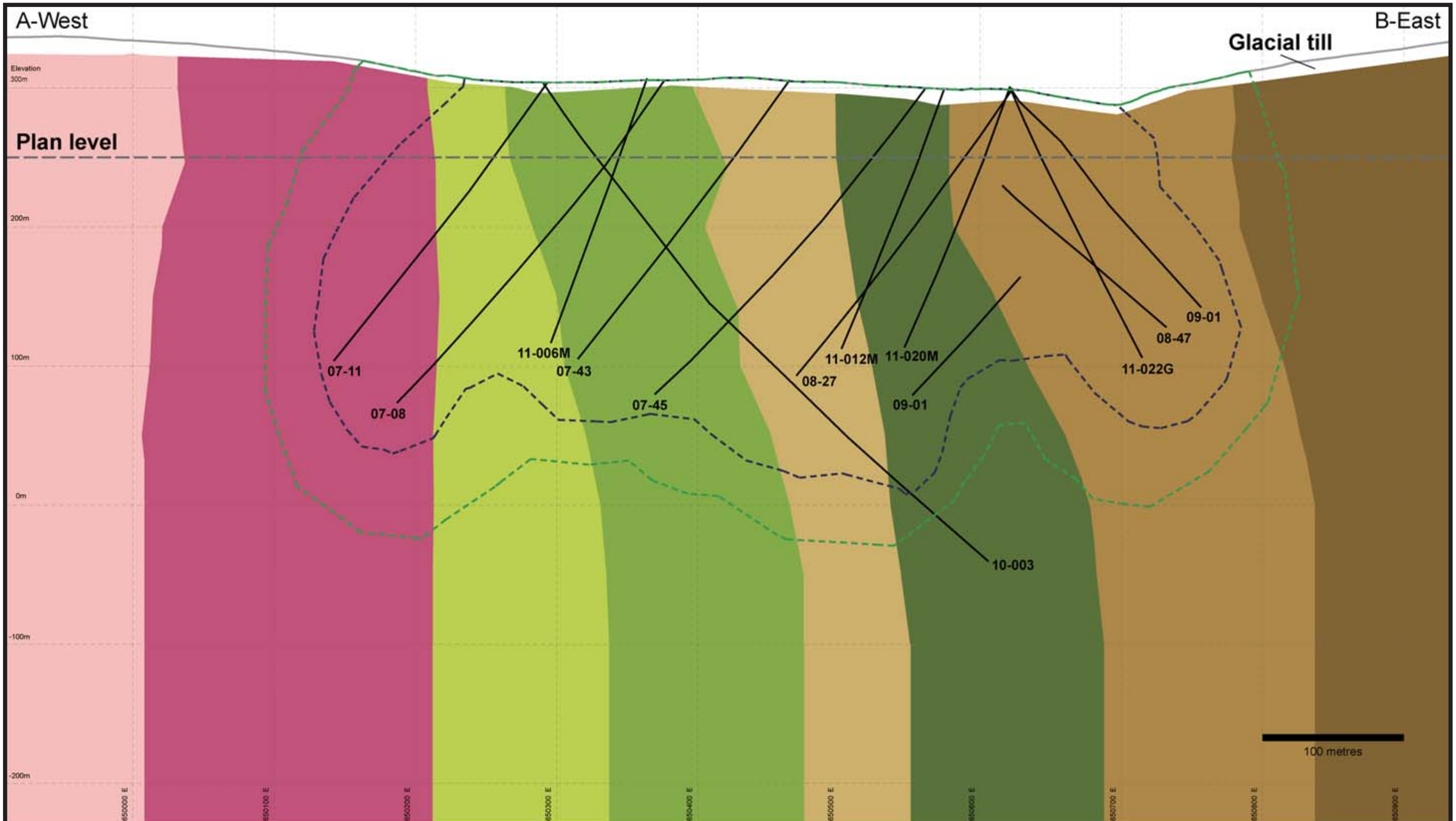


Figure 7-5

Northcliff Resources Ltd.

Sisson Project

Project Location

Geological Cross Section (A-B)

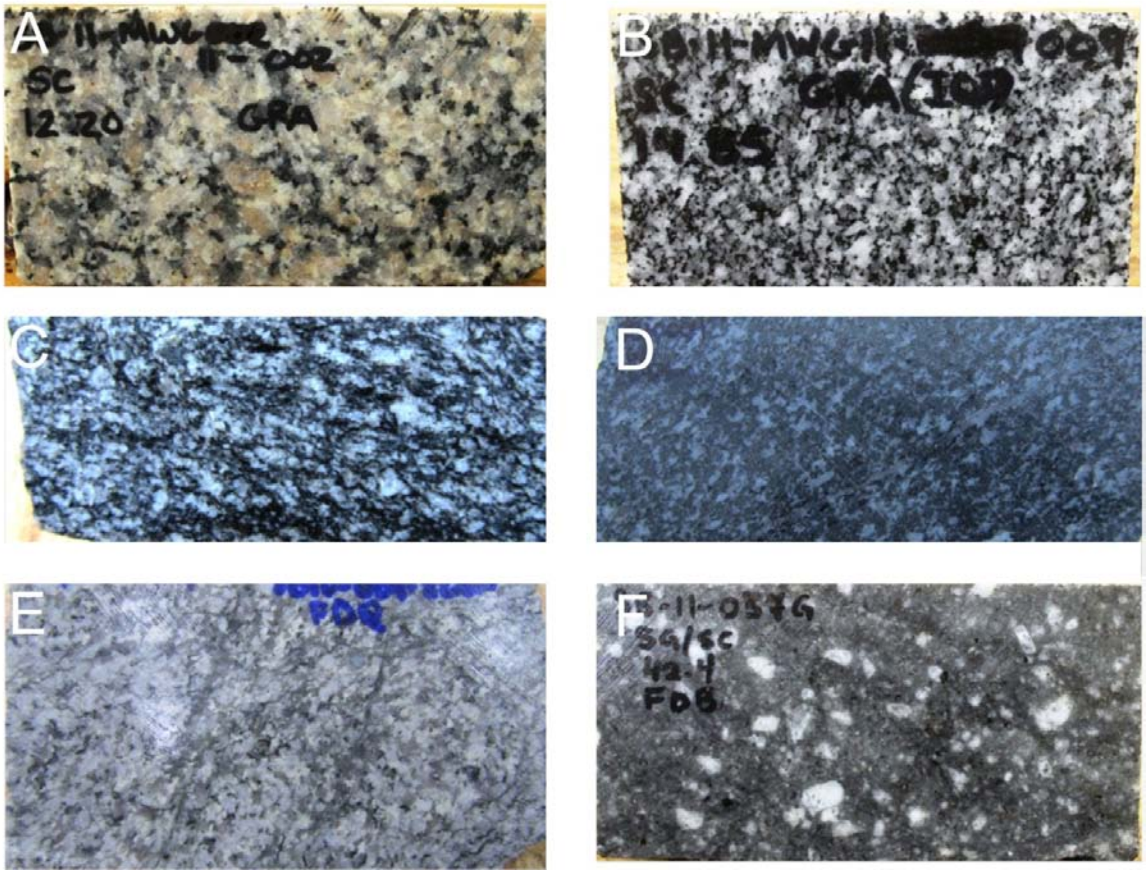
June 2012

Source: Northcliff Resources Ltd., 2011.

QUARTZ DIORITE AND GABBRO (MODEL UNITS IQD AND IGB)

The quartz diorite phase of the Howard Peak Granodiorite (Figure 7-6C) is an important host to mineralization in the western part of the Ellipse Zone, whereas the gabbro (Figure 7-6D) hosts the western part of Zone III and the eastern part of the Ellipse Zone. The quartz diorite is dark grey to mottled, subporphyritic, and medium grained. It is dominated by subhedral plagioclase and about 25% to 35% subhedral hornblende, accompanied by up to 5% small, anhedral grains of interstitial quartz, minor K-feldspar, 3% hematitized magnetite, and accessory titanite, apatite, and zircon. The gabbro is very similar but can be distinguished from quartz diorite by its higher concentration of hornblende, rare accessory pyroxene, and a near absence of quartz. Both intrusions can be well foliated and marked by segregations of metamorphic biotite. The quartz diorite grades to the biotite granodiorite phase of the Howard Peak intrusion (Figure 7-6B) to the east, and both are intruded by the Nashwaak Granite (Figure 7-6A). Quartz diorite and gabbro are intermingled near their contact, however, possible chilled contacts suggest that the quartz diorite intrudes the gabbro (Oliver, 2010). The contact between gabbro and volcanic rocks of the Turnbull Mountain Formation to the east is faulted and sheared and was a major locus for hydrothermal activity and tungsten mineralization. Dykes of gabbro have not been conclusively identified within the Turnbull Mountain Formation.

FIGURE 7-6 PHOTOGRAPHS OF IGNEOUS ROCK TYPES

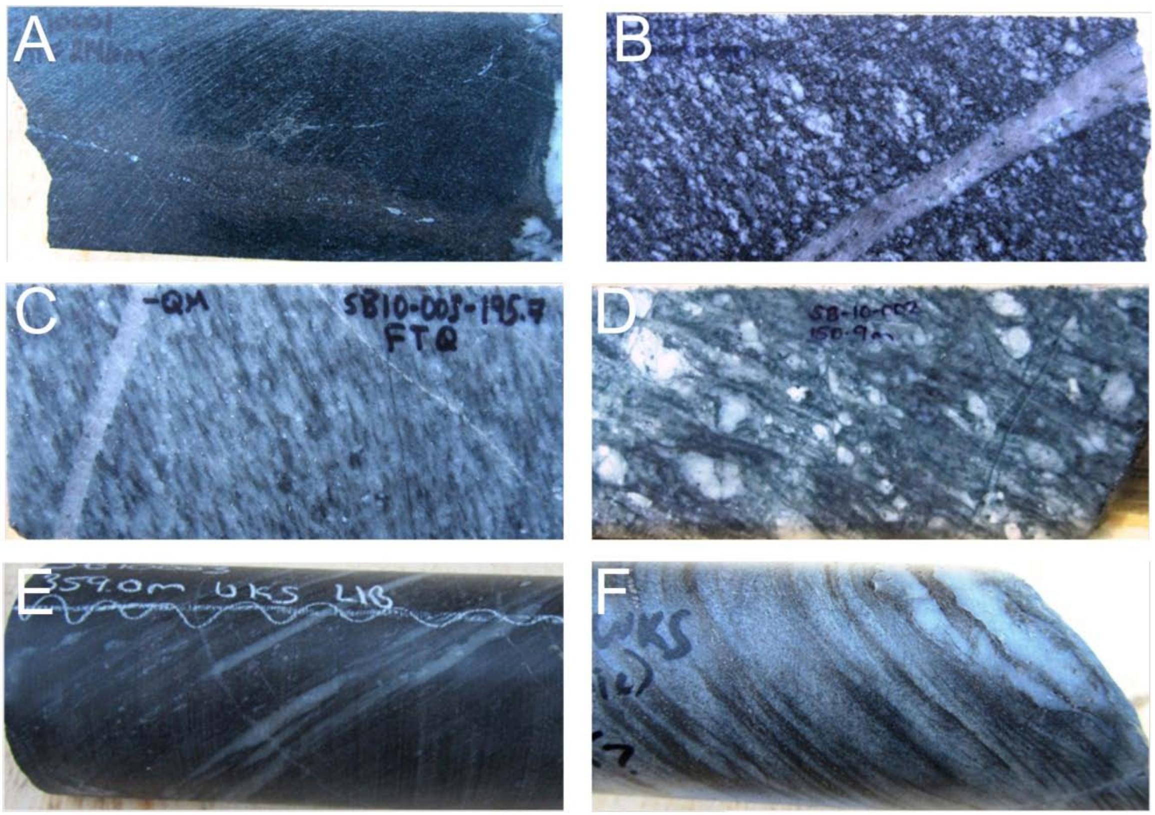


Photographs of igneous rock types within and proximal to the Sisson deposit. A: Nashwaak Granite; B: Howard Peak intrusion, biotite granodiorite phase; C: Howard Peak intrusion, quartz diorite phase; D: Howard Peak intrusion, gabbro phase; E: granite dyke; F: biotite granite porphyry dyke.

MAFIC TUFF

Mafic tuff (Figure 7-7A) is interbedded with felsic (Figure 7-7C) and mafic crystal tuff (Figure 7-7B) throughout the volcanic sequence, and minor interbeds are locally present in biotite wacke intervals in the central part of the deposit. It is present primarily in geology model units FTA, FTC, WKB1, and FT4. Drill intersections of individual mafic tuffs are rarely more than one metre to two metres in length and range down to sub-centimetre scale; as such, individual beds of mafic tuff cannot be confidently correlated between drill holes or cross sections. Mafic tuff is dark grey to dark green and is very fine grained to aphanitic. It is dominated by amphibole and plagioclase, along with accessory titanite. The rock is typically massive but locally has a weak laminar fabric.

FIGURE 7-7 PHOTOGRAPHS OF VOLCANIC AND SEDIMENTARY ROCK TYPES



Photographs of volcanic and sedimentary rock types within and proximal to the Sisson deposit. A: mafic tuff; B: mafic crystal tuff; C: felsic tuff; D: felsic tuff with augen; E: biotite wacke; F: wacke with biotite- and sericite-rich interbeds.

MAFIC CRYSTAL TUFF

Mafic crystal tuff (Figure 7-7B) is a texturally variable rock type that forms the largest part of the volcanic sequence within the deposit. It occurs primarily in geology model units FTC and FT4 and, to a lesser extent, in units FTA and WKB1. It is black, dark brown, or mottled in colour and is typically interbedded at all scales with mafic and felsic tuffs. Narrow intersections of this rock type are locally present in biotite wacke intervals. The rock contains plagioclase, quartz, amphibole, minor alkali feldspar, and accessory magnetite and/or ilmenite, zircon and apatite; metamorphic biotite is abundant and replaces hornblende. The abundance of quartz indicates an intermediate composition. This rock type ranges from massive to strongly foliated.

FELSIC TUFF AND AUGEN-BEARING FELSIC TUFF

Felsic tuff (Figure 7-7C) occurs throughout the volcanic portions of the stratigraphy and is an important host to mineralization. It occurs primarily in geology model units FTA, FTC, and FT4 and, to a lesser extent, in unit WKB1. It is typically interbedded with mafic tuff and mafic crystal tuff but internally homogenous beds locally range up to 20 m or more in true thickness. Narrow interbeds are locally present within wacke intervals. The rock is white to light grey and is dominated by quartz and feldspars. It ranges from massive and medium grained to strongly foliated and fine grained. Augen bearing felsic tuff (Figure 7-7D) occurs only in the western part of the volcanic stratigraphy. Geology model unit FTA is defined by the western and eastern extents of augen bearing felsic tuff. It is distinguished from felsic tuff by up to 15% feldspar crystals or crystal aggregates up to two centimetres in size. These features probably represent volcaniclastic lapilli, but the term ”augen” has been used historically and is retained here.

BIOTITE WACKE (MODEL UNITS WKB1, WKB2/3 AND WKB4)

The eastern part of the Sisson deposit is hosted predominantly by three geological model units defined by the extent of biotite wacke (Figure 7-7E). Intersections of biotite wacke range from nearly black, to dark brown to medium grey-brown. They are locally medium grained but are mostly fine grained and have a laminar fabric. All are characterized by high concentrations of metamorphic biotite, abundant feldspar, and lesser granular quartz; metamorphic sericite variably replaces feldspar. Quartz segregations occur parallel to the laminar fabric. The westernmost zone of biotite wacke, defined as geology model unit WKB1, contains andalusite formed during contact metamorphism. Central model unit WKB2/3 is similar to WKB1 but lacks andalusite. The easternmost intersections, which form geology model unit WKB4, may be part of the Miramichi Group and contain staurolite, have a higher concentration of sericite (Figure 7-7F), and include narrow interbeds of siliceous siltstone and quartzite. Narrow interbeds of mafic, felsic, and mafic crystal tuff occur in the western parts of the biotite wacke section.

MINOR INTRUSIONS

The Sisson deposit is cut by several types of volumetrically minor dykes.

- **Granite dykes.** Light grey, fine grained to pegmatoidal, locally granophyric granite dykes (see Figure 7-6E) are very common within the gabbro and quartz diorite intrusions and, to a much lesser extent, in volcanic rocks immediately east of the gabbro. True width for most dykes is less than three metres. All of these dykes contain mineralization, veins, and/or alteration. Paragenetic relationships of hydrothermal features suggest that some of these dykes may be syn-hydrothermal; this is supported by overlap in their preliminary U-Pb ages from some dykes and Re-Os dates on molybdenite (Zhang, pers. comm., 2011).

- **Biotite granite porphyry dykes.** These intrusions (Figure 7-6F) have been intersected in several drill holes, mostly from the south part of Zone III. They are grey, massive and unfoliated, fresh and commonly truncate mineralized veins. They are distinguished by phenocrysts of plagioclase, alkali feldspar, quartz, and 8% biotite in a fine grained matrix. Fyffe et al. (2008) obtained a U-Pb date on zircon of 364.5±1.3 Ma, which is significantly younger than the ~377 Ma dates on molybdenite (Zhang, unpublished data).

- **Mafic dykes.** These are rare at Sisson and occur mostly in gabbro in the southwest part of the deposit. They are altered and mineralized but are volumetrically insignificant.

TABLE 7-1 ROCK TYPES USED TO MODEL THE SISSON DEPOSIT
Northcliff Resources Ltd. - Sisson Project

Model Unit	Unit Name	Mineralization	Constituent Rock Types
IQD	Quartz diorite	Western part of the Ellipse Zone	Quartz diorite phase, Howard Peak Granodiorite; internally homogenous
IGB	Gabbro	Eastern part of the Ellipse Zone, Zone II and western part of Zone III	Gabbro phase, Howard Peak Granodiorite; internally homogeneous
FTA	Felsic tuff – augen-bearing	Western part of Zone III	Thinly interbedded felsic > mafic > mafic crystal tuff; defined by eastern limit of augen bearing felsic tuff
FTC	Felsic tuff combined	Central part of Zone III	Moderately to thinly interbedded mafic crystal > felsic > mafic tuff
WKB1	Biotite wacke 1	Zone II and central part of Zone III	Medium grained biotite wacke, commonly with contact metamorphic andalusite; contains minor mafic and felsic tuff near eastern and western contacts
FT4	Felsic tuff 4	Central and eastern parts of Zone III	Interbedded mafic crystal > mafic > felsic tuff; increasing biotite wacke interbeds toward eastern and western margins
WKB2/3	Biotite wacke 2/3	Eastern part of Zone III	Fine grained biotite wacke with minor interbeds of mafic tuff; lacks andalusite
WKB4	Biotite wacke 4	Low-grade mineralization near the eastern margin of Zone III	Fine grained biotite wacke with interbeds of siliceous siltstone and quartzite; may be the western margin of the Miramichi Group; locally contains staurolite

STRUCTURE

The Miramichi Group is believed to occupy the core of a north-northeast trending, south plunging anticline (Lutes, 1981) and to be bounded to the east and west by younger volcanic and sedimentary rocks of the Ordovician Tetagouche Group (Figure 7-3). The interpretation and/or specific characteristics of a major anticline cored by Miramichi Group, however, continues to be debated. Fyffe et al. (2008) note that rocks of the Tetagouche Group do not correlate on the east and west sides of the Miramichi Group, and Mann (1980, 1981) suggests that the volcanic rocks to the west of the Miramichi Group may young to the east, which precludes an antiformal structure. Small isoclinal folds, however, have been observed in drill core, and measurements in oriented core confirm that they plunge steeply to the south (Duncan, 2011), which is consistent with the interpretation of Lutes (1981). The western contact of the Miramichi Group against the Turnbull Mountain Formation may be a fault (Figure 7-3; Fyffe et al., 2008), which may further complicate local structural interpretation, although a definite structure has not been identified during the work described in this report. To the east, the Miramichi Group is overlain unconformably by the Hayden Lake Formation of the Tetagouche Group, which yields to the younger Push and Be Damned Formation of the Tetagouche Group. Regardless of the uncertainties in structural interpretation and regional correlation of rock types, these effects occur at scales larger than the zone of mineralization and do not impact on exploration and development considerations.

The north trending contact between the gabbro and the Turnbull Mountain Formation is a vertical fault zone, which ranges from a few to about 20 m in width. It is marked by strong fracturing, local brecciation, and minor gouge seams. The strongest alteration and tungsten mineralization and most abundant quartz-sulphide veins occur along and adjacent to this important fault, although it did not apparently influence later molybdenum mineralization. Kinematic indicators are compatible with sinistral strike-slip movement, but absolute displacement is not constrained. Large quartz-sulphide veins in a trench in Zone I, described in a later section, also formed along north-trending, sinistral faults. Brittle faults with gouge are largely absent from the rest of the deposit but a few rubble zones are present.

Most rock types exhibit a weak to strong foliation, defined by biotite and/or muscovite, which is parallel to stratigraphic orientation. A northwest trending, steeply dipping cleavage is also commonly present (Fyffe and Thorne, 2010).

MINERALIZATION

Mineralization in the Sisson deposit is related to several types of alteration and veins, each of which has a distinct relationship to metal introduction.

Hydrothermal features of the Sisson deposit are described below from early to late effects, to the extent that their timing has been constrained by paragenetic relationships. To summarize, early barren to weakly mineralized alteration was followed sequentially by an early stage of tungsten mineralization, an intermediate stage of molybdenum ± tungsten mineralization, and a late stage of polymetallic mineralization in which tungsten is accompanied by numerous base and trace elements Most alteration and nearly all mineralization can be directly related to specific types of veins. The overall vein density at Sisson is only about 3% and pervasive alteration zones are spatially limited, which indicates that the hydrothermal system at Sisson had a low fluid flux.

EARLY SODIC-CALCIC ALTERATION AND AMPHIBOLE VEINS

The earliest hydrothermal feature at Sisson comprises amphibole veins and associated albite-actinolite (sodic-calcic) alteration (Figure 7-8A). These features occur almost exclusively in gabbro and, to a lesser extent, in quartz diorite. They are most abundant in the west-central part of Zone III and extend into the Ellipse Zone. The AA veins and sodic-calcic alteration contain a few percent pyrrhotite-pyrite but completely lack molybdenum and contain only trace scheelite. The veins are mostly between two and 20 mm in width, have diffuse contacts with host rocks and contain mostly actinolite, lesser albite, minor calcite, and trace to minor pyrrhotite and/or pyrite. Alteration envelopes are mineralogically similar and can be up to several times the width of the associated vein. Where vein density is high, the alteration envelopes coalesce to pervasive alteration.

EARLY BIOTITE AND BIOTITE-SULPHIDE ALTERATION

This alteration mostly spans the contact between gabbro and volcanic rocks on the west side of Zone III. This alteration is commonly intense and texture-destructive (Figure 7-8B). Similar alteration is erratically distributed through gabbro west of the contact, but is rare in quartz diorite. Sulphide concentration ranges from trace to 10% and manifests cubiform pyrite locally accompanied by pyrrhotite. Biotite-sulphide alteration typically contains neither scheelite nor molybdenite.

CALC-SILICATE ALTERATION

Drilling has intersected mineralized calc-silicate alteration (Figure 7-8C) over lengths between 0.5 m and three metres. This alteration occurs both in gabbro and in volcanic rocks but mostly at depths greater than about 300 m. The timing of this alteration relative to other hydrothermal effects has not been constrained. The alteration is massive and pervasive and associated veins have not been observed. The mineralogy comprises various combinations of red-brown garnet, green pyroxene, calcite, epidote, and possibly amphibole, and up to a few percent pyrrhotite and lesser pyrite. Disseminated scheelite is ubiquitous but molybdenite has not been observed. Relicts of granite dyke within this alteration suggest that it may be endoskarn.

QUARTZ-SCHEELITE VEINS (TYPE QW)

Quartz-scheelite (QW) veins represent the earliest stage of significant tungsten mineralization at Sisson. These veins are typically less than five millimetres in width, have sharp to locally diffuse contacts with host rocks, and range from planar to strongly curviplanar (Figure 7-8D). They contain clear to milky quartz, scheelite, low concentrations of pyrite and/or pyrrhotite, and rare molybdenite. Alteration envelopes are mostly less than one centimetre in width and comprise biotite in mafic host rocks (Figure 7-8D) and, more rarely, sericite in felsic host rocks. The alteration envelopes commonly contain disseminated scheelite, particularly when hosted by gabbro or quartz diorite. The density of these veins diminishes markedly below about 300 m depth in the centre of Zone III, and at shallower and deeper levels in the north and south parts of the deposit, respectively.

QUARTZ-MOLYBDENITE (TYPE QM) AND QUARTZ-FELDSPAR (TYPE QF) VEINS

Quartz-molybdenite (QM, Figure 7-8E) veins consistently cut QW veins. They represent the main stage of molybdenum mineralization and, except in the north part of Zone III, also contain high concentrations of scheelite. They are most abundant in the centre of Zone III, of intermediate abundance in the south part of Zone III and the Ellipse Zone, and are rare to absent in Zones I and II, the north part of Zone III, and in gabbro from the west-central part of Zone III. Type QM veins extend to much greater depth than QW veins and, for example, remain abundant at 525 m true depth in DDH-SB10-004.

The QM veins are mostly one centimetre to five centimetres in width, but veins greater than 20 cm wide are common. They are planar to curviplanar and have sharp contacts with wall rocks (Figure 7-8E). The QM veins are dominated by clear, locally epitaxial quartz. Molybdenite can form up to 10% of these veins but has a clotty distribution along their length. Most QM veins contain less than 3% pyrite, rarely accompanied by pyrrhotite. They contain low to locally high concentrations of scheelite (Figure 7-8F), although in some cases tungsten mineralization is related to younger type SX veins which exploited fractured QM veins. Sericite alteration envelopes less than one centimetre in width are only locally present and rare biotite envelopes occur in mafic host rocks.

Type quartz-feldspar (QF) veins are very similar to QM veins but occur mostly at depths below about 250 m. They are distinguished by selvages of white K-feldspar, contain a dark green mineral that may be grossular garnet, have a significantly lower concentration of molybdenite and scheelite than normal QM veins, and are mostly less than three centimetres in width. Vein types QM and QF are generally contemporaneous.

QUARTZ SHEAR (TYPE QS) AND SULPHIDE-RICH (TYPE SX) VEINS

Late quartz-shear (QS, Figure 7-8G) and sulphide-rich (SX, Figure 7-8H) veins are closely related and represent the youngest stage of significant mineralization at Sisson. The QS veins are the main style of mineralization in Zones I and II and in the strongly mineralized contact between gabbro and volcanic rocks in Zone III. They are common throughout the Turnbull Mountain Formation in Zone III but are less common in gabbro in Zone III and in the Ellipse Zone. The QS veins and associated alteration commonly attain grades between 0.25% WO_3 and 1.00% WO_3, although they constitute only a very small portion of the overall deposit. Drill hole intersections of QS veins are mostly less than two metres in length, although intersections up to ten metres have been observed and swarms of smaller QS veins in rare cases span zones 20 m or more in apparent width. They exhibit crack-seal textures and formed by repeated reopening. As such, their formation was plausibly protracted and may have spanned much of the life of the Sisson hydrothermal system.

The QS veins range from planar to curviplanar and contacts with host rock are typically sharp (Figure 7-8G). Lensoidal forms occur in outcrop in Trench 1. The QS veins contain mostly white quartz cut by myriad brittle fractures that reflect structural disruption during and after vein formation. Sulphide concentration can attain 15% and comprises mostly pyrrhotite and lesser pyrite, 1% to 3% chalcopyrite, and highly variable concentrations of arsenopyrite, galena, sphalerite, and bismuth minerals. These veins host almost all of the wolframite in the deposit (Figure 7-8G), which occurs as black, prismatic crystals that are variably to completely replaced by scheelite. Molybdenite has not been observed.

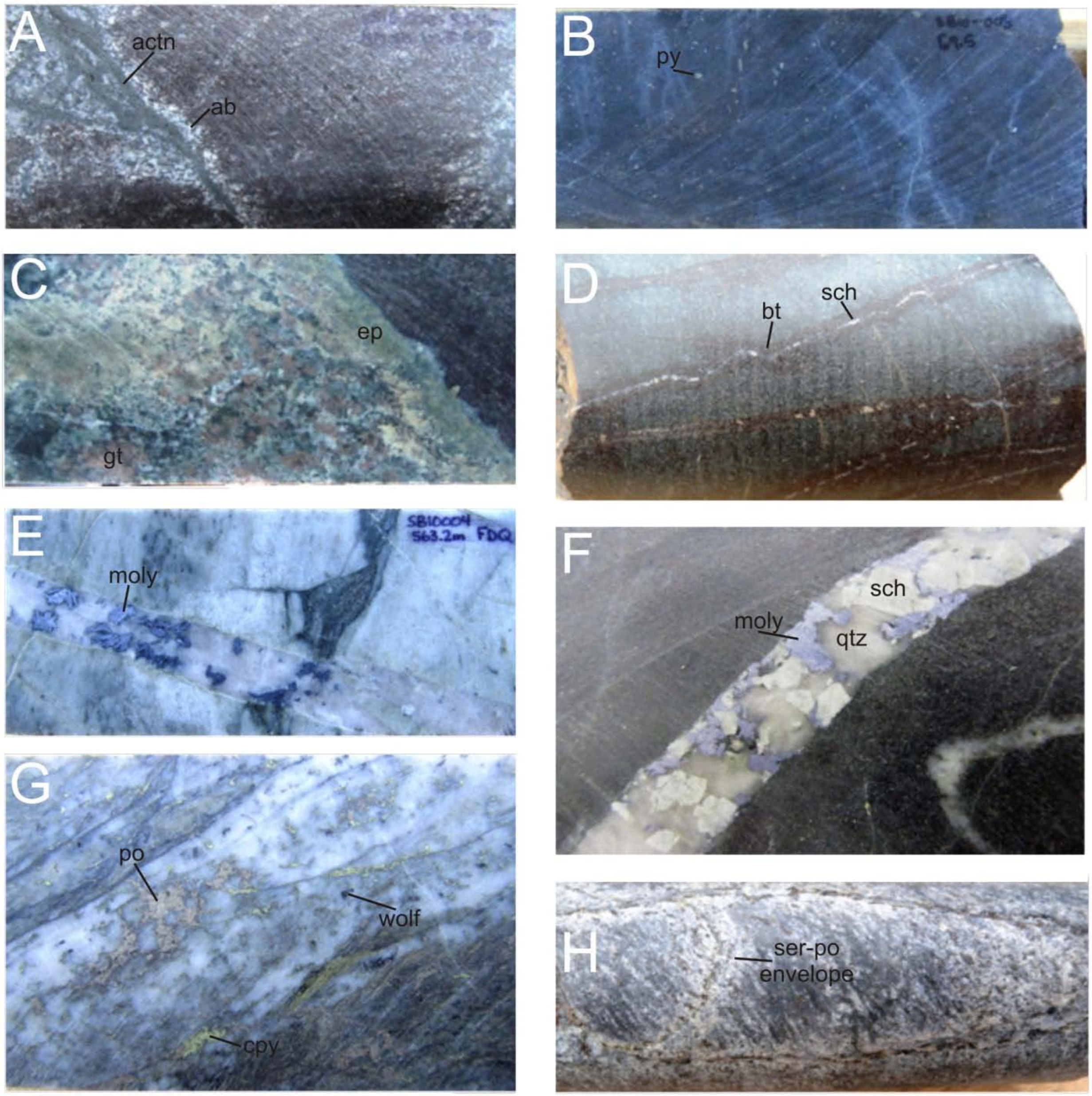
The QS veins are enclosed by envelopes of intense, texture-destructive sericite-quartz-sulphide alteration. The envelopes coalesce where multiple QS veins are closely spaced. The envelopes are dominated by sericite and quartz and contain up to 15% pyrrhotite, which is locally intergrown with lesser pyrite. The metal assemblage in veins and envelopes is similar. A few larger QS veins, mostly from the far eastern side of the deposit, have an outer, poorly mineralized carbonate envelope. These envelopes manifest swarms of narrow fractures that are filled with ankerite or ferroan dolomite, which cut and replace the proximal sericite-sulphide envelopes but extend up to ten metres from the associated veins.

The SX veins (Figure 7-8H) are widely distributed through the Turnbull Mountain Formation but are rare in the Ellipse Zone and gabbro in Zone III. Relationships exposed in Trench I suggests that SX veins may occur as sheeted swarms of planar fractures oriented at conjugate angles to and surrounding QS veins. Individual SX veins are fracture fills that rarely exceed three millimetres in width and which are enclosed by intense sericite-quartz-sulphide alteration envelopes (Figure 7-8H) identical to those related to QS veins. The SX veins are mineralogically similar to QS veins.

CARBONATE VEINS (TYPE QC)

Late carbonate veins are planar, up to one centimetre in width, and lack alteration envelopes. They contain calcite or dolomite, quartz, pyrite and minor green to purple fluorite. In a few rare cases, they contain minor scheelite, but molybdenite has not been observed. This same assemblage locally forms open-space infill of small voids in late SX and QS veins. These veins are widespread but volumetrically and economically insignificant.

FIGURE 7-8 EXAMPLES OF ALTERATION AND VEIN TYPES IN THE SISSON DEPOSIT



A: actinolite veins with albite envelopes in gabbro. B: Pervasive biotite-pyrite alteration in mafic tuff. C: Calc-silicate alteration in either granite dyke and/or gabbro. D: Early quartz-scheelite (QW) veins with biotite alteration envelopes in mafic tuff. E: Intermediate stage quartz-molybdenite (QM) veins in felsic tuff. F: High-grade type QM or QW vein in mafic tuff. G: Late quartz-shear (QS) vein. H: Late sulphide-rich (SX) veins with prominent sericite-pyrrhotite alteration envelopes in mafic crystal tuff.

STYLES OF MINERALIZATION

Mineralization at Sisson occurs almost exclusively in quartz veins, fractures, and their alteration envelopes (Figure 7-9). Tungsten and molybdenum are the metals of principal economic interest, whereas several other metals, including copper, zinc, lead, arsenic, and bismuth, occur in geochemically anomalous but subeconomic concentrations.

Mineralization occurs in contiguous Zones I, II, and III and in the Ellipse Zone (Figure 7-3). Zones I and II trend approximately north from the northern end of Zone III. Zone I is hosted by the Turnbull Mountain Formation, whereas Zone II occurs in gabbro. Zones I and II are structurally controlled, up to tens of metres in width, and extend several hundred metres along strike. They are dominated by QS and SX veins and contain tungsten, copper, and associated trace elements, but lack significant molybdenum. Zone III contains the bulk of the tungsten and molybdenum resource at Sisson. It is an ovoid zone that obliquely spans the contact between gabbro and the Turnbull Mountain Formation and mineralization occurs in gabbro, volcanic, and sedimentary rocks. The highest grades of molybdenum occur in both volcanic and sedimentary rocks in the central part of Zone III, whereas the highest grades of tungsten occur on either side of the contact between gabbro and volcanic rocks in Zone III. The Ellipse Zone and the southern part of Zone III are very similar to each other and contain moderate grades of both tungsten and molybdenum. Host rocks in the southern part of Zone III are gabbro and volcanic rocks, whereas the Ellipse Zone is hosted by gabbro and quartz diorite. Mineralization diminishes very abruptly at the south end of Zone III.

The minerals of economic interest at Sisson are molybdenite, scheelite, and minor wolframite. Scheelite precipitated during formation of QW, QM, QS, and SX veins, whereas most molybdenite is found in QM and, to a lesser extent, QF veins. Overall, the deposit only contains very minor wolframite, which occurs almost exclusively in QS and SX veinlets where it is replaced, in whole or in part, by scheelite (Figure 7-9C). The highest concentration of copper, zinc, lead, arsenic, bismuth, and other trace elements is directly related to late QS and SX veins and their sericite-sulphide envelopes.

Tungsten and molybdenum mineralization precipitated mostly within quartz-sulphide veins (Figure 7-9A) and, in some cases, in their alteration envelopes (Figure 7-9B). Scheelite ranges from very fine (greater than 100 µm) to coarse grained (less than one centimetre). Scheelite occurs both as selvages and along the central axes of veins.

Fine grained scheelite is also commonly disseminated through biotite alteration envelopes to QW veins (Figure 7-9B), particularly in gabbro and quartz diorite host rocks. Disseminated scheelite is less common in sericite alteration envelopes to QW, QS, and SX veins. Molybdenite occurs almost primarily within QM veins where it commonly forms coarse grained selvages (Figure 7-8E).

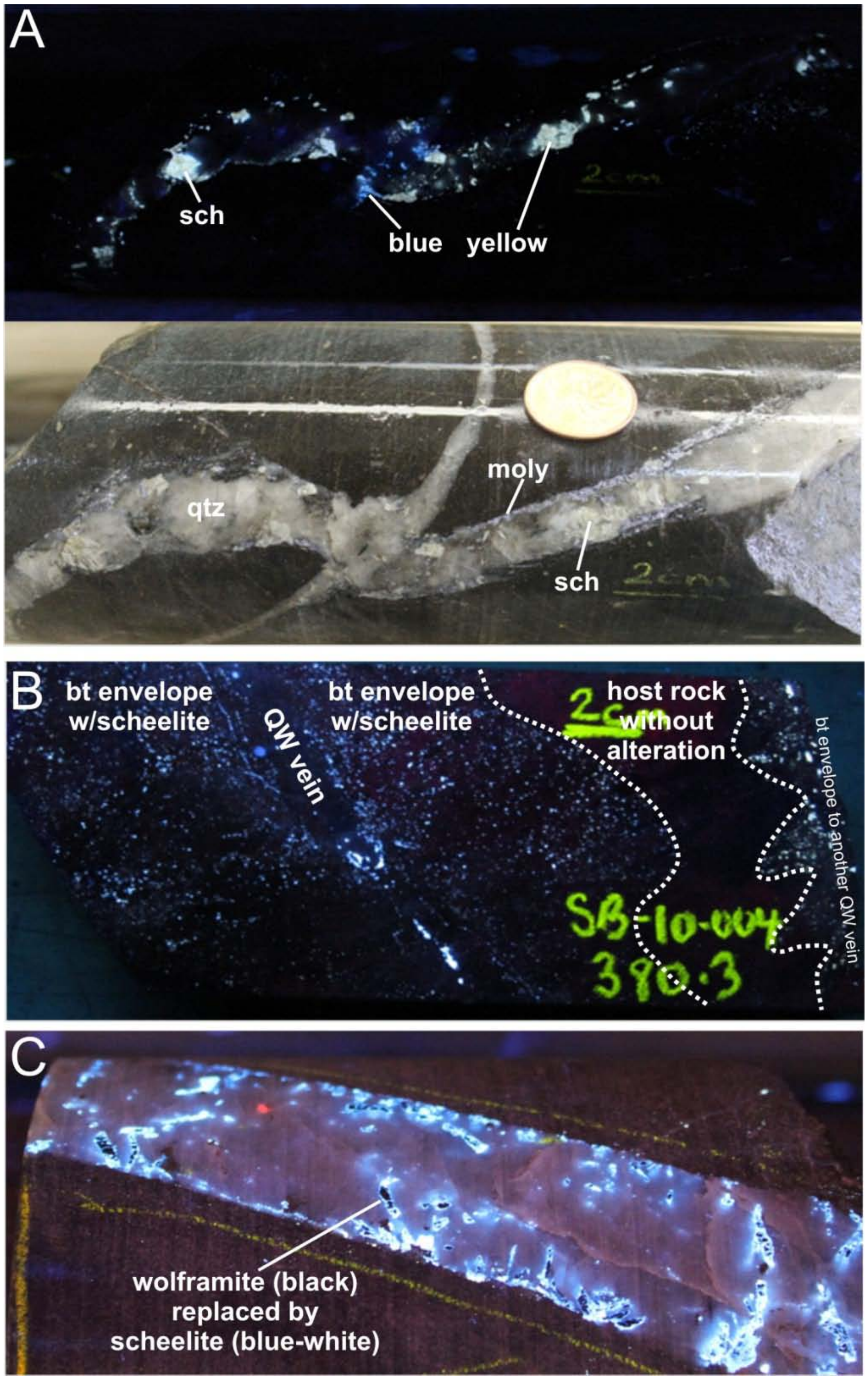
Metal zoning has only been established empirically at Sisson. The concentration of scheelite decreases with depth and grades diminish rapidly below about 250 m and 400 m in the north and south parts of Zone III, respectively. Above average grades of tungsten are most consistently present along the contact between gabbro and volcanic rocks and, to a much lesser extent, in narrow, steeply dipping zones on the eastern side of the deposit. The highest concentration of molybdenum occurs in the centre of Zone III, where type QM veins are most abundant. Moderate grades of molybdenum occur in the south part of Zone III and in the Ellipse Zone. Zones I and II and the north part of Zone III contain almost no molybdenum. Significant intersections of molybdenum mineralization extend to a much greater depth than tungsten mineralization. The distribution of both tungsten and molybdenum mineralization are consistent with a south plunge to the Sisson deposit. The highest concentrations of copper and associated elements are most consistently present in Zones I and II, whereas elevated concentrations of these elements elsewhere are related to more widely distributed QS and SX veins.

The grade of tungsten correlates only weakly with the composition of host rocks. Nast (1985) and Nast and Williams-Jones (1991) have suggested that the paucity of pervasive alteration and weak development of alteration envelopes to veins is compatible with a low flux of hydrothermal fluids. In such a rock-buffered hydrothermal system, they further suggest that scheelite preferentially precipitated in more mafic, calcium-rich host rocks. Empirically, there is a tendency for higher concentrations of scheelite to occur in mafic tuff, gabbro, and mafic crystal tuff than in adjacent felsic tuffs. The biotite wacke located along the central axis of Zone III (geological model unit WKB1; Figure 7-5) commonly has lower tungsten grade than adjacent volcanic host rocks. Host rock does not exhibit any apparent control on the grade of molybdenum.

Scheelite exhibits both blue and yellow fluorescence (Figure 7-9A) when exposed to shortwave ultraviolet light. Yellow fluorescence can indicate anything from end-member powellite ($CaMoO_4$) to minor substitution of molybdenum for tungsten in scheelite (referred to as molybdoscheelite). Electron microprobe analyses indicate that yellow fluorescence at Sisson reflects molybdoscheelite which contains a maximum of about two weight-percent molybdenum (Gregory, 2011). These results are consistent with Nast and Williams-Jones (1991) who report a maximum of about four weight-percent molybdenum in scheelite. These results indicate that less than three percent of the total molybdenum inventory at Sisson might be sequestered in molybdoscheelite, using average deposit grades and a concentration of one weight-percent molybdenum in molybdoscheelite.

Oxidation related to surface weathering is mostly weak to moderate and confined to the upper 20 m of the deposit. Oxidation along fractures locally extends to greater depths, particularly along the structurally disrupted contact between gabbro and the Turnbull Mountain Formation. Where oxidation is strongest, primary rock textures remain visible and hypogene pyrite and pyrrhotite are, at most, only partially converted to iron oxides. Scheelite, wolframite, and molybdenite are essentially non-reactive in surface settings and are not significantly affected.

FIGURE 7-9 EXAMPLES OF MINERALIZATION STYLES IN THE SISSON DEPOSIT



A. Vein-hosted scheelite and molybdenite mineralization. Scheelite includes both blue fluorescent grains of pure scheelite and yellow fluorescent grains of molybdoscheelite which contain a maximum of about 2 wt% molybdenum. Note the absence of fluorescent grains outside the vein itself. Drill hole SB11-019M. B. A narrow QW vein with blue fluorescent scheelite surrounded by a biotite alteration envelope with abundant, very fine-grained, disseminated scheelite. This effect is most common in gabbro. Drill hole SB10-004 at 380.3 m depth. C. A late QS vein which contains wolframite (dark, elongate grains) partially to completely replaced by fluorescent scheelite. Drill hole SB11-019M.

8 DEPOSIT TYPES

The Sisson deposit can be defined as an intrusion related, structurally controlled, bulk tonnage tungsten-molybdenum deposit. Deposits of this type have general hydrothermal similarities to porphyry copper deposits. These types of deposit form in convergent margin to collisional tectonic environments and are related to highly evolved granitic melts formed from continental crust.

PROVISIONAL MAGMATIC-STRUCTURAL-HYDROTHERMAL MODEL

Tungsten-molybdenum deposits in New Brunswick have been linked genetically and temporally to hydrothermal fluids generated by Late Devonian felsic batholiths and intrusions formed during the Acadian Orogeny (e.g., Fyffe and Thorne, 2010; dating cited on p. 7-2 and p. 7-5 in this report). The overlap between U-Pb ages on granite dykes and Re-Os dates on molybdenite support a similar link at Sisson (W. Zhang, pers. comm., 2011). A larger granitic pluton as a source for mineralizing hydrothermal fluids at Sisson has not been intersected by drilling thus far, but the numerous, albeit narrow, granitic dykes allow the presence of such a body to be confidently inferred at depth below the deposit.

Structures focused the ascent from depth of the intrusion derived hydrothermal fluids which formed the Sisson deposit. The physical relationship between QS and SX veins exposed in exploration Trench 1 in Zone I and the concentration of mineralization along the disrupted contact between gabbro and the Turnbull Mountain Formation suggest the possible nature of this control. Trench 1 is cut by several broadly north trending, approximately vertical QS veins that are between 0.3 m and 1.5 m in width. Kinematic indicators support long-lived to episodic, sinistral movement along the structures which host the QS veins. Sheeted arrays of northwest trending, steeply dipping, narrow SX veins, as well as fewer but larger, lensoidal quartz extension veins, form an envelope at approximately conjugate angles to the larger QS veins. Orientations obtained on 1,631 veins of all types in seven oriented geotechnical drill holes (Duncan, 2011) also show that most veins throughout the deposit form a sheeted array with northwest strike and steep southwest dip.

A provisional, highly simplified genetic model for Sisson therefore comprises: (1) emplacement of granitic magma at depth; (2) magmatic fractionation and release of hydrothermal fluids; (3) ascent of these fluids along north trending, sinistral fault zones; and (4) lateral distribution of mineralizing fluids along northwest trending, sheeted fracture arrays.

9 EXPLORATION

This section was prepared by Dr. James Lang, P. Geo., Senior Vice President Geology, HDI.

Early exploration programs, conducted prior to Northcliff's acquisition of the property, are discussed in Section 6, History of this report.

2011 TEST PIT PROGRAM

The following is largely an excerpt from a Northcliff Assessment Report, filed with the New Brunswick government, but not yet available to the public.

In 2011, Northcliff conducted a test pitting program comprising 349 pits dug to bedrock using a Caterpillar 320 excavator. The purpose of the program was to assess exploration potential in areas of possible infrastructure development. A total of 409 till samples and 276 bedrock samples were collected from these pits for geochemical analysis. The locations of the pits were chosen by measuring approximately equidistant sections along pre-existing roads at spacings of between 50 m and 100 m. In addition to the samples collected in 2011, 147 till and 44 bedrock samples collected by Geodex in 2008 were also submitted for analysis. These sites were located between 2011 sample locations to ensure geochemical coverage of the target areas.

The physical characteristics of the till profile were documented as each pit was dug. Where bedrock was encountered, a sample was broken off by the excavator and rock type, grain size, foliation, mineralization, weathering, oxidation, veining, alteration, and colour were described. Bedrock samples were only collected where the material was angular and interpreted to be in place.

Other information recorded at each test pit site included UTM coordinates, the depth of the pit, depth to where the till began (below BC horizon), depth of till sample(s) taken, depth of bedrock sample taken, photo number, and whether any water seepage within the pit occurred. UTM coordinates were marked/saved in a GPS unit (Garmin 62s).

Till and bedrock samples were prepared for analysis by Activation Laboratories Ltd. in Fredericton, New Brunswick. Full chain of custody control was maintained for all analytical samples from collection through delivery to the analytical laboratory. The till samples were dried and screened to 230 mesh. The concentration of tungsten was analyzed by instrumental neutron activation analysis (INAA). A suite of 58 additional elements was analyzed by a combination of INAA and inductively coupled plasma-mass spectrometry (ICP-MS) methods following four-acid digestion (Code UT-5 INAA(INAAGEO)/Total Digestion ICP/MS). All geochemical analyses were completed by Activation Laboratories Ltd. in Ancaster, Ontario. Bedrock samples were prepared and analyzed using protocols identical to those described in Section 11 of this report for drill core geochemical analysis.

Principal geological observations from the 2011 till and bedrock sampling program include the following.

- Analytical results for both bedrock and tills yield only a few scattered values for various elements at very low concentrations throughout the area of infrastructure.
- Slightly higher, but still weak, results were encountered over and immediately to the north of known mineralization in Zones I and II. These values decrease rapidly to the north.
- The results are fully consistent with the lack of mineralization and alteration in the hydrogeological and engineering drill holes completed in the area of potential infrastructure.
- The rock types encountered in bedrock samples generally conform to the distribution of major units as defined by published DNR regional geology maps.
- The results indicate that exploration potential for significant deposits of tungsten, molybdenum, or other metals in the area of potential infrastructure is very low.

EXPLORATION POTENTIAL

The Sisson deposit has been essentially closed off by drilling to the northeast, northwest, and south. At the present time, Northcliff considers the exploration potential in the immediate vicinity to be limited and has no plans for additional exploration work.

10 DRILLING

This section was prepared by Eric Titley, P. Geo., Senior Manager Resource Geology, HDI.

Since 1979, 64,768 m of drilling has been completed on the property in 304 drill holes. A drilling summary by year is shown in Table 10-1.

TABLE 10-1 DRILLING SUMMARY ALL YEARS
Northcliff Resources Ltd. - Sisson Project

Operator	Year	Drill Hole ID	No. of Holes	Core Size	Metres
Kidd Creek Mines Ltd.	1979	SSN01 to SSN11	11	BQ	1,663
	1980	SSN12 to SSN23	12	BQ	2,419
	1981	SSN24 to SSN32	9	BQ	1,727
	1982	SSN33 to SSN40	8	BQ	1,697
Geodex Minerals Ltd.	2005	SB-05-01 to SB-05-09	9	NQ	1,219
	2006	SB-06-02 to SB-06-30	29	NQ	7,653
	2007	SB-07-01 to SB-07-75[1]; SBM-07-01; SE-07-01 to SE-07-05; SP-07-01	83	NQ	20,194
	2008	SB-08-01 to SB-08-47[2]	49	NQ	12,122
	2009	SB-09-1 to SB-09-28	28	NQ	4,899
Northcliff Resources Ltd.	2010	SB-10-001 to SB-10-005	5	HQ	2,701
Northcliff Resources Ltd.	2011	SB-11-006M to SB-11-037G SB-11-MW-001D to SB-11-MW-006D SB-11-MW-001S to SB-11-MW-006S SB-11-MWG-001 to SB-11-MWG-018	61	PQ & HQ	8,474
Total			**304**		**64,768**

Notes:
1. Including hole SB-07-10A.
2. Including hole SB-08-7A and SB-08-34A.

The following describes the drilling activities carried out by Kidd Creek Mines Limited (Kidd Creek), Geodex, and Northcliff on the Sisson property.

GEODEX AND KIDD CREEK PROGRAMS (1979-2009)

Diamond drilling to delineate the W-Mo ± Cu mineralization in Zones I, II and III on the Sisson property was completed by Kidd Creek during the 1979 to 1982 period and Geodex in the 2005 to 2009 period. Kidd Creek completed 40 drill holes on the property in three campaigns. Geodex drilled 197 additional holes totaling 45,943 m in five subsequent campaigns to the end of 2009.

The initial digital compilation of the historic drilling data was carried out by Geodex staff. Drilling information, such as lithologic and sampling logs, assay results, collar survey data and downhole survey data, was compiled from hard copy assessment reports filed with the New Brunswick government and from in-house records and reports. The Geodex compilation was provided to Northcliff and additional information was added where available.

Ideal Drilling Ltd. provided contract drilling services to Kidd Creek for the 1979 through 1981 drilling campaigns and Petro Drilling Limited provided services in 1982. In all cases, BQ-size equipment, producing drill core measuring approximately 36.5 mm in diameter, was used. Kidd Creek staff supervised the on-site geological work and also carried out core logging, sampling, and interpretive and reporting functions. Kidd Creek programs were coordinated from the company's Fredericton exploration office.

The 2005 drilling program by Geodex was contracted to Maritime Diamond Drilling Limited (Maritime) of Hilden, Nova Scotia. Maritime recovered NQ-size drill core measuring approximately 47.6 mm in diameter. In 2006, Maritime initiated the Zone III program using two drill rigs, both recovering NQ core. Geodex also contracted Lantech Drilling Limited (Lantech) of Moncton, New Brunswick, to assist in the completion of the 2006 drill program. Lantech also recovered NQ core. Geodex staff supervised all aspects of the Project, including on-site supervision, core logging, sampling, interpretive and reporting functions. Lantech was retained by Geodex to carry out all 2007 and 2008 drilling on the Sisson property and Maritime carried out the 2009 program. The Geodex programs were directed by staff operating out of their Fredericton office.

With the exception of one track-mounted drill rig operated by Maritime in 2006, conventional skid-mounted drilling equipment was utilized.

Drill core from all programs completed prior to 2006 is stored at the New Brunswick Department of Natural Resources core storage facility near Sussex, New Brunswick. Core from 2006 through 2009 programs was held in a secure storage facility by Geodex. Northcliff took over this storage facility in 2011.

Drill hole collar locations for all Kidd Creek holes were originally surveyed and coordinated to Mining Lease survey pins in the area. Most of these drill collars in the Zone III area were relocated by Geodex in 2006 and subsequently resurveyed along with all Geodex holes of the 2006 through 2009 programs. All Geodex surveying was carried out by suitably certified technical staff employed by an independent, third party surveying firm. UTM Zone 19 grid coordinates based on North American Datum 83 (NAD 83) were generated from this program. Holes were typically tested for inclination and azimuthal variation using downhole survey instruments and these data were incorporated in the Project database for use in the deposit model. Early holes were tested using mechanical instrumentation (Tropari) and those subsequent to 2005 used FlexIt (Reflex Instruments) downhole orientation tools. Mercator Geological Services Limited (Mercator) independently checked drill hole collar location coordinates for selected drill holes completed by Geodex through September 2009 and consistently found excellent agreement with the Geodex coordinates.

NORTHCLIFF DRILLING

2010 PROGRAM

Northcliff contracted Lantech to carry out a seven-hole drilling program that was initiated in October 2010. Conventional skid-mounted drilling equipment recovering HQ-size core (63.5 mm diameter) was used and the program was terminated in mid-December 2010 after completion of only five holes (2,700 m). Professional and technical staff acting on behalf of Northcliff managed all aspects of the Project, including on-site supervision, core logging, sampling, interpretive, and reporting functions. Field activities were coordinated from offices in Fredericton, New Brunswick, and the Geodex core logging facility located at Keswick Ridge, New Brunswick, was used for logging and sampling purposes.

Northcliff hole locations were set out by suitably certified technical staff and locations were surveyed by an independent, third party surveying firm. UTM Zone 19 grid coordinates based on NAD 83 were generated from this program and incorporated in the

Project drilling database. Holes were tested for inclination and azimuthal variation using electronic (Reflex) downhole survey instruments and these data (Table 10-2) were incorporated in the Northcliff database. Remaining half-core and coarse rejects are stored at the Northcliff core logging facility located on Kingsley Road north-northwest of Fredericton. The sample pulps are stored at a secure warehouse separate from the core logging facility.

RPA inspected the Northcliff core logging, sampling, and storage facility and found it to be well configured, properly equipped, and secure.

TABLE 10-2 NORTHCLIFF 2010 DRILLHOLE COORDINATES AND ORIENTATIONS
Northcliff Resources Ltd. - Sisson Project

Hole ID	Northing[(1)]	Easting	Elevation	Length (m)	Azimuth (°)[(2)]	Dip (°)	Purpose
SB-10-001	650334.1	5136881.7	303.2	528	270	-70	Exploration
SB-10-002	650161.7	5137146.5	327.8	356	90	-50	Exploration
SB-10-003	650286.7	5137002.4	303.7	570	90	-55	Exploration
SB-10-004	649827.4	5136215.4	300.8	674	90	-59	Exploration
SB-10-005	650092.4	5136660.2	305.5	573	90	-55	Exploration

Notes:
1. Coordinates are in NAD83 Zone19.
2. Azimuth and dip are for the collar.

2011 PROGRAM

In 2011, 61 drill holes totalling 8,474 m were completed by Northcliff. The purpose of this program was to provide additional geological, metallurgical, hydrological, and geotechnical information for a feasibility study to be completed in the third quarter of 2012 (Northcliff News Release dated March 05, 2012, http://www.northcliffresources.com). The following information was obtained:

- metallurgical and comminution sample material (15 holes, 3,048 m)
- hydrogeological information (12 holes, 275 m)
- engineering data in areas of proposed infrastructure (17 holes, 608 m)
- pit wall geotechnical data in oriented drill holes (seven holes, 1,650 m)
- additional deposit delineation and exploration to depth (ten holes, 2,901 m).

Northcliff contracted Layne Christiansen Canada Ltd. to carry out the 2011 drilling program initiated in June of that year. Conventional skid-mounted drilling equipment recovering both PQ size drill core measuring approximately 85.0 mm in diameter and HQ size core was used and the program was successfully completed in October 2011. Professional and technical staff acting on behalf of Northcliff managed all aspects of the Project, including on-site supervision, core logging, sampling, and interpretive and reporting functions. Field activities were coordinated from offices located in Fredericton, New Brunswick.

Drill hole locations were set out by suitably certified technical staff and locations were surveyed by an independent, third party surveying firm. UTM coordinates (NAD 83 zone 19) generated from this program were incorporated in the Project drilling database developed by Northcliff. Holes were tested for downhole inclination and azimuth variation using Reflex electronic survey instruments and these data were also incorporated in the Northcliff database. The 2011 drill hole locations are highlighted in Figure 10-1 and their coordinates and orientations are listed in Table 10-3. The location of the drill holes in relation to the proposed site infrastructure is shown in Figure 10-2.

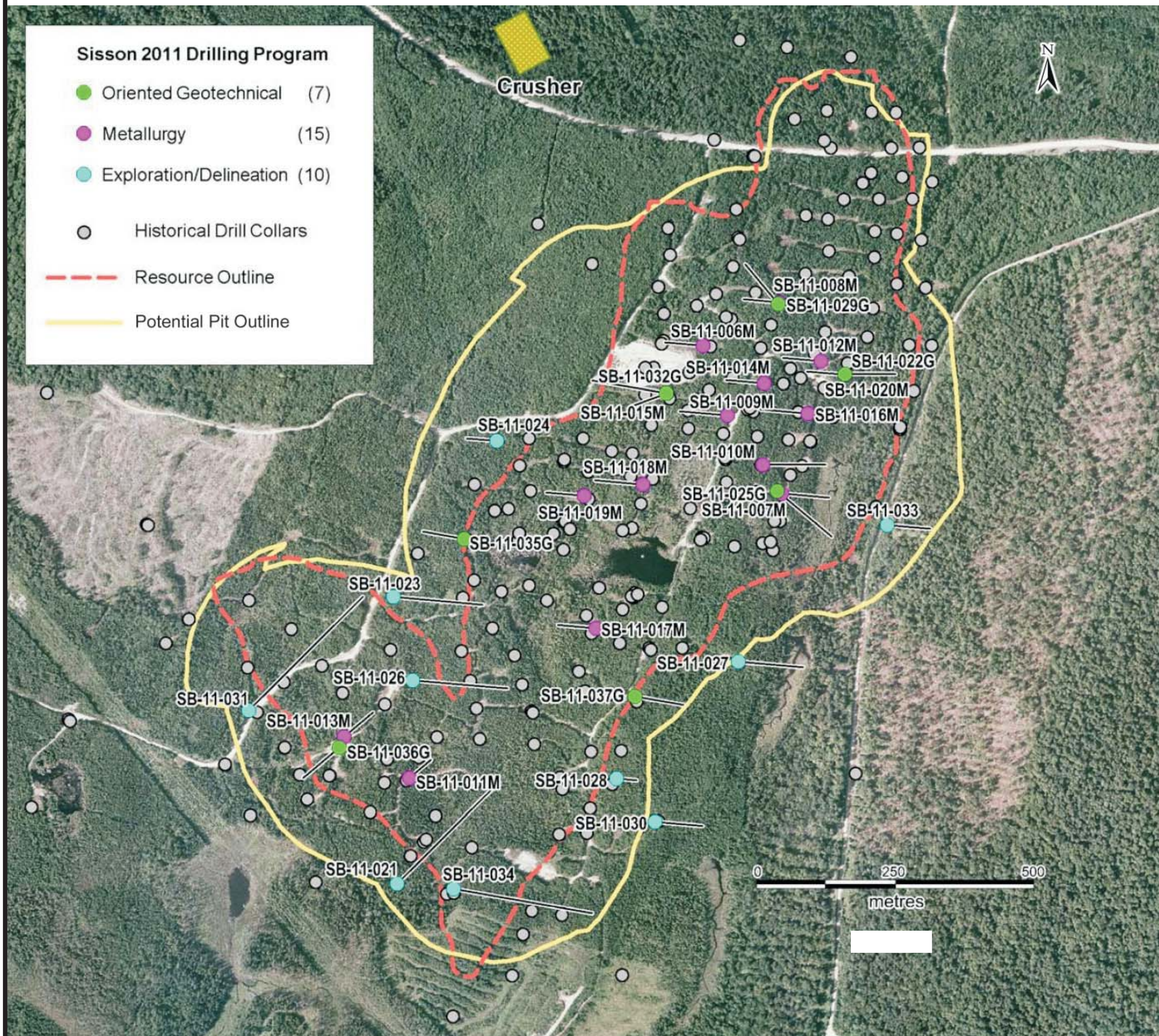


Figure 10-1

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

2011
Diamond Drill Hole Locations

June 2012

Source: Northcliff Resources Ltd., 2011.

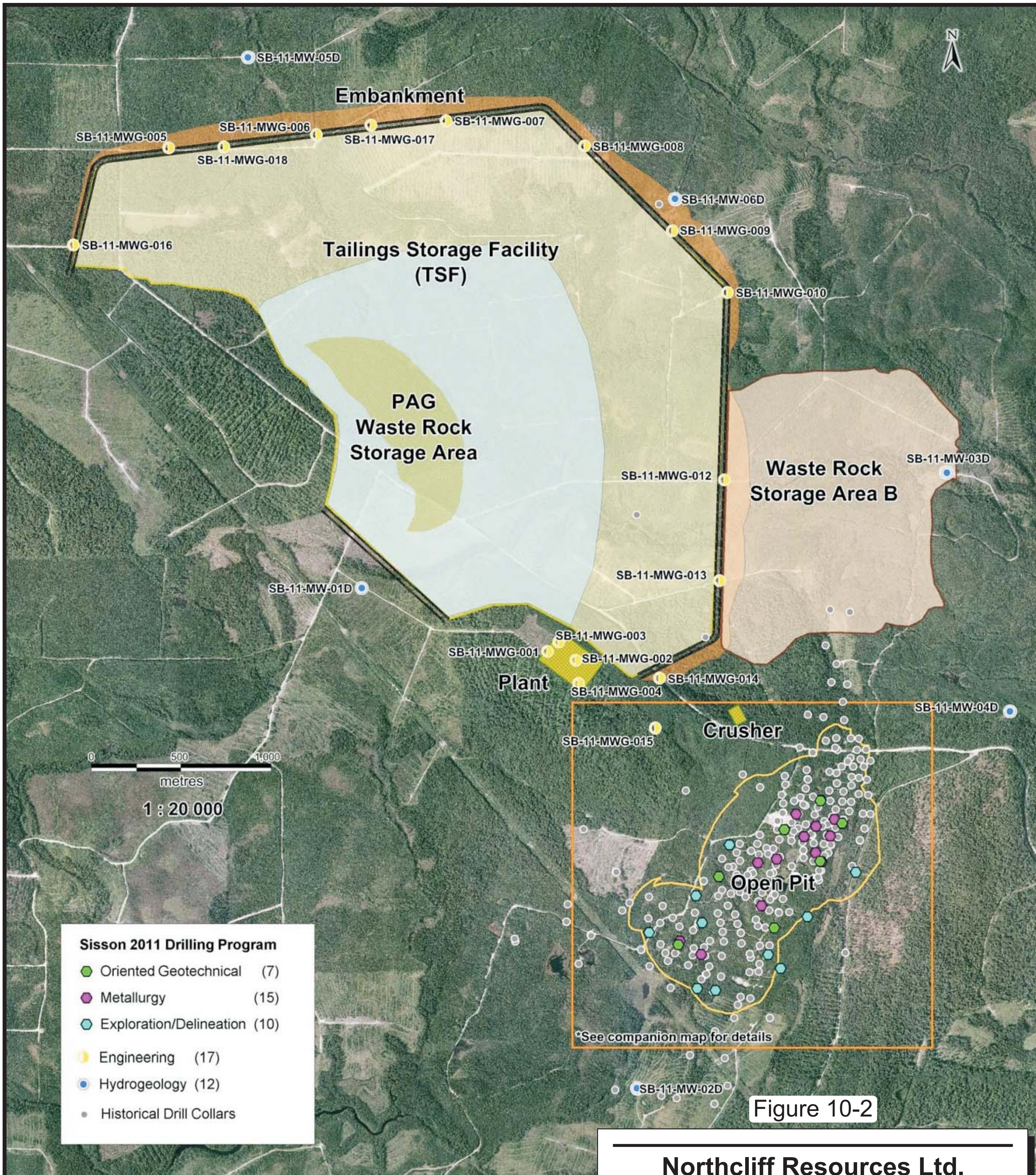


Figure 10-2

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

2011 Diamond Drill Hole Locations Relative To Proposed Infrastructure

June 2012

Source: Northcliff Resources Ltd., 2011.

TABLE 10-3 NORTHCLIFF 2011 DRILLHOLE COORDINATES AND ORIENTATIONS
Northcliff Resources Ltd. - Sisson Project

Hole ID	Northing[1]	Easting	Elevation	Length (m)	Azimuth (°)[2]	Dip (°)	Purpose
SB-11-006M	650,361.5	5,136,996.5	305.7	201.0	275	-70	Metallurgy
SB-11-007M	650,502.6	5,136,730.7	300.1	150.0	95	-55	Metallurgy
SB-11-008M	650,498.5	5,137,074.5	305.3	189.1	275	-70	Metallurgy
SB-11-009M	650,405.1	5,136,871.3	306.7	252.0	275	-70	Metallurgy
SB-11-010M	650,469.1	5,136,782.0	301.1	198.0	90	-55	Metallurgy
SB-11-011M	649,832.2	5,136,217.7	300.8	147.0	50	-70	Metallurgy
SB-11-012M	650,574.0	5,136,968.5	299.2	201.0	275	-70	Metallurgy
SB-11-013M	649,714.0	5,136,291.9	298.8	200.7	50	-70	Metallurgy
SB-11-014M	650,471.0	5,136,928.3	307.1	201.0	275	-70	Metallurgy
SB-11-015M	650,296.2	5,136,910.7	304.3	201.0	250	-70	Metallurgy
SB-11-016M	650,550.3	5,136,874.6	299.2	252.0	275	-70	Metallurgy
SB-11-017M	650,168.3	5,136,487.7	304.9	201.0	275	-70	Metallurgy
SB-11-018M	650,252.7	5,136,746.6	304.0	252.0	275	-70	Metallurgy
SB-11-019M	650,147.1	5,136,725.8	302.9	201.0	275	-70	Metallurgy
SB-11-020M	650,617.2	5,136,944.0	299.4	201.0	275	-70	Metallurgy
SB-11-021	649,810.5	5,136,027.3	293.2	508.4	45	-60	Exploration
SB-11-022G	650,617.2	5,136,944.8	299.4	216.0	90	-65	Geotechnical
SB-11-023	649,803.2	5,136,543.8	313.0	282.0	95	-55	Exploration
SB-11-024	649,990.0	5,136,825.0	319.6	129.1	275	-65	Exploration
SB-11-025G	650,495.4	5,136,734.6	300.8	303.0	130	-65	Geotechnical
SB-11-026	649,838.4	5,136,393.8	303.6	405.0	95	-65	Exploration
SB-11-027	650,424.6	5,136,427.5	301.6	204.0	95	-55	Exploration
SB-11-028	650,205.2	5,136,216.3	310.6	141.0	95	-75	Exploration
SB-11-029G	650,497.1	5,137,071.7	305.4	219.0	320	-65	Geotechnical
SB-11-030	650,274.9	5,136,139.7	311.9	150.0	95	-55	Exploration
SB-11-031	649,542.5	5,136,338.9	300.5	507.0	45	-55	Exploration
SB-11-032G	650,294.9	5,136,910.4	304.3	321.0	280	-65	Geotechnical
SB-11-033	650,693.5	5,136,673.4	308.9	135.0	95	-55	Exploration
SB-11-034	649,912.0	5,136,018.1	296.4	441.0	100	-55	Exploration
SB-11-035G	649,931.5	5,136,648.5	310.2	180.0	280	-65	Geotechnical
SB-11-036G	649,706.1	5,136,272.1	298.3	201.0	230	-65	Geotechnical
SB-11-037G	650,238.4	5,136,364.8	314.8	210.0	100	-65	Geotechnical
SB-11-MW-001D	647,944.0	5,138,245.0	300.0	38.0	0	-90	Hydrogeology
SB-11-MW-001S	647,944.4	5,138,252.5	345.5	24.4	0	-90	Hydrogeology
SB-11-MW-002D	649,477.8	5,135,470.4	293.3	37.2	0	-90	Hydrogeology
SB-11-MW-002S	649,476.1	5,135,475.1	293.6	8.0	0	-90	Hydrogeology
SB-11-MW-003D	651,193.7	5,138,895.3	287.5	33.2	0	-90	Hydrogeology
SB-11-MW-003S	651,200.0	5,138,893.7	287.8	6.0	0	-90	Hydrogeology
SB-11-MW-004D	651,551.8	5,137,567.0	261.3	35.0	0	-90	Hydrogeology
SB-11-MW-004S	651,550.1	5,137,567.6	262.0	9.0	0	-90	Hydrogeology
SB-11-MW-005D	647,315.3	5,141,200.4	308.8	35.4	0	-90	Hydrogeology
SB-11-MW-005S	647,312.0	5,141,200.1	309.0	9.1	0	-90	Hydrogeology
SB-11-MW-006D	649,690.8	5,140,410.8	305.9	28.9	0	-90	Hydrogeology
SB-11-MW-006S	649,687.2	5,140,414.2	306.1	9.2	0	-90	Hydrogeology
SB-11-MWG-001	648,977.7	5,137,896.8	382.4	39.7	0	-90	Engineering

Hole ID	Northing[(1)]	Easting	Elevation	Length (m)	Azimuth (°)[(2)]	Dip (°)	Purpose
SB-11-MWG-002	649,135.0	5,137,847.7	386.3	29.9	0	-90	Engineering
SB-11-MWG-003	649,040.2	5,137,948.9	382.2	39.7	0	-90	Engineering
SB-11-MWG-004	649,149.8	5,137,718.7	388.4	29.8	0	-90	Engineering
SB-11-MWG-005	646,872.2	5,140,695.7	328.3	42.9	0	-90	Geotechnical
SB-11-MWG-006	647,692.3	5,140,769.7	320.0	35.3	0	-90	Geotechnical
SB-11-MWG-007	648,414.3	5,140,845.2	323.5	50.5	0	-90	Geotechnical
SB-11-MWG-008	649,184.6	5,140,705.9	332.8	32.5	0	-90	Geotechnical
SB-11-MWG-009	649,672.4	5,140,233.9	314.7	23.1	0	-90	Geotechnical
SB-11-MWG-010	649,978.2	5,139,892.0	340.6	22.5	0	-90	Geotechnical
SB-11-MWG-012	649,960.8	5,138,850.0	306.0	33.9	0	-90	Geotechnical
SB-11-MWG-013	649,934.3	5,138,292.2	317.6	39.6	0	-90	Engineering
SB-11-MWG-014	649,600.4	5,137,748.0	336.6	36.9	0	-90	Engineering
SB-11-MWG-015	649,577.4	5,137,472.3	358.6	30.8	0	-90	Geotechnical
SB-11-MWG-016	646,341.6	5,140,156.2	354.3	35.3	0	-90	Geotechnical
SB-11-MWG-017	647,996.0	5,140,821.4	321.7	38.3	0	-90	Geotechnical
SB-11-MWG-018	647,178.0	5,140,700.6	320.8	39.7	0	-90	Geotechnical

Notes:
1. Coordinates are in NAD83 Zone19.
2. Azimuth and dip are for the collar.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

This section was largely prepared by Eric Titley, P. Geo., Senior Manager Resource Geology, HDI.

Table 11-1 is a summary of the sampling and sample preparation work performed on the Project since 1979. The analytical history is summarized in Table 11-2.

TABLE 11-1 SAMPLING AND SAMPLE PREPARATION SUMMARY
Northcliff Resources Ltd. - Sisson Project

Year	Drill Holes	Operator	Method	Sample length Range	Sample length Typical	Sample Preparation Laboratory
1979	11	Kidd Creek Mines Ltd	Half Split	0.05 - 4.1 m Selected Intervals	2.0 - 4.1 m Selected Intervals	Bondar-Clegg Ottawa, ON
1980	12					
1981	9					
1982	8					
2005	9	Geodex Minerals Ltd	Half Split	0.12 - 2.56 m Continuous Intervals	1.5 m Continuous Intervals	Actlabs Ancaster ON or Fredericton, NB
2006	29		Half Split Mechanical	0.5 - 1.5 m Continuous Intervals	1.5 m Continuous Intervals	
2007	82					
2008	49					
2009	28					
2010	n/a	Northcliff Due Diligence	Pulp Split	1.5 m Selected Intervals	1.5 m Selected Intervals	Acme Vancouver BC
			Reject Split			
			1/4 Core Split			
2010	5	Northcliff	Half Split Diamond Saw	0.7 – 5.0 m Continuous Intervals	3.0 m Continuous Intervals	Actlabs Fredericton, NB
2011	61	Northcliff	Half Split Diamond Saw	0.7 – 5.0 m Continuous Intervals	3.0 m Continuous Intervals	Actlabs Fredericton, NB

TABLE 11-2 ASSAY SUMMARY
Northcliff Resources Ltd. - Sisson Project

Year	DDH	Assay Laboratory	Elements Assayed	Method & Code	Digestion or Activation	Finish
1979	11	Bondar-Clegg Ottawa, ON	WO_3, Cu, Mo	Unknown	Unknown	Unknown
1980	12					
1981	9					
1982	8		WO_3, Cu, Mo, Ag, As, Bi	Colorimetric; titration; AAS; FA	Thiocyanate for WO_3; HF + HNO_3 for Cu and Bi; FA for Ag; Na_2O_2 fusion for As	Colorimetric for WO_3; I2 titration for As; AAS for Cu, Mo, Ag, Bi
2005	9	Actlabs Ancaster, ON	W, Mo, Au, Ag, Cd, Cu, Mn, Ni, Pb, Zn, S, As, Ba, Hg, Sb	Multi-element analytical package IEPI AQUAGEO	Neutron activation for W, Au, As, Ba, Sb & Hg; AR digestion for Ag, Cd, Cu, Mn, Mo, Pb, Zn & S	W, Au, As, Ba, Sb & Hg by INAA; Ag, Cd, Cu, Mn, Mo, Pb, Zn & S by ICP
2006	29		W, Mo, Cu	INAA INAAGEO	Neutron activation for W, Mo; AR digestion for Cu	W & Mo by INAA; Cu by ICP
2007	82					
2008	49					
2009	28					
2010	Due Dil.	Acme Vancouver, BC	W, Mo, Cu and 38 additional elements	1EX 7KP2	Phosphoric acid digest for W and 4 additional elements, 4 acid digest for Cu & 40 additional elements	ICP-AES for W and 4 additional elements, ICP-MS for Cu & 40 additional elements.
2010	5	Actlabs Ancaster, ON	W, Mo, Cu & 61 additional elements	Geodex-INAA (INAAGEO) UT-2-0.5 g	Neutron activation for W, Mo; Aqua Regia digest for Cu & 61 Elements	W & Mo by INAA; Cu & 61 elements by ICP-OES/MS
2011	61	Actlabs Ancaster, ON	W, Mo, Cu & 61 additional elements	Geodex-INAA (INAAGEO) UT-2-0.5 g	Neutron activation for W, Mo; Aqua Regia digest for Cu & 61 Elements	W & Mo by INAA; Cu & 61 elements by ICP-OES/MS

KIDD CREEK SAMPLES (1979-1982)

According to Mercator (2011), documentation of the Kidd Creek drilling programs does not provide a lot of detail on the sample preparation methodologies, analytical procedures, or security considerations. The bagged samples of half core material were shipped from Kidd Creek's Fredericton office to Bondar-Clegg laboratories in Ottawa, Ontario, where sample preparation and assay were conducted. Assays from 1979 to 1981 were done for copper and WO_3 and in 1982 for copper, WO_3, silver, arsenic, and bismuth. The analytical methods used were as follows:

- WO_3 - thiocyanate digestion with colorimetric finish

- Mo – nitric and hydrochloric acid (HNO_3 + HCl) digestion with atomic absorption (AAS) finish
- Cu – hydrofluoric and nitric acid (HF + HNO_3) digestion with AAS finish
- Ag fire assay (FA) fusion with AAS finish
- Bi - HF + HNO_3 digestion with AAS finish
- As - Na_2O_2 fusion and then titrated by I_2 solution.

In addition, certain samples were selected for geochemical analysis. Table 11-3 lists the analytical methods used in the 1982 program.

TABLE 11-3 ANALYTICAL METHODS 1982 PROGRAM
Northcliff Resources Ltd. - Sisson Project

Type	Element	Fraction	Digestion or Extraction	Finish
Assay	WO_3	-200 Mesh	Thiocyanate	Colorimetric
Assay	Cu	-200 Mesh	HF + HNO_3	Atomic Absorption
Assay	Ag	-200 Mesh	Fire Assay	Atomic Absorption
Assay	As	-200 Mesh	Na Peroxide Fusion	Idiometric Titration
Assay	Bi	-200 Mesh	HF + HNO_3	Atomic Absorption
Geochemical	Pb, Zn, Bi	-200 Mesh	HNO_3	Atomic Absorption
Geochemical	Mo	-200 Mesh	HNO_3 + HCl	Atomic Absorption
Geochemical	Sb, Sn	-200 Mesh		X-Ray Fluorescence
Geochemical	F	-200 Mesh	Fusion	Specific Ion Electrode
Geochemical	As	-200 Mesh	HNO_3 + $HClO_4$	Atomic Absorption

No mention is made of sample or site security measures in the Kidd Creek reports. It is assumed that security measures consistent with industry standards of the day were in place during the 1979 through 1982 drilling programs.

GEODEX SAMPLES (2005-2009)

Activation Laboratories Ltd. (Actlabs) performed sample preparation and analytical work for the 2005 through 2009 drilling programs. Two Actlabs facilities, one in Ancaster, Ontario, and the other in Fredericton, New Brunswick, were used. Core samples were placed in plastic sample bags, checked for sample sequence integrity, and shipped by courier to the laboratory. Core samples were crushed, split, and then pulverized to 95% passing 105 µm (150 mesh).

In 2005, INAA was used to determine gold, arsenic, barium, antimony, mercury, and tungsten and Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) was used to determine silver, cadmium, copper, manganese, molybdenum, nickel, lead, zinc, and tin after aqua regia digestion.

From 2006 and onward, Geodex focused on tungsten and molybdenum, as the main metals of economic interest. Tungsten and molybdenum were determined by the INAA method with included tungsten and molybdenum standards. Copper in selected samples was determined by aqua regia digestion with ICP-AES finish. In addition, some samples were selected for multi-elements analysis using a variety of assay methods (Table 11-4).

In addition to the mainstream samples analyzed by Actlabs, check duplicates from the 2006 drilling program were analyzed by ALS Chemex (ALS) in Vancouver, British Columbia, using X-ray fluorescence (XRF) on pressed pellets. In the 2007, 2008, and 2009 drilling programs, check duplicate analyses were carried out at Global Discovery Laboratory in Vancouver, British Columbia (acquired by Acme Analytical Laboratories in 2008).

Mercator (2009) reported that a system of drill core security was implemented during the 2006 program that began at the drill site and continued through transportation to the sampling and logging facility, and then onward through shipment of samples to the laboratory. At the drill site, the security of core was the responsibility of the contractor under the direction of Geodex. Drill crews were instructed that only they and designated Geodex personnel were to access core at the drill sites and that core boxes should be covered immediately after drilling. Designated field transfer points were established at which responsibility for core security passed from the drilling contractor to Geodex. This was coordinated daily between the drilling contractor crews and Geodex personnel. Core delivered to the facility was placed in a secure location prior to logging and sampling, and Geodex personnel were responsible for security of all core and samples at this facility. Prior to sampling, a digital photograph of each box of core was taken and archived for future reference. After core logging and sampling were completed, core boxes containing half-core archives were labelled with weather-proof aluminum tags and were bound with steel strapping and stored at the logging facility on pallets. Core sample numbers were recorded on sample shipment forms, and after checking against sample listings, were placed in sealed plastic buckets for shipment to the laboratory. Details of the shipment were recorded, including date shipped, sample numbers, client account number, laboratory name, and name of the individual responsible for preparation of the documents and security of the sample shipment preparation process.

NORTHCLIFF DUE DILIGENCE (2010)

As part of a due diligence review, a sampling program of core, rejects, and pulps was carried out by Darrel Johnson, P.Geo., of HDI. Eighteen core samples, 25 coarse rejects, and 237 pulp samples from site were collected on behalf of Northcliff and submitted to Acme Analytical Laboratories (Acme) in Vancouver, British Columbia. The samples were prepared at Acme. All core samples were crushed to 75% passing a 2 mm screen (10 mesh) and a 250 g subsample was taken. Pulverizing was performed on the 250 g splits to 85% passing 75 µm (200 mesh).

Molybdenum, copper, and 39 additional elements were determined by four acid digestion with an ICP-MS finish (Acme code: 1EX). Molybdenum, tungsten, and three additional elements were reassayed by phosphoric acid leach with ICP-AES finish (Acme code: 7KP2). In addition, 27 external standards and five blanks were inserted and assayed along with the mainstream samples.

NORTHCLIFF SAMPLES (2010)

Sampling during Northcliff's 2010 drilling program was carried out under the supervision of Dr. James Lang, P.Geo, of HDI.

Core logging and sampling activities were conducted by Northcliff at the Geodex logging facility located in Keswick Ridge, New Brunswick. Procedures for core handling and processing were generally similar to those employed by Geodex. Drill cores were transported from the Sisson Project site to the core logging facility by company truck. Core received from the field was washed and prepared for initial inspection under ultra-violet (UV) light to define major rock units and associated mineralized intervals. This information was used to provide a preliminary assessment of mineralization intensity. Core was then stacked for subsequent detailed logging and sampling.

After logging by a Northcliff geologist, but prior to sampling, all core was photographed using a standardized layout format and digital camera to provide a permanent pre-sampling record of core from each drill hole. Continuous rock quality and core recovery determinations were also recorded for all cores and entered into the digital project database. Conventional core logging procedures were standardized through use of a project lithological legend and lithocode system with log information entered directly into a digital logging utility accessed via the logging geologist's laptop computer and later integrated into the digital project database.

Core sampling by Northcliff was conducted using diamond saws. One half of each split core sample was placed in a pre-labelled plastic bag along with a corresponding sample book tag and then sealed and laid out for checking prior to insertion of quality assurance/quality control (QA/QC) materials into the associated sample sequence. A corresponding tag was secured to the core box for archive purposes. Tracking of sample intervals and QA/QC materials was integrated with the logging function and thereby within the digital project database.

The core samples were collected by site geological staff. Most sample intervals were from continuous three metre lengths of core. Some interval lengths varied depending on the geologic features encountered. The sample intervals were marked and then the core samples were cut in half lengthwise with a diamond saw. The samples were sealed in plastic bags and sent to Actlabs sample preparation laboratory in Fredericton, New Brunswick.

Core samples and associated QA/QC samples were prepared at Actlabs sample preparation laboratory in Fredericton, New Brunswick, and analyzed at Actlabs in Ancaster, Ontario.

At Actlabs in Fredericton, the samples were sorted, dried, weighed, and then crushed to 75% passing 2 mm (10 mesh). After crushing, an 800 g subsample was split and pulverized to 95% passing 105 µm (150 mesh). The pulverized subsample pulps were sent to Actlabs in Ancaster, Ontario, for assay. Actlabs in Ancaster is ISO 17025 accredited for specific registered tests. In addition, it is also accredited to CAN-P-1579, specific to mineral analysis laboratories.

At Actlabs in Ancaster, tungsten and molybdenum were determined by the Geodex INAA method (Actlabs code: INAAGEO); copper, silver, sulphur, and an additional 59 elements were analyzed by aqua regia digestion with Inductively Couple Plasma Optical Emission Spectroscopy/Mass Spectrometry (ICP-OES/MS) finish (Actlabs code: UT-2-0.5g).

In-line duplicates were assayed by Actlabs along with the mainstream samples using the same method. Inter-laboratory check assays were performed by Acme. Acme is ISO certified (since 1996) and is currently registered to the ISO 9001:2000 quality system standards. Tungsten, molybdenum, and three additional elements were determined by phosphoric acid leach with ICP-AES finish (Acme code: 7KP2). Molybdenum, copper, and 39 additional elements were determined by four-acid digestion with ICP-MS finish (Acme code: 1EX).

A similar system of drill core security, as used by Geodex in 2005 through 2009, was implemented by Northcliff for the 2010 drill program.

NORTHCLIFF SAMPLES (2011)

Sampling during the 2011 drilling program was carried out under the supervision of Dr. James Lang, P.Geo., of HDI, using essentially the same procedures as those used in 2010. Mainstream sample preparation and assay work continued to be performed by Actlabs using the same procedures as for the 2010 drill program. Sample preparation and test work on metallurgical samples was performed by SGS of Lakefield, Ontario.

Figure 11-1 is a flow chart illustrating the 2011 drill core sampling, sample preparation, and assay analysis.

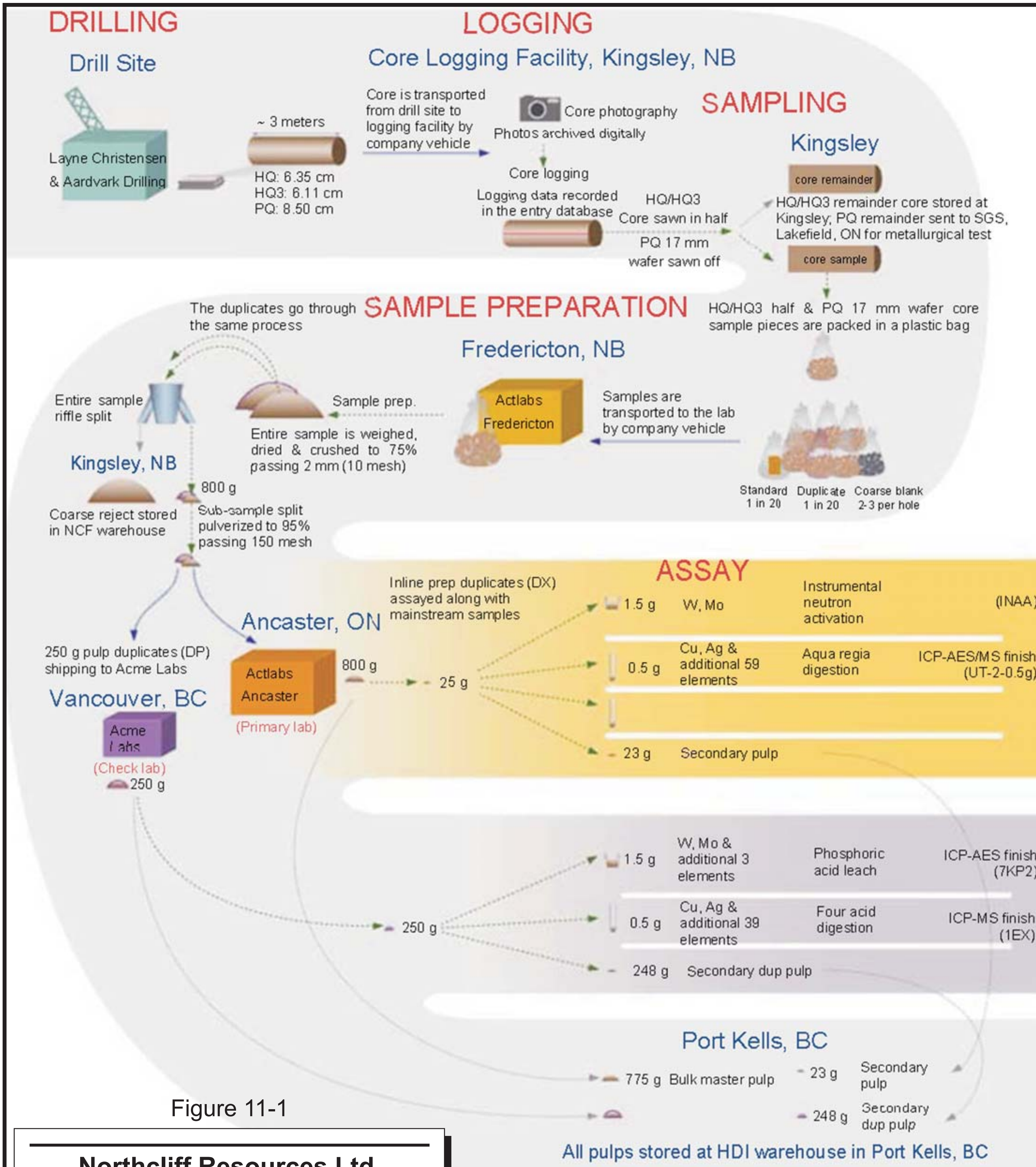


Figure 11-1

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Drill Core Sampling Preparation and Analytical Flow Chart

June 2012

Source: Northcliff Resources Ltd., 2011.

CORE RECOVERY

Table 11-4 summarizes the core recovery for the drilling conducted from 2006 onwards. RPA notes that the recovery appears to be satisfactory.

TABLE 11-4 CORE RECOVERY
Northcliff Resources Ltd. - Sisson Project

Year	Number of Intervals	Mean Core Recovery Percent
2006	2,341	98.0
2007	6,632	97.1
2008	3,871	97.6
2009	1,561	97.4
2010	894	98.0
2011	2,415	98.6
Total	**17,714**	**97.6**

DISCUSSION AND CONCLUSIONS

In RPA's opinion, the sampling and core handling have been carried out in an appropriate manner consistent with common industry practice. The assaying has been performed at independent commercial accredited laboratories, using conventional approved methodologies. The holes have been drilled and samples taken such that they will be representative of the deposit mineralization.

RPA notes that the low grade ranges encountered for the Sisson Project have prompted the selection of INAA as the primary analytical technique. This is not as common a technique as more typical assay methods such as ICP or AAS, and is not generally offered by commercial laboratories. At present, Actlabs is one of the few in Canada that offers this service. Consequently, pulp duplicate comparisons with other laboratories, using different protocols, are likely to result in apparent biases. This could create some difficulties in evaluation of assay QA/QC results, but it is not anticipated to adversely affect the Mineral Resource estimate.

12 DATA VERIFICATION

This section was largely prepared under the direction of Eric Titley, P. Geo., Senior Manager Resource Geology, HDI, with assistance from Weidong Yang, Ph.D., and Catherine Sidwell.

EARLIER OPERATORS

KIDD CREEK (1979-1982)

Reports documenting the Kidd Creek Mines drilling programs do not specifically address QA/QC issues and no evidence was noted of any external QA/QC samples inserted with core samples. However, it was reported that 67 original sample pulp splits from drill hole SSN-33 were reassayed and overall reproducibility of assay values between sample splits was found to be consistent and acceptable.

The overall impact of the Kidd Creek drill holes on the current Sisson resource estimate is limited as many of the holes are outside the current study area. Of the 31,900 core samples assayed on the Project from 1979 to the end of 2011, only 2,700, or about 8.5% of the total, are from the Kidd Creek drill holes. In 2007 and 2008, Geodex sampled and assayed 769 intervals from the historic Kidd Creek drill core, which had never previously been assayed.

GEODEX (2005-2009)

During the 2005 drill program, no external QA/QC samples were applied by Geodex. Only internal standards, blanks, and duplicates administered by Actlabs were used to assess the analytical results. From 2006 onward, Geodex implemented a QA/QC protocol which included the use of external standards and blanks, which were inserted and analyzed with the mainstream core samples. Table 12-1 is a summary of the regular mainstream samples and additional QA/QC samples analyzed in the years 2005 through 2009.

In the 2006 drill program, Geodex completed 29 holes and collected 4,876 core samples. The company adopted a QA/QC program that included systematic insertion of certified standards and barren rock blanks and analysis of duplicate samples. As shown in Table 12-1, 52 standards and 193 blanks were inserted and assayed along with mainstream samples. A total of 161 check duplicates including 147 mainstream duplicates and 14 blanks were submitted to the ALS Chemex laboratory in Vancouver, British Columbia, for check analysis.

TABLE 12-1 ASSAY QA/QC SUMMARY FOR 2005-2009
Northcliff Resources Ltd. - Sisson Project

Year	MS	DP	ST	BL	ST %
2005	515	-	-	-	-
2006	4,876	147	52	193	4
2007	11,940	320	498	522	4
2008	5,114	186	213	219	4
2009	2,945	121	156	129	4
ALL	**25,390**	**774**	**919**	**1,063**	**4**

Notes:
1. MS – mainstream sample.
2. DP - duplicate.
3. ST- standard.
4. BL - blank.
5. ST% - standards as a percent of the total mainstream samples.

In the 2007 drill program, Geodex drilled 83 holes with a total length of 20,194 m. A total of 11,940 core samples were collected and 498 standards and 522 blanks were applied. In addition, 417 check duplicates (320 mainstream duplicates and 97 blank duplicates) were assayed at Actlabs.

Geodex completed 49 holes in 2008 with a total length of 12,122 m and collected 5,114 core samples. They submitted 213 external standards and 219 external blanks with these samples for analysis as Actlabs. A total of 190 check duplicates (186 mainstream duplicates and four blank duplicates) were also assayed.

A 4,899 m, 28-hole program was completed by Geodex in 2009 in which 2,945 core samples were collected, and 156 standards and 129 blanks were included for analysis at Actlabs. In addition, 121 mainstream duplicates were selected for check assay.

In 2007 and 2008, Geodex also assayed 769 core samples from the Kidd Creek program, from core intervals that had not previously been assayed.

STANDARDS

Table 12-2 lists the standard reference samples used in 2006 to 2009 exploration programs.

TABLE 12-2 STANDARDS USED BY GEODEX 2006 THROUGH 2009
Northcliff Resources Ltd. - Sisson Project

Standard	Times Used	W (%)	Mo (%)	Cu (%)
BH-1	144	0.422	*0.02*	-
HV-2	345	-	0.048	0.57
MP-2	219	0.65	0.281	-
NIST8608	18	0.22	0.098	0.096
TLG-1	193	0.083	-	-

Note: Value in italics is not certified.

Figures 12-1 and 12-2 show the combined standard control charts based on Geodex 2006 and 2009 assay QA/QC results.

In RPA's opinion, the standards results from the Geodex assays show a fairly broad scatter, but are generally within acceptable limits and unbiased.

FIGURE 12-1 TUNGSTEN QUALITY CONTROL CHART 2006 - 2009 DRILL PROGRAMS

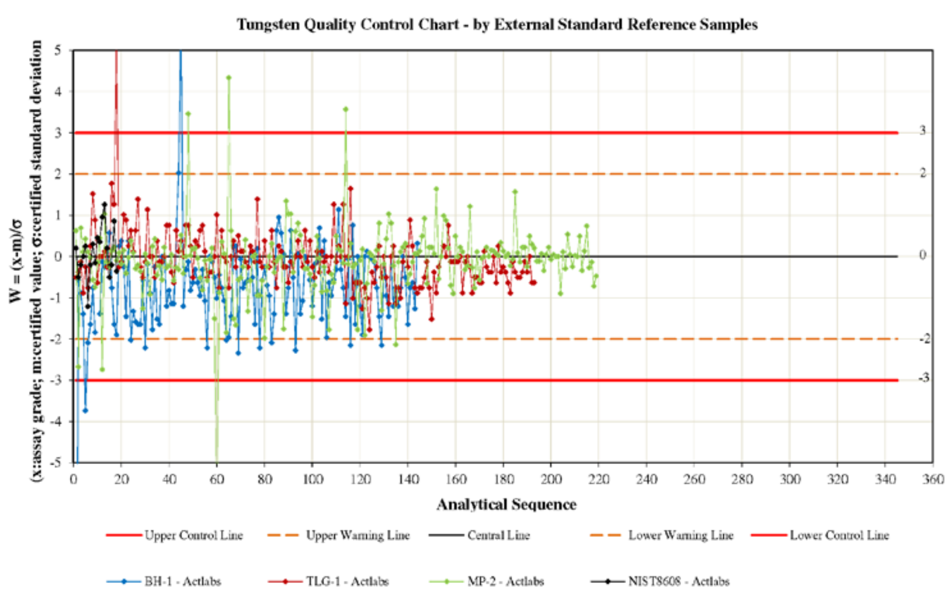
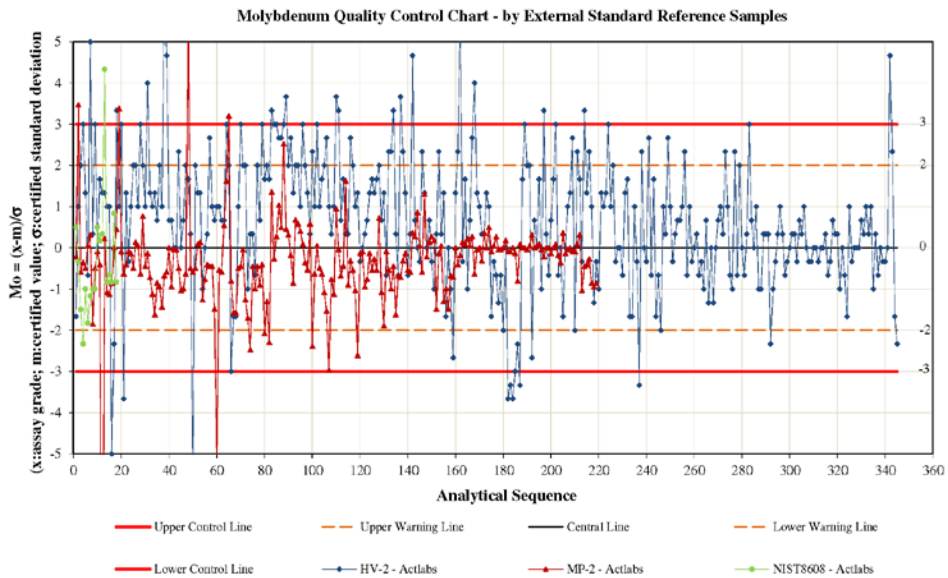


FIGURE 12-2 MOLYBDENUM QUALITY CONTROL CHART 2006 - 2009 DRILL PROGRAMS



BLANKS

A total of 1,063 external blanks were included with the regular samples during the 2006 through 2009 drill programs. Figure 12-3 and 12-4 show the results of tungsten and molybdenum respectively for these blanks. The assay grades of the blanks are generally low (≤0.001%). However, some are obviously higher than normal, which Northcliff personnel think may be due to some degree of cross-contamination during sample preparation, perhaps during the sample crushing process. In RPA's opinion, this is a plausible explanation. The total number of apparent failures relative to the number of determinations is within an acceptable tolerance and seems to have improved with time.

FIGURE 12-3 TUNGSTEN RESULTS OF BLANK SAMPLES 2006 - 2009 DRILL PROGRAMS

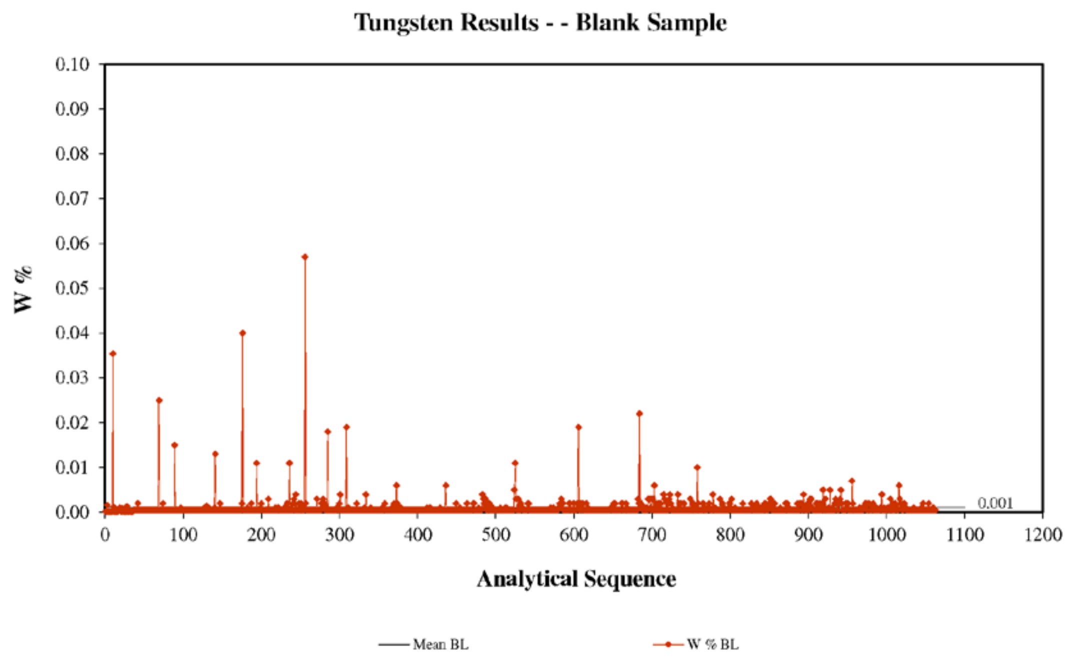
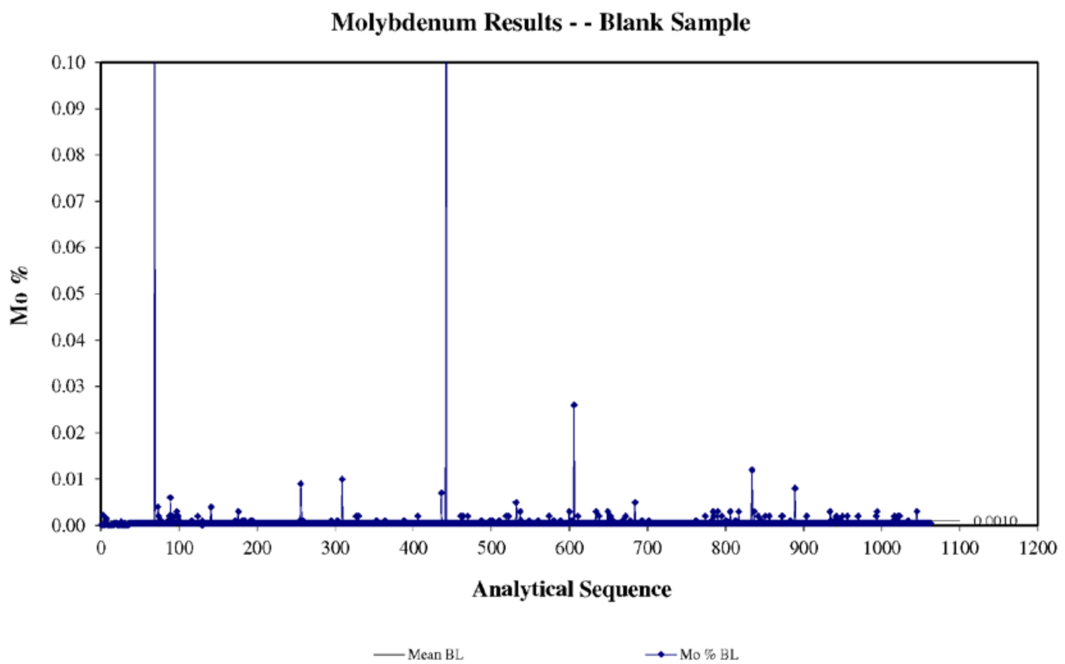


FIGURE 12-4 MOLYBDENUM RESULTS OF BLANK SAMPLES 2006 - 2009 DRILL PROGRAMS



DUPLICATES

A total of 889 inter-laboratory pulp duplicates (774 mainstream duplicates and 115 blank duplicates) were assayed at a second laboratory during the 2006 through 2009 Geodex drilling programs. Figures 12-5 to 12-6 are scatterplots of the matched pair duplicate results for tungsten and molybdenum respectively comparing Actlabs results on the X axis with the check laboratory results from ALS Chemex (2006) and Global Discovery Labs (2007-2009) on the Y axis.

FIGURE 12-5 TUNGSTEN DUPLICATES SCATTERPLOT 2006 - 2009 DRILL PROGRAMS

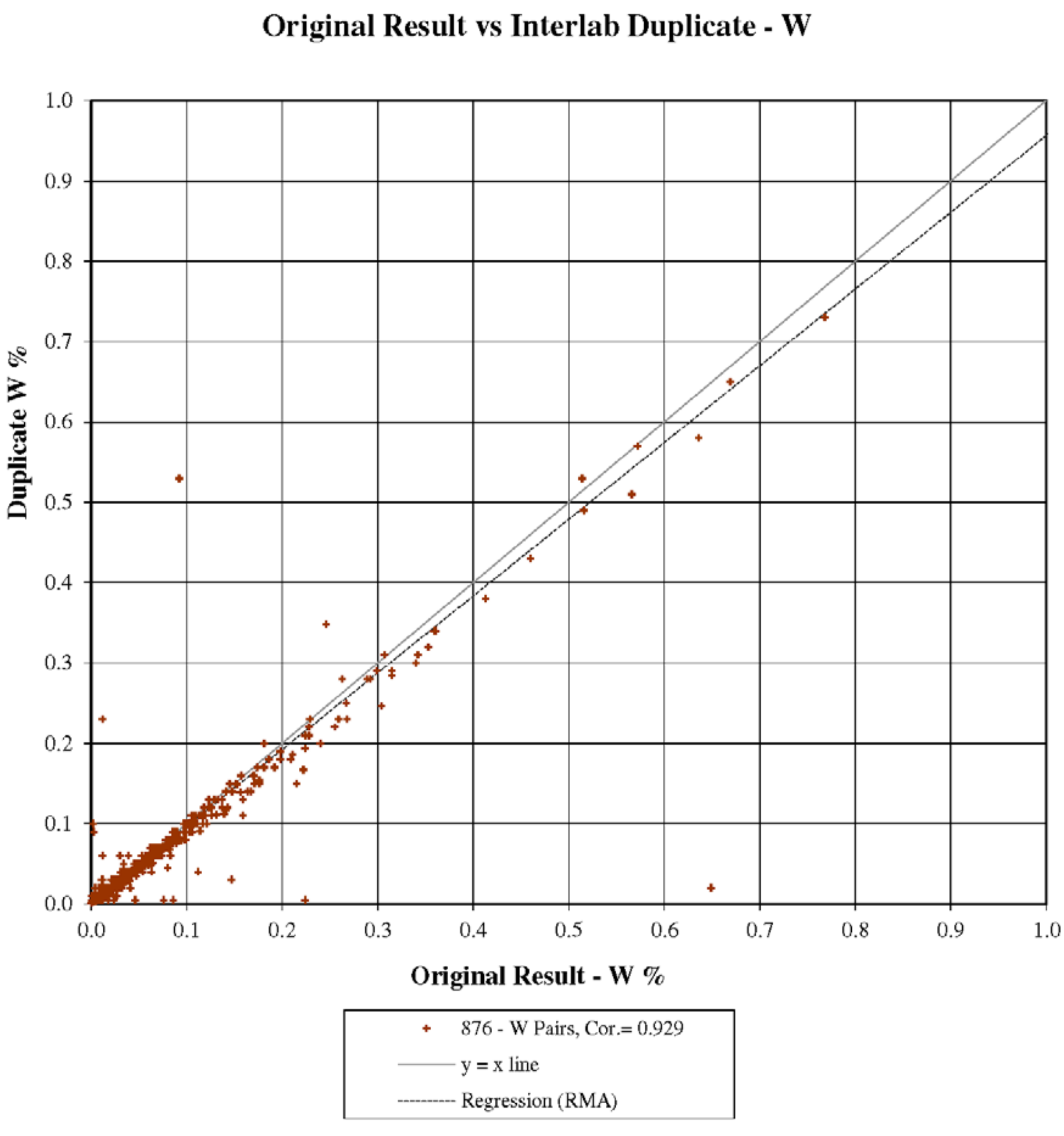
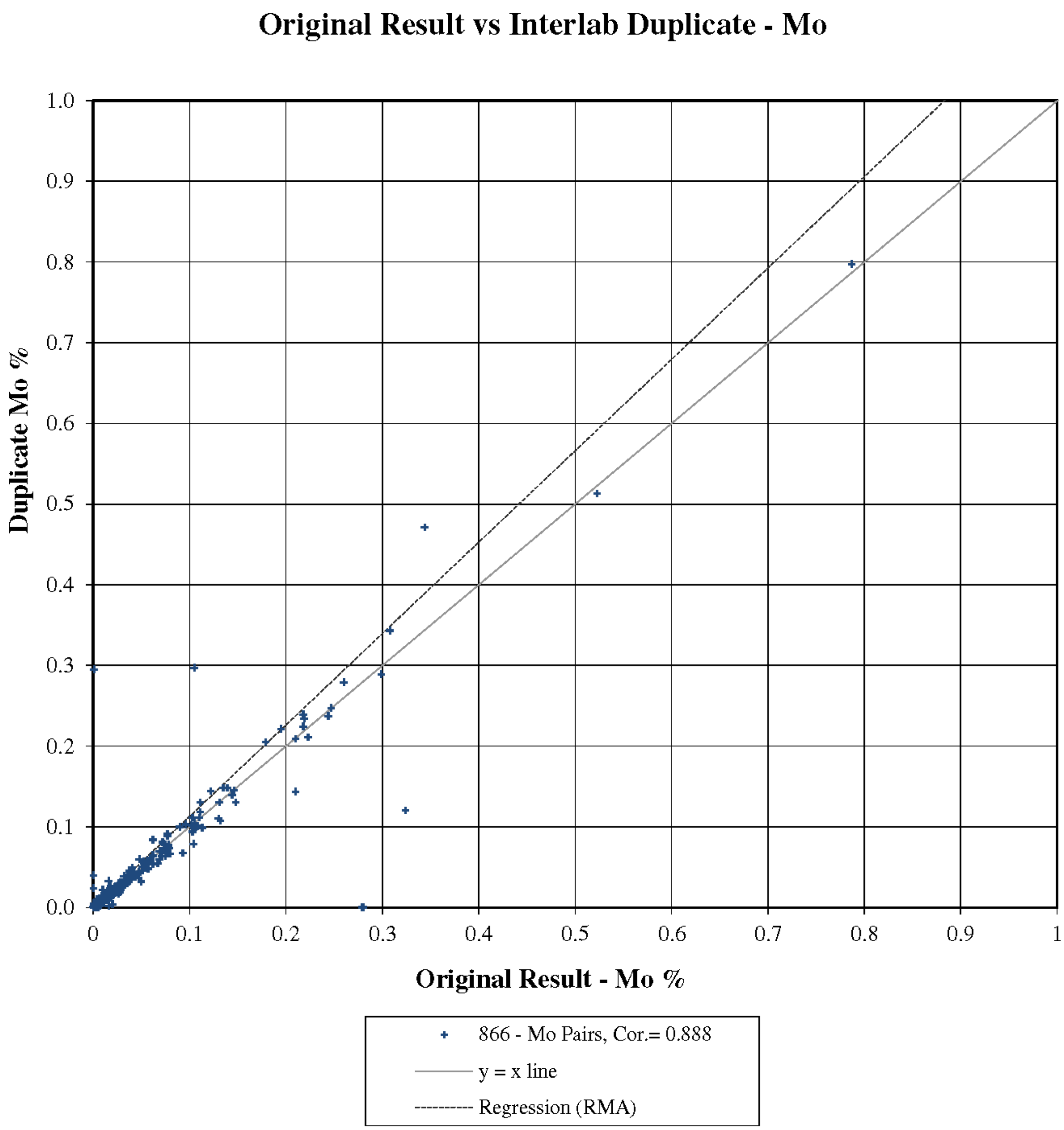


FIGURE 12-6 MOLYBDENUM DUPLICATES SCATTERPLOT 2006 - 2009 DRILL PROGRAMS



In RPA's opinion, the results for molybdenum demonstrate a small bias between the original and duplicate assays. On inspection of the data, this apparent bias was found to be due to one outlier, which plots outside the range of Figure 12-6. When this outlier is removed, the apparent bias disappears.

NORTHCLIFF DUE DILIGENCE SAMPLING (2010)

As part of a due diligence review conducted by Northcliff in 2010, 18 core samples, 25 coarse rejects, and 237 pulps were selected and sent for reanalysis. Northcliff included 27 standards and five blanks with the samples and sent them to Acme in Vancouver for assay. The results from this resampling program confirmed the original results obtained by Geodex.

A total of 27 external standards and five blanks were included with this suite of samples. Table 12-3 is a summary of the due diligence sample types.

TABLE 12-3 SUMMARY OF 2010 QA/QC SAMPLES
Northcliff Resources Ltd. - Sisson Project

Type	MS	ST	BL	Sum
¼ Core	18	2	1	21
Reject	25	2	0	27
Pulp	237	23	4	264
ALL	**280**	**27**	**5**	**312**

STANDARDS

Three different assay standards were submitted as part of the due diligence program. Two commercially available standards W-4 and TLG-1 were submitted along with a proprietary copper-molybdenum standard. Table 12-4 lists the key parameters of these standards.

TABLE 12-4 STANDARDS USED IN DUE DILLIGENCE ANALYSES
Northcliff Resources Ltd. - Sisson Project

Standard	Times Used	W (%)	Mo (%)	Cu (%)
W-4	2	0.366	0.11	0.139
Cu-Mo	13	-	0.0146	1.23
TLG-1	12	0.083	-	-

Figures 12-7 and 12-8 show the assay results of these standards in the due diligence program. The assayed values of tungsten and molybdenum for W-4 and the assayed values of tungsten for TLG-1 are within the control limits. Three of the thirteen molybdenum values for the copper-molybdenum standard returned above of the upper control limit.

FIGURE 12-7 TUNGSTEN QUALITY CONTROL CHART FOR DUE DILIGENCE

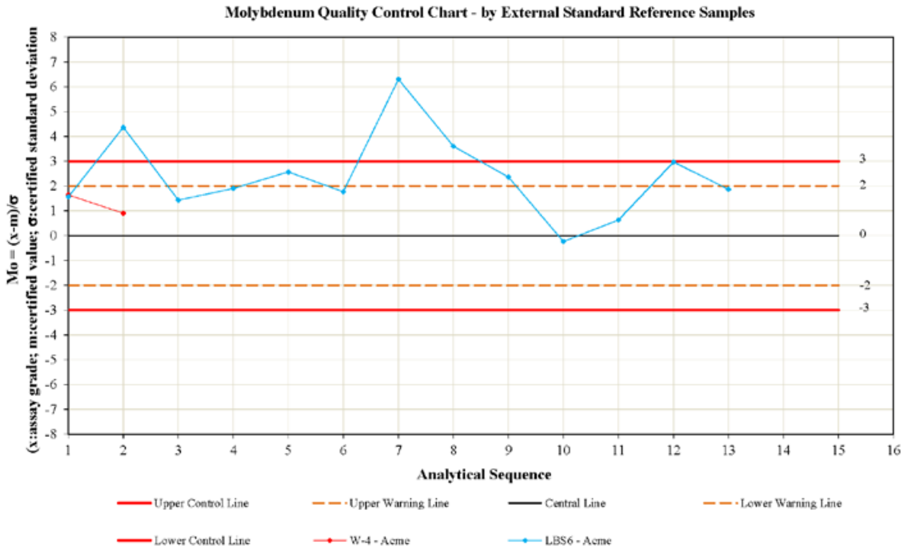
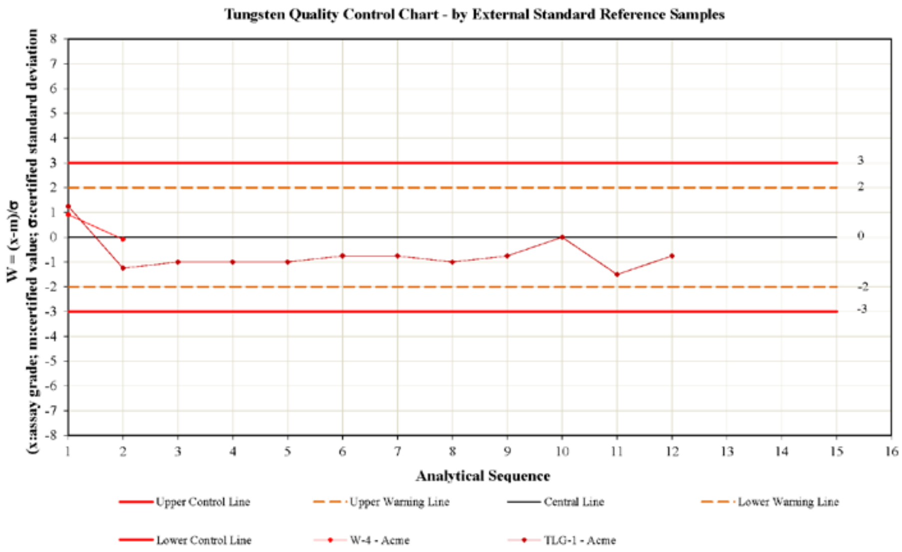


FIGURE 12-8 MOLYBDENUM QUALITY CONTROL CHART FOR DUE DILIGENCE

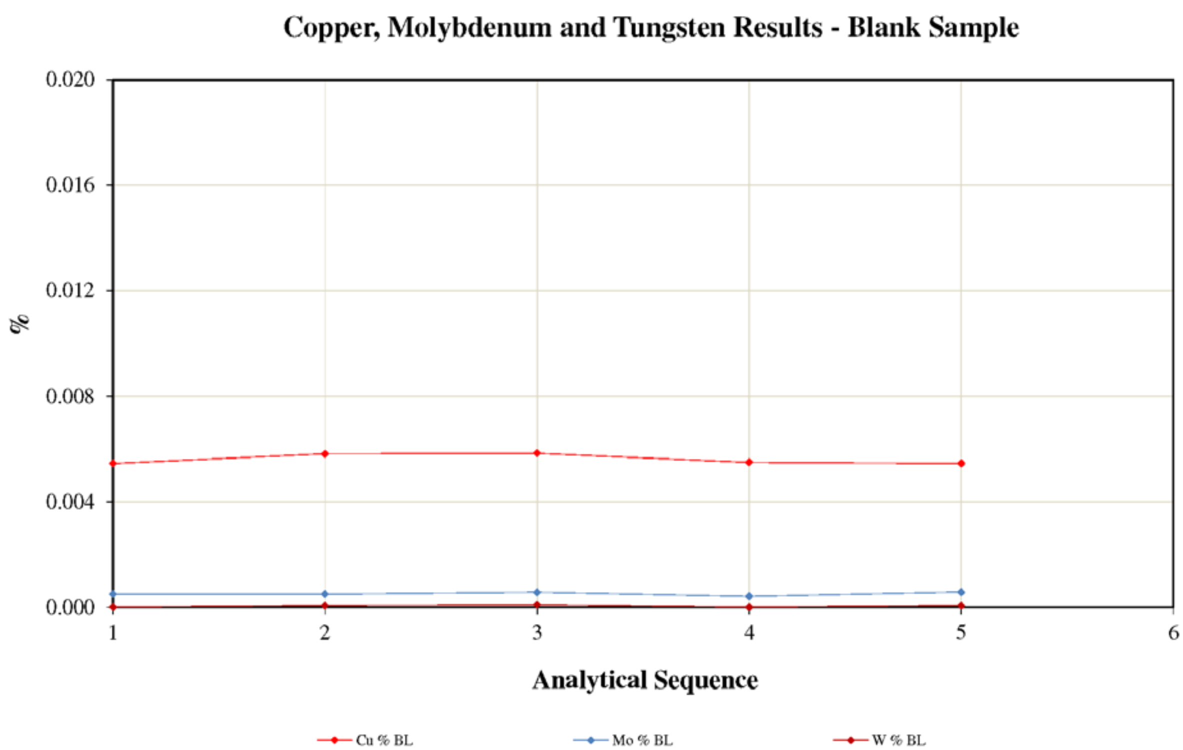


RPA notes that the molybdenum standards results show a persistent positive bias. However, since these samples are not part of the resource estimation database, there is no concern with respect to the block grade interpolations.

BLANKS

A total of five pulp blanks, comprising commercial blank BL-6, were included with the due diligence samples to monitor for potential contamination during sample preparation and assay. BL-6 is certified as a standard with very low (<0.01 ppm) precious metal content, however, as it had been analyzed extensively on another HDI project with low tungsten (0.6 ppm) and molybdenum (4.7 ppm) results, it was considered suitable for this purpose. Figure 12-9 shows the copper, molybdenum, and tungsten results. In Northcliff's opinion, no contamination is apparent based on these results, and RPA concurs.

FIGURE 12-9 COPPER, MOLYBDENUM AND TUNGSTEN RESULTS OF BLANK SAMPLE BL-6 FOR DUE DILIGENCE



DUPLICATES

The 280 due diligence samples were compared with the original results obtained by Geodex. Figures 12-10 through 12-15 are comparisons of the matched pairs duplicate results in a series of scatterplots by sample type. Generally speaking, the pulp and reject duplicates match the original results reasonably well. Although the results of the quarter core duplicates do not match the original half core sample results very well, the presence of tungsten and molybdenum mineralization is confirmed in the samples.

Northcliff personnel are of the opinion that it is likely that a significant portion of the difference between these samples is attributable to the fact that it is often not possible to obtain a truly representative sample of vein-type mineralization in quarter core. In RPA's opinion, this is a plausible explanation.

FIGURE 12-10 TUNGSTEN SCATTERPLOT OF ¼ CORE DUPLICATES FOR DUE DILIGENCE

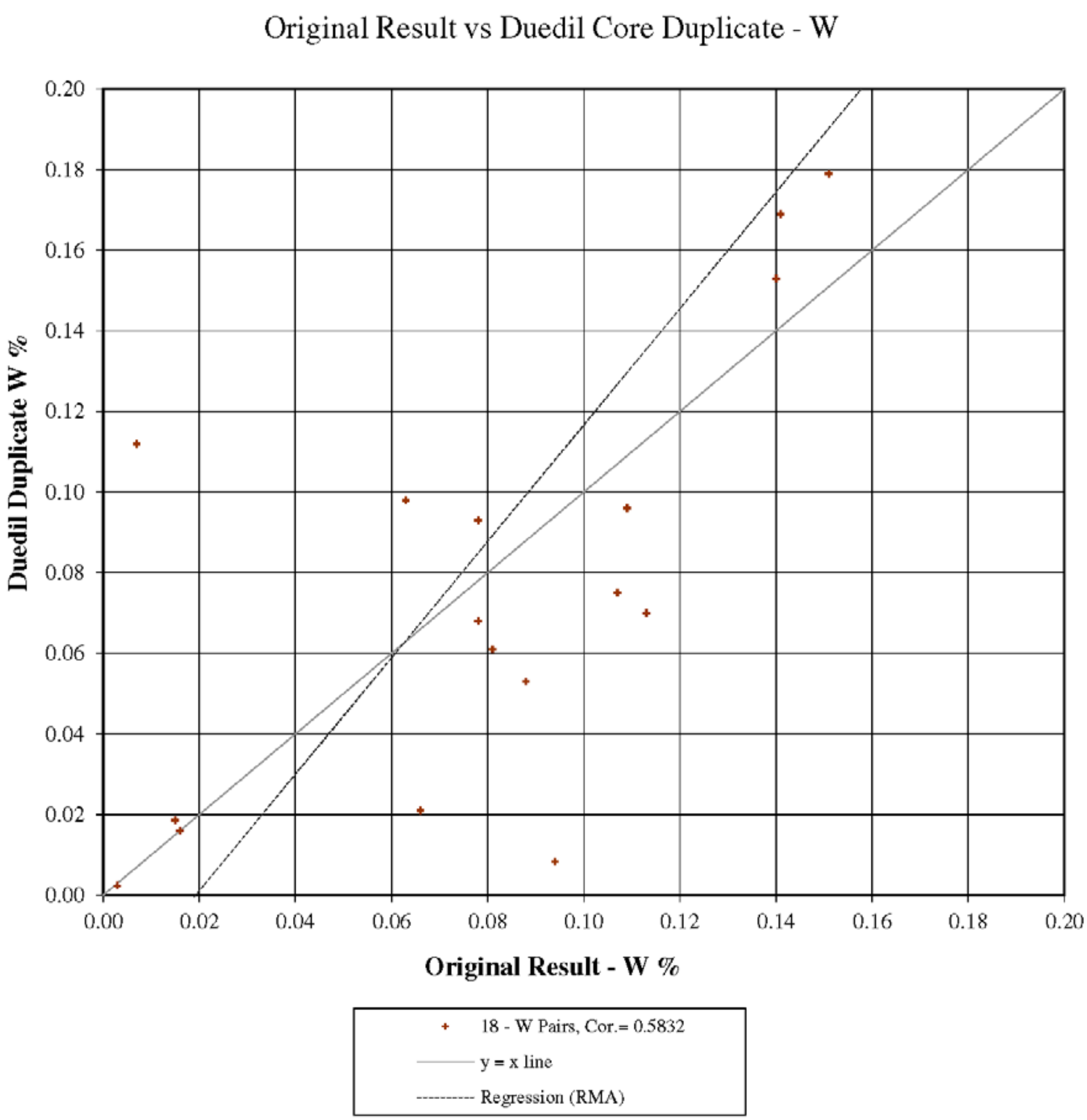


FIGURE 12-11 MOLYBDENUM SCATTERPLOT OF ¼ CORE DUPLICATES FOR DUE DILIGENCE

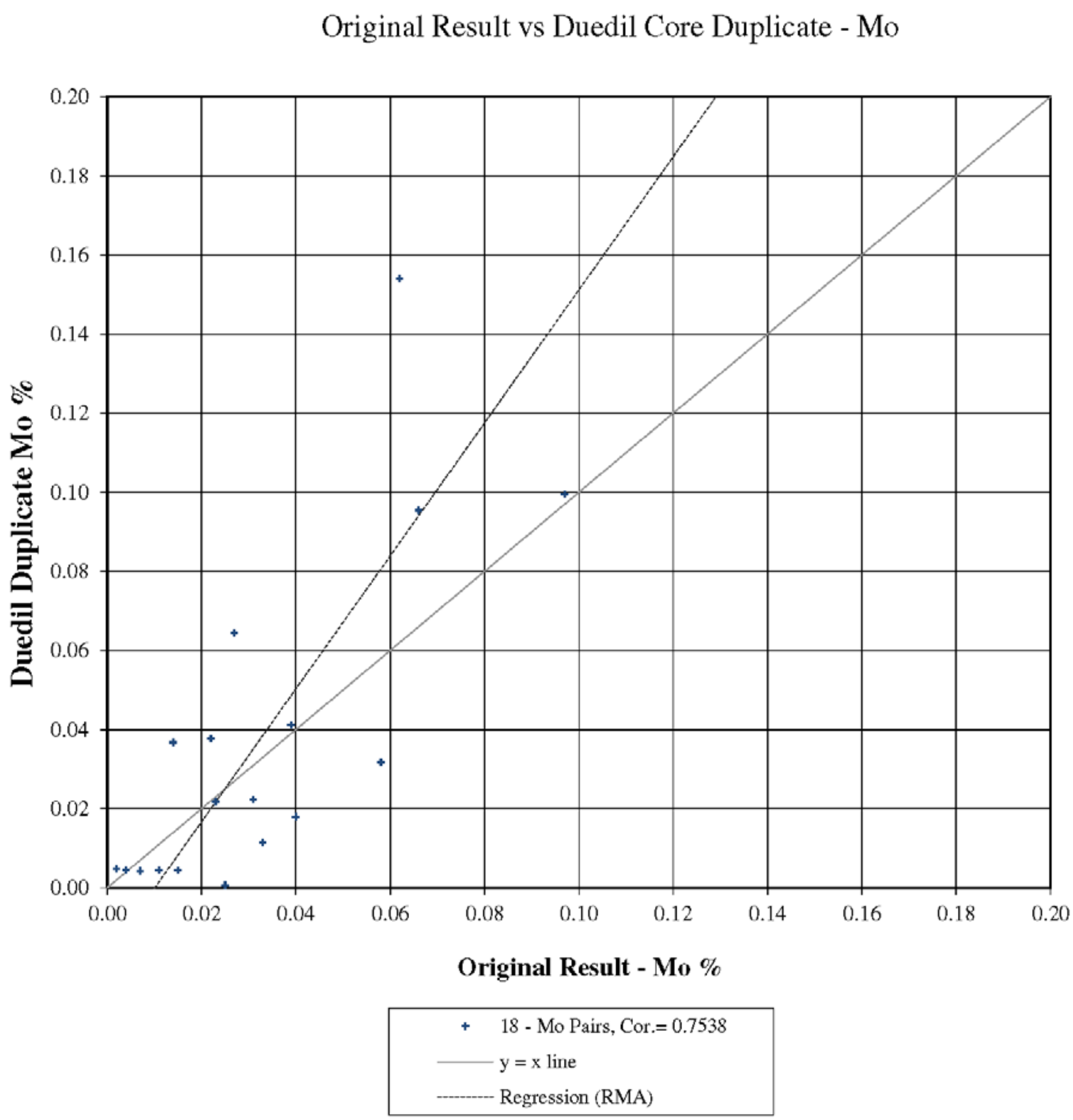


FIGURE 12-12 TUNGSTEN SCATTERPLOT OF REJECT DUPLICATES FOR DUE DILIGENCE

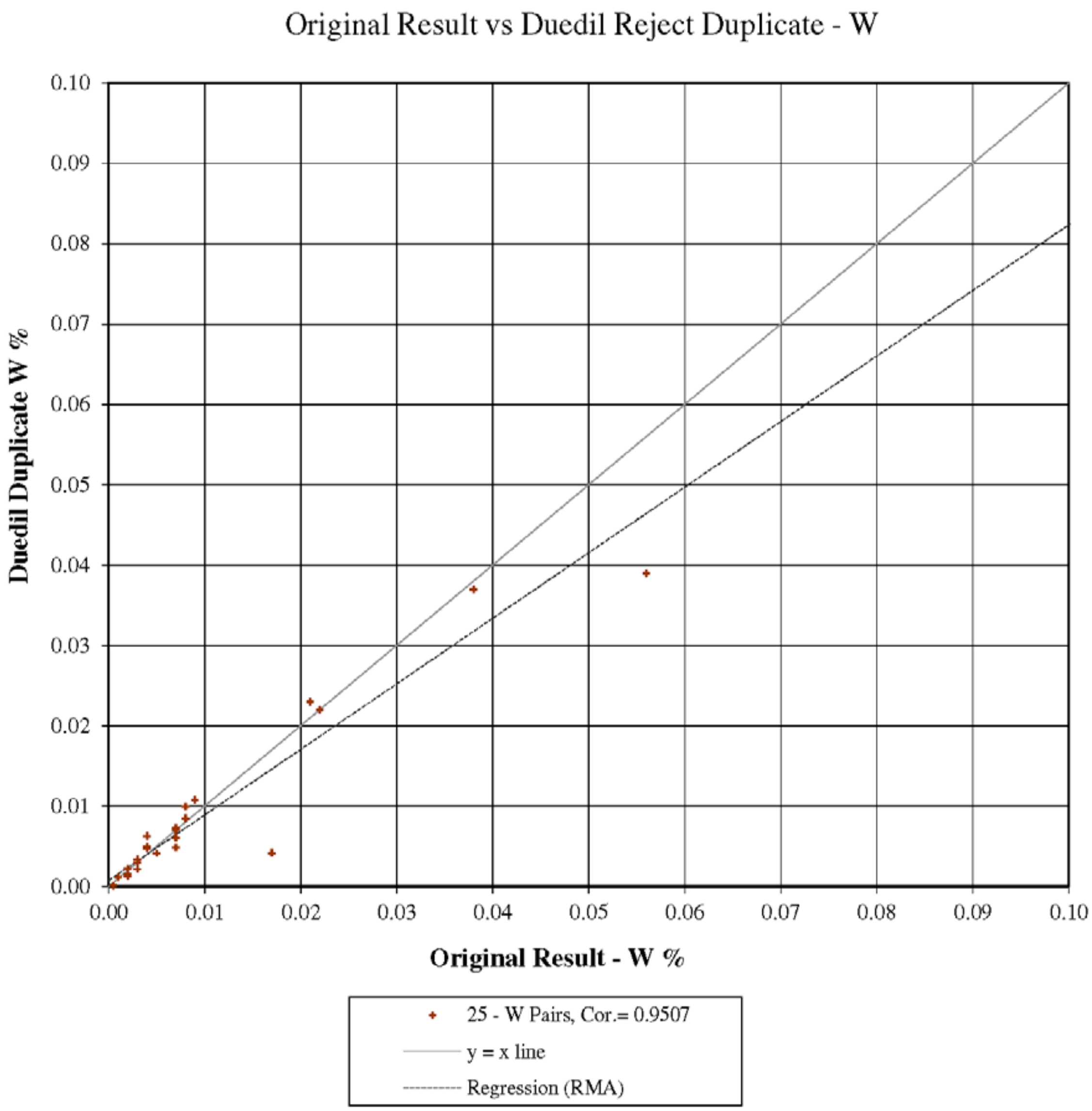


FIGURE 12-13 MOLYBDENUM SCATTERPLOT OF REJECT DUPLICATES FOR DUE DILIGENCE

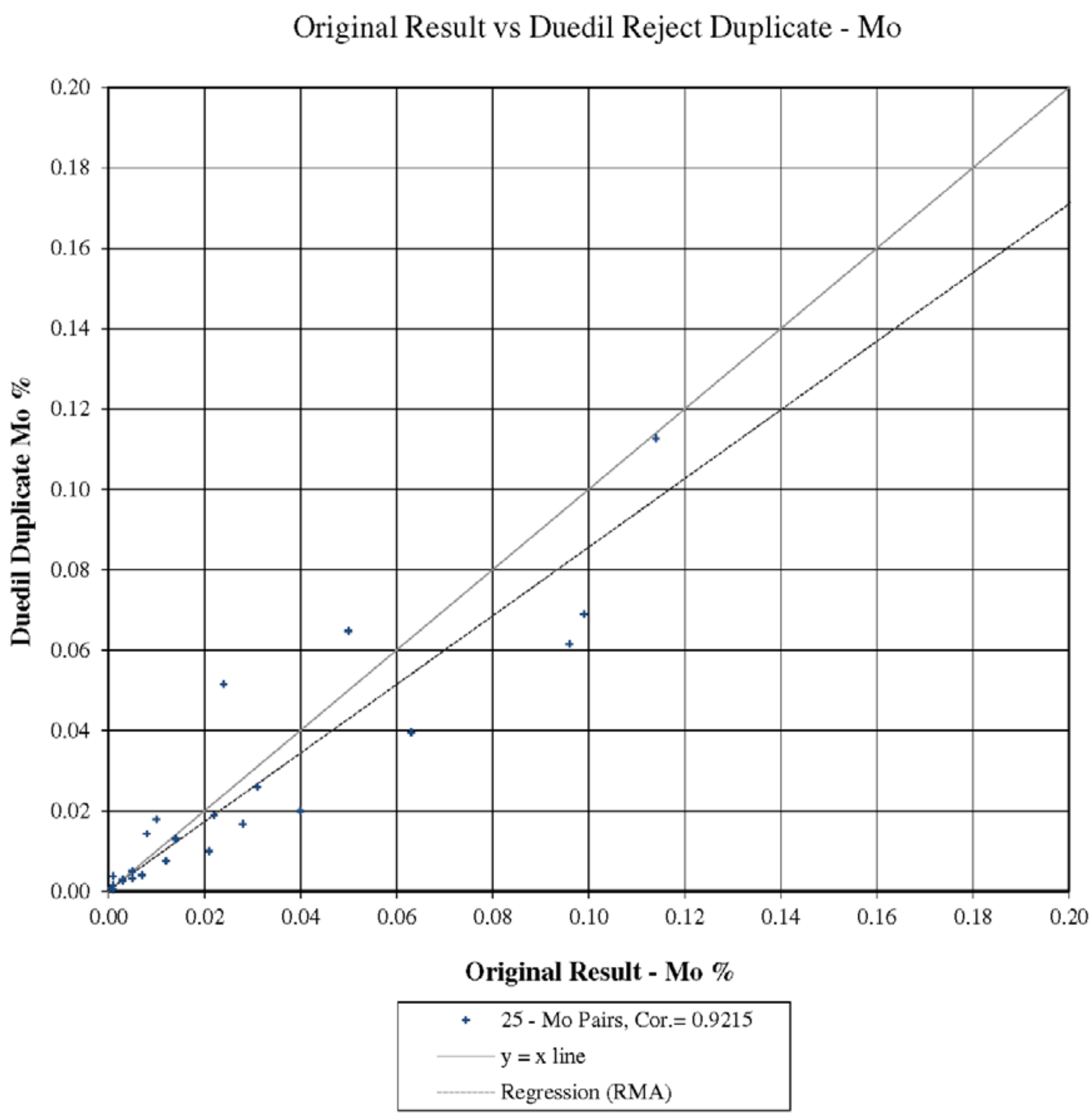


FIGURE 12-14 TUNGSTEN SCATTERPLOT OF PULP DUPLICATES FOR DUE DILIGENCE

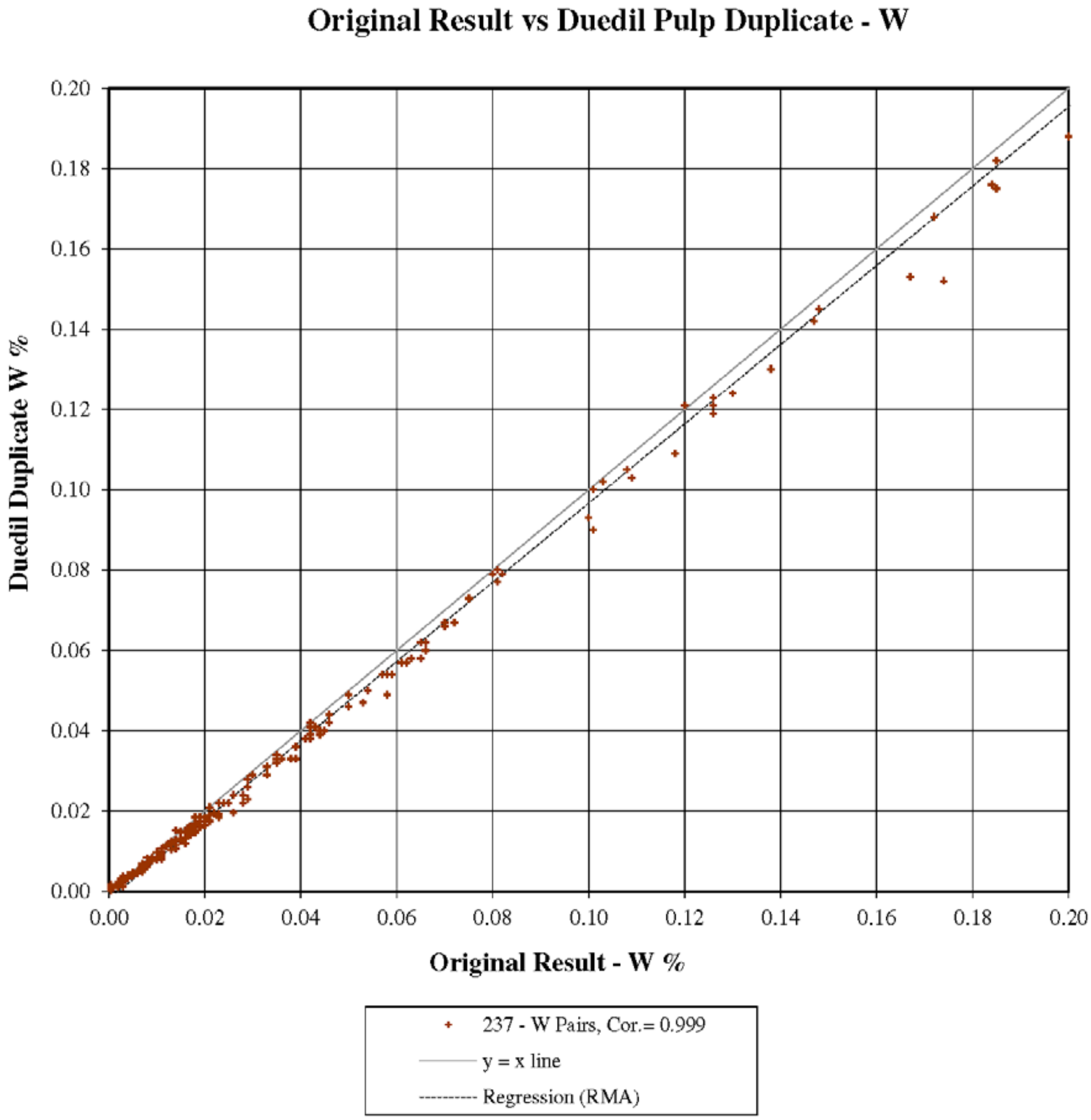
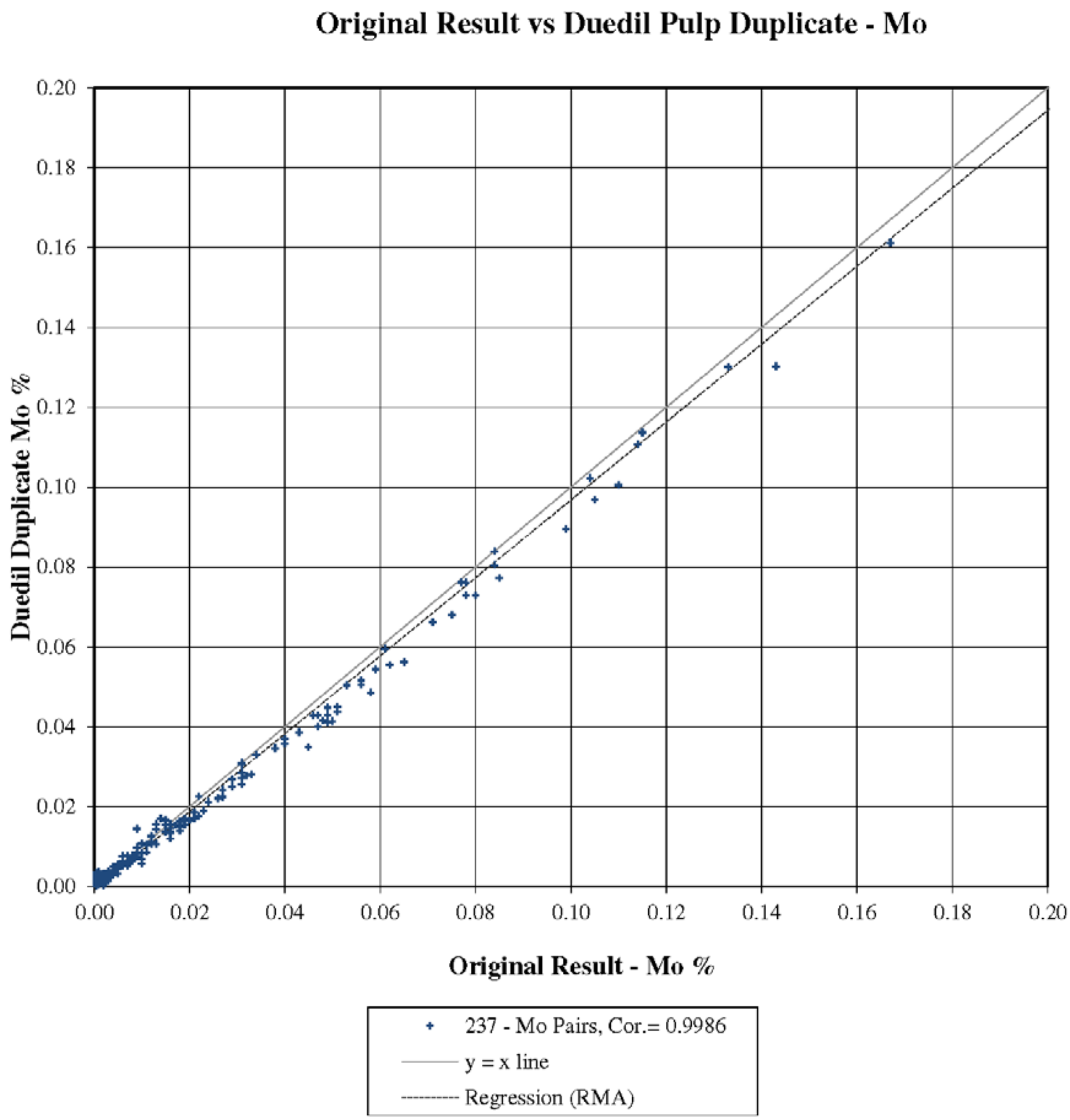


FIGURE 12-15 MOLYBDENUM SCATTERPLOT OF PULP DUPLICATES FOR DUE DILIGENCE



NORTHCLIFF DRILLING (2010)

The commercial standards used by Geodex were reportedly the best available at the time. However, the tungsten and molybdenum grades of these standards are three to ten times higher than the median values for these elements in the area of interest. In addition, the relative standard deviation (a measurement of precision) for these standards is typically between 5% and 10% (see discussion in Section 10 on 2011 Northcliff drilling). In Northcliff's opinion, these standards were suitable for exploration, but it was recognized that they needed to be replaced for the next stage of Project development. In order to implement a better QA/QC program for the ongoing drilling and engineering programs, six new matrix-matched certified reference materials (MMCRM) were produced. These new standards were made from the coarse rejects of 2009 drill core from the Sisson property. Material was selected based on typical lithological types and tungsten grades. The six MMCRM's were prepared and certified by CDN Resource Laboratories Ltd. The ten laboratories participating in the round robin analysis are listed below:

- Activation Laboratories Ltd. (Actlabs)
- Acme Analytical Laboratories (Acme)
- ALS Minerals (ALS)
- Genalysis Laboratory Services (Genalysis)
- OMAC Laboratories Ltd. (OMAC)
- Becquerel Laboratories Inc. (Becquerel)
- SGS Canada Inc., Toronto (SGS Toronto)
- SGS Canada Inc., Vancouver (SGS Vancouver)
- AGAT Laboratories Ltd. (AGAT)
- Inspectorate Exploration and Mining Services Ltd. (Inspectorate)

Table 12-5 is a summary of the key values for the MMCRM.

TABLE 12-5 SUMMARY OF MATRIX-MATCHED CERTIFIED REFERENCE MATERIALS
Northcliff Resources Ltd. - Sisson Project

Standard	W ppm	Mo ppm	Cu ppm	Original Rock Type	Source
SBRK-1	1,196	452	223	Volcanic & Sedimentary	Sisson Drill Core Rejects
SBRK-2	670	321	274		
SBRK-3	310	114	295		
SBRK-4	1,201	326	134	Gabbro	
SBRK-5	802	254	151		
SBRK-6	287	80	146		

In the 2010 drill program, a total of 113 external QA/QC samples were applied, including 49 standards, 52 duplicates, and 12 blanks (see Table 12-7). The standards and duplicates were inserted alternately at the frequency of one in every 20 mainstream samples. Blanks were inserted at the rate of two or three per drill hole.

STANDARDS

Northcliff implemented the new MMCRM along with the higher grade commercial tungsten molybdenum standard W-4 in the 2010 drill program. Table 12-6 is a summary of standards used to monitor in the 2010 program.

TABLE 12-6 STANDARD MATERIALS USED IN 2010 DRILL PROGRAM
Northcliff Resources Ltd. - Sisson Project

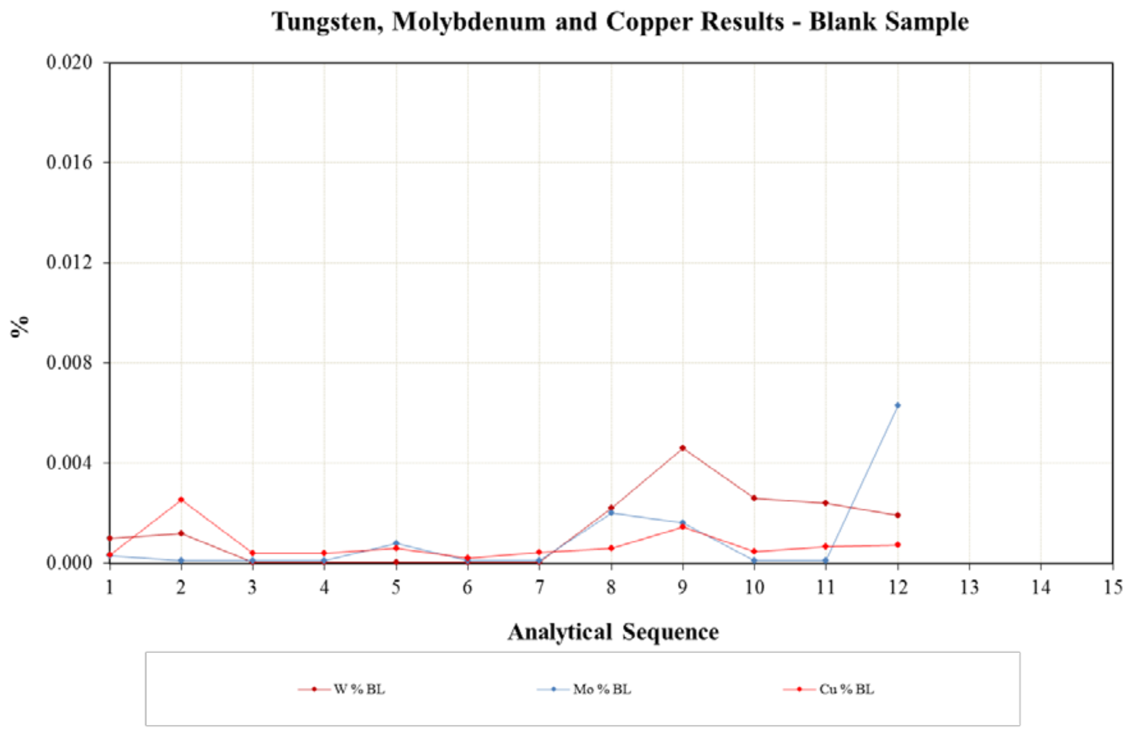
Standard	Times Used
SBRK-1	3
SBRK-2	5
SBRK-3	8
SBRK-4	2
SBRK-5	2
SBRK-6	3
W-4	26

Figures 12-21 and 12-22 show the results of the standards inserted and assayed for both the 2010 and 2011 programs.

BLANKS

A total of 12 barren core blanks (granite) were applied to monitor the potential contamination for the 2010 drill program. Figure 12-16 shows copper, molybdenum, and tungsten results of these blanks. No obvious contamination was indicated based on these results.

FIGURE 12-16 TUNGSTEN, MOLYBDENUM AND COPPER RESULTS OF BLANK SAMPLES FOR 2010 DRILL PROGRAM



DUPLICATES

A total of 52 duplicates were applied to monitor the reproducibility of the primary assay laboratory (in-line duplicates) as well as the second check laboratory (inter-laboratory duplicates). In Northcliff's nomenclature, an in-line duplicate is a second split from the reject material, while the inter-laboratory duplicate is a split from the pulp. Figures 12-17 to 12-20 are scatterplots of the duplicate pair results.

FIGURE 12-17 TUNGSTEN SCATTERPLOT OF IN-LINE DUPLICATES FOR 2010 DRILL PROGRAM

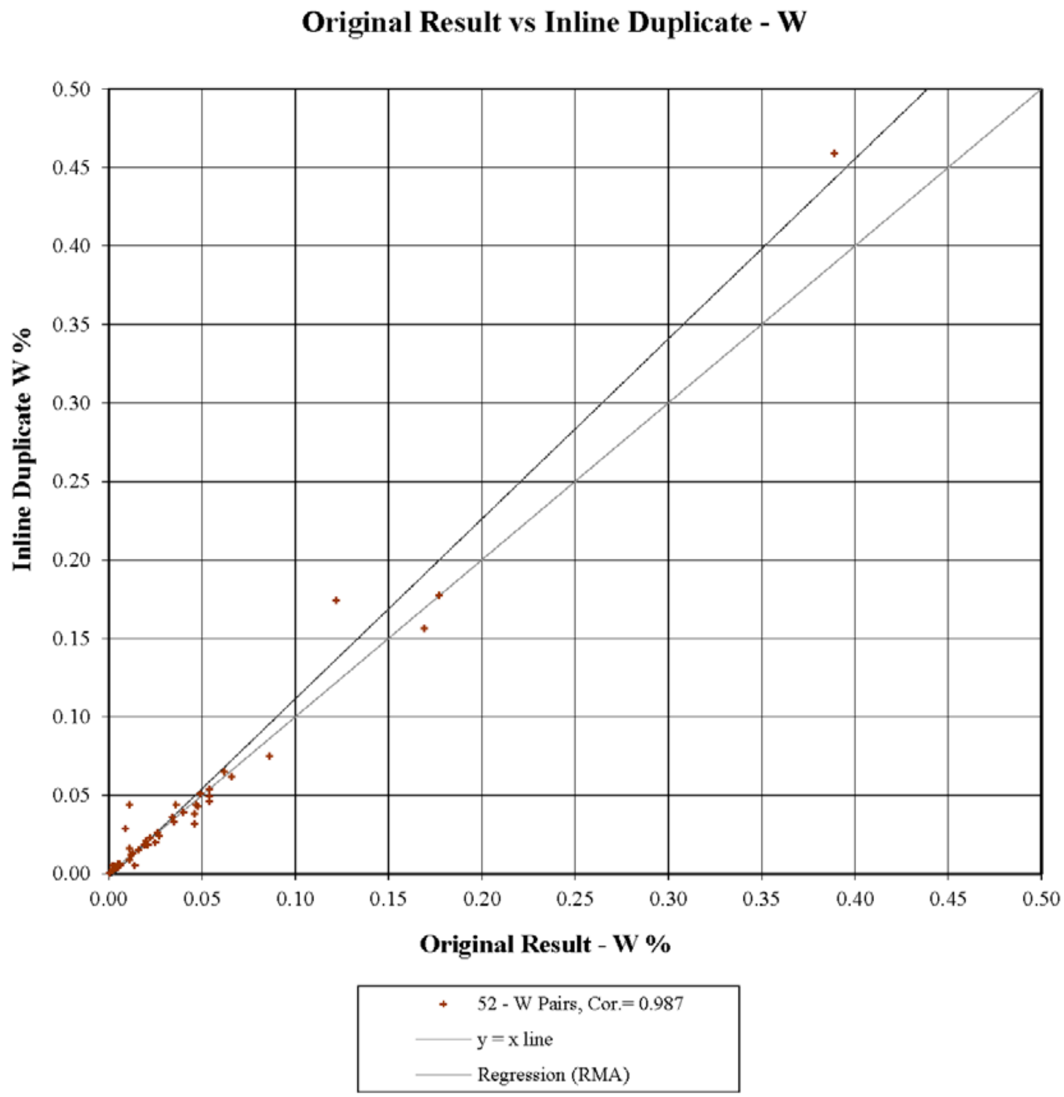


FIGURE 12-18 MOLYBDENUM SCATTERPLOT OF IN-LINE DUPLICATES FOR 2010 DRILL PROGRAM

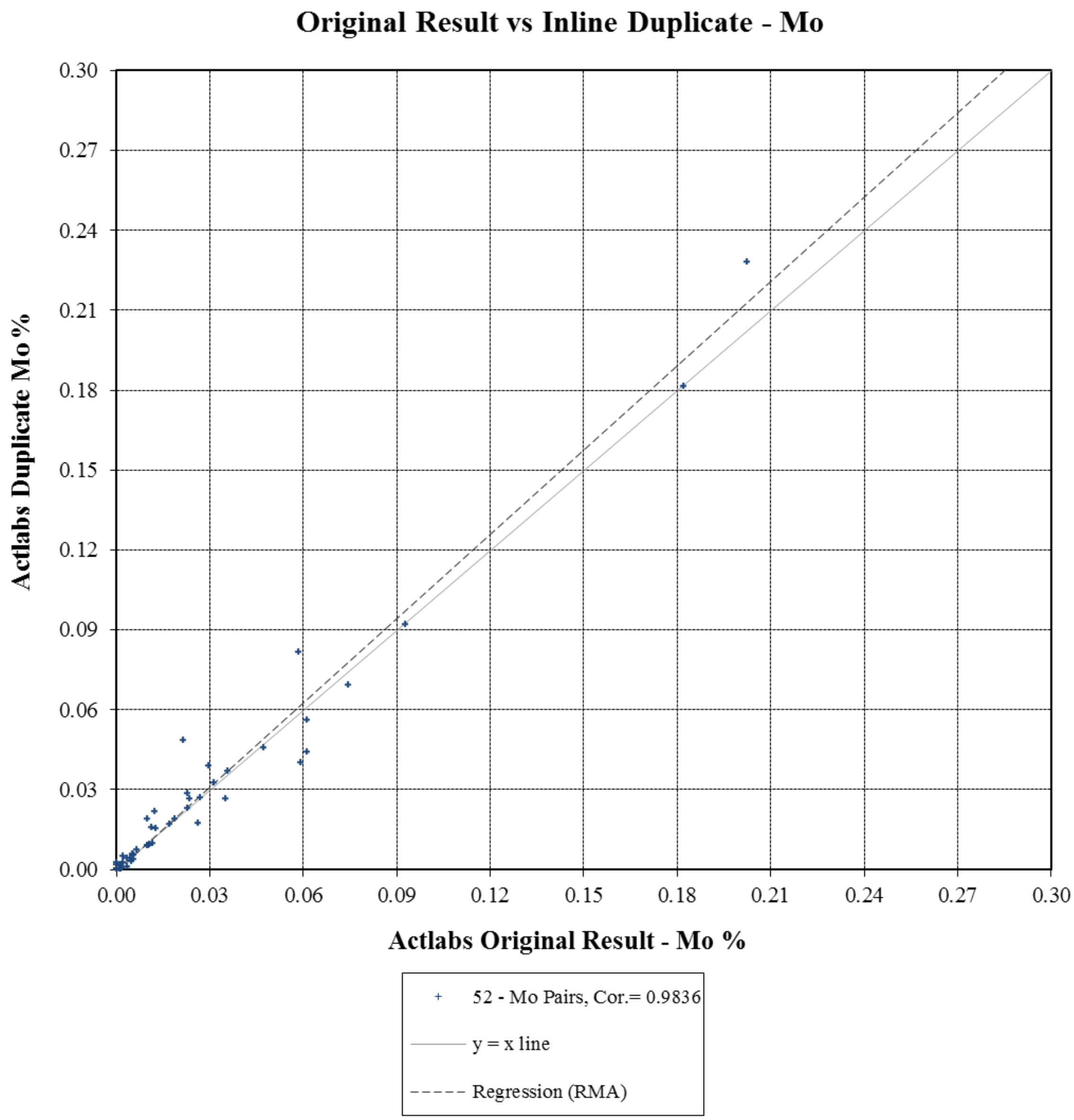


FIGURE 12-19 TUNGSTEN SCATTERPLOT OF INTER-LAB DUPLICATES FOR 2010 DRILL PROGRAM

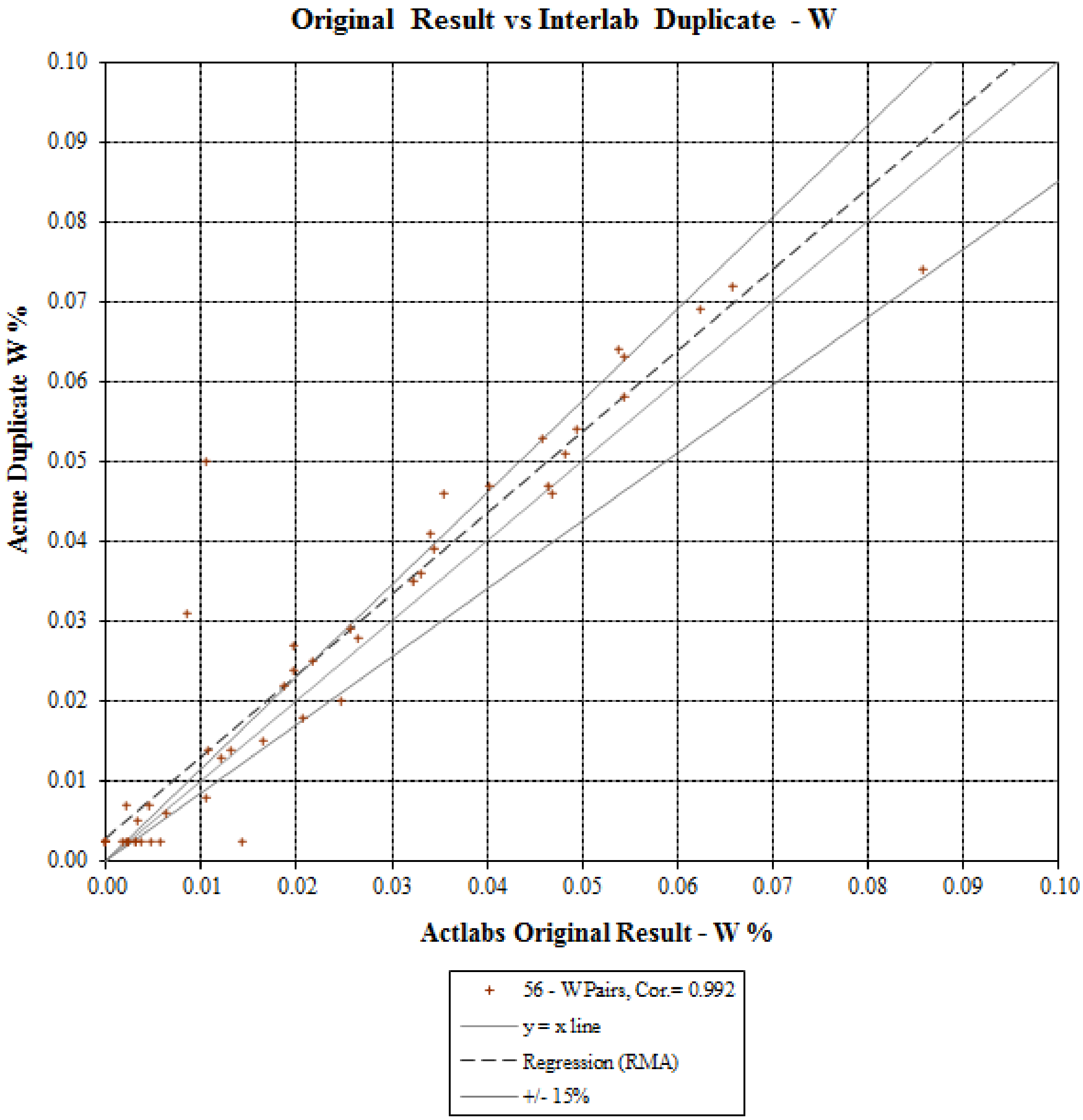
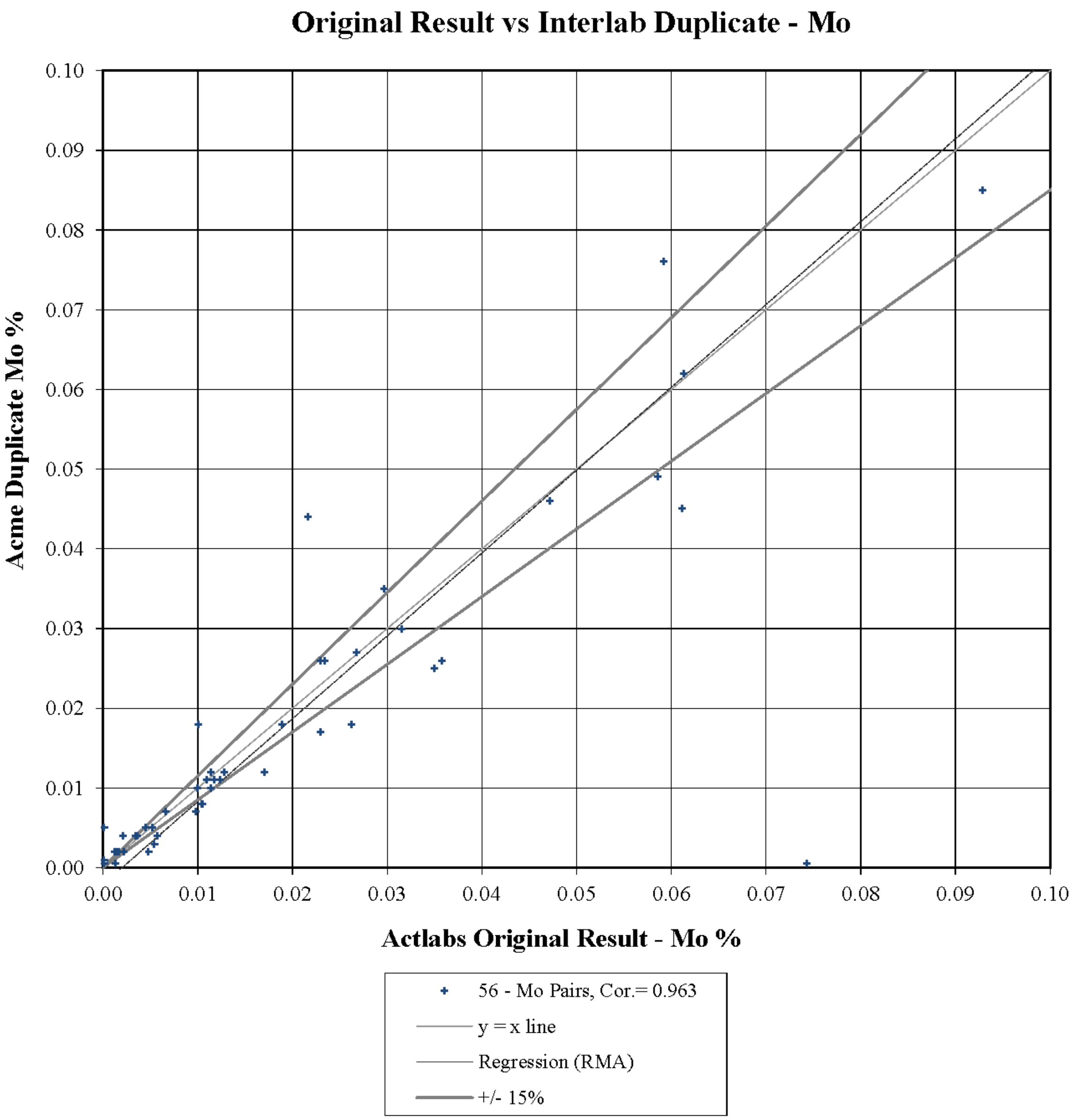


FIGURE 12-20 MOLYBDENUM SCATTERPLOT OF INTER-LAB DUPLICATES FOR 2010 DRILL PROGRAM



NORTHCLIFF DRILLING (2011)

In the 2011 drill program, a total of 337 external QA/QC samples were applied, including 149 standards, 144 duplicates, and 44 blanks (Table 12-7). The standards and duplicates were inserted alternately with the frequency of one in every 20 mainstream samples. Blanks were inserted at the rate of two or three for each drill hole.

TABLE 12-7 QA/QC SUMMARY FOR 2010 - 2011
Northcliff Resources Ltd. - Sisson Project

Year	MS	DP	ST	BL	ST%
2010	929	52	49	12	5
2011	2,768	144	149	44	5
ALL	**3,697**	**196**	**198**	**56**	**5**

STANDARDS

Table 12-8 is the summary of standards used to monitor the tungsten and molybdenum assays in the 2011 drill program.

TABLE 12-8 STANDARD MATERIALS USED IN 2011 DRILL PROGRAM
Northcliff Resources Ltd. - Sisson Project

Standard	Times Used
SBRK-1	8
SBRK-2	21
SBRK-3	49
SBRK-4	4
SBRK-5	14
SBRK-6	45
W-4	8
Overall	**149**

Figures 12-21 and 12-22 show the results of the standards inserted and assayed along with the regular samples.

FIGURE 12-21 TUNGSTEN CONTROL CHART FOR 2010 & 2011DRILL PROGRAM

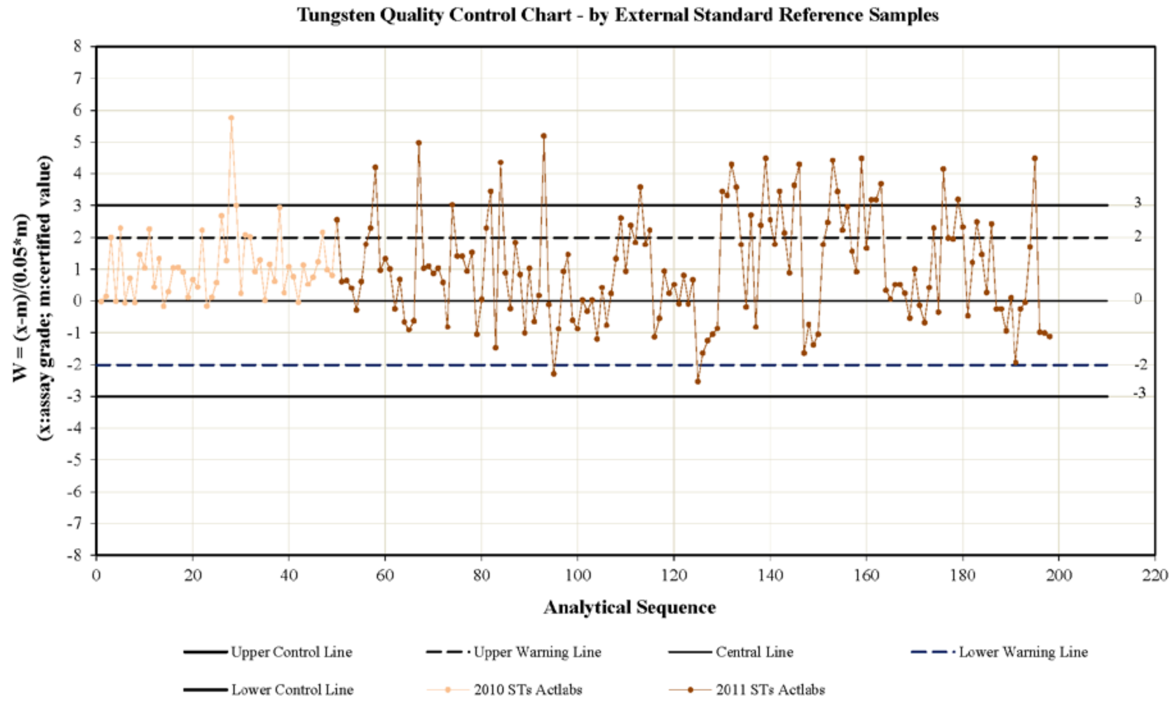
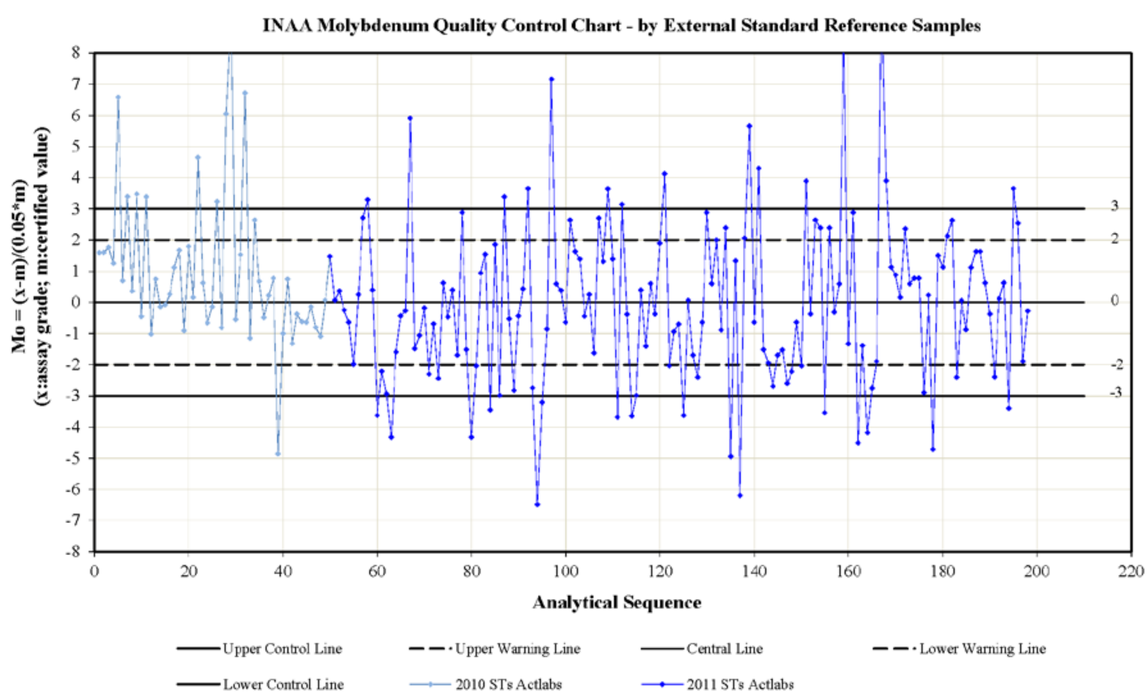


FIGURE 12-22 MOLYBDENUM CONTROL CHART FOR 2010 & 2011 DRILL PROGRAM



The warning and failure limits for the control diagrams are based on the relative standard deviation (RSD), which is the coefficient of variation (i.e., standard deviation divided by the mean) multiplied by 100%. The RSD values for the standards, as derived from the round robin assays, are shown in Figures 12-23 and 12-24. The tolerance limits (termed Recommended Control Rules by Northcliff personnel) applied to the standards assays are listed in Table 12-9.

TABLE 12-9 CONTROL LIMITS APPLIED
Northcliff Resources Ltd. - Sisson Project

Element (commodity)	Standardized RSD	Warning limits	Control limits
Au (Pt, Pd)	5%	Mean*(1 ± 10%)	Mean*(1 ± 15%)
Mo, W	5%	Mean*(1 ± 10%)	Mean*(1 ± 15%)
Ag, Pb, Nb	4%	Mean*(1 ± 8%)	Mean*(1 ± 12%)
Cu, Zn	3%	Mean*(1 ± 6%)	Mean*(1 ± 9%)

Northcliff personnel found that the MMCRM used in the 2010 and 2011 drilling programs on the Project had generally smaller RSDs than the commercial standards, which led to a higher failure rate than usual. In Figure 12-23, RSD values for the commercial standards TLG-1, NIST8608, and MP-2 are all significantly higher than for Northcliff's internal standards. This indicates that the precision with which the assay values for these standards are known is less than for the in-house standards. The net effect was that when the conventional ±2 and ±3 SD error limits were applied, an excessive number of failures were generated for the MMCRM. This resulted in a larger number of re-assays, significant time lost in resolving apparent issues, and increased costs without an attributable improvement in the overall assay database. In response, Northcliff adopted the control limits outlined in Table 12-9 for gauging assay performance.

In RPA's opinion, the approach taken by Northcliff in developing and using the in-house standards is reasonable. The grade ranges for the samples at Sisson Brook, including the MMCRM, are relatively low, which will result in higher variance in assay results. This tendency for assay precision to deteriorate at lower grades is quite common and well documented.

RPA notes that there is some evidence of a slight positive bias in the results for tungsten over certain periods of time, which should be investigated further. The molybdenum results demonstrate a fairly high degree of scatter, but there does not appear to be any significant bias.

FIGURE 12-23 TUNGSTEN RSD (%) OF CERTIFIED STANDARDS

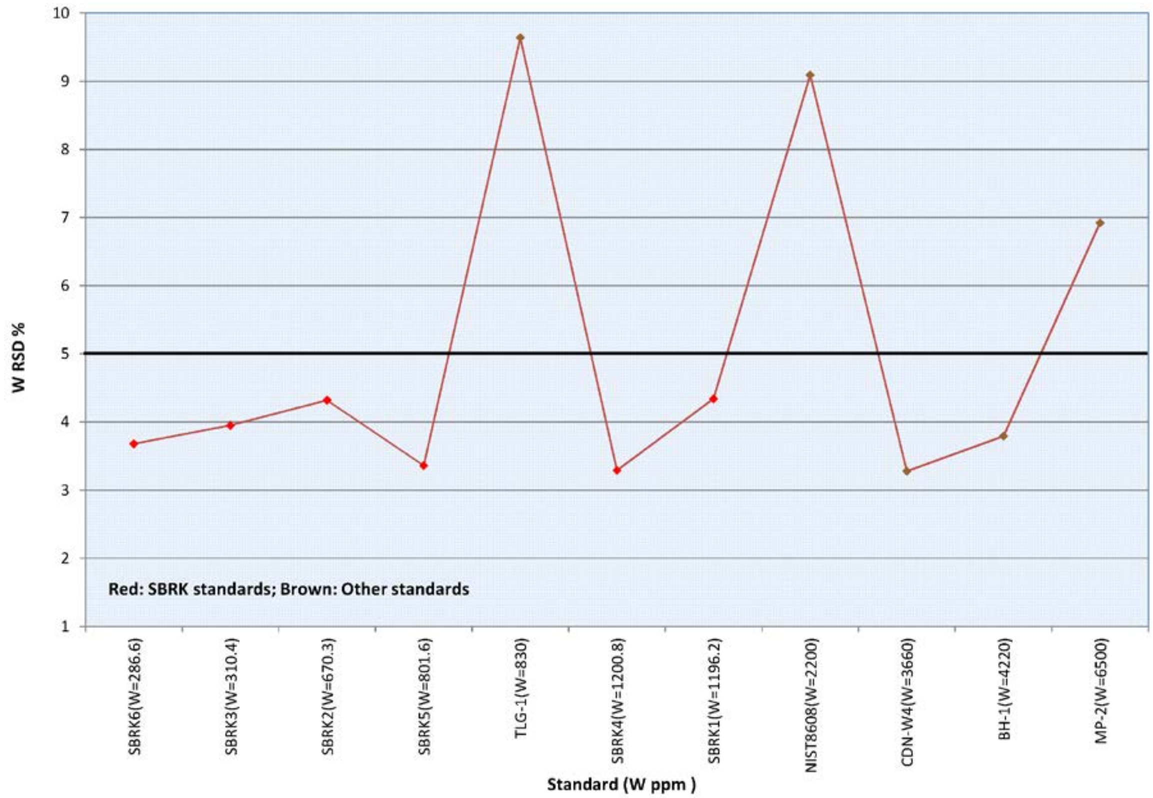
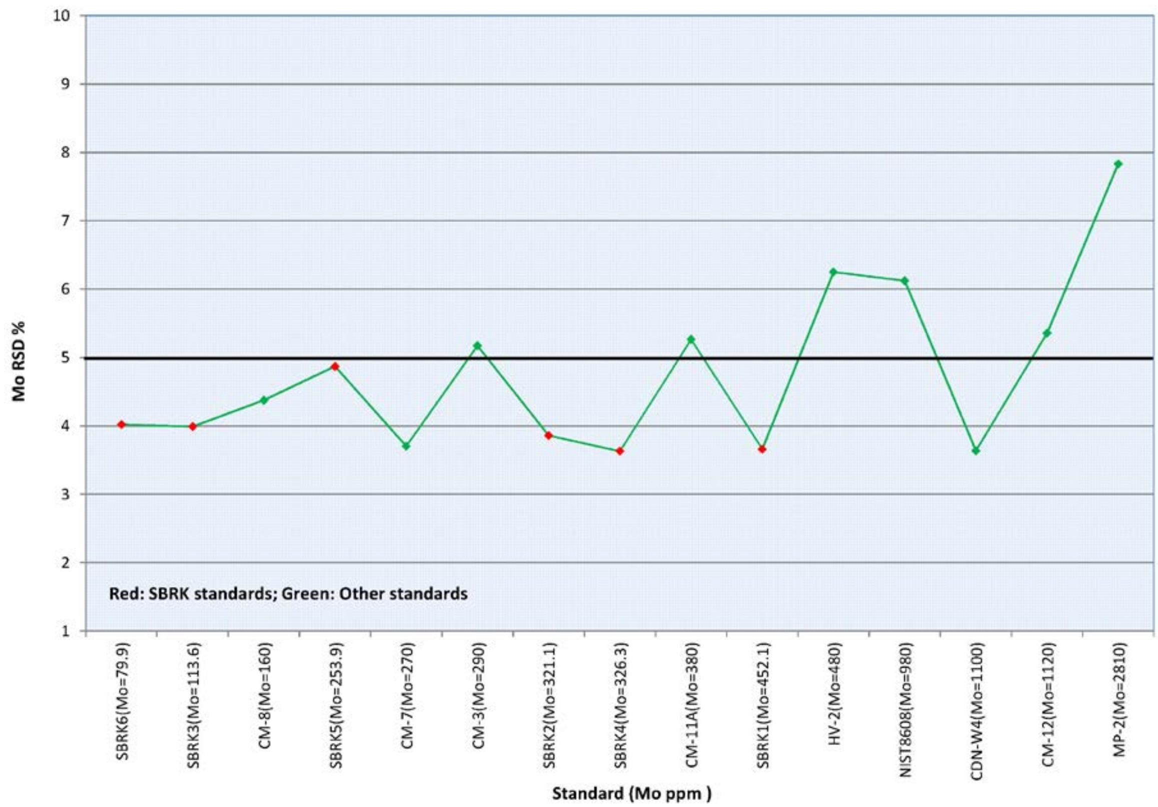


FIGURE 12-24 MOLYBDENUM RSD (%) OF CERTIFIED STANDARDS

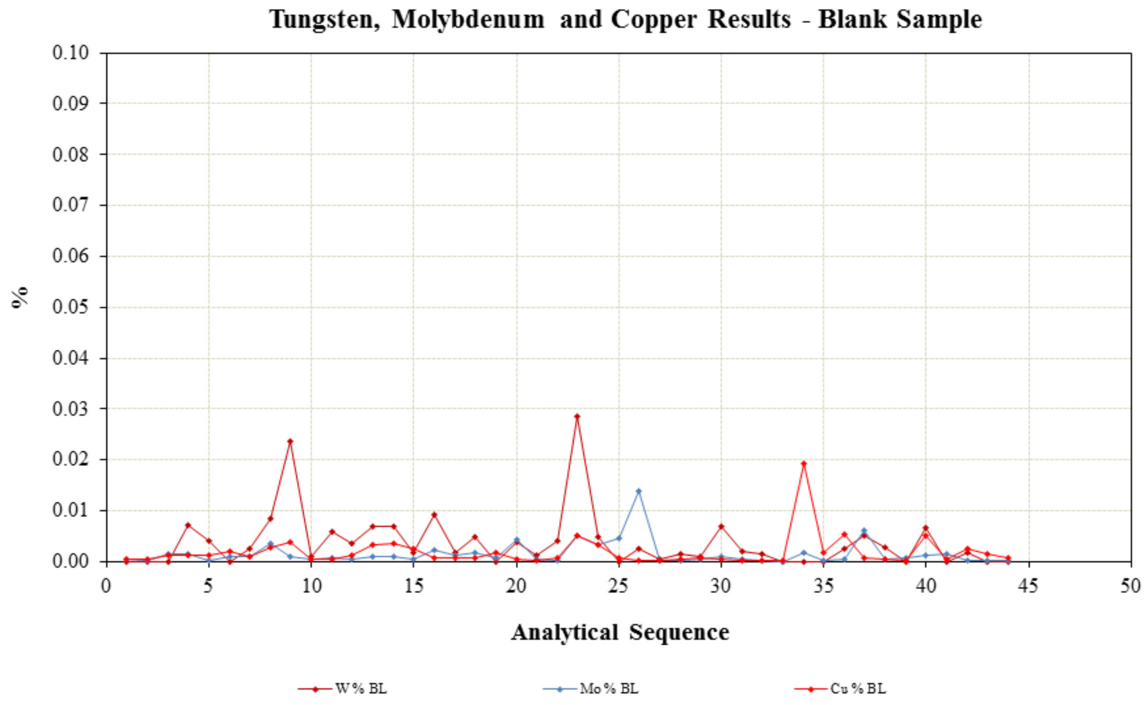


BLANKS

A total of 44 barren course (granite) blanks were applied to monitor the potential contamination for the 2011 drill program. Figure 12-25 shows tungsten, molybdenum, and copper results of these blanks. No significant contamination was found based on these results.

In RPA's opinion, the blanks results show an acceptable failure rate.

FIGURE 12-25 TUNGSTEN, MOLYBDENUM AND COPPER RESULTS OF BLANK SAMPLES FOR 2011 DRILLING PROGRAM



DUPLICATES

A total of 144 duplicates were applied to monitor the repeatability of the primary assay laboratory (in-line duplicates) as well as the reproducibility of the second check laboratory (inter-laboratory duplicates). Figures 12-26 to 12-29 are scatterplots of the related pairs.

In RPA's opinion, the duplicate results demonstrate a somewhat increased level of scatter which is perhaps related to the low grade issue. The in-line duplicates do not appear to be biased. The inter-laboratory duplicates show some evidence of bias, which, in RPA's opinion, is probably due to the use of different assay techniques.

FIGURE 12-26 TUNGSTEN SCATTERPLOT OF IN-LINE DUPLICATES FOR 2011 DRILL PROGRAM

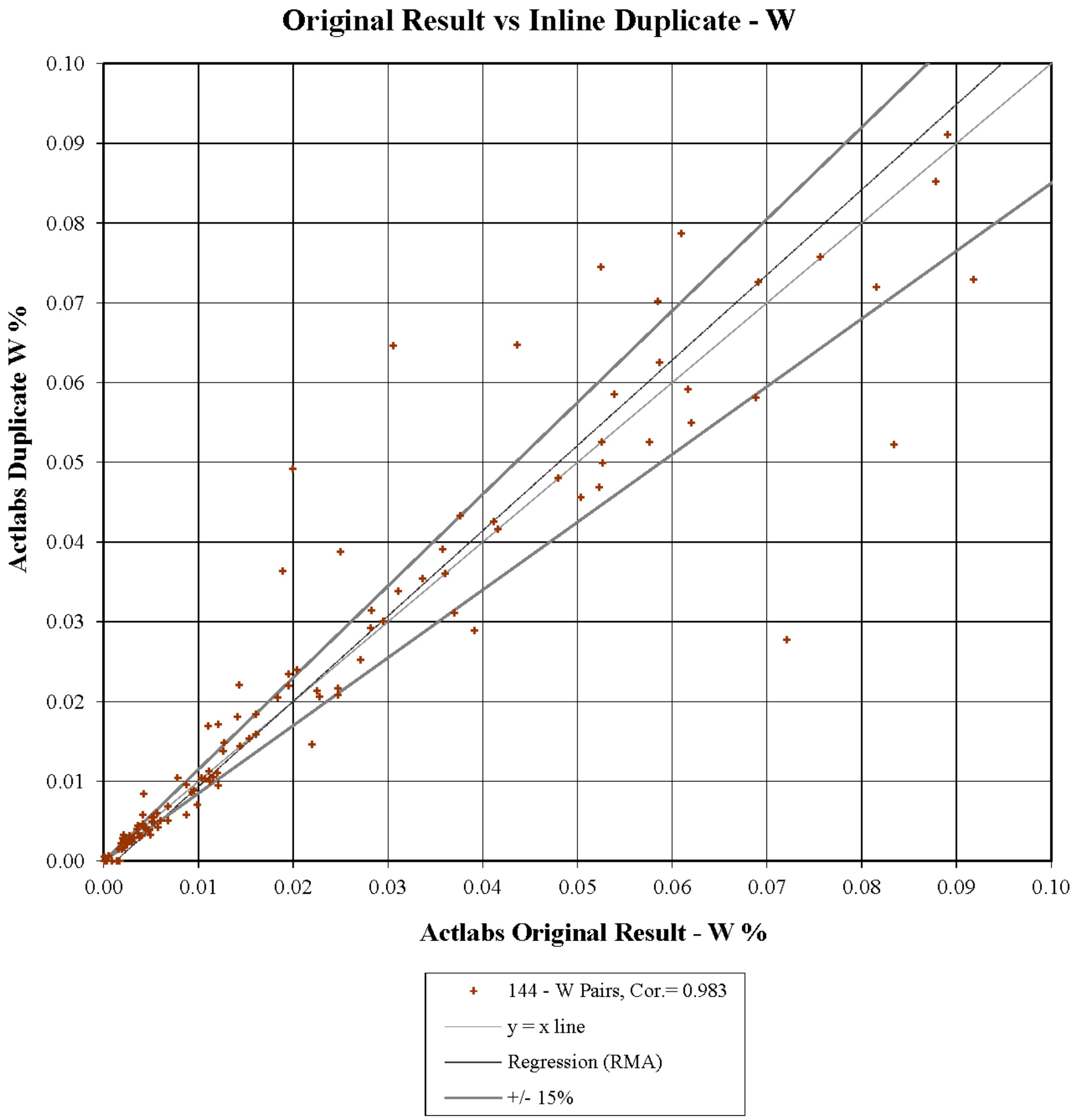


FIGURE 12-27 MOLYBDENUM SCATTERPLOT OF IN-LINE DUPLICATES FOR 2011 DRILL PROGRAM

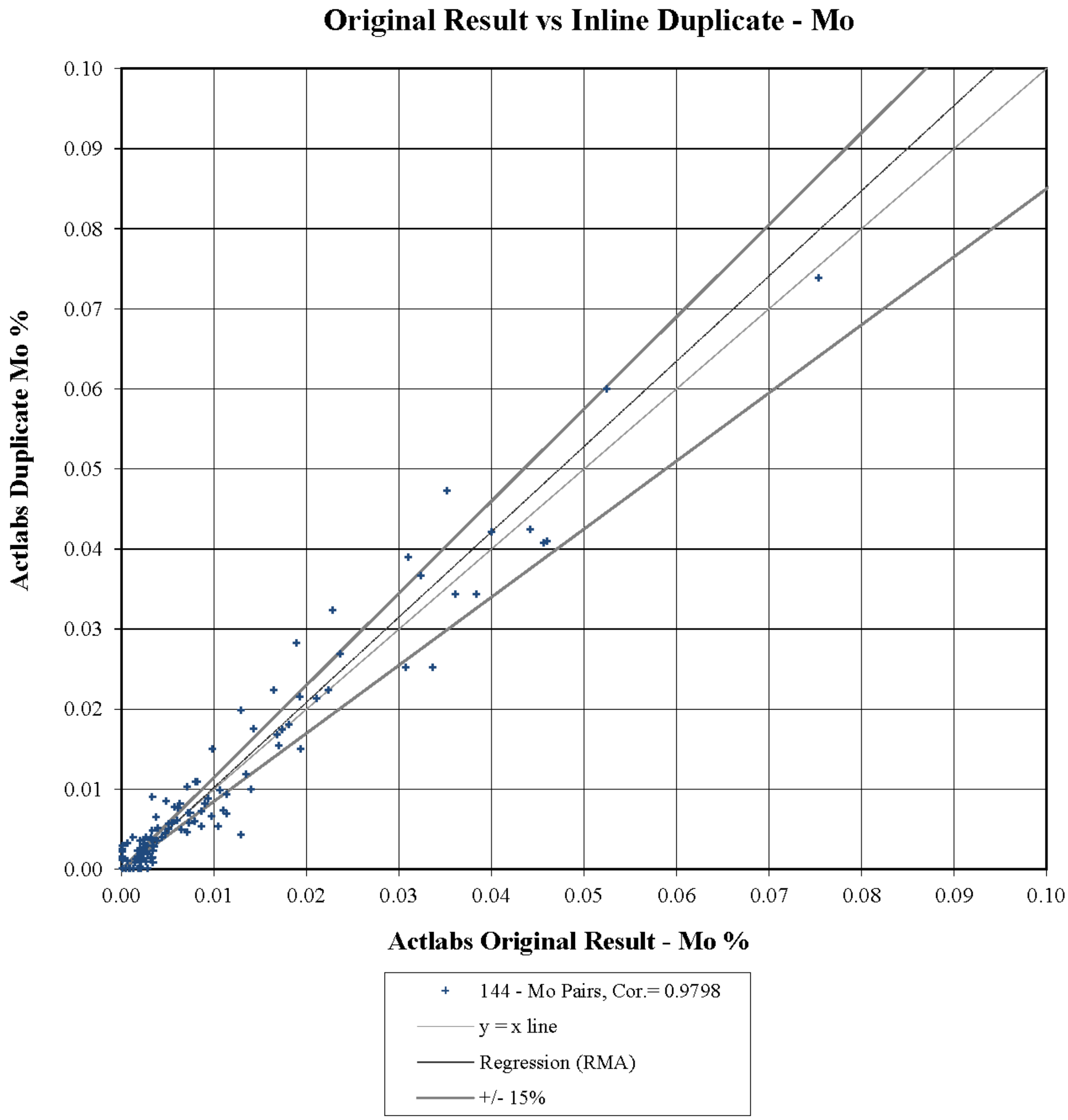


FIGURE 12-28 TUNGSTEN SCATTERPLOT OF INTER-LAB DUPLICATES FOR 2011 DRILL PROGRAM

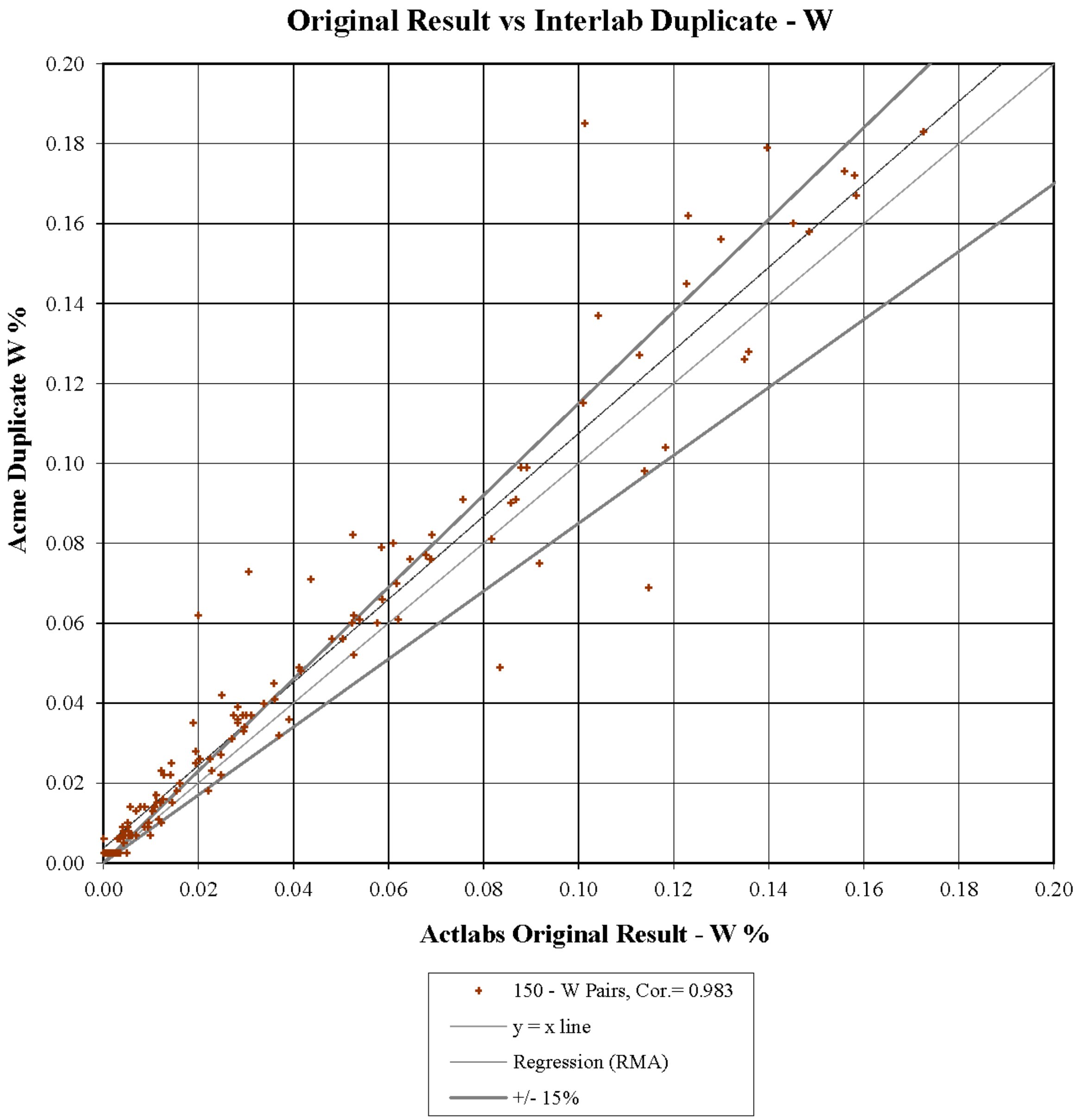
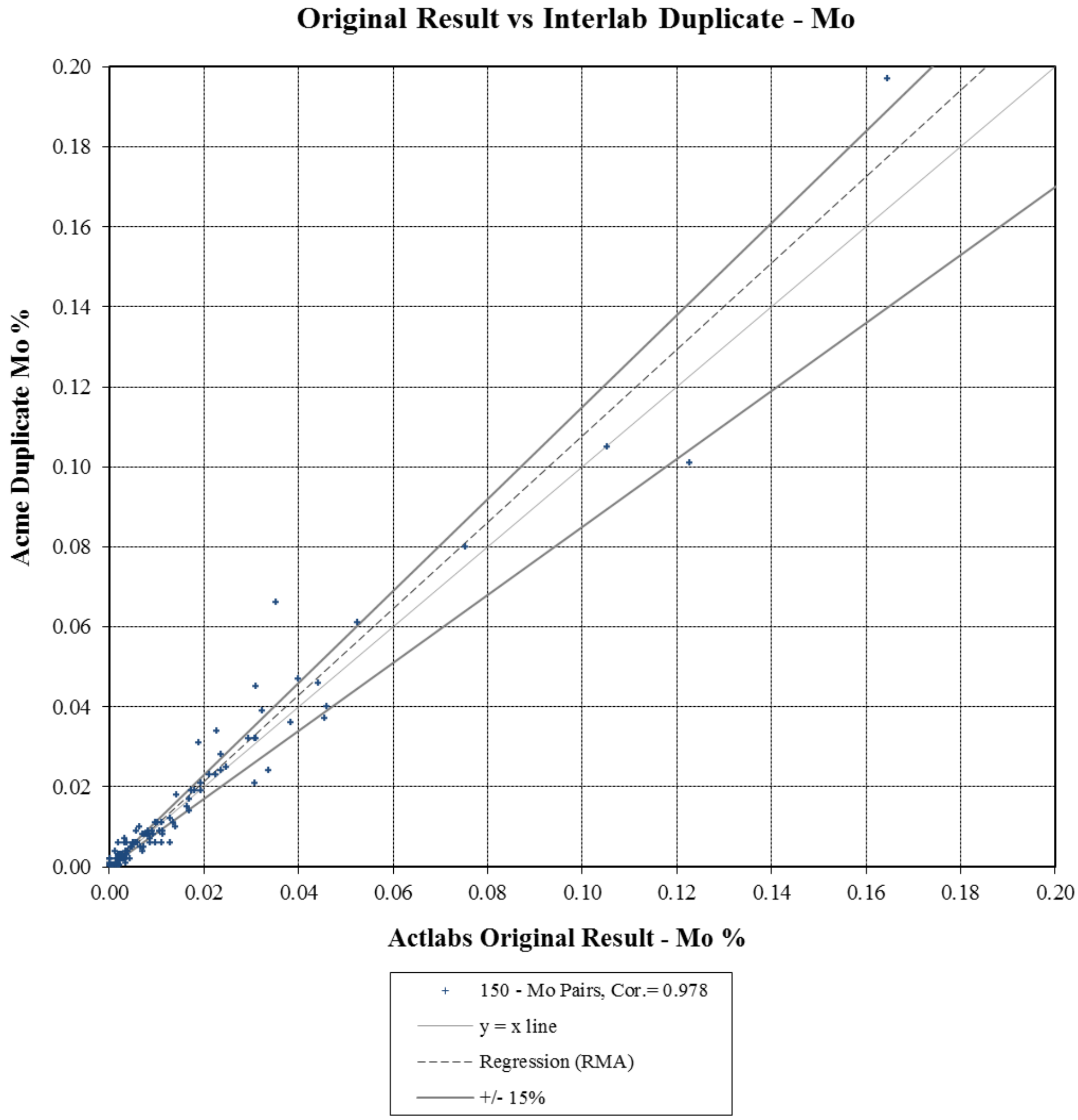


FIGURE 12-29 MOLYBDENUM SCATTERPLOT OF INTER-LAB DUPLICATES FOR 2011 DRILL PROGRAM



DATA COLLECTION AND MANAGEMENT

All the drill logs and the assay results from 2011 and previous years were compiled in a SQL server into data tables which are compatible with Microsoft® Access relational database. Drill hole logs were entered into notebook computers running the Access data entry module for the Project in the core logging area at the site. The core logging computers were synchronized on a regular basis with the master site entry database.

Core photographs were transferred to the site geology office on a daily basis. In the geology office, the logs were printed, reviewed, and validated and initial corrections made. The site data were transmitted to the Vancouver office of HDI on a weekly basis where the logging data were imported into the master drill hole database and merged with digital assay results provided by the analytical laboratories. A further printing, validation and verification step followed after this import.

Updates and corrections to the field geological and sampling data were performed at the site office as the Project progressed. This was done so that the revised information was reflected in the primary database in the Vancouver head office after the regular weekly transmittals were received and imported. Updates and corrections to the analytical data within the database were made in the Vancouver office. Compiled geological and analytical data were exported from the primary database for use: at site, in resource modelling, and by other users and consultants.

Project data are processed so that they could be assessed with respect to ongoing requirements for timely disclosure of material information by management. In this regard, compiled drill data and assay results are made available to management, the technical team, and Project consultants advancing the Project immediately after the initial error trapping and analytical QA/QC appraisal processes are completed, provided there are no significant concerns. The data are then subjected to more extensive, long-term validation, verification, QA/QC, and error correction processes. The findings of these long-term reviews are assessed as to their impact on previous disclosures and the necessity for further disclosure if there is a significant material change.

VERIFICATION

VERIFICATION BY MERCATOR

Government assessment reports and internal Geodex files consisting of core sample records, lithologic logs, laboratory reports, and associated drill hole and survey information for all holes used in the Sisson Brook resource estimates were reportedly reviewed by Mercator.

DUE DILLIGENCE VERIFICATION BY NORTHCLIFF

Northcliff reports that it conducted independent reviews of much of the analytical data from past work on the Sisson property as part of the due diligence process. This work included:

- Review of historical drilling, sampling, and assay results.
- Review of drilling, sampling, and assay results provided by Geodex.
- Review of certificates of analysis obtained directly from the analytical laboratories.
- Due diligence sampling and reanalysis of materials from the 2007, 2008, and 2009 Geodex drill programs including:
    - 18 quarter core samples
    - 25 coarse reject samples
    - 237 pulps samples
- Review of Geodex analytical quality control data from 2006 to 2009.

VERIFICATION BY NORTHCLIFF

The 2010 and 2011 drill hole geological and sample data were collected and digitally entered by site geological and technical personnel and sent to the Vancouver office of HDI on a weekly basis. In Vancouver, the digital database was compiled, merged with the analytical results, and reviewed for QA/QC purposes. Verification and validation took place at the site and Vancouver. At the site, the technical personnel responsible reviewed the digitally entered geology, sample and field log data.

At HDI Vancouver, the compiled data from the header, survey, assay, geology, and geotechnical tables were validated for missing, overlapping or duplicated intervals or duplicated sample numbers, and for matching drill hole lengths in each table. Drill hole collars and traces were reviewed in plan and sectional views by a geologist as a visual check on the validity of the location information. As the analytical data were returned from the laboratory, they were merged with the sample logs and printed out.

RPA VERIFICATION

INDEPENDENT SAMPLES

RPA collected eight quartered-core samples from drill core stored at the Northcliff logging facility. These samples were selected more or less randomly, split under RPA's supervision, and kept in the custody of RPA until delivered to a bonded carrier for shipment. The samples were sent to the SGS Canada Inc. assay laboratory in Vancouver, British Columbia, where they were analyzed for tungsten and molybdenum. The analytical method used was ICP after NA_2O_2 fusion. Table 12-10 compares the results obtained with the original assays in the Northcliff database.

TABLE 12-10 VERIFICATION SAMPLE RESULTS
Northcliff Resources Ltd. - Sisson Project

Hole ID	Original No.	W (ppm)	Mo (ppm)	RPA No.	W (ppm)	Mo (ppm)
SB11-026	919572	442	816	921567	320	50
SB11-026	919579	1430	85	921568	180	<10
SB10-004	920202	73	1035	921569	90	860
SB10-004	920223	686	487	921570	260	340
SB11-034	920487	915	130	921571	1020	400
SB11-034	920499	435	610	921572	570	1040
SB10-003	923894	29	728	921573	70	1180
SB10-003	923899	1004	324	921574	530	160

In RPA's opinion, the resampled assays compare reasonably well with Northcliff's results, particularly considering the difference in assay methods used.

DATABASE VALIDATION

RPA validated the drilling database using the utilities provided in GEMS. No errors were found.

RPA also compared assay results from the original laboratory certificates to the values stored in the Northcliff database for approximately 12% of the holes used in the resource estimate. Thirty-two holes were selected from those drilled by either Geodex or

Northcliff, and the digital laboratory certificates were acquired and compiled into a database. Some 3,532 samples out of the total of 32,319 (note that not all were included in the estimate) were checked in this manner. There were no discrepancies found.

DISCUSSION AND CONCLUSIONS

In RPA's opinion, Northcliff has demonstrated an adequate level of validation and verification of the database contents. The level of database validation for earlier operators, particularly Kidd Creek, is not well documented, but the proportion of the data collected during this regime is small. Geodex appears to have also applied a reasonable level of validation and verification effort to the database. Northcliff has been particularly rigorous in external monitoring of assay QA/QC. In RPA's opinion, the database is reasonably free of errors and suitable for use in estimation of Mineral Resources.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

In 2006, Micron Geological Limited of Vancouver, British Columbia, was retained by Geodex to carry out a petrographic study of specimens from five sections of drill core in hole SB-06-08 (Zone III). The study confirmed that the principal economic minerals were scheelite and molybdenite, with smaller amounts of sphalerite, galena, chalcopyrite, and wolframite. Gangue minerals comprised quartz, feldspar, amphibole, biotite-phlogopite and chlorite, with accessory calcite, ilmenite, pyrite, pyrrhotite, and arsenopyrite.

Grain size analysis indicated that satisfactory liberation of scheelite and molybdenite was possible by grinding to minus 0.86 mm.

Geodex retained SGS Lakefield (SGS) in 2007 to carry out metallurgical testing on drill core samples. The work comprised grindability tests, mineralogical studies, and preliminary gravity and flotation tests. RPA was not able to review the results of this test work.

In September 2008, SGS conducted preliminary metallurgical test work on 2.8 t of drill core collected and composited from within the higher grade central core of Zone III. Samples were selected to represent material from within the gabbro host rock, the central volcanic hosted section, and the East Zone. The assayed grade of the composited sample material was 0.096% WO_3 and 0.038% Mo.

The test work included bench-scale flotation and gravity separation, as well as pre-concentration ore sorting. SGS concluded that high grade concentrates could be produced by conventional flotation for molybdenum and tungsten, and gravity for tungsten.

For a Preliminary Economic Assessment (PEA), conducted in 2009, Geodex used the results of the SGS study to develop a flow sheet based on a production rate of 20,000 tpd. The conceptual process design comprised ore sorting, crushing, grinding, flotation, and gravity separation. The ore sorting approach, developed from the test work with UV fluorescence and Dual Energy X-Ray Tomography techniques, was estimated to achieve close to a 50% reduction in the ore stream tonnage. Treatment by flotation and gravity separation was projected to recover 94% of the tungsten and 84% of the molybdenum from the upgraded feed stream. Overall plant recoveries were predicted to be 74% for tungsten and 70% for molybdenum.

In RPA's opinion, the metallurgical test work for the Project is not complete and additional testing is warranted. However, the preliminary results obtained to date suggest that there is a reasonable probability that acceptable recoveries can be obtained using conventional, existing technology.

14 MINERAL RESOURCE ESTIMATE

SUMMARY

Northcliff personnel have updated the Mineral Resource estimate for the Sisson Project using a block model constrained with wireframe models of the principal geological domains. Values for bulk density, WO_3, and Mo were interpolated into the blocks using Inverse Distance Squared (ID^2) weighting. The updated estimate is summarized in Table 14-1.

TABLE 14-1 MINERAL RESOURCE ESTIMATE TO FEBRUARY 29, 2012
Northcliff Resources Ltd. - Sisson Project

NSR Cut-Off ($/t)	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3 (M mtu)	Mo (M lb)	WO_3Eq (%)	Avg NSR ($/t)
Measured							
15	68	0.091	0.028	6.19	42.0	0.124	26.37
11	92	0.078	0.025	7.18	50.7	0.108	22.82
9	**107**	**0.072**	**0.024**	**7.7**	**56.6**	**0.101**	**21.11**
7	122	0.066	0.022	8.05	59.2	0.092	19.4
Indicated							
15	161	0.084	0.024	13.52	85.2	0.113	23.7
11	234	0.071	0.022	16.61	113.5	0.097	20.35
9	**276**	**0.065**	**0.020**	**17.94**	**121.7**	**0.089**	**18.76**
7	322	0.06	0.019	19.32	134.9	0.083	17.23
Measured + Indicated							
15	229	0.086	0.025	19.71	127.2	0.116	24.49
11	326	0.073	0.023	23.79	164.2	0.100	21.05
9	**383**	**0.067**	**0.021**	**25.64**	**178.3**	**0.092**	**19.42**
7	444	0.062	0.02	27.37	194.0	0.085	17.83
Inferred							
15	71	0.075	0.027	5.33	42.3	0.107	22.53
11	130	0.058	0.024	7.54	68.8	0.087	18.09
9	**178**	**0.051**	**0.021**	**9.08**	**82.4**	**0.076**	**15.89**
7	239	0.045	0.018	10.76	94.8	0.066	13.88

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a net smelter return (NSR) cut-off grade of $US9.00/t.
3. Mineral Resources are estimated using a long-term metal prices of US$300 per mtu WO_3 and $US15/lb Mo, and a US$/C$ exchange rate of 0.9:1.
4. Metallurgical recoveries for the NSR calculation were 74% for WO_3 and 80% for Mo.
5. Numbers may not add due to rounding.

At the time of writing of this report, Northcliff was in the process of conducting a Feasibility Study for the Project, and preparing an EIA to facilitate permitting. As such, permits for development of a mine operation had not yet been acquired. RPA notes that there is a risk that environmental, legal, land tenure, socio-economic, or permitting issues could prevent development of the Project. However, to the extent delineated in this report, RPA is not aware of any such constraint.

PREVIOUS RESOURCE ESTIMATE

COMPARISON WITH PREVIOUS ESTIMATE

Table 14-2 compares the most recent Mineral Resource estimate (February 29, 2012) with the previous one (February 4, 2011). The tonnage and metal contents of all categories have increased substantially, while the grades show a significant decrease. In RPA's opinion, the changes are due to the following factors:

- An increase in tonnage and reduction in grade due to decrease in the cut-off grade from the previous estimate
- To a lesser extent, an increase in tonnage and metal content due to additional drilling conducted since the last estimate

The principal cut-off criterion is now based on an NSR value rather than WO_3Eq, which had been used up to now. This NSR value was generated using metal prices of US$300/mtu WO_3 and US$15/lb Mo, versus US$200/mtu WO_3 and US$15/lb Mo used in the previous estimate. The present NSR cut-off of $9.00/t is roughly equivalent to a 0.050% WO_3Eq cut-off, which is significantly lower than the 0.100% WO_3Eq cut-off used in 2011. In RPA's opinion, this reduction in the cut-off would result in a significant increase in tonnage with a commensurate decrease in grades.

TABLE 14-2 COMPARISON OF CURRENT AND PREVIOUS ESTIMATES
Northcliff Resources Ltd. - Sisson Project

February 4, 2011

Category	Cut-Off (%WO_3Eq)	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3 (M mtu)	Mo (M lb)
Measured	0.100	28.8	0.097	0.034	2.79	21.5
Indicated	0.100	149	0.094	0.030	13.9	99.3
Inferred	0.100	69.0	0.086	0.033	5.93	50.9

February 29, 2012						
Category ($\%WO_3Eq$)	Cut-Off (NSR)	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3 (M mtu)	Mo (M lb)
Measured	$9.00	107	0.072	0.024	7.70	56.6
Indicated	$9.00	276	0.065	0.020	17.9	121.7
Inferred	$9.00	178	0.051	0.021	9.08	82.4

Percent Difference					
Category ($\%WO_3Eq$)	Tonnage (Mt)	WO_3 (%)	Mo (%)	WO_3 (M mtu)	Mo (M lb)
Measured	271.5%	-25.7%	-29.1%	176.0%	163.3%
Indicated	85.7%	-30.6%	-34.0%	28.9%	22.5%
Inferred	158.0%	-40.6%	-37.2%	53.2%	62.0%

MINERAL RESOURCE ESTIMATION METHODOLOGY

DATABASE – GENERAL DESCRIPTION

The Mineral Resource estimate for the Sisson Project is based primarily on information from surface drilling, supplemented in part by historical surface mapping and geophysics to assist in the interpretations. As stated above, the database provided to RPA contained collar records for 304 holes. All of these are diamond drill holes. Most of the holes were collared at a dip shallower than -75°. Hole lengths vary widely but are typically in the range between 100 m and 350 m.

Drilling on Sisson covers an approximate area of 2,300 m (north-south) by 1,500 m (east-west), with the density of drilling decreasing toward the north and northwest. Results from 259 drill holes within the block model boundaries were used for the resource estimate. Further detail on drilling can be found in Section 11, Drilling.

The Mineral Resource estimate was completed using Maptek Vulcan (Vulcan) software using a conventional approach including 3D solid modelling and block modelling.

ASSAYS

The assay database provided to RPA contains 31,357 assay intervals, and of these 29,897 have non-zero values for WO_3 and 31,336 have non-zero values for molybdenum. Most sampled intervals are 1.5 m in length. Brief statistical summaries of the grade domain assays are provided in Tables 14-3 and 14-4.

TABLE 14-3 MO SAMPLE STATISTICS BY ESTIMATION DOMAIN
Northcliff Resources Ltd. - Sisson Project

Statistic	All Domains	Ellipse Zone	Zone III
Samples	31,336	4,930	26,406
Minimum	0	0	0
Maximum	19.8	2.73	19.8
Mean	0.020	0.019	0.021
Standard Deviation	0.131	0.072	0.140
CV	6.456	3.767	6.791
Variance	0.017	0.005	0.020

TABLE 14-4 WO_3 SAMPLE STATISTICS BY ESTIMATION DOMAIN
Northcliff Resources Ltd. - Sisson Project

Statistic	All Domains	Ellipse HG	Ellipse LG	Z3 HG East	Z3 HG West	Z3 LG
Samples	31,357	2,858	2,072	5,730	11,064	9,633
Minimum	0	0	0	0.001	0	0
Maximum	4.439	2.383	0.676	3.493	3.354	4.439
Mean	0.062	0.072	0.033	0.09	0.082	0.027
Standard Deviation	0.127	0.113	0.048	0.161	0.148	0.072
CV	2.039	1.574	1.467	1.797	1.802	2.72
Variance	0.016	0.013	0.002	0.026	0.022	0.005

GEOLOGICAL AND STRUCTURAL MODELS

Drill data was partitioned into 13 separate lithology wireframes corresponding to the eight rock types and their respective sub-domains, discussed in Section 7. Descriptive statistics were generated based on these 13 lithology wireframes and the results suggest that lithology does not have strong control over the mineralization distribution. As a result, the lithology model was not used for the purpose of this estimation.

After visual data inspection and statistical analysis, the grade domain approach was chosen for partitioning of WO_3 data. Minimum grade parameters for higher grade WO_3 domains were not rigidly fixed but effectively defined zones with acceptable continuity that grade above 0.035% WO_3 over ten or more metres. There were two higher grade zones modelled for Zone III and a single high grade zone modelled for the Ellipse Zone (Figure 14-1).

After a visual inspection of molybdenum data it was decided to not use the grade domaining technique in this case. Molybdenum data was partitioned into Zone III and Ellipse domains only.

ASSAY CAPPING (CUTTING)

RPA notes that the sample grade distributions for WO_3 and molybdenum are positively skewed, in some cases resembling log-normal distributions. For skewed distributions of this type, the highest grade samples can have an inordinately large effect on the average grades, which can result in biased grade interpolations. In order to reduce the influence of these high samples, a cap is applied prior to compositing. For the 2012 estimate, a series of log-normal probability plots and histograms for tungsten and molybdenum were prepared from data within the interpreted zones to examine the distribution of the assay data. Interpretation of the log-normal probability plots and histograms has yielded capping levels of 1.1% WO_3 and 0.65% Mo for both the Ellipse and Zone III domains.

In total, 66 WO_3 and 68 molybdenum assay intervals were capped. These intervals represent approximately 0.2% of the total number of assays. The net impact of the capping was to reduce the average WO_3 and molybdenum assay grades by a negligible amount. Samples were capped prior to compositing.

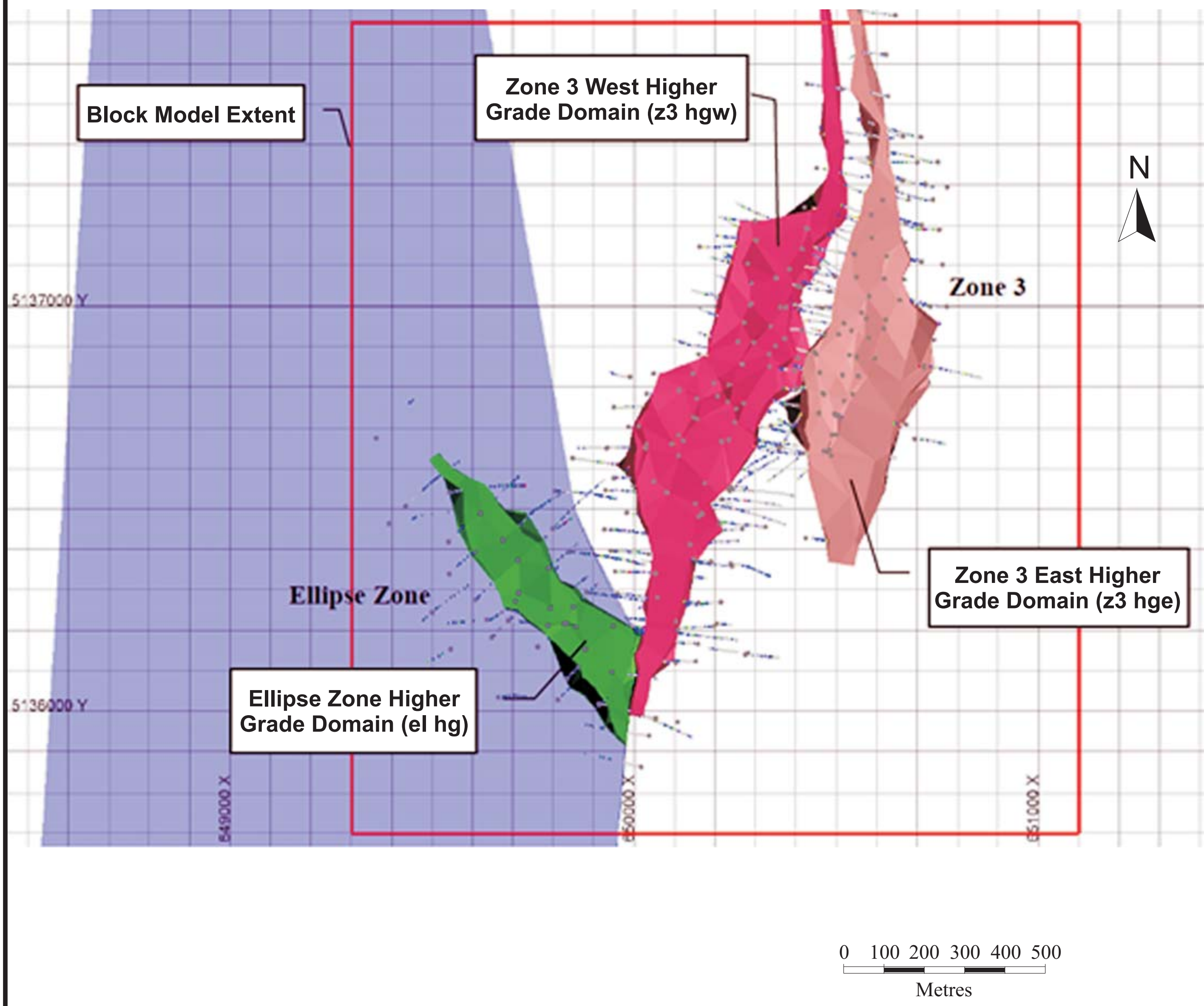


Figure 14-1

Northcliff Resources Ltd.

Sisson Project

New Brunswick, Canada

Ellipse and Zone III WO_3 High Grade Domains within Lower Grade Ellipse and Zone III Domains

June 2012

Source: Northcliff Resources Ltd., 2011.

COMPOSITES

For all Sisson domains, assay intervals were composited on the basis of their respective grade domains. Samples were composited in downhole intervals of four metres, starting at the wireframe pierce-point for each zone, continuing to the point at which the hole exited the zone. Inevitably, the final composite in each zone will be shorter than the fixed composite length unless the zone intercept is an exact multiple of the selected length.

Since the short composites were relatively few in number, their impact was considered to be insignificant, and they were left in the database. The four metre composite length was deemed most suitable, based on the prospective equipment size for potential future mining. Grade domain solids were used to flag composites, based on their centroids (see Table 14-5).

TABLE 14-5 GRADE DOMAIN COMPOSITE FLAGS
Northcliff Resources Ltd. - Sisson Project

Zone/Domain	Variable	Value
Zone III HG East WO_3	Bound	z3_hge
Zone III HG West WO_3	Bound	z3_hgw
Zone III LG WO_3	Bound	Z3_lg
Ellipse HG Mo	Bound	el_hg
Ellipse LG Mo	Bound	el_lg

In RPA's opinion, insofar as the most common sample lengths are 1.5 m and three metres, a more appropriate composite length would have been three metres. This would have reduced the number of composites that straddle the assay intervals. This is not considered to be a serious concern.

A summary of composite statistics is provided in Tables 14-6 and 14-7.

TABLE 14-6 MO 4M COMPOSITE STATISTICS BY ESTIMATION DOMAIN
Northcliff Resources Ltd. - Sisson Project

Statistic	All Domains	Ellipse Zone	Zone III
Samples	13349	2062	11287
Minimum	0	0	0
Maximum	0.62	0.491	0.62
Mean	0.018	0.019	0.018
Standard deviation	0.035	0.036	0.035
CV	1.952	1.894	1.963
Variance	0.001	0.001	0.001

TABLE 14-7 WO_3 4M COMPOSITE STATISTICS BY ESTIMATION DOMAIN
Northcliff Resources Ltd. - Sisson Project

Statistic	All Domains	Ellipse HG	Ellipse LG	Z3 HG East	Z3 HG West	Z3 LG
Samples	13356	1274	788	2427	4468	4399
Minimum	0	0.001	0.001	0.001	0	0
Maximum	0.986	0.49	0.262	0.916	0.986	0.564
Mean	0.059	0.07	0.035	0.086	0.079	0.025
Standard Deviation	0.074	0.062	0.032	0.091	0.085	0.035
CV	1.248	0.887	0.932	1.065	1.074	1.375
Variance	0.005	0.004	0.001	0.008	0.007	0.001

BLOCK MODEL AND GRADE ESTIMATION PROCEDURES

DIMENSIONS AND CODING

A block model of sufficient dimension to encompass the known mineralized system was generated using a block size of 10 m x 10 m x 10 m. Variables were then created to contain estimated WO_3, Mo, and WO_3Eq, as well as specific gravity (SG), metal revenue, average distance of estimation samples, material (air/overburden/rock) and resource classification.

VARIOGRAM MODELS

Variograms were developed for WO_3 in each of the grade domains and for molybdenum in each of the two zones (Zone III and Ellipse). For all metals a two-structure, spherical model was fitted to the experimental variograms. This analysis was carried out by Northcliff using Snowden Supervisor software.

The drill spacing throughout the deposit is approximately 50 m along strike in the north-south direction by 100 m along sections in the east-west direction. This drill spacing generally yielded the best set of variograms using lag distances between 50 m and 90 m.

GRADE INTERPOLATION

Grade estimation was performed using inverse distance estimator with a power of two. Search region geometries were based on variography analysis results (a factor of 1.5 was applied to the ranges). For WO_3 grade estimation, higher grade domain solids were employed as hard boundaries (i.e., only samples from this domain were used to estimate blocks for this domain). Lower grade domains were estimated using soft boundaries – samples from both lower grade domains were used to estimate blocks in either of these domains. Two estimation passes were performed, a minimum of three and maximum of 12 samples from a minimum of two drill holes were required before a block would be estimated in the first pass. No minimum drill hole limit was applied in the second pass. For molybdenum grade estimation, blocks in both zones were estimated using all composites (soft boundaries).

Other estimation parameters are summarized in Table 14-8.

TABLE 14-8 INVERSE DISTANCE ESTIMATION PARAMETERS
Northcliff Resources Ltd. - Sisson Project

Estimator	Zone	Estimation ID	Sample Selection	Block Selection	Major Axis	Semi-Major Axis	Minor Axis	Bearing	Plunge	Dip
WO_3 (ID^2)	Zone III HG West	z3w1_1, z3w1_2	Bound=z3_hgw	wo3_zone eqs “z3_hgw” and yworld le 5137300	165	123	60	20	20	-90
	Zone III HG West (North of 5137300)	z3w1n1, z3w1n2	Bound=z3_hgw	wo3_zone eqs “z3_hgw” and yworld gt 5137300	165	123	60	350	20	-90
	Zone III HG East	z3w1_1, z3w1_2	Bound=z3_hge	wo3_zone eqs “z3_hge” and yworld le 5137300	180	144	48	20	-30	-90
	Zone III HG East (North of 5137300)	z3w1n1, z3w1n2	Bound=z3_hge	wo3_zone eqs “z3_hge” and yworld gt 5137300	180	144	48	350	-30	-90
	Zone III LG	z3w0_1,z3w0_2	Bound="z3_lg" or "el_lg"	zone eqs "z3" and wo3pct_id2 lt 0	273	255	180	20	0	-90
	Ellipse Zone HG	elw1_1, elw1_2	Bound=el_hg	zone eqs "el_hg"	225	156	138	140	0	-90
	Ellipse Zone LG	elw0_1, elw0_2	Bound="z3_lg" or "el_lg"	zone eqs "el" and wo3pct_id2 lt 0	234	225	420	140	0	-90
Mo (ID^2)	Zone III	mo_z32	MOPCT > 0	zone eqs "z3"	500	280	300	35	0	-90
	Ellipse Zone	mo_el2	MOPCT > 0	zone eqs "el"	460	180	70	140	0	-90
SG	Zone III + Ellipse Zone	sg	SG > 0	material eq 1	260	300	100	15.8	39.8	-83.5

EQUIVALENCE CALCULATION

The WO_3Eq values were calculated for each block using a script formula which is shown in Figure 14-2.

FIGURE 14-2 WO_3 EQUIVALENT SCRIPT

```
Script file: feb12_wo3eq_calc.bcf

mo_price_lb = 15
wo3_price_mu = 300
wo3_price_lb = wo3_price_mu/22.046


if ((wo3pct_id2 gt 0.0001) and (mopct_id2 gt 0.0001)) then
        wo3eq_id2 = wo3pct_id2 + mopct_id2*(mo_price_lb/wo3_price_lb)
        wo3eq_mercat_formula = wo3pct_id2 + mopct_id2 * 2.02
else
        wo3eq_id2 = -9
        wo3eq_mercat_formula = -9
endif
```

BULK DENSITY

In previous estimates, density values were calculated by Geodex using a water immersion method and the data were compiled and averaged by Mercator on the basis of sampled lithology. For the block model, all 555 SG samples from all lithologies were grouped into four major categories for the purpose of density assignment.

For the current estimate, Northcliff elected to create an interpolated SG model for density and tonnage calculations. The 2011 drill program has increased the number of density determinations within the database to a total of 1,743 samples. Using interpolated densities in this model is expected to provide better local estimates than the previous simple average of density values within grouped lithologies.

The procedures of the water immersion method are as follows:

- Whole core samples which are typical of the surrounding rock and free of visible moisture were selected. They ranged from seven centimetres to 20 cm in length, and averaged 15 cm.
- The sample was weighed in air on a digital scale and the mass in air (Ma) recorded to the nearest 0.1 g in an Excel spreadsheet.
- The sample was then suspended in water below the scale and the mass in water (Mw) was entered into the same sheet.
- Calculation of the bulk density was done by the following formula:
  $$BD = Ma/(Ma - Mw).$$

Table 14-9 is a summary of the bulk density data.

TABLE 14-9 BULK DENSITY SUMMARY
Northcliff Resources Ltd. - Sisson Project

Year	Number	BD Min	BD Max	Mean	Median
2006	205	2.61	3.51	2.79	2.77
2007	172	2.59	3.02	2.76	2.76
2008	40	2.61	2.92	2.82	2.84
2009	60	2.59	2.94	2.76	2.76
2010	224	2.59	3.17	2.76	2.76
2011	1,042	2.56	3.37	2.77	2.77
Total	**1,743**	**2.56**	**3.51**	**2.77**	**2.77**

An average deposit density of 2.77 t/m^3 was assigned to blocks where SG variable was not populated by the estimation routine.

NSR AND CUT-OFF GRADE

Both molybdenum and WO_3 are considered to be of economic interest for the Project. Northcliff has derived and applied an NSR cut-off value to include contributions from both metals. The NSR was based on metal prices and assumed costs, recovery factors, mining, downstream processing, and marketing parameters. The main cost, recovery, and economic assumptions are listed along with the pit optimization parameters in Table 14-10. The NSR cut-off value was estimated by Northcliff to be US$9 per tonne.

RPA reviewed the inputs to the NSR calculation, and considers them to be reasonable. RPA also reran the block NSR calculation to confirm that it had been done correctly.

PIT OPTIMIZATION

In order to comply with the CIM definitions of “reasonable prospects for economic extraction”, Northcliff prepared a preliminary Lerchs-Grossman pit shell using the estimated costs and parameters shown in Table 14-10. Only those blocks contained within the preliminary pit shell are reported as Mineral Resources (Table 14-1) at the NSR reporting cut-off grade of US$9/t.

TABLE 14-10 PIT OPTIMIZATION PARAMETERS
Northcliff Resources Ltd. - Sisson Project

Item	Amount
WO_3 Price	US$13.61/lb
Mo Price	US$15.00/lb
Mining Cost	US$2.25/t
Milling + G&A Cost	US$8.00/t
Pit Slope	45°
Mo Recovery	74%
WO_3 Recovery	80%

The block model variable resource_2012 was set to 1 if a block is within the pit shell and of inferred or better category.

MODEL VALIDATION BY NORTHCLIFF

A visual comparison completed by Northcliff on a section by section basis showed acceptable degree of consistency between the block model and drill hole assay grade distribution.

Swath plots for WO_3 and molybdenum were generated to assess the model for global bias by comparing ID^2 values with Ordinary Kriging estimates and four metre run length composites. These plots were compiled on 50 m vertical East-West panels through the deposit. Only blocks and composites that are within the Indicated category outline were used for swath plot generation. In RPA's opinion, the plots show a good comparison between the three methods, particularly in the main portions of the deposit. At the north end of the deposit, some deviation between WO_3 estimated grades and assay composites was noted. This deviation between estimated and composite grades may be due to the lower number of samples available to populate blocks at the edges of the model. The differences in grade between models and raw data are shown in Figures 14-3 and 14-4.

FIGURE 14-3 SWATH PLOT COMPARISON FOR WO_3

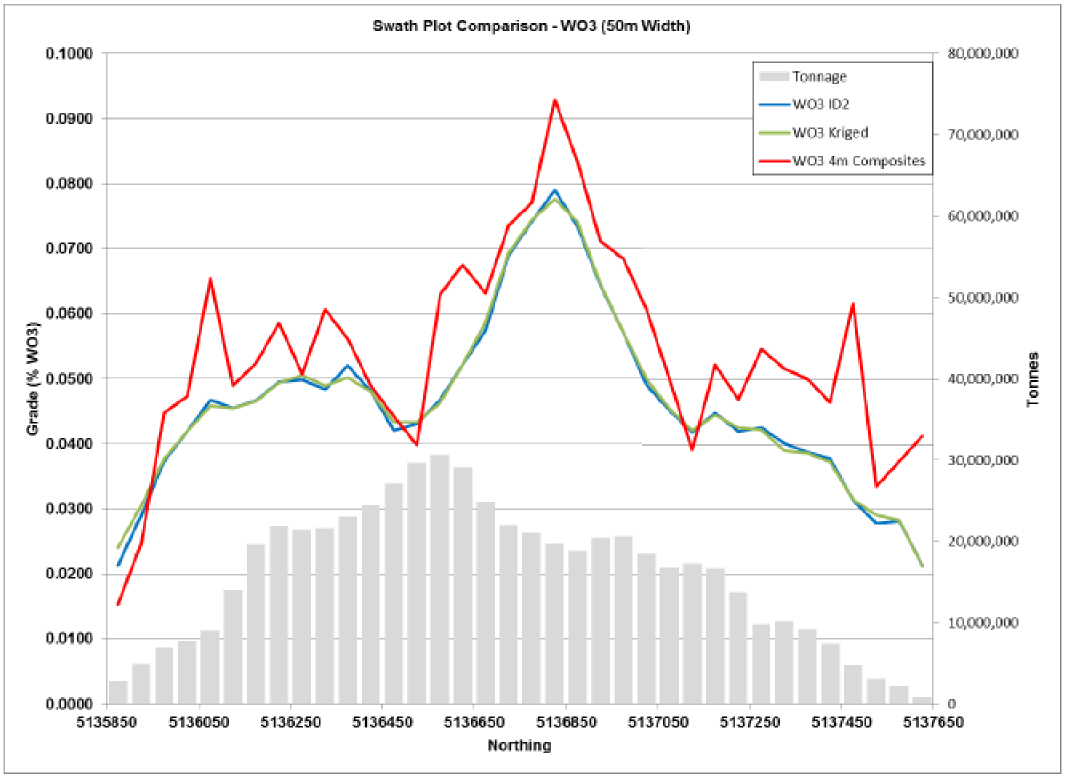


FIGURE 14-4 SWATH PLOT COMPARISON FOR MO

Swath plots for SG were generated to assess the model for global bias by comparing ID^2 values with drill hole SG measurements on 100 m vertical South-North panels through the deposit. Results show a good comparison between the two data sets (Figure 14-5).

FIGURE 14-5 SWATH PLOT COMPARISON FOR SG

RPA VALIDATION

The following is a list of the checks performed on the drill hole database and resource models by RPA:

- Checked for duplicate drill hole collar locations and hole numbers.
- Checked collar locations for zero/extreme values.
- Checked assays in database for missing intervals, long intervals, extreme high values, blank/zero values, reasonable minimum/maximum values.
- Ran validity report to check for out-of-range values, missing intervals, overlapping intervals, etc.
- Checked for overlapping wireframes to assess potential double counting of resource volumes.
- Checked mineralized domain/wireframe extensions beyond last holes to see if they are reasonable and consistent.
- Compared basic statistics of assays within wireframes with basic statistics of composites within wireframes for both uncut and cut values.
- Checked the capping of extreme values and effect on coefficient of variation.

- Checked for reasonable compositing intervals.
- Checked that composite intervals start and stop at wireframe boundaries.
- Checked that assigned composite rock type coding is consistent with intersected wireframe coding.
- Checked if block model size and orientation is appropriate for drilling density, mineralization, and mining method.
- Checked search volume radii and orientations against available variography.
- Checked estimation parameters against available variography.
- Visually checked block resource classification coding for isolated blocks.
- Visually compared block grades to drill hole composite values on section and plan views.
- Visually checked for grade banding, smearing of high grades, plumes of high grades, etc., on sections and plans.

While performing the above checks, RPA noted the following:

- Even after cutting, over 20% of the total molybdenum metal content resides within the top percentile of the data. This indicates that there is still a risk of overestimation of global molybdenum in the block model. This is not expected to be severe but warrants further review as the Project advances.
- The risk of overestimation of the molybdenum metal content may also be increased somewhat by the fact that the interpolation is effectively unconstrained. It is noted, however, that this risk is greatest on the periphery of model, in areas that were often not included as Mineral Resources.
- There are a couple of areas in the model where high SG estimates have been allowed to fill blocks in an unusual manner. This occurs, again, at the edges of the model, presumably where there are few data points and not enough constraining data. Some of these blocks, however, are within the pit limit. The net impact on the global resource estimate is not anticipated to be overly severe but it is likely that some block tonnages will be overestimated. RPA notes that, in poorly drilled portions of the deposit, it may be more appropriate to use average SGs rather than trying to interpolate them. The impact of making this change should be evaluated.
- There also appear to be differences in the statistics for the various zones, which suggest that it might be more prudent to develop independent top cuts on a zone by zone basis rather than a single top cut for all.

In RPA's opinion the assumptions, parameters, and methodology used in the Mineral Resource estimate are appropriate for the style of mineralization and proposed mining method. The resources were further constrained by an 80 m limit to the external boundary of the model. This limit was used because it represents two-thirds of the semi-major axis range of the tungsten variogram.

CLASSIFICATION

As previously stated in the section of this report entitled Pit Optimization, only those blocks contained within the preliminary pit shell are reported as Mineral Resources (Table 14-1) at the NSR cut-off grade of $9/t.

Estimated blocks were classified by geostatistical means using Vulcan scripts. The principal criterion for assignment of resource classification was the average distance to the nearest three drill holes. The classification was assigned using the following criteria:

1. Blocks with an average distance to the nearest three holes of 45 m or less were classified as Measured (class = 1).
2. Blocks with an average distance to the nearest three holes between 45 m and 80 m were nominally classified as Indicated (class = 2).
3. Blocks with an average distance to the nearest three holes between 80 m and 125 m were nominally assigned to the Inferred category (class = 3).

For the Indicated and Inferred classes, three dimensional category solids were created from sectional interpretations of category blocks. This allowed local smoothing of category boundaries and elimination of isolated classification artefacts. These solids were then used for repopulation of the block model variable class. A script was also created to make sure grade values were erased where no class variable had been assigned.

15 MINERAL RESERVE ESTIMATE

There are no Mineral Reserves for the project.

16 MINING METHODS

This section is not relevant.

17 RECOVERY METHODS

This section is not relevant.

18 PROJECT INFRASTRUCTURE

This section is not relevant.

19 MARKET STUDIES AND CONTRACTS

This section is not relevant.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Mining projects in New Brunswick must undergo an environmental impact assessment (EIA) review and approval by both the federal and provincial governments. Guidelines for the provincial EIA were issued in March 2009. In April 2011, a Project Description for the Sisson Project was accepted by the Canadian Environmental Assessment Agency to launch the federal EIA process. The Project will undergo a harmonized federal/provincial EIA review. Draft Terms of Reference (TOR) for the EIA were defined by a joint federal/provincial Technical Review Committee (TRC), and were released for review and comment by the public in August 2011. The TOR were finalized in April 2012, and Northcliff has begun preparation of an EIA Report to meet the TOR requirements. Completion of the Draft EIA Report, ready for submission to the TRC, is planned to coincide with the completion of the Feasibility Study in the third quarter of 2012. The Draft EIA Report will then be reviewed by the TRC, finalized with Northcliff, and released for comment by the public, First Nations, and stakeholder groups. Subsequent provincial and federal review and approval processes differ somewhat, but are expected to result in EIA decisions in the third quarter of 2013.

ENVIRONMENTAL STUDIES

In 2008, Geodex commenced water quality, climate, and hydrology studies on the Project. Northcliff has continued these programs and, in 2011, initiated additional studies of air quality, water resources, environmental geochemistry, terrestrial and aquatic habitats, fish and wildlife, wetlands, land and resource uses, heritage resources, socio-economics, and traditional Aboriginal land uses. The purpose of these studies is to provide data for use in preparing the EIA Report. While the EIA TOR require a comprehensive study of baseline conditions, and assessment of Project effects, particular attention is being paid to aquatic resources to understand potential Project effects on fish habitat and to develop the habitat compensation plan required to obtain Project authorization under the federal *Fisheries Act*.

WASTE AND WATER MANAGEMENT

A Tailings Storage Facility (TSF) is included in the Project to handle all tailings and waste rock, including the subaqueous disposal of potentially acid generating materials to prevent the generation of acidic conditions. All mine-contact water will be delivered to the TSF for use and reuse in the process plant. During operations, any surplus water to be discharged to the environment will be treated, if necessary, to meet permit conditions set by New Brunswick and the federal Metal Mining Effluent Regulations (MMER). Similarly, post-closure, any necessary treatment of surplus water discharged to the environment will be continued until water quality meets receiving water standards.

PROJECT PERMITTING

As noted above, the federal and provincial Project review and permitting process has commenced with the preparation of an EIA Report. A comprehensive permitting plan is being developed so that the individual permits required for the Project will be obtained in a timely fashion to allow the start of construction shortly after the EIA decisions are made. An approved closure and reclamation plan and a financial security for the reclamation costs are required by the province before approval for the mine is granted.

SOCIAL OR COMMUNITY REQUIREMENTS

Since early 2011, Northcliff has had numerous meetings, presentations and workshops with local communities, First Nations, and stakeholder groups to disseminate Project information and to learn about and help address specific concerns. These activities will continue throughout Project planning and permitting, and into construction and operations. Northcliff is funding an Aboriginal Traditional Use Study being carried out by First Nations communities. A study of the economic benefits of the Project will be completed along with the Feasibility Study.

At this stage, RPA is not aware of any issues that may prevent the Project from advancing or would otherwise impact upon the Mineral Resource estimate.

21 CAPITAL AND OPERATING COSTS

This section is not relevant.

22 ECONOMIC ANALYSIS

This section is not relevant.

23 ADJACENT PROPERTIES

Sisson is the most advanced and significant mineral project in the district and there are no adjacent properties which require comment.

24 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

RPA has conducted an audit of the Mineral Resource estimate for the Sisson Project, and draws the following conclusions:

- For most of the history of exploration work on the Project the drill core handling, logging, and sampling protocols have been properly recorded and carried out in a manner consistent with industry best practice.

- Similarly, the assay methods and external QA/QC protocols have been properly documented. Assay methodology has changed somewhat over the history of the Project, but the various operators have employed conventional protocols, conducted by certified independent commercial laboratories.

- Reasonable and appropriate analytical QA/QC protocols have been observed for all programs since Geodex, and later Northcliff, assumed control, and the QA/QC results have been acted upon in a timely and acceptable fashion.

- Collar and downhole surveys have been conducted using conventional and appropriate methods and equipment.

- The database has been compiled and maintained in a competent manner, using a reasonable level of verification and validation.

- The geology of the deposit, mineralization styles, and controls to mineralization are well-understood and have been applied in a reasonable fashion.

- In RPA's opinion, the assumptions, parameters, and methodology used in the Mineral Resource estimate are appropriate for the style of mineralization and proposed mining method.

- The block model and grade interpolations have been generated using generally appropriate assumptions and parameters.

- The NSR cut-off has been derived using reasonable assumptions.

- The Mineral Resource classification has been done in a manner consistent with the CIM definitions, and as such is consistent with NI 43-101.

- The Mineral Resource estimate shows a significant increase in tonnes and metal content from the previous estimate, dated February 2011. In RPA's opinion, the changes are due to the following factors:
    - Increase in tonnage and reduction in grade due to decrease in the cut-off grade from the previous estimate
    - To a lesser extent, an increase in tonnage and metal content due to additional drilling conducted since the last estimate.

26 RECOMMENDATIONS

At the time of writing, Northcliff was preparing a Feasibility Study on the Sisson Project. RPA concurs that the study is warranted and recommends that it be completed.

27 REFERENCES

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28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Sisson Project, New Brunswick, Canada" and dated June 29, 2012, was prepared and signed by the following author:

(Signed & Sealed) "*David W. Rennie*"

Dated at Vancouver, BC
June 29, 2012

David W. Rennie, P.Eng.
Principal Geologist

29 CERTIFICATE OF QUALIFIED PERSON

DAVID W. RENNIE

I, David W. Rennie, P.Eng., as an author of this report entitled "Technical Report on the Sisson Project, New Brunswick, Canada", prepared for Northcliff Resources Ltd., and dated June 29, 2012, do hereby certify that:

1. I am a Principal Geologist with Roscoe Postle Associates Inc. My office address is Suite 388, 1130 West Pender Street, Vancouver, British Columbia, Canada V6E 4A4.

2. I am a graduate of the University of British Columbia in 1979 with a Bachelor of Applied Science degree in Geological Engineering.

3. I am registered as a Professional Engineer in the Province of British Columbia (Reg.# 13572). I have worked as a geological engineer for a total of 33 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on numerous exploration and mining projects around the world for due diligence and regulatory requirements.
   - Consultant Geologist to a number of major international mining companies providing expertise in conventional and geostatistical resource estimation for properties in North and South Americas, and Africa.
   - Chief Geologist and Chief Engineer at a gold-silver mine in southern B.C.
   - Exploration geologist in charge of exploration work and claim staking with two mining companies in British Columbia.

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.

5. I visited the Sisson Project on February 3, 2012.

6. I am responsible for overall preparation of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. 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.

Dated this 29th day of June, 2012

(Signed & Sealed) "*David W. Rennie*"

David W. Rennie, P. Eng.