

Perpetua Resources GHG Inventory Report

Prepared by Warm Springs Consulting
March 1, 2024

Overview

The Perpetua Resources (Perpetua) Greenhouse Gas (GHG) Inventory Report describes the Company's operational contribution to climate change measured in GHG emissions in units of equivalent metric tonnes of carbon dioxide (MTCO₂e). This report covers the fiscal year, from January 1, 2023 to December 31, 2023.

The purpose of this GHG emissions inventory is to benchmark Perpetua's company-wide GHG emissions and to provide a consistent methodology for documenting GHG emissions on an ongoing basis. Warm Springs Consulting (WSC) compiled and analyzed the data with support from the Perpetua staff.

Methodology

Perpetua's GHG inventory has been developed in accordance with the revised [GHG Protocol Corporate Standard](#) and the [Corporate Value Chain Accounting and Reporting Standard](#). WSC utilized procedures and calculations per the [ISO Standard 14064-1](#), pertaining to GHG quantification.

To support uniform reporting, Perpetua's combined CO₂ equivalent emissions of all GHGs, including CH₄ and NO₂ emissions, are expressed as CO₂ equivalent (CO₂e). Inventory boundary, materiality, and calculation development involve the collection and examination of documentation, testimony, and data from internal and external sources.

Base Year

The [Science Based Target initiative](#) recommends selecting the most recent year for which data is available and complete. Based on this recommendation and the availability of reliable data, the base year for Perpetua's GHG emission comparisons is 2017.

Primary vs. Secondary Data

Primary data refers to activity data taken directly from meter readings, i.e., the “raw” utility bill data. Primary data is generally considered to be the most accurate and thus preferable. Secondary data, or estimated data, refers to the development and use of intensity factors and/or energy consumption models based on financial data or square footage. For this report, WSC utilized a mix of primary and secondary data to calculate Scope 1 and Scope 2 emissions.

Scope 1

Perpetua provided consumption data for the direct use of gasoline, diesel, and propane (primary data). Fuel use included light and heavy duty vehicles used for transportation and exploration, using both ethanol gasoline and diesel, along with propane fueled equipment. Refrigerant consumption in both the Boise and Donnelly offices was determined based on square footage and Energy Information Administration (EIA)-assumed consumption per square foot for comparable facilities (secondary data).

Scope 2

Utility bill data was used for the calculation of Scope 2 emissions for the Stibnite site and Donnelly office (primary data). WSC utilized office square footage and EIA consumption estimates to quantify Scope 2 emissions for the Boise office (secondary data).

Figure 1: Emissions Calculation Methodology

Scope	Emissions Source/ Category	Data Source	% Primary Data	% Secondary Data	Calculation Method
1	Refrigerants	1. Office locations, based on size 2. Intergovernmental Panel on Climate Change Fifth Assessment Report for refrigerant global warming potential	0%	100%	Screening Method
	Propane	Consumption data	100%	0%	Mass-balance
	Gasoline	Consumption data	100%	0%	Mass-balance
	Diesel	Consumption data	100%	0%	Mass-balance
2	Electricity	1. Utility bills for Donnelly and Stibnite site locations 2. EIA consumption estimate based on Boise location size	53%	47%	Market-based estimate

WSC used emissions factors and energy consumption estimates based on recognized published data applicable to the types of emissions associated with the inventory. These factors are published by the EPA¹, U.S. Energy Information Administration (EIA)², and Idaho Power³ and are consistent with methodologies from the [World Business Council Sustainable Development](#) and [World Resources Institute Greenhouse Gas Protocol](#).

Figure 2: Emissions Factors and Sources

Scope	Item	Emissions Factor	Unit	Source
1	Gasoline	8.78	kg CO2e/ gallon	EPA ¹
1	Diesel	10.21	kg CO2e/ gallon	EPA ¹
1	Propane	5.72	kg CO2e/ gallon	EPA ¹
2	Electricity	0.42	kg CO2e/kWh	Idaho Power ³

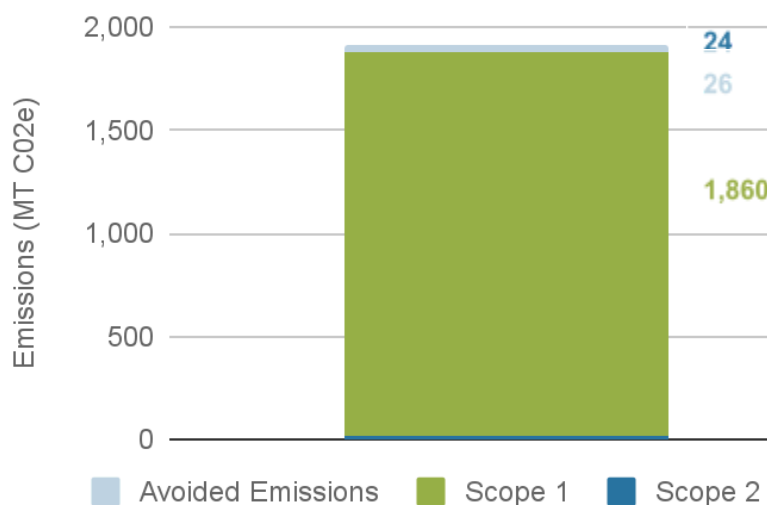
Scope 1 & 2 Emissions Overview

Perpetua's GHG emissions are indicative of its ongoing operational activities, resulting in a total of 1,885 metric tonnes of CO2e (MT CO2e) generated in 2023. Within this, Scope 1 emissions account for 99% of the total, equating to an estimated 1,860 metric tonnes of CO2e. Scope 2 emissions comprise 1% of Perpetua's total emissions, amounting to approximately 24 MT CO2e.

Avoided Scope 1 emissions calculations were based on 2023 solar production data provided by Perpetua.

The rise in GHG emissions observed in 2023, relative to previous years, can be attributed to the following activities:

Figure 3. Scope 1 & Scope 2, Total Emissions



¹ [United States Environmental Protection Agency](#). GHG Emissions Factors Hub. 2023.

² [U.S. Energy Information Administration](#). 2023.

³ [Idaho Power. Reducing Carbon Emissions](#). 2022.

1. Soil and groundwater remediation efforts at the Administrative Settlement Agreement and Order on Consent (ASAOC) site involved the intensive use of heavy equipment to remove and relocate over 325,000 tons of legacy materials.
2. Testing conducted on the Yellow Pine Pit Aquifer.
3. Drilling operations carried out for the Proof of Concept (POC).
4. The Antimony Targeted Core program.
5. Utilization of generators at associated camps.

Figure 4. Scope 1 & Scope 2, Year Over Year

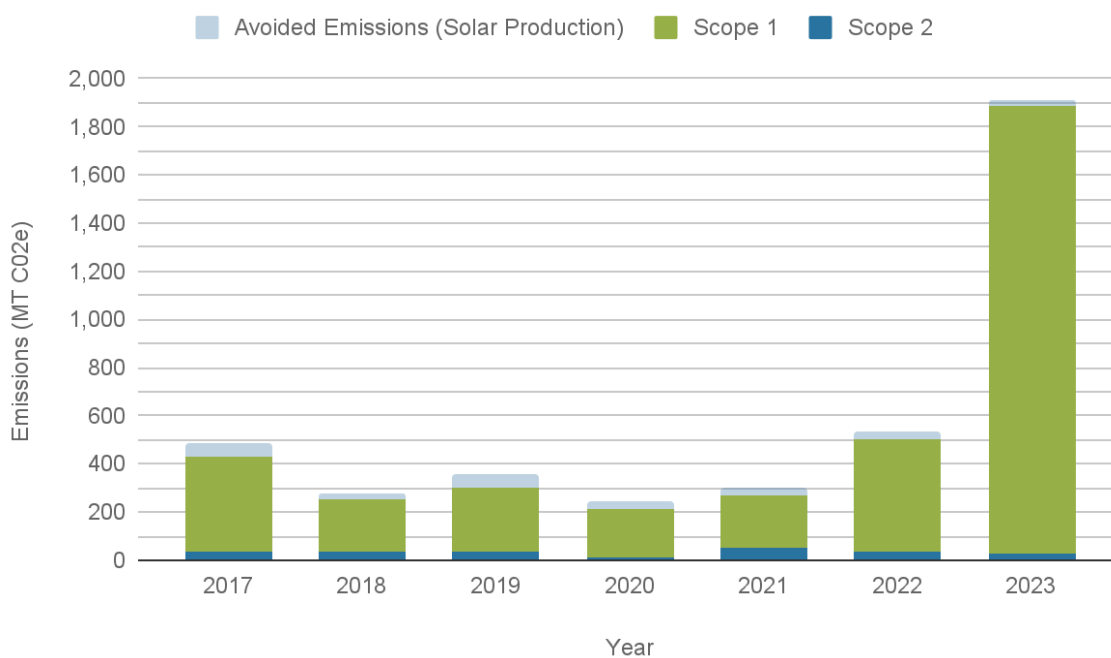


Figure 5. Scope 1 & Scope 2, Percent of Total Emissions

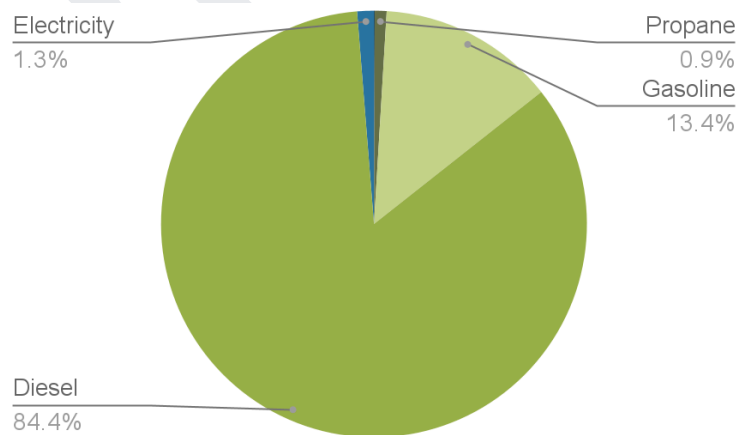


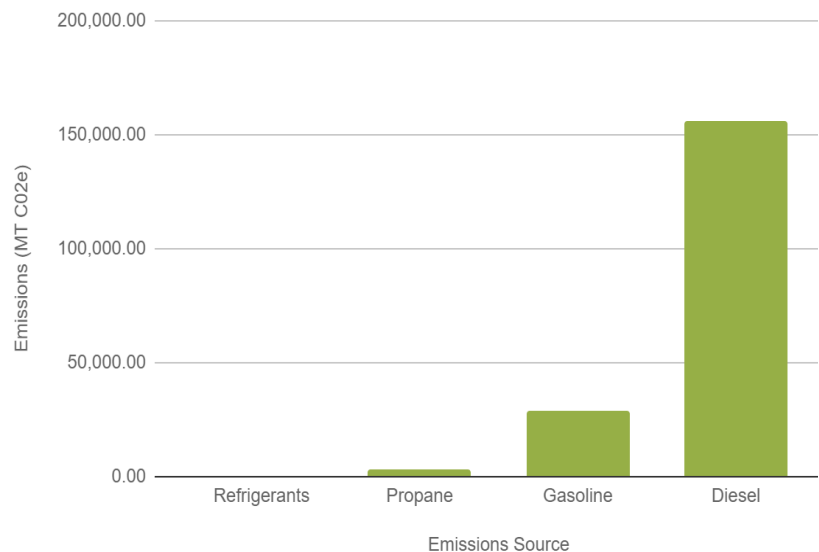
Figure 6: Emissions Calculations Table

Scope	Emissions Source/Category	Consumption		Emissions	
		2023	Unit	2023 (MTCO2e)	% of Total Emissions
1	Refrigerants	0.52	kg	1	0.06%
	Propane	2,950	Gallon	17	0.90%
	Gasoline	28,800	Gallon	253	13.43%
	Diesel	155,749	Gallon	1,590	84.35%
	Total Scope 1			1,861	
2	Electricity	56,372	kWh	24	1.27%
	Total Scope 2			24	
Total Scope 1 & Scope 2 MTCO2e				1,885	

Scope 1 Emissions

The primary contributor to Scope 1 emissions stems from the combustion of diesel fuel linked to the operation of light and heavy duty vehicles used for transportation and exploration. The use of ethanol gasoline and propane used for transportation and machinery accounts for a smaller percentage of Scope 1 emissions. Scope 1 emissions also result from the use of refrigerants in the Boise and Donnelly offices.

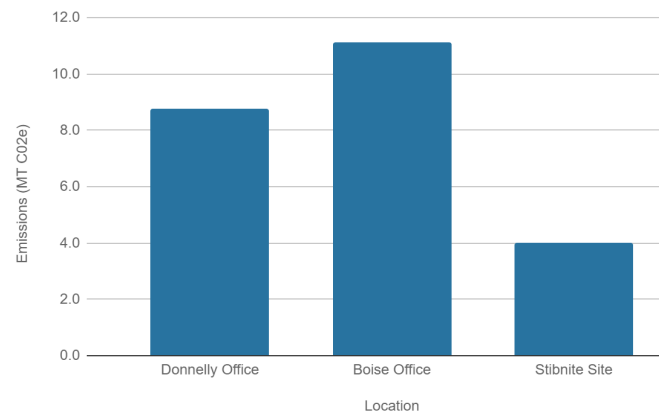
Figure 7. Scope 1 Emissions by Source Fuel



Scope 2 Emissions

Scope 2 emissions for the Donnelly office and Stibnite location were calculated utilizing utility billing data, quantified in units of electricity consumed measured in kilowatt-hours (kWh). In the case of the Boise office, electricity consumption and consequent emissions were approximated based on its size.

Figure 8. Scope 2 Emissions by Facility Location



Scope 3

Perpetua plans to continue reporting on Scopes 1 & Scope 2 GHG emissions. A significant portion of the company's operational emissions likely come from drilling operations, which are currently managed through a contracted third party, and therefore fall within Scope 3, rather than Scope 1 or 2.

Amendments

In 2021, Scope 2 emissions for years 2017-2019 were amended to include electricity use from Perpetua's Boise office. Due to COVID-19, Scope 2 emissions for 2020 do not include the Boise office as employees were not present.

No further amendments have been made as of March 1, 2024.