BRIGHTSPOT CLIMATE

Centerra Gold Inc.

Centerra Gold 2020 GHG Inventory

Verification Report

September 17, 2021

1. Introduction

This document provides details of the independent verification of the Centerra Gold Inc. 2020 Scope 1 and Scope 2 GHG emissions.

The verification was completed in accordance with the ISO 14064-3:2019 standard.

This document contains the following five sections:

1. **Introduction:** This section defines the parties associated with this verification, a description of the facility and the verification parameters. A list of the Responsible Party's documents reviewed through the course of the verification is also provided in this section.
2. **Verification Schedule:** This section lists important verification activities and dates.
3. **Verification Findings:** This section includes a discussion of the results of the evidence gathering activities. The qualitative and quantitative discrepancies identified through the course of the verification are described in this section.
4. **Statement of Verification:** This statement includes the verification conclusion.
5. **Conflict of Interest Declaration:** The verification team monitored for real and potential conflicts of interest through the course of the verification. A declaration regarding the independence of the verification team is provided in this section.
6. **Appendix – Verification Plan:** The final Verification Plan is a separate document that was developed at the outset of the verification. The Verification Plan includes a description of the final verification strategy, verification procedures and sampling that was applied to the verification. The final Verification Plan is appended to this report.

Parties Associated with the Verification

ISO 14064-3 defines the following parties associated with the verification:

Responsible Party: person or persons responsible for the provision of the greenhouse gas statement and supporting GHG information. The Responsible Party for this verification is Centerra Gold Inc.

Intended User: individual or organization identified by those reporting GHG-related information as being the one who relies on that information to make decisions. The Intended User for this verification is CDP Worldwide and its stakeholders.

Verifier: competent and independent person, or persons, with responsibility for performing and reporting on the verification process. The Verifier for this verification is Brightspot Climate Inc. The members of the verification team are listed in Table 1.

Verification Parameters

The verification was completed in accordance with the ISO 14064-3 standard. The verification parameters, which are described in the following table, were established and confirmed prior to beginning the verification.

Table 1: Verification Parameters

Responsible Party	Centerra Gold Inc.	
Client	Centerra Gold Inc.	
Type of Engagement	Verification	
GHG Program	CDP Worldwide	
Level of Assurance	Reasonable Level of Assurance	
Objectives	• issue a verification statement on whether the GHG assertion is accurate and conforms with the criteria as listed below; • issue a verification report that provides details of the verification activities.	
Criteria	• CDP Climate Change 2021 Scoring Methodology • CDP Climate Change Questionnaire Reporting Guidance 2021 • 2021 CDP scoring introduction document • The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) • Western Climate Initiative's Final Essential Requirements of Mandatory Reporting, Amended for Canadian Harmonization - Second Update, December 21, 2011 (WCI)	
Scope	Organizational Name:	Centerra Gold Inc.
	Organizational Boundary:	Operational control
	Geographic Boundary:	Kumtor Gold Mine, Öksüt Gold Mine & Mount Milligan Gold Mine
	Physical Operations:	Extraction and processing of gold and copper
	Emission Sources:	Stationary Combustion Mobile Combustion Electricity Consumption Blasting
	IPCC GHGs Emitted:	Carbon Dioxide (CO_2) Methane (CH_4) Nitrous Oxide (N_2O)
	Reporting Period:	January 1 – December 31, 2020

Materiality	Quantitative materiality threshold is 5% total error	
Verification Team	Lead Verifier	Aaron Schroeder, P.Eng.
	Associate Verifier	Rodrigo Cubedo, EIT
	Associate Verifier	Alexandra Naudi
	Associate Verifier	Lydia Brant, EIT
	Independent Reviewer	Deepika Mahadevan, P.Eng.
Responsible Party Contact	Contact Name:	Ainsley Chiang
	Company Name:	Centerra Gold Inc.
	Email Address:	ainsley.chiang@centerragold.com

Documents Reviewed

The following is a non-exhaustive list of the documents reviewed through the course of the verification.

Document File Name	Description
Centerra Gold CDP Climate Change Questionnaire V4_Brightspot Assurance_cc.docx	CDP Report
Centerra_ConsolidatedGHG_2020_v4.xlsx	Responsible Party's GHG Calculation File
ONEMLI…..Centerra_GHGData_Template_v2 Reviewed.xlsx	GHG Data for Öksüt Gold Mine
Electricity Invoices	Electricity invoices for all mines
Explosives Invoices	Blasting invoices for all mines
OMAS- 2020 LNG Consumption.xlsx	LNG consumption for the Öksüt Gold Mine
Monthly Fuel Usage MTM 2020.xlsx	Monthly fuel consumption for Mount Milligan Gold Mine
Explosives Data 2020.xlsx	Explosive material for Mount Milligan Gold Mine
Diesel, gasoline, propane and LNG invoices	Invoices for fuel for Mount Milligan and Öksüt Gold Mines
Kumtor-fuel-gas-2020.xlsx	Diesel and gasoline volumes for Kumtor Gold Mine

Limitation of Liability

This report is intended for the Responsible Party and the Intended User as defined in this report. The sole intention of this report is to verify the GHG statement made by the Responsible Party and is not intended to provide assurance of any kind for any purpose.

Brightspot Climate disclaims liability for use by any other party and for any other purpose.

2. Verification Schedule

The verification was completed according to the schedule established between the Responsible Party and the Verifier.

The verification reached important milestones on the following dates:

Verification Kickoff Meeting:	June 3, 2021
Draft Verification Plan:	July 12, 2021
Draft Verification Report:	September 16, 2021
Final Verification Report:	September 17, 2021

3. Verification Findings

The evidence-gathering activities completed during the course of the verification and the corresponding findings of each activity are described in the following table.

Source or Risk Area	Evidence Gathering Activity	Findings
BOUNDARY CONDITIONS		
Emission sources	Controls test: Observe emission sources during the virtual site visit.	The verification team performed a virtual site visit to Mount Milligan, one of the three mining facilities. During this virtual site visit, all relevant emission sources were confirmed to be included in the quantification. Operators walked through the mine processes during the site tour conference call. The effective emission sources were determined to accurately represent operations at the mine. **No discrepancies detected.**
Emission sources categorization	Substantive test: Categorize each emission source based on compliance with the GHG Program policy. Cross reference categorization with Responsible Party's categorization.	All activity data sources were appropriately categorized in the relevant quantification files. **No discrepancies detected.**
Reporting period	Substantive test: Filter all data to fall within the reporting period.	Based on the evidence collected through several verification activities, the verification team concluded that appropriate cut-off was applied to each emission source. **No discrepancies detected.**

Source or Risk Area	Evidence Gathering Activity	Findings
CDP Eligibility Requirements	Substantive test: Confirm that eligibility requirements for CDP reporting have been met throughout the verification.	The CDP Climate Change 2021 Scoring Methodology document requires that companies verify both Scope 1 and 2 emissions, including at least 70% of their Scope 1 and 2 emissions with no significant relevant exclusions. The verification team confirmed that Scope 1 and 2 emissions are reported and all relevant emission sources were confirmed to be included in the verification. Facilities under Care and Maintenance, Exploration, Administrative offices and Langeloth Metallurgical Facility were not included in the verification scope. The verification was performed in conformance with ISO 14064-3 which is an accepted Verification standard by CDP. This standard is relevant, competent, independent, includes relevant terminology and methodology and is available for scrutiny as per the CDP verification requirements. **No discrepancies detected.**
METHODOLOGIES		
Emission quantification methodologies	Substantive test: Compare Responsible Party's quantification against the GHG Program policy.	The verification team compared the methods described in the CDP Report to the methods used in the quantification. **No discrepancies detected.**
	Substantive test: Recalculate emissions using the methodology from the GHG Program policy.	A recalculation based on the methodologies in the CDP Report reasonably matched the emission calculations conducted by the Responsible Party. **No discrepancies detected.**
Geographic location	Takes place in Kumtor, Öksüt and Milligan under operational control of Centerra Gold Inc.	**No discrepancies detected.**

Source or Risk Area	Evidence Gathering Activity	Findings
ACTIVITY DATA		
Propane Volumes	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors. Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Propane is only consumed at the Mount Milligan facility and tracked monthly in a summary spreadsheet. The verification team confirmed propane consumption through the review of invoices from the propane supplier. **No discrepancies detected.**

Diesel Volumes	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors. Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Diesel is consumed at all three facilities, Mount Milligan, Kumtor and Öksüt. A daily spreadsheet tracker records diesel usage at Mount Milligan and was confirmed through a review of a sample of invoices. **No discrepancies identified for Mount Milligan Gold Mine.** For Kumtor, diesel usage is tracked through Ellipse, a data management software, where requisitions must be approved by a manager before being consumed on site. Several samples of requisitions were reviewed for Kumtor which matched the output from the data management software. The data management software tracks invoiced diesel over the reporting period, however the Responsible Party has asserted a differing diesel value as the Kumtor operations team has asserted that a slightly different volume of diesel was actually consumed, rather than invoiced over the reporting period. Due to the political situation in Kumtor (see details in the Data Integrity section), there is no supporting evidence for the actual consumption of diesel. The verification team has reviewed and verified the invoiced diesel volume from the data management software but cannot verify the asserted "consumed" volume. The difference between the data management software and consumed values result in an overstatement of 5,348 tonnes CO_2e (1.30% of the total GHG assertion), therefore the difference is immaterial. **The lack of supporting evidence for the consumption of diesel, compared to the invoiced volumes of diesel, at the Kumtor Gold Mine results in an immaterial qualitative discrepancy.** For Öksüt, diesel invoices were reviewed for three of the four diesel suppliers without any discrepancies identified. For the fourth diesel contractor, which only supplied 6% of the total diesel consumption, there was no supporting evidence available to review. The volume of diesel purchased was provided through a data management system with controls in place, however the verification team was unable to independently verify supporting evidence for this volume. The emissions

Source or Risk Area	Evidence Gathering Activity	Findings
		associated with this volume of diesel account for approximately 0.44% of the total assertion, therefore the discrepancy is immaterial. **The lack of supporting evidence for one of the Öksüt diesel suppliers constitutes an immaterial qualitative discrepancy.**

Source or Risk Area	Evidence Gathering Activity	Findings
Gasoline Volumes	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors. Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Diesel is consumed at Mount Milligan and Kumtor. A daily spreadsheet tracker records gasoline usage at Mount Milligan and was confirmed through a review of a sample of invoices. **No discrepancies detected for the Mount Milligan Gold Mine.** For Kumtor, gasoline consumption is tracked through a data management software where requisitions must be approved by a manager before being consumed on site. Several samples of requisitions were reviewed for Kumtor without any discrepancies identified. The data management software tracks invoiced gasoline over the reporting period, however the Responsible Party has asserted a differing gasoline value as the Kumtor operations team has asserted that a slightly different volume of gasoline was actually consumed, rather than invoiced over the reporting period. Due to the political situation in Kumtor (see details in the Data Integrity section), there is no supporting evidence for the actual consumption of gasoline. The verification team has reviewed and verified the invoiced gasoline volume from the data management software but cannot verify the asserted "consumed" volume. The difference between the data management software and consumed values result in an overstatement of 206 tonnes CO_2e (0.05% of the total GHG assertion), therefore the difference is immaterial. **The lack of supporting evidence for the consumption of gasoline, compared to the invoiced volumes of gasoline, at the Kumtor Gold Mine results in an immaterial qualitative discrepancy.**

Source or Risk Area	Evidence Gathering Activity	Findings
Liquified Natural Gas (LNG) Volumes	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors. Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	LNG is consumed only at Öksüt. A summary spreadsheet of monthly consumption was provided and confirmed to be transcribed correctly from a sample of invoices from the LNG provider. **No discrepancies detected.**

Source or Risk Area	Evidence Gathering Activity	Findings
Tonnes of Explosive	Substantive test: Check explosive product invoices or reports for transcription errors. Substantive test: Recalculate emissions using original explosive product mass from appropriate substantiating evidence.	All three facilities use explosive products, mixed with diesel for operations. For Mount Milligan, a summary spreadsheet of explosive materials consumed was sent to the verification team, along with invoices from the supplier. The verification team identified that the invoices differed slightly from the consumed volumes due to monthly tracking of consumption as "detonated explosives" and invoices as "purchased explosives". The difference was identified to account for 14 tonnes CO_2e (<0.1 of the total GHG assertion). This difference accounts for an immaterial qualitative discrepancy. **The lack of supporting evidence for the consumed explosives compared to the purchased explosives result in an immaterial qualitative discrepancy.** For Kumtor, there is no supporting data or invoices available for review due to the Kyrgyz Republic Government taking control of the mine in early 2021. The total amount of explosives purchased can be queried through an accounting software, which has built in controls. The verification team confirmed through screenshots that the explosive amounts in the quantification matched that in the accounting system. **No discrepancies detected for Kumtor Gold Mine.** For Öksüt, a summary spreadsheet was used to track monthly consumption and this was verified through reviewing a sample of invoices from the explosives provider. **No discrepancies detected for Öksüt Gold Mine.**

Source or Risk Area	Evidence Gathering Activity	Findings
Electricity Use	Control test: Ensure that all electricity invoices, statements or reports have been included in the calculation. Substantive test: Recalculate emissions using original electricity use data from appropriate substantiating evidence.	Electricity consumption at all three facilities was included in the quantification. For Mount Milligan and Öksüt, raw invoices from the electricity provider were reviewed and found to be complete. **No discrepancies detected for Mount Milligan and Öksüt Gold Mines.** For Kumtor, screenshots from the accounting software showing the electricity consumption on a month-by-month basis was reviewed for completeness. The account software shows the invoiced electricity usage over the reporting period, however the Responsible Party has asserted a different electricity consumption value as the Kumtor operations team has asserted that the invoiced and consumed electricity values are different. Due to the political situation in Kumtor (see details in the Data Integrity section), there is no supporting evidence for the actual usage of electricity. The verification team has reviewed and verified the electricity consumption from the accounting invoices but cannot verify the asserted "consumed" electricity. The difference between the accounting invoices and asserted electricity consumption result in an overstatement of 1,136 tonnes CO_2e (0.28% of the total GHG assertion), therefore the difference is immaterial. **The lack of supporting evidence for the electricity consumption, compared to the electricity invoices, at the Kumtor Gold Mine results in an immaterial qualitative discrepancy.**

Source or Risk Area	Evidence Gathering Activity	Findings
Mass Percentage Diesel in Explosive	Substantive test: Validate that the correct fuel content of the explosive product has been used and transcribed correctly to the GHG quantification.	For each explosive type (ANFO and emulsion), diesel is used to ignite the explosives. The amount of diesel required is stated in the safety data sheet of each explosive type used. The safety data sheets for the explosives for Mount Milligan and Öksüt were reviewed and confirmed to be transcribed correctly. For Kumtor, the technical data sheet diesel value for the ANFO explosive was found to be slightly different than the diesel value asserted by the Responsible Party. The Responsible Party was unable to identify any other supporting data for their asserted diesel ratio. The verification team has determined that the more accurate calculation would be to use the ratio from the technical data sheet. **The difference in the diesel ratio for the ANFO explosive results in an understatement of 72 tonnes CO2e (<0.1% of the total assertion). This constitutes an immaterial quantitative discrepancy.** For the explosive emulsion at Kumtor the Responsible Party asserted that the diesel ratio was 2.4% but was unable to provide any evidence to support this. The verification team concluded based on experience and through industry research that the highest diesel ratio is approximately 10% and using this ratio would result in an immaterial discrepancy of 1,634 tonnes CO2e (0.40% of the total assertion). Therefore, the verification team has concluded that the lack of evidence for the diesel ratio in the emulsion is a qualitative discrepancy and is immaterial based on the estimate test performed. **The lack of supporting evidence for the Kumtor emulsion diesel ratio results in an immaterial qualitative discrepancy.**

Source or Risk Area	Evidence Gathering Activity	Findings
Emission factors	Substantive test: Verify that correct emissions factors have been used and transcribed correctly to the GHG quantification.	Emission factors were correctly referenced from reputable sources. These emission factors were used in the recalculation which reasonably matched the GHG assertion. **No discrepancies detected.**
QUANTIFICATION		
Emissions quantification	Substantive test: Recalculate emissions using original data.	Recalculation reasonably matched the GHG quantification asserted by the Responsible Party. **No discrepancies detected.**
DATA INTEGRITY		
All inventory emission reporting quantities	Substantive test: Confirm correct transcription of values for CDP reporting	The verification team confirmed the accuracy of transcription between the final emissions quantification, CDP Report. This review included the following sections of the CDP report: - C6.1 Gross global Scope 1 emissions - C6.3 Gross global Scope 2 emissions - C6.5 Gross global Scope 3 emissions - C7.1a Scope 1 breakdown by GHG - C7.2 Scope 1 breakdown by country - C7.5 Scope 2 breakdown by country - C8.2 Energy consumption totals and breakdown by fuel type - C10.1a Verification for Scope 1 emissions - C10.1b Verification for Scope 2 emissions - C10.2 Verification of other parameters **No discrepancies detected.**

Source or Risk Area	Evidence Gathering Activity	Findings
Data Monitoring Methods for the Mount Milligan Facility	Substantive test: Confirm data from Mount Milligan is sufficient and appropriate for the level of verification.	The verification team cross checked propane, diesel and gasoline invoices available against summary spreadsheets, as well as confirmed electricity consumption through monthly invoices. Explosive amounts were confirmed through purchased invoices. All data available was from third-party sources and confirmed to be sufficient and appropriate as evidence to a reasonable level of assurance. **No discrepancies detected.**
Data Monitoring Methods for the Öksüt Facility	Substantive test: Confirm data from Öksüt is sufficient and appropriate for the level of verification.	Liquified natural gas (LNG) and diesel invoices were cross checked against consumption spreadsheets, and a sample of electricity invoices were reviewed for completeness. It was identified that some supporting evidence for diesel invoices was not available, this discrepancy has been addressed above in the “Activity Data”. Invoices for explosives were reviewed and found to be complete. **No additional discrepancies detected.**

Source or Risk Area	Evidence Gathering Activity	Findings
Data Monitoring Methods for the Kumtor Facility	Control test: Confirm data from Kumtor is sufficient and appropriate for the level of verification.	In the spring of 2021, the Kyrgyz Republic Government took control of the Kumtor gold mine from the Responsible Party. After, receiving evidence including invoices and other documentation from the Kumtor facility proved very difficult. Given the political nature of the situation, the verification team concluded that evidence for the Kumtor facility would be gathered through a substantive test if possible and where not possible, through a control test. There were no raw invoices available for diesel and gasoline consumption and a control test was performed to review the software tracking system for fuel consumption, as was described in the "Activity Data" section above. For electricity, screenshots of invoices from an Asset Management system were used to verify the electricity consumption monthly. Explosive amounts could not be confirmed through invoices and a screenshot of the annual consumption from cost centers were used to verify the explosive amounts. Given the data available for the Kumtor facility, the verification team was able to complete control tests for all emission sources. **No discrepancies detected.**

Statement of Verification

CDP Worldwide
London, England

September 17, 2021

Introduction

Centerra Gold Inc. (the "Responsible Party") engaged Brightspot Climate Inc. (Brightspot Climate) to review their greenhouse gas (GHG) inventory for the 2020 Corporate Inventory (the "Corporate Inventory").

The Responsible Party's "GHG Statement" is comprised of the CDP Report and supporting documentation. The GHG Statement covers the reporting period January 1, 2020 – December 31, 2020 and states a total GHG emissions inventory as follows:

Scope 1:	367,477	tCO_2e
Scope 2:	43,721	tCO_2e

The GHG Statement is based on historical GHG information.

The Responsible Party is responsible for the preparation and fair presentation of the GHG statement in accordance with the criteria. Our responsibility as the verifier is to express an opinion on the GHG statement based on the verification.

Scope

We completed our review in accordance with the ISO 14064 Part 3: *Greenhouse Gases: Specification with Guidance for the Verification and Validation of Greenhouse Gas Statements* (ISO, 2019). As such, we planned and performed our work in order to provide positive, but not absolute assurance with respect to the GHG Assertion. Scope 1 and 2 emissions were verified at a reasonable level of assurance.

The verification procedures that were performed through the course of the verification were developed based on the results of a risk assessment that was completed during the verification planning stage. These verification procedures are described in the Verification Plan. Certain verification procedures included data sampling. The sampling type, sample size and the justification for the planned sampling type and size are detailed in a Sampling Plan, which is included in the Verification Plan.

Conclusion and Verification Opinion

Aaron Schroeder is the lead verifier and has over 12 years of experience quantifying and verifying greenhouse gas emissions. Mr. Schroeder is a professional Engineer with The Association of Professional Engineers and Geoscientists of Alberta and has completed Greenhouse Gas Verification ISO 14064-3 training through the Canadian Standards Association, as well as instructs the Greenhouse Gas Verification course at the University of Toronto.

I believe our work provides a reasonable basis for my conclusion. There are seven unresolved immaterial discrepancies remaining in the GHG Statement, which are detailed in the Verification Report. The aggregate of the immaterial discrepancies does not exceed the materiality threshold.

Based on our review, it is my opinion at a reasonable level of assurance that the GHG Statement for Scope 1 and 2 emissions is materially correct and presented fairly in accordance with the relevant criteria. This verification opinion is unmodified (unqualified).

Sincerely,

Aaron Schroeder, P.Eng.
Brightspot Climate Inc.
Westmount, Quebec

Conflict of Interest Declaration

Assessment of Threats to Independence

The assessment of threats to independence considered Brightspot Climate's financial interests and work history. Brightspot Climate has not performed any consulting services for this operator and has no prior relationship outside of previous verifications.

A conflict of interest review was conducted prior to beginning work and was monitored throughout the verification. The conflict of interest review evaluated the prior work history, relationships and financial interests of all management and staff involved in the verification.

No threats to independence were identified through this assessment.

No conflicts of interest or threats to independence were identified; therefore, no mitigation procedures were required.

Declaration

In signing this document, I certify, on behalf of the Verification Body that I am an authorized officer of the Verification Body and have personally examined and am familiar with the information submitted in this Conflict of Interest Report.

Based upon reasonable investigation, including my inquiry of those individuals responsible for completing the assessment and implementing the procedures, I hereby warrant that the Verification Body avoided any actual or potential conflict of interest with the operator of the Reporting Operation or Regulated Operation.

Signed,

Aaron Schroeder, P.Eng.
Brightspot Climate Inc.
Westmount, Quebec

Verification Plan

Centerra Gold Inc. – Centerra Gold 2020 GHG Inventory

2020 CDP Worldwide Verification

Plan Parameters

The verification will be conducted according to the plan defined in the following table:

Table 1: Verification Parameters

Responsible Party	Centerra Gold Inc.	
Client	Centerra Gold Inc.	
Type of Engagement	Verification	
GHG Program	CDP Worldwide	
Level of Assurance	Reasonable assurance	
Objectives	• issue a verification statement on whether the GHG assertion is accurate and conforms with the criteria as listed below; • issue a verification report that provides details of the verification activities.	
Criteria	• CDP Climate Change 2021 Scoring Methodology • CDP Climate Change Questionnaire Reporting Guidance 2021 • 2021 CDP scoring introduction document • The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) • Western Climate Initiative's Final Essential Requirements of Mandatory Reporting, Amended for Canadian Harmonization - Second Update, December 21, 2011 (WCI)	
Scope	Facility Name:	Kumtor Gold Mine Öksüt Gold Mine Milligan Gold Mine
	Organizational Boundary:	Operational Control
	Geographic Boundary:	Mining facilities at Kumtor, Öksüt and Milligan.

	Physical Operations:	Extraction and processing of gold and copper
	Emission Sources:	Stationary combustion Mobile combustion Electricity Blasting
	IPCC GHGs Emitted:	Carbon Dioxide (CO_2) Methane (CH_4) Nitrous Oxide (N_2O)
	Reporting Period:	January 1, 2020 - December 31, 2020
Materiality	Quantitative materiality threshold is 5% total error	

Table 2: Verification Logistics

Verification Team	Lead Verifier	Aaron Schroeder, P.Eng.
	Associate Verifier	Rodrigo Cubedo, EIT
	Associate Verifier	Alexandra Naudi
	Associate Verifier	Lydia Brant, EIT
	Independent Reviewer	Deepika Mahadevan, P.Eng.
Responsible Party Contact	Centerra Gold Inc. Ainsley Chiang 1 University Avenue, Suite 1500 Toronto, ON M5J 2P1 Ainsley.chiang@centerragold.com	
Verification Schedule	Verification Kickoff Meeting	June 3, 2021
	Verification Plan to Responsible Party	July 12, 2021
	Receipt of Data	July 26, 2021
	Draft Verification Report	June 16, 2021
	Final Verification Report and Statement	June 21, 2021

Responsible Party Data Management and Controls

Data Management Systems

Centerra Gold Inc. has the primary responsibility for collecting GHG information, quantifying the emissions inventory and completing required documentation. Centerra Gold is responsible for quantifying the GHG inventory and preparing the CDP Report.

The Responsible Party uses Excel based spreadsheets to store and manage GHG information. Table 3, below, describes the data measurement, estimation and data storage locations for all GHG information used by the Responsible Party to produce the GHG inventory. The final column in this table describes the data storage location and the path (intermediate data transfer) prior to use in the GHG inventory.

Table 3: GHG Information Data Management

Activity Data Description	Measurement Type	Data Storage Location / Path
Diesel, propane, LNG and gasoline volumes	Raw Invoices	Invoices >> GHG Calculator
Electricity Consumption	Raw Invoices	Invoices >> GHG Calculator
Explosives Amount (kg)	Invoices	Invoices >> GHG Calculator
Amount of fuel used in explosives	Material Data Sheets	SDS >> GHG Calculator

Control Environment

The Responsible Party described the processes, procedures and systems that have been designed and implemented within their quality assurance/quality control framework. The accuracy and completeness of the documentation of the Responsible Party's controls will be reviewed through the course of the verification.

The following processes, procedures and systems have been employed by the Responsible Party:

- Quantification is based on direct metering and measurement.
- Data is transferred electronically between systems to reduce transcription errors.
- The Responsible Party has implemented a QA/QC and senior review process to validate data, transcription, calculations, references and methodologies.

Verification Risk Assessment and Verification Procedures

Verification risk is defined as the risk of an incorrect verification conclusion. It can be calculated as the product of

- The Facility's inherent risks;
- The Responsible Party's control risks; and
- The detection risks associated with the verifier's verification procedures.

$$\textit{Inherent Risk} \times \textit{Control Risk} \times \textit{Detection Risk} = \textit{Verification Risk}$$

The verifier cannot affect the inherent risk or the control risk. Therefore, to reduce the overall verification risk and reach the agreed level of assurance (defined in the verification scope), the verifier must design verification procedures that reduce the detection risk.

Each inherent and control risk was provided with a risk score (high/medium/low). The risk analysis of inherent and control risks considers both the magnitude of the activity data or inventory component on the overall GHG assertion as well as the probability that the risk will result in a discrepancy, as assessed by the verifier.

The Verification Risk Assessment Summary on the following pages describes the following information:

Source or Risk Area: The emission source, boundary, eligibility requirement, data component or reporting activity being evaluated.

Attributes: The verification attribute associated with a risk identified for a particular source or risk area (occurrence, completeness, accuracy, classification, transparency, consistency).

Inherent Risk: The verifier's evaluation of inherent risk level (high/medium/low). Inherent risk is the risk that an assertion may be misstated because of intrinsic challenges in the subject matter.[1]

Control Risk: The verifier's evaluation of control risk level, if any controls are applicable. Control risk is the risk that a misstatement has occurred and has not been detected and corrected by the facility's internal controls.[1]

Detection Risk: The detection risk of the verification procedure that the verifier intends to complete.

Evidence-Gathering Activity: Procedures designed by the verifier to mitigate the identified risk to bring the overall risk to an acceptable level.

Important note: The verification strategy for this verification is to use substantive tests instead of control tests wherever possible. Substantive tests are designed to focus on directly testing activity data or inventory components and their associated inherent risks. Control tests are designed to focus on testing the Responsible Party's controls and if the test is successful, relying on the Responsible Party's control. Therefore, control tests indirectly test activity data or inventory components. Each verification procedure listed in the following table denotes if the procedure is a substantive or control test.

[1] Standard for Validation, Verification and Audit.

Table 7: Verification Risk Assessment Summary

Source of Risk	Attribute	Inherent Risk	Control Risk	Det. Risk	Evidence-Gathering Activity
BOUNDARY CONDITIONS					
Emission sources	Completeness	Medium	Low	Low	Controls test: Observe emission sources during the virtual site visit.
Emission sources categorization	Classification	Low	High	Low	Substantive test: Categorize each emission source based on compliance with the GHG Program policy. Cross reference categorization with Responsible Party's categorization.
Reporting period	Cut-off	Low	High	Low	Substantive test: Filter all data to fall within the reporting period.
CDP Eligibility Requirements	Classification	Low	Medium	Low	Substantive test: Confirm that eligibility requirements for CDP reporting have been met throughout the verification.
METHODOLOGIES					
Emission quantification methodologies	Consistency	Medium	Low	Low	Substantive test: Compare Responsible Party's quantification against the GHG Program policy.
	Occurrence	Medium	High	Low	Substantive test: Recalculate emissions using the methodology from the GHG Program policy.
Geographic Location	Consistency	Medium	Low	Low	Takes place in Kumtor, Öksüt and Milligan under operational control of Centerra Gold Inc.

Source of Risk	Attribute	Inherent Risk	Control Risk	Det. Risk	Evidence-Gathering Activity
ACTIVITY DATA					
Propane Volumes	Accuracy	Medium	Low	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.
					Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.
Diesel Volumes	Accuracy	Medium	Low	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.
					Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.
Gasoline Volumes	Accuracy	Medium	Low	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.
					Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.
LNG Volumes	Accuracy	Medium	Low	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.
					Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.

Source of Risk	Attribute	Inherent Risk	Control Risk	Det. Risk	Evidence-Gathering Activity
Tonnes of Explosives	Accuracy	Medium	Medium	Low	Substantive test: Check explosive product invoices or reports for transcription errors.
					Substantive test: Recalculate emissions using original explosive product mass from appropriate substantiating evidence.
Electricity Usage	Accuracy	Medium	High	Low	Control test: Ensure that all electricity invoices, statements or reports have been included in the calculation.
					Substantive test: Recalculate emissions using original electricity use data from appropriate substantiating evidence.
Fuel Mass in Explosives	Accuracy	Medium	Low	Low	Substantive test: Validate that the correct fuel content of the explosive product has been used and transcribed correctly to the GHG quantification.
Emission Factors	Accuracy	Medium	High	Low	Substantive test: Verify that correct emissions factors have been used and transcribed correctly to the GHG quantification.
QUANTIFICATION					
Emissions quantification	Accuracy	Medium	High	Low	Substantive test: Recalculate emissions using original data.
DATA INTEGRITY					

Source of Risk	Attribute	Inherent Risk	Control Risk	Det. Risk	Evidence-Gathering Activity
All inventory emission and reporting quantities	Accuracy Completeness	Medium	High	Low	Substantive test: Confirm correct transcription of values for CDP reporting.

Sampling Plan

The verification procedures that could apply sampling of the Facility data are listed in the following table.

The sample size, the sampling methodology and their respective justifications are also described in the following table.

Table 8: Sampling Plan

Activity Data / Inventory Component	Det. Risk	Evidence-Gathering Activity	Sample Size	Sampling Methodology and Justification
BOUNDARY CONDITIONS				
Emission sources	Low	Controls test: Observe emission sources during the virtual site visit.	One of the three sites will be "visited" through a virtual site visit	One of the three facilities fulfils the requirements of a control test
Emission sources categorization	Low	Substantive test: Categorize each emission source based on compliance with the GHG Program policy. Cross reference categorization with Responsible Party's categorization.	All emission sources	Sampling is not applicable
Reporting period	Low	Substantive test: Filter all data to fall within the reporting period.	All data points	Sampling is not applicable

Activity Data / Inventory Component	Det. Risk	Evidence-Gathering Activity	Sample Size	Sampling Methodology and Justification
CDP Eligibility Requirements	Low	Substantive test: Confirm that eligibility requirements for CDP reporting have been met throughout the verification.	All requirements	Sampling is not applicable
METHODOLOGIES				
Emission quantification methodologies	Low	Substantive test: Compare Responsible Party's quantification against the GHG Program policy.	Compare methodologies against GHG Program	Sampling is not applicable
	Low	Substantive test: Recalculate emissions using the methodology from the GHG Program policy.	Full recalculation	Sampling is not applicable
Geographic location	Low	Takes place in Kumtor, Öksüt and Milligan under operational control of Centerra Gold Inc.	Confirm all emission sources in geographic locations	Sampling is not applicable
ACTIVITY DATA				
Propane Volumes	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.	Sample size TBD based on number of invoices	Risk based assessment
		Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Full recalculation	Sampling is not applicable

Activity Data / Inventory Component	Det. Risk	Evidence-Gathering Activity	Sample Size	Sampling Methodology and Justification
Diesel Volumes	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.	Sample size TBD based on number of invoices	Risk based assessment
		Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Full recalculation	Sampling is not applicable
Gasoline Volumes	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.	Sample size TBD based on number of invoices	Risk based assessment
		Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Full recalculation	Sampling is not applicable
LNG Volumes	Low	Substantive test: Check fuel volume invoices, reports or tank balances for transcription errors.	Sample size TBD based on number of invoices	Risk based assessment
		Substantive test: Recalculate emissions using original fuel volume data from appropriate substantiating evidence.	Full recalculation	Sampling is not applicable
Tonnes of Explosives	Low	Substantive test: Check explosive product invoices or reports for transcription errors.	Sample size based on number of fuel invoices and evidence provided for each facility	To be determined based on a risk assessment

Activity Data / Inventory Component	Det. Risk	Evidence-Gathering Activity	Sample Size	Sampling Methodology and Justification
		Substantive test: Recalculate emissions using original explosive product mass from appropriate substantiating evidence.	Full recalculation	Sampling is not applicable
Electricity Usage	Low	Control test: Ensure that all electricity invoices, statements or reports have been included in the calculation.	Sample size based on number of fuel invoices and evidence provided for each facility	To be determined based on a risk assessment
		Substantive test: Recalculate emissions using original electricity use data from appropriate substantiating evidence.	Full recalculation	Sampling is not applicable
Fuel Mass in Explosives	Low	Substantive test: Validate that the correct fuel content of the explosive product has been used and transcribed correctly to the GHG quantification.	Validate fuel content for each facility and each explosive type	Sampling is not applicable
Emission Factors	Low	Substantive test: Verify that correct emissions factors have been used and transcribed correctly to the GHG quantification.	Validate each emission factor used matches the relevant GHG criteria	Sampling is not applicable
QUANTIFICATION				
Emission quantification	Low	Substantive test: Recalculate emissions using original data.	Full recalculation	Sampling is not applicable

Activity Data / Inventory Component	Det. Risk	Evidence-Gathering Activity	Sample Size	Sampling Methodology and Justification
DATA INTEGRITY				
All inventory emission and reporting quantities	Low	Substantive test: Confirm correct transcription of values for CDP reporting.	All values	Review of all values is required.