

# RAINY RIVER PROJECT

Township of Chapple, Ontario

FINAL ENVIRONMENTAL ASSESSMENT REPORT  
(ENVIRONMENTAL IMPACT STATEMENT)  
VERSION 2

Volume 2 (Main Text)







**RAINY RIVER RESOURCES LTD.**

**VOLUME 2: FINAL ENVIRONMENTAL ASSESSMENT REPORT  
(ENVIRONMENTAL IMPACT STATEMENT)**

**VERSION 2**

**RAINY RIVER PROJECT  
TOWNSHIP OF CHAPPLE, ONTARIO**

**1111 Victoria Avenue East  
Thunder Bay, Ontario  
P7C 1B7**

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TC111504**





## PREFACE

This document contains "forward-looking information" as defined in applicable securities laws (referred to herein as "forward-looking statements"). Forward looking statements include, but are not limited to, statements with respect to the cost and timing of the development of the Rainy River Project, including the exercise of the economic parameters of the project; the success and continuation of exploration activities; estimates of mineral resources; acquisitions of additional mineral properties; the future price of gold; government regulations and permitting timelines; estimates of reclamation obligations that may be assumed in connection with the exercise of the economic parameters of the project; requirements for additional capital; environmental risks; and general business and economic conditions. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "suggests", "continues", "forecasts", "projects", "predicts", "intends", "anticipates" or "believes", or variations of, or the negatives of, such words and phrases, or statements that certain actions, events or results "may", "could", "would", "should", "might" or "will" be taken, occur or be achieved. Inherent in forward-looking statements are risks, uncertainties and other factors beyond the Company's ability to predict or control. These risks, uncertainties and other factors include, but are not limited to, the assumptions underlying the document not being realized, future gold prices, changes in cost of labour, supplies, fuel and equipment, changes in equity markets, actual results of current exploration, changes in project parameters, exchange rate fluctuations, title risks, regulatory risks and uncertainties with respect to obtaining necessary surface rights and permits or delays in obtaining same, and other risks involved in the gold exploration and development industry, as well as those risk factors discussed in the section entitled *Description of Business-Risk Factors* in Rainy River Resources 2012 Annual Information Form. Forward-looking statements are based on a number of assumptions which may prove to be incorrect, including, but not limited to, the availability of financing for the Company's exploration and development activities; the timelines for the Company's exploration and development activities on the Rainy River Property; the availability of certain consumables and services; assumptions made in mineral resource estimates, including geological interpretation grade, recovery rates, and operational costs; and general business and economic conditions. Forward looking statements involve known and unknown risks, uncertainties and other factors which may cause the Company's actual results, performance or achievements to be materially different from any of its future results, performance or achievements expressed or implied by forward-looking statements. All forward-looking statements herein are qualified by this cautionary statement. Accordingly, readers should not place undue reliance on forward-looking statements. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking statements whether as a result of new information or future events or otherwise, except as may be required by law.

## **ACKNOWLEDGEMENTS**

Rainy River Resources Ltd. / New Gold Inc. wish to acknowledge the involvement and support of many groups and individuals in the Rainy River Project to date, including but not limited to: local Municipalities, First Nations, Métis, the public, other government agencies, the Rainy River School District, Riverside Health, Rainy River Cattleman's Association, Ontario Federation of Anglers and hunters, Confederation College, as well as local hoteliers and resort owners.

Through this involvement and support, Rainy River Resources Ltd. / New Gold Inc. have been able to design a better project for development in the Rainy River District.

**GLOSSARY AND ABBREVIATIONS**

7Q20	Lowest average 7-day flow expected to occur once every 20 years
AADT	Average Annual Daily Traffic
AANDC	Aboriginal Affairs and Northern Development Canada
AAQC	Ambient Air Quality Criteria
AAQO	Ambient Air Quality Objectives
Aboriginal	In the context of the RRP includes both First Nation and Métis people
ABA	Acid Base Accounting
AMEC	AMEC Environment & Infrastructure
ANFO	Ammonium Nitrate / Fuel Oil
AP	Acid Potential
(aq)	Aqueous
AQI	Air Quality Index
ARD	Acid Rock Drainage
ASME	American Society of Mechanical Engineers
BP	Before Present
CAPMoN	Canadian Air and Precipitation Monitoring Network
CBC	Canadian Broadcasting Corporation
CCC	Continuous Chronic Criterion
CDWQG	Canadian Drinking Water Quality Guideline
CEA Agency	Canadian Environmental Assessment Agency
<i>CEAA, 2012</i>	<i>Canadian Environmental Assessment Act, 2012</i>
CEQG	Canadian Environmental Quality Guidelines
CIP	Carbon-in-pulp
CND	Cyanide Destruction
COPC	Contaminants of Potential Concern
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CPUE	Catch per Unit Effort
CUM	Cultural Meadow
DFO	Fisheries and Oceans Canada
FMP	Follow-up Monitoring Program
DS	Downstream
DSPs	Data Sharing Protocols
DU	Designatable Unit
eq	Equivalent
E	East (in association with direction)
EA	Environmental Assessment
EC	Environment Canada
EIS	Environmental Impact Statement
ELA	Experimental Lakes Area

ELC	Ecological Land Classification
EPT	Ephemeroptera, Plecoptera, Trichoptera
ESA	<i>Endangered Species Act</i>
FMA	Forestry Management Area
(g)	gas
GDP	Gross Domestic Product
GHGs	Greenhouse Gases
H	Horizontal (when in association with ratios and vertical)
HLSA	Human Environment Local Study Area
HRSA	Human Environment Regional Study Area
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ISO	International Organization for Standardization
KCB	Klohn Crippen Berger Limited
L <sub>eq</sub>	Sound Exposure
LEL	Lowest Effect Level
LHD	Load Haul Dump
LiDAR	Light Detection and Ranging
MCL	Maximum Concentration Level
ML	Metal Leaching
MM EEM	Metal Mining Environmental Effects Monitoring
MMAH	Ontario Ministry of Municipal Affairs and Housing
MMER	Metal Mining Effluent Regulations
MNDM	Ontario Ministry of Northern Development and Mines
MNO	Métis Nation of Ontario
MNR	Ontario Ministry of Natural Resources
MODFLOW	Modular Finite-Difference Groundwater Flow Model
MOE	Ontario Ministry of the Environment
MS	Midstream
MTCS	Ontario Ministry of Tourism, Culture and Sport
MTO	Ontario Ministry of Transportation
N	North (in association with direction)
NA	Not applicable
NAD	North American Datum
NAG	Net Acid Generation
NAGpH	Net Acid Generation pH
NAPS	National Air and Pollution Surveillance
NHIC	Natural Heritage Information Centre
NLSA	Natural Environment Local Study Area
NOC-S	National Occupational Classification for Statistics
NP	Neutralizing Potential
NPAG	Non-potentially Acid Generating
NPR	Neutralization Potential Ratio

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NR	Not Rated
NRCan	Natural Resources Canada
NRSA	Natural Environment Regional Study Area
NW	Northwest
OBBA	Ontario Breeding Bird Atlas
ODM	Main Ore Zone
ODWS	Ontario Drinking Water Standards
OEB	Ontario Energy Board
OPP	Ontario Provincial Police
PAG	Potentially Acid Generating
PDGZNYZ	Pwi-Di-Goo-Zing-Ne-Yaa-Zhing
PLGD	Pleistocene Lower Granular Deposits
PM	Particulate Matter
PM <sub>2.5</sub>	Particles less than 2.5 micrometers in diameter
PM <sub>10</sub>	Particles less than 10 micrometers in diameter
PM <sub>tot</sub>	Total Particulate Matter
POI	Point of Impingement
POR	Point of Reception
PSQG	Ontario Provincial Sediment Quality Guidelines
PWQO	Ontario Provincial Water Quality Objectives
r <sup>2</sup>	Coefficient of Determination
RCC	Regional Consultation Committee
ROM	Ore directly from mine (no crushing, just rock breaking for transport)
ROW	Right-of-way
RRDMA	Rainy River District Municipal Association
RRDSSAB	Rainy River District Social Services Administration Board
RRDVSP	Rainy River District Victims Services Program
RRFDC	Rainy River Future Development Corporation
RRP	Rainy River Project
RRR	Rainy River Resources Ltd,
RSA	Regional Study Area
SAG	Semi-autogenous Grinding
SAR	Species at Risk
SARA	<i>Species at Risk Act</i>
SARO	Species at Risk in Ontario
SD	Standard Deviation
SEL	Severe Effect Level
SWH	Significant Wildlife Habitat
TBD	To Be Determined
TC	Transport Canada
TK	Traditional Knowledge
TKN	Total Kjeldahl Nitrogen

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TLU	Traditional Land Use
TMA	Tailings Management Area
ToR	Terms of Reference
TOC	Total Organic Carbon
TSS	Total Suspended Solids
TSSA	Technical Standards and Safety Authority
US	Upstream
US EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
V	Vertical (when in association with ratios and vertical)
V-type	Vegetation Type
VEC	Valued Ecosystem Component
VOC	Volatile Organic Compound
VSEC	Valued Socio-economic Component
W	West (in association with direction)
Wt	Weight
W-type	Wetland Vegetation Type
WAC	Wildlife Acoustics Compression
WAV	Waveform Audio File
WHO	World Health Organization
WMU	Wildlife Management Unit
WSC	Water Survey of Canada
XRD	X-ray Diffraction
'-' or '--'	Information not available

**MEASUREMENT UNITS**

<	Less than
>	Greater than
=	Equal to
±	Plus or minus
%	Percent
\$	Canadian Dollars
°	Degrees
°C	Degrees Celsius
a	Annum (year)
cm	Centimetre
d	Day
dB	Decibels
dBA	A-weighted Decibels
g	Gram
g/t	Grams per Tonne
ha	Hectare
hr	Hour
kg	Kilogram
kg/d	Kilograms per Day
kg CaCO <sub>3</sub> /t	Kilograms of Calcium Carbonate per Tonne
km	Kilometre
km/hr	Kilometres per Hour
km <sup>2</sup>	Square Kilometre
kHz	Kilohertz
kV	Kilovolt
kW	Kilowatt
lb	Pound
L	Litre
L/d	Litres per Day
L/MWh	Litres per Megawatt Hour
m	Metre
m <sup>2</sup>	Square Metres
m <sup>3</sup>	Cubic Metres
m/s	Metres per Second
m <sup>3</sup> /a	Cubic Metres per Year
m <sup>3</sup> /d	Cubic Metres per Day
m <sup>3</sup> /hr	Cubic Metres per Hour
m <sup>3</sup> /s	Cubic Metres per Second
masl	Metres Above Sea Level
mg	Milligram

mg/L	Milligrams per Litre
mg/kg/wk	Milligrams per Kilogram per Week
mg/m <sup>2</sup> /wk	Milligrams per Square Metres per Week
min	Minute
mL	Millilitre
mm	Millimetre
mm/a	Millimetres per Year
mm/s	Millimetres per Second
mo	Month
M	Million
Mm <sup>3</sup>	Million Cubic Metres
Mm <sup>3</sup> /a	Million Cubic Metres per Year
Moz	Million Ounces
Mt	Million Tonnes
Mt/a	Million Tonnes per Year
MB	Megabyte
ML	Million Litres
MW	Megawatts
ppb	Parts per Billion
ppm	Parts per Million
psig	pound-force per square inch gauge
s	Second
t	Tonne
t/km	Tonnes per Kilometre
t/m <sup>3</sup>	Tonnes per Cubic Metre
tpa	Tonnes per Year
tpd or t/d	Tonnes per Day
wk	Week
µg	Microgram
µg/g	Micrograms per Gram
µg/kg	Micrograms per Kilogram
µg/m <sup>3</sup>	Micrograms per Cubic Metre
µm	Micrometre
USgpm	Gallons per Minute (US)

**CHEMICAL ELEMENTS AND COMPOUNDS**

Ag	Silver
Al	Aluminum
As	Arsenic
Au	Gold
B	Boron
Ba	Barium
Be	Beryllium
Bi	Bismuth
C	Carbon (in association with other chemicals)
CN	Cyanide
CNO	Cyanate
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
Ca	Calcium
CaCO <sub>3</sub>	Calcium Carbonate
CaO	Lime
Cd	Cadmium
Cl	Chlorine
Co	Cobalt
Cr	Chromium
Cu	Copper
CuSO <sub>4</sub>	Copper Sulphate
Fe	Iron
H	Hydrogen (when in association with other chemicals)
HCN	Hydrogen Cyanide
Hg	Mercury
HNO <sub>3</sub>	Nitric acid
H <sub>2</sub> O	Water
H <sub>2</sub> SO <sub>4</sub>	Sulphuric acid
K	Potassium
Li	Lithium
Mg	Magnesium
Mn	Manganese
Mo	Molybdenum
N	Nitrogen (when in association with other chemicals)
Na	Sodium
NaCN	Sodium Cyanide
NaOH	Sodium Hydroxide
Na <sub>2</sub> SO <sub>4</sub>	Sodium Sulphate
Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	Sodium Metabisulphite

Ni	Nickel
NH <sub>3</sub>	Ammonia
NO	Nitric Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>3</sub>	Nitrate
NO <sub>x</sub>	Nitrogen Oxide
O <sub>2</sub>	Oxygen
O <sub>3</sub>	Ozone
OH	Hydroxide
P	Phosphorus
Pb	Lead
S	Sulphur
Sb	Antimony
Se	Selenium
Si	Silicon
Sn	Tin
SO <sub>2</sub>	Sulphur Dioxide
SO <sub>4</sub>	Sulphate
SO <sub>x</sub>	Sulphur Oxide
Sr	Strontium
Te	Tellurium
Th	Thorium
Ti	Titanium
Tl	Thallium
U	Uranium
V	Vanadium (when in association with other chemicals)
Y	Yttrium
Zn	Zinc
Zr	Zirconium

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