Public Project Description

This document is a project description made available in the Puro Registry to summarize the information available about a certified production facility. The project description is organized as follow:

1 Production Facility and Supplier information

This project description corresponds to the following **Production Facility** and **CO_2 Removal supplier**, acting as registering entity of the facility.

Production Facility	
Production Facility name	Eion - Twinterstellar 3021
Registration date (YYYY-MM-DD)	2024-09-29
Production Facility ID	387867
Location of facility	Mississippi and Louisiana, USA
Host Country of removal	United States of America
Has this facility been registered in another registry?	☒No ☐Yes, additional information (registration periods):
This table is filled in by the CO_2 Removal Supplier.	

CO_2 Removal Supplier	
Supplier name	Eion
Supplier address	28 Spring St #254, Princeton, NJ 08542
Business ID	86-1184028
KYC status	Completed
This table is filled in by the CO_2 Removal Supplier.	

The above-mentioned production facility has undergone the following audit, during which the project description, alongside other audit documents were verified.

Facility Audit	
Type of audit	Facility and Output Audit (Joint Validation and Verification)
General Rules version	Puro General Rules v4.1
Methodology name	Enhanced Rock Weathering
Methodology edition and version	Edition: 2022 Version: V2
Date of audit completion	September 18, 2025
Conclusion of audit	The overall verification conclusion is that the Twinterstellar 3021 facility meets the requirements of Puro Standard General Rules v4.1 and the Enhanced Rock Weathering Methodology (Edition 2022 v2).

Auditing body	350 Solutions
Start date of crediting period	May 10, 2023
End date of crediting period	May 09, 2028
This table is filled in by the Issuing Body.	

2 Overview of activity, its location, and operators

The information in this section provides an overview of how and where carbon dioxide removal is achieved, and by whom.

2.1 Non-technical description

Instructions	*Please provide a non-technical description of the carbon removal activity taking place at the production facility. Word limit: 100 words.*
Non-technical description	Eion's Twinterstellar 3021 enhanced rock weathering (ERW) project was developed to remove carbon dioxide from the atmosphere safely, permanently, and verifiably. In 2023, Eion and its partners sourced, transported, and spread ~15,000 tons of pulverized olivine on agricultural lands in the state of Mississippi (with a few fields across the state line in Louisiana). The olivine was sourced from two quarries: the Twin Sisters Mountain in Washington State and a quarry located in Åheim, Norway. The project uses existing agricultural infrastructure, and our measurement techniques seamlessly integrate with standard agricultural practices, imposing no new burdens on our farm partners.
This table is filled-in by the supplier and verified by the auditor.	

2.2 Locations

Instructions	*Please provide a list of locations associated with the carbon removal activity. Additional locations or areas can refer to e.g. the location of the storage site, the spatial extent of the area of use of a carbon removal product or sourcing of a specific feedstock.*
Production Facility Location (as registered)	Address: Mississippi and Louisiana, USA (multiple farms/fields, see Production Facility shapefiles) Coordinates (WSG84, decimal format): Latitude: 32.7662 Longitude: -90.5475
Additional location(s)	*Specify purpose, location, address, coordinates, to the extent possible, for one or multiple additional locations relevant to the removal activity.* Twin Sisters feedstock sourced from quarry operated by Millbank Materials USA. Located at: 15540 N Lombard St

	Portland, OR 97203 3021 feedstock sourced from quarry located in Åheim, Norway, operated by Sibelco. Located at: Åheim Plant NO-6146 Åheim, Norway
This table is filled-in by the supplier and verified by the auditor.	

2.3 Operators

Instructions	*Please provide a full list of operators or organizations that contribute to the removal activity. Add rows as necessary. For each entity, provide the name, a business ID, an address, and the role of the entity.*
CO_2 Removal Supplier	*Entity name:* Eion Corp. *Entity business ID:* 86-1184028 *Entity address:* 28 Spring St #254, Princeton, NJ 08542 *Role of entity:* CO_2 Removal Supplier
Organization 2	*Entity name:* AGRIgate, Inc. *Entity business ID:* 26-2082116 *Entity address:* 123 Jefferson St, Starkville, MS 39759 *Role of entity:* Eion's agronomy consulting partner, they help to manage Eion's logistics, farmer engagement, and soil sampling protocol. They also help Eion evaluate every acre from a carbon removal, agronomic, and social perspective.
Organization 3	*Entity name:* *Entity business ID:* *Entity address:* *Role of entity:*
This table is filled-in by the supplier and verified by the auditor.	

3 Technical description of the removal activity

The information in this section provides more technical details about the technologies and processes deployed to achieve carbon dioxide removal.

3.1 Technical description

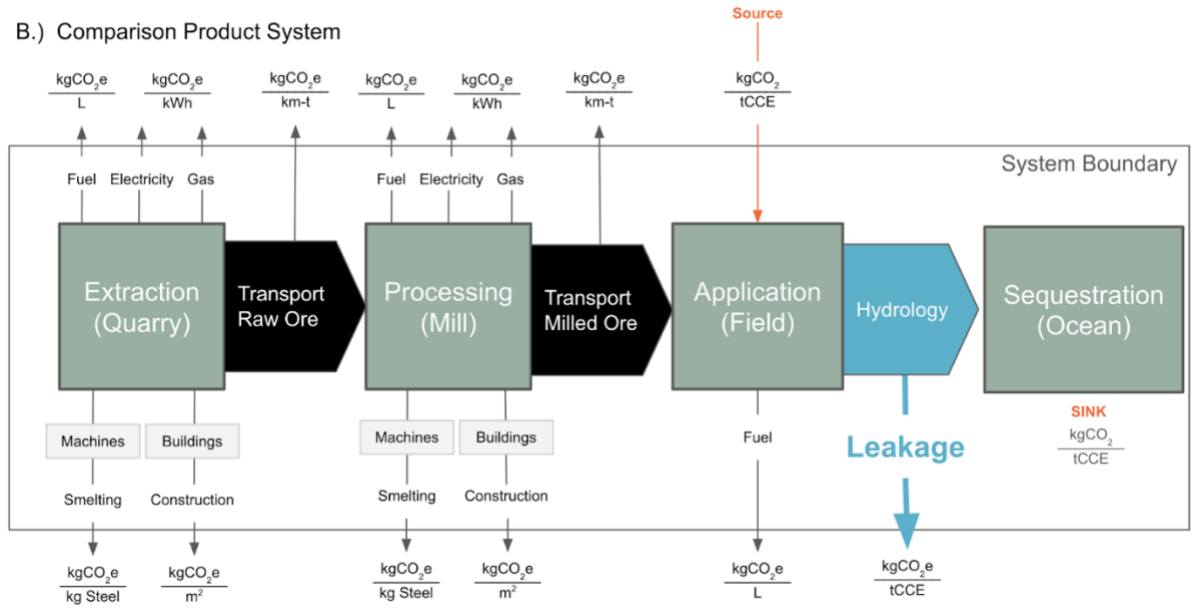
Instructions	*Please provide a technical description of the carbon removal activity taking place at the production facility. Word limit: 500 words.*
Technical description	Eion accelerates the weathering cycle by pulverizing olivine (i.e., greater surface area = faster reaction), a silicate mineral with high CDR potential and crystal structure that weathers rapidly. The pulverized olivine has a soil alkalizing value that is comparable to conventional ag lime, a common agricultural input that balances soil pH (helping to maintain healthy soil and agricultural productivity). Eion and its partners sourced, transported, and applied pulverized olivine to agricultural lands using existing infrastructure. Once the olivine has been applied, nature takes over. Rain and soil acidity

	enable the olivine to remove carbon dioxide from the atmosphere and ultimately transport it to the ocean. Eion uses a direct measurement approach to quantify the atmospheric carbon dioxide that has been captured and sequestered through the soil-air-rock interface. The approach fundamentally draws upon the accumulation of semi-mobile tracers in the topsoil (i.e., Ni) and the simultaneous depletion of base cations as a clear proxy for alkalinity fluxes (i.e., Mg) induced by weathering. We also determine the following: <u>How much mineral was applied</u> To determine the amount of material applied, we measure the concentrations of Ni in the soil before application, after application, and in the feedstock. Dividing the difference between pre-application and post-application samples by the concentration in the feedstock yields the application rate. This is confirmed by as-applied maps. <u>How much of the mineral has weathered and sequestered carbon</u> The weathering rate is calculated using a nearly identical process above but is expanded to account for a crucial difference; Mg is more mobile in soils and subject to losses. <u>How much of the generated alkalinity is stable through rivers</u> Historic U.S. Geological Survey river chemistry data is extracted in order to conduct aqueous speciation calculations from field sites to the ocean. This approach allows for the determination of zones that may lead to the precipitation of carbonate phases, which can be seen as a potential for alkalinity to degas. By running these iterative computations between the path of the field sites to the ocean, we strive to constrain the probability of stable dissolved inorganic carbon transport through the riverine system. <u>How much of the generated alkalinity is retained as it reaches the ocean</u> Using the GLORICH dataset, historic average pH is collected and plotted on the river path. We then plot several oceanic sampling points, computing the localized oceanic DIC retention index using NOAA/ETHz reanalysis data to evaluate the potential for the generated alkalinity to be stored within the oceanic body of water. Overall, Eion uses these calculations to implement Puro's Enhanced Rock Weathering Methodology to help determine the net amount of carbon removal.
This table is filled-in by the supplier and verified by the auditor.	

3.2 Illustration

Instructions	*Please provide up to three illustrations of the process and technologies described above (e.g. picture of equipment, flowcharts of process).*

	Note that you must own the rights to reproduce and publish the illustration and that you also authorize puro.earth to reproduce and publish the illustration in the Puro Registry.
Authorization to reproduce and publish the illustration	☒ Puro.earth is authorized to reproduce and publish the illustrations below, for use in the Puro Registry.



4 Application of the Puro Standard (boundary, baseline, additionality, quantification)

4.1 Scope and project boundary

Instructions	*Please provide a brief demonstration that the removal activity described above fits within the scope of the methodology and that the system boundaries of the removal activity correspond to the ones defined in the methodology. Word limit: 150 words.*
Scope and system boundary	Eion's Twinterstellar 3021 carbon project fits within the scope of Puro's Enhanced Rock Weathering Methodology; it meets all requirements and was designed, developed, and implemented adhering to a principle of conservativeness. The project boundary overall includes: 1. Quarry where feedstock was extracted 2. Transportation from quarry to mill 3. Mill where the product was pulverized 4. Transportation from mill to fields 5. Application on the fields 6. Chemical transformations within the fields, resulting in carbon sequestration 7. Hydrologic transport of cations and dissolved inorganic carbon to ultimate sink (i.e., the ocean) Two different olivine feedstocks were used in the project: the TS material sourced from the Twin Sisters Mountain in Washington State and 3021 feedstock from a quarry located in Åheim, Norway. The TS feedstock was a

	byproduct (from fugitive dust from their crusher); therefore, it does not include steps 1-3 above. The Commitment Date of the project is 2023-01-04.
This table is filled-in by the supplier and verified by the auditor.	

4.2 Baseline scenario

*The information in this section provides a summary of the project-specific **baseline scenario**.*

Instructions	*Please provide a summary of the project-specific baseline scenario. The summary shall be based on the additionality questionnaire (available separately). Word limit: 150 words.*
Summary of the project-specific baseline scenario	
The weathering material used in Twinterstellar 3021 would have 1) sat in a warehouse for years or decades longer before being landfilled (i.e., the TS material) or 2) been sold as a lower value product and eventually landfilled after use (i.e., the 3021 material), but given the same final destination, both would have required decades to millennia to react in neutral conditions. Additionally, given that the material would likely be disposed of in bags still, and would be in piles in the landfill, this would limit the exposure of reactive surfaces, thus requiring even longer for the material to weather. The rock, therefore, would not weather at any meaningful rate in the counterfactual, business-as-usual/baseline scenario (i.e., the alternative fate) compared to the project activity.	
This table is filled-in by the supplier and verified by the auditor.	

Further information on the baseline scenario:

Instructions	*If the methodology explicitly defines one or several possible baseline scenarios for the removal activity, please specify which ones was selected:*
Selected baseline scenario	N/A
This table is filled-in by the supplier and verified by the auditor.	

4.3 Demonstration of additionality

*The information in this section provides a summary of the project-specific **additionality assessment**.*

Instructions	*Please provide a summary of the project-specific additionality assessment, considering baseline removal, regulatory and financial additionality. The summary shall be based on the additionality questionnaire (available separately). Word limit: 150 words.*
Summary of additionality assessment	
The project activity entails the application of ~15,000 tonnes of olivine on ~9,000 acres (~3640 hectares / ~36 km^2) of agricultural soils. The associated carbon sequestered is above and beyond business-as-usual and would not happen absent the carbon project.	

The project provides growers with a cheaper and more efficient soil conditioner to correct soil acidity. This ultimately benefits both growers, via higher profitability for their farming operations, and the environment, by removing atmospheric carbon. But for the carbon project, growers would not be using Eion's CarbonLock (i.e., olivine feedstock) and, consequently, removing additional carbon. No statute or regulation, as of the application date in 2023, requires the proposed enhanced rock weathering activity or its associated carbon dioxide removal. Project costs have been funded by our balance sheet (i.e., equity funds raised). Without carbon finance (i.e., CORCs) to recoup costs, Eion would not be able to develop Twinterstellar 3021.
This table is filled-in by the supplier and verified by the auditor.

The following files are further made available in the Puro Registry.

Additionality questionnaire (required)	Filename	Puro Additionality_Twinterstellar 3021_v1.3.pdf
	Description	Additionality questionnaire signed and audited, used to determine the additionality of the project following the Puro requirements for additionality.
Additional file (optional)	Filename	
	Description	
Add rows as necessary, following same template as for additional file. The filename shall be the exact filename as provided in the audit documentation. The description shall be at most a 3-line summary of what the file contains. This table is filled-in by the supplier and verified by the auditor.		

4.4 Quantification of net carbon dioxide removal

*The information in this section provides a description of how **quantification of net carbon dioxide removal removals** is achieved, including **monitoring** of the removal activity, and calculation of **supply-chain emissions**.*

Quantification implementation

Instructions	*Please describe how the quantification of net carbon dioxide removal, as described in the methodology (see CORC equation), is implemented by the supplier. Word limit: 200 words.*
Description of quantification implementation	
In our direct measurement approach, Eion uses weathering products as geo-tracers to determine the amount of rock weathered during a specific timeframe. This requires the analysis of tracer elements and base cations of the feedstock, and the same elements measured in the soil at pre- and post-rock application times. Our soil sampling is based on a 2.5-acre grid. We use nickel (Ni) as a geo-tracer, as it is relatively immobile in the soil under short time scales. And by measuring the concentration of Mg cations before and after rock application, we estimate the fraction of the rock that has weathered. A distribution of the mean fraction weathered is derived by bootstrapping the samples. To quantify the CDR tonnes, conservatively, we use the 10th percentile (i.e., the threshold exceeded by 90% of the bootstrapped distribution) as a lower-bound estimate. We also constrain natural background weathering/Mg loss, plant uptake, and strong acid neutralization in treated and control areas.	

Emissions and losses are quantified using process-based methods with EPA and DEFRA emission factors. Transportation emissions (rail, truck, sampling) are calculated using vehicle- or tonne-kilometers, with both well-to-tank (WTT) and tank-to-wheel (TTW) stages included. Field application emissions are based on diesel use, while packaging, lab analysis, and sample collection emissions are estimated using material weights and cost-based factors.

This table is filled-in by the supplier and verified by the auditor.

Monitoring and reporting

Instructions	*Please provide a summary of the monitoring procedures and monitoring plan which are in place at the production facility to ensure i) the safety of the removal activity, ii) the eligibility of the removal activity, and iii) the precise quantification of CORCs. The summary shall be project-specific and based on related evidence pieces that were submitted in the audit documentation. Word limit: 500 words.*

Summary of monitoring and reporting plan

Eion has a robust monitoring plan in place for Twinterstellar 3021: confirming metal concentrations are safe and legal, that the project conforms to Puro's rules and methodology, and providing a thorough and transparent quantification process (see Monitoring Plan for details).

Eion is responsible for the overall execution of the project, including protocol design, identifying relevant partners, material procurement, completing an environmental risk assessment, tracking and collecting data for the life cycle assessment, CDR quantification, and reporting. Eion's agricultural consulting partner manages in-field sampling (per Eion's instructions). After data collection, samples are sent to a lab for analysis. Eion then receives the results for processing to evaluate health and safety requirements, update any modeling projections, and/or quantify carbon dioxide removal. After processing is complete, Eion stores all data and documentation and submits the necessary reports per the Puro rules and methodology.

We capture and maintain detailed information for each application event. We collect bills of lading and receipts to track project emissions, as well as information from quarries. And our partner on the ground provides Eion with as-applied maps and data. We also receive COAs from quarries and partner labs for the material. All material is linked in our database to each application event and related fields. Initial data checks are conducted prior to using any data or results as part of our QA/QC process. And once outputs have been transferred to the appropriate reports and project documents, multiple Eion employees review the information for consistency and accuracy.

Additionally, prior to the application of any weathering material, we include a dedusting conditioning step that adds a small amount of moisture to effectively eliminate excessive dust generation for very fine material. This risk management strategy also involves avoiding any weathering material that is too fine and dry/dusty and carefully timing application to avoid windy conditions that could increase dust dispersion and potential ecological disruption or affect human health.

This table is filled-in by the supplier and verified by the auditor.

Optionally, the following documents may be made available in the Puro Registry once the facility has completed its first Output Audit:

Can the monitoring plan and procedures be made available in the Puro Registry?	
Answer	☐ Yes, entirely. ☐ Yes, in a redacted version. ☐ No. If no, please provide a reason:
Filename(s) to be made public	Monitoring plan includes confidential information.
This table is filled-in by the supplier.	

Supply-chain emissions

The determination of the supply-chain emissions of the removal activity shall be based on a project-specific life cycle assessment, made of a report and calculations. Calculations are updated at least annually, during the Output Audits, with data captured through above-described monitoring.

Instructions	*Please provide a summary or an abstract of the LCA performed. Word limit: 500 words.*
Summary of life cycle assessment	
The life cycle analysis evaluates the environmental impact of Eion's enhanced rock weathering (ERW) process, focusing on key stages: milling, transport, application, weathering (sampling), and stored carbon. ERW involves applying ground rock to fields, where it reacts with precipitation and carbon dioxide to form dissolved inorganic carbon. The analysis covers emissions related to sourcing, transporting, applying, and monitoring the rock material, detailing the carbon footprint at each stage, and relying on EPA and DEFRA emission factors to ensure accurate reporting. Milling After mineral extraction, the material undergoes a processing stage where it is crushed or pulverized to a specific particle size, a process known as comminution. This step is energy-intensive, with the energy demand largely governed by the mineral's Bond Work Index. Silicates generally require more energy to grind than carbonates. For CarbonLock™, comminution is carried out using either ball mills or more efficient roller mills, which can reduce energy use by about 40%. The energy input—and thus emissions—are primarily tied to the power grid's carbon intensity at the processing site. Transport The transport stage includes emissions from both road and rail as the weathering material moves from the processing facility to farms. Emissions data is collected through bills of lading, which document the distances traveled and mass of material transported. Trucking emissions are recorded for routes from the processing facility to rail loading centers, routing to Vicksburg, Mississippi, and then to farms, while rail emissions are tracked through RailInc. Diesel consumption and distances traveled are incorporated to calculate emissions for each leg of the journey. The use of EPA and DEFRA emission factors ensures accurate estimation of emissions from both trucking and rail transport. Application	

In the application stage, emissions arise from the use of fuel during the spreading of rock material on fields. The analysis utilizes a model of fuel consumption during the application process, which includes the operation of machinery to spread the material over the land. Weathering (Sampling) Following the application of the rock, emissions from sampling are considered in the weathering stage. This includes the collection and transportation of soil samples for carbon dioxide removal (CDR) quantification. The analysis models fuel usage from the collection process, using all-terrain vehicles (ATVs) and trucks to transport samples to testing facilities. EPA and DEFRA emission factors are applied to estimate the emissions from fuel consumption and well-to-tank emissions during the sampling and transport phases. Stored Carbon The final stage assesses the amount of carbon dioxide stored through the weathering process. This includes the total sequestration of carbon dioxide as well as inefficiencies from the in-field application and downstream processes such as rivers and ocean systems. The LCA model provides an estimate of the total carbon dioxide removed and stored, while accounting for inefficiencies in the weathering process itself.
This table is filled-in by the supplier and verified by the auditor.

Optionally, the following documents may be made available in the Puro Registry once the facility has completed its first Output Audit:

Can the LCA report be made available in the Puro Registry?	
Answer	☐ Yes, entirely. ☐ Yes, in a redacted version. ☐ No. If no, please provide a reason:
Filename(s) to be made public	LCA includes confidential information.
This table is filled-in by the supplier.	

5 Social and environmental safeguards

The information in this section provides a summary of the project-specific measures taken to avoid and minimize negative social and environmental effects, as well as maximize positive impacts contributing to the sustainable development goals (SDGs).

5.1 Stakeholder engagement

In line with the Puro General Rules, the CO_2 Removal Supplier must have conducted a stakeholder engagement process and reported its outcome in a written format.

Instructions	*Please reproduce the summary of the stakeholder engagement report. Word limit: 500 words.*

Summary of stakeholder engagement
Eion's Twinterstellar 3021 ERW project on farmland in Mississippi and Louisiana is helping to revitalize local communities and drive economic incentives to rural areas by reducing soil acidity, providing improved per-acre economics for farmers participating in the project, and creating employment opportunities; this is particularly vital since there are regions designated as Justice40 tracts within the project (these communities are deemed especially susceptible to the negative impacts of climate change, pollution, and other environmental hazards). Eion is driven by a do-no-harm principle, leaving farmers/growers and the environment better off, while also considering environmental justice impacts. We use reducing climate change's negative impacts as our North Star, developing highly durable and verifiable carbon removal. And we do this by working with one of the country's most vulnerable communities: farmers and growers. Twinterstellar 3021 stakeholders include the growers, along with the quarries, agronomy consulting group, and state agencies. All parties have an interest in, or are impacted by, the ERW project. Eion held and participated in numerous stakeholder consultation activities, which included providing information, considering all feedback, and discussing/working through any concerns. Overall, stakeholders have been comfortable working with Eion on, as well as motivated and excited by, the different steps and details required to realize the Twinterstellar 3021 project. Stakeholders are engaged through both routine project management and periodic engagement sessions. Eion regularly checks in with its agronomy consulting partner. And they, in turn, are often working directly with the growers involved in the Twinterstellar 3021 project. Eion also has employees that live in the local farming communities and are able to collect feedback and provide advice. Due to our hands-on approach with stakeholders, and focus on honesty and transparency, Eion is able to make immediate changes when necessary to ensure a positive impact in the project and region. We plan to continue to host sessions and invite comments and feedback from both stakeholders and nonparticipants alike.
This table is filled-in by the supplier and verified by the auditor.

In addition, the following documents are made available in the Puro Registry once the facility has completed its first Output Audit:

Stakeholder Engagement Report (required)	Filename	Puro Stakeholder Engagement Report_Eion_Twinterstellar 3021_v1.2.pdf
	Description	Stakeholder engagement report completed and audited, following the Puro requirements for stakeholder engagement.
The filename shall be the exact filename as provided in the audit documentation. This table is filled-in by the supplier.		

5.2 Environmental and social safeguards

In line with the Puro General Rules, the CO_2 Removal Supplier must ensure that environmental and social safeguards are in place.

Instructions	*Please summarize the environmental and social impacts relevant to the project, based on the answers provided to the corresponding questionnaire in the audit documentation. Word limit: 500 words.*
Summary of environmental and social safeguards questionnaire	

Eion operates on the basic principle that farmers should not be burdened with additional risk in order to take positive climate action. Additionally, we believe it is our duty to provide real economic value to the rural communities that give us social license to operate on managed lands in their locale. Thus, Eion takes seriously its responsibility to accurately identify and manage any environmental and social impacts due to the project activity.

Eion has identified two different categories of possible human and ecosystem impact: 1) release of metals (with a focus largely on chromium and nickel) and 2) dust hazard, including asbestos exposure. Olivine naturally contains trace amounts of heavy metals, so project activity must be managed carefully to ensure they do not accumulate to harmful levels at any point in the ecosystem (in agricultural soils, crops, water). Additionally, the mining, processing, transportation, and handling of pulverized mineral amendments used in ERW can create dust emissions that pose health risks to workers. Olivine contains virtually no free silica, which reduces the dust hazard, but it can contain trace amounts of chrysotile asbestos.

To prevent and mitigate any potential risks, Eion carefully manages every step of the project to ensure it is safe and overall beneficial. We carefully monitor the quantities of metals in the feedstock and soil samples for every deployment: ensuring that relevant thresholds are considered in each step. Numerous steps are taken to ensure the appropriate safeguards are in place for the non-harmful practice of olivine application in an agricultural terrestrial system. Additionally, multiple studies have examined the potential for olivine applications on land to affect ecosystem health, including crop yields; no studies to date have found detrimental effects. Eion also mitigates asbestos risk via rigorous feedstock characterization, including a fiber management quality control program in partnership with our suppliers. We also include a dedusting conditioning step that adds a small amount of moisture to effectively eliminate excessive dust generation during field deployment. Finally, Eion measures basic soil properties such as cation exchange capacity in field trials and deployments. There have not been any systematic changes observed.

Further, Eion completed an environmental risk assessment for the project. The ecological assessment endpoint was the protection of crops (plants), soil invertebrates, avian wildlife, and mammalian wildlife that may be exposed to olivine following application to agricultural fields. This assessment endpoint was evaluated by comparing predicted agricultural soil concentrations of hazardous metals present in olivine to ecological screening levels for hazardous metals in soil that are protective of plants, soil invertebrates, avian wildlife, and mammalian wildlife. The protection of human health, following the application of olivine to agricultural fields, was the other endpoint for the risk assessment. This assessment endpoint was evaluated by comparing predicted agricultural soil concentrations of hazardous metals present in olivine to cancer risk and noncancer hazard quotient values. All values suggested that the project activity is unlikely to create dangerous conditions.

This table is filled-in by the supplier and verified by the auditor.

In addition, the following document is made available in the Puro Registry once the facility has completed its first Output Audit:

	Filename	Puro Environmental and Social Safeguard_Twinterstellar 3021_v1.1.pdf

Stakeholder Engagement Report (required)	Description	Questionnaire based on a template provided by Puro, to ensure compliance with the Puro General Rules, regarding social and environmental safeguards.
The filename shall be the exact filename as provided in the audit documentation. This table is filled-in by the supplier.		

5.3 Permits, risk assessments and impact assessments

Depending on the nature and scale of the removal activity, the CO_2 Removal Supplier may have obtained permits or conducted specific environmental assessments (e.g. Environmental and Social Impact Assessment, Environmental Risk Assessment) for compliance with local laws and regulations.

Were the obtention of one or several construction or environmental permits required for the removal activity, for compliance with local laws and regulations?	
Answer	☐Yes, permits were required and successfully obtained. ☒ No, permits were not required.
Permits obtained	Name of permit: ID of permit: Issuer of permit: Date of issuance: Permit file (.pdf): Permit URL (if available):
If several permits were obtained, provide the information for each of them. This table is filled-in by the supplier and verified by the auditor.	

Was an environmental and social impact assessment study (EIA) conducted?	
Answer	☐ Yes, an EIA was legally required and thereby conducted. ☐ Yes, an EIA was not legally required but conducted voluntarily. ☒ No, an EIA was not legally required and not conducted.
EIA Report (if conducted)	Title of study: Filename of report: Can the report be published in the Puro Registry: Yes/No
This table is filled-in by the supplier and verified by the auditor.	

Was an environmental risk assessment study (ERA) conducted?	
Answer	☐ Yes, an ERA was legally required and thereby conducted. ☒ Yes, an ERA was not legally required but conducted voluntarily. ☐ No, an ERA was not legally required and not conducted.
ERA Report (if conducted)	Title of study: Environmental Risk Assessment – Twinterstellar 3021 Filename of report: Eion_ERA_TS & 3021 Deployment_FINAL_v3_ 20240923.docx Can the report be published in the Puro Registry: No
This table is filled-in by the supplier and verified by the auditor.	

5.4 Positive impacts on SDGs

Depending on the nature of the removal activity, the activity may have positive impacts on the UN Sustainable Development Goals (SDGs).

Instructions	*Please provide a summary of the positive impacts on the SDGs that the removal activity has or plans to has. This summary shall be project-specific and based on related evidence pieces that were submitted in the audit documentation (SDG Reporting files). Word limit: 150 words.*
Summary	Twinterstellar 3021 directly contributes to SDG 13 - Climate Action. The carbon sequestered due to the project activity will be quantified and certified as CO2 Removal Certificates (CORCs). Thus, implementation of the project has a positive impact by taking urgent action to combat climate change via verified carbon removal. Another positive impact is the increase in the buffer capacity of the ocean, so the project activity also contributes to SDG Target 14.3 (i.e., Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels). Eion is otherwise not claiming the advancement of any additional SDGs as a result of the project at this time.
This table is filled-in by the supplier and verified by the auditor.	

In addition, the following document is made available in the Puro Registry once the facility has completed its first Output Audit:

SDG Reporting (required)	Filename	N/A
	Description	SDG Reporting based on a template provided by Puro, disclosing with SDG indicators are reported and how they are or will be demonstrated.
The filename shall be the exact filename as provided in the audit documentation. This table is filled-in by the supplier.		

6 Other documents available in the Puro Registry

Alongside this project description, several other documents are made available in the Puro Registry for more details.

The documents referenced in this project description are compiled in the following table:

Instructions	To finalize the project description, please list the names of all the public documents to be made available in the Puro Registry, in the order they appear, specifying the number of pages of each document. Add rows as necessary.	
#	**Document names**	**No of pages**
1	Puro Additionality_Twinterstellar 3021_v1.4.pdf	9
2	Puro Stakeholder Engagement Report_Eion_Twinterstellar 3021_v1.2.pdf	6
3	Puro Environmental and Social Safeguard_Twinterstellar 3021_v1.1.pdf	17
4		
5		

6		
7		
8		
9		
10		
This table is filled-in by the supplier.		

Besides the documents referenced in this project description, the 3rd-party auditor has reviewed a complete audit package containing numerous documents, performed a site visit, and prepared an audit report and statement.

The facility described here will further be audited annually, in Output Audits, to verify the performance of the removal activity, resulting in the issuance of CORCs. All audits lead to audit reports and statements, which will be available in the Puro Registry, alongside further details on CORC quantification for each monitoring period.

1. Baseline and Additionality Assessment

The baseline and additionality assessment is a requirement for eligibility under the Puro Standard. The assessment is made by the CO2 Removal Supplier and verified by the independent 3rd party auditor. The assessment made in this document will be publicly available in the Puro Registry.

The Puro Standard only certifies durable carbon removals from the atmosphere that are net-negative and does not certify emissions reductions or avoidance. The CORCs (Carbon dioxide removal certificates), issued therefore represent a net carbon removal (1 tCO_2eq. net) from the atmosphere to a durable storage of minimum 100 years, and for mineralization and geological storage minimum 1000 years. Net carbon removal is determined from stored gross CO_2 volume by subtracting supply-chain emissions from the project, any re-emissions over the guaranteed storage time, any baseline removals taking place in a baseline scenario, and any negative indirect leakage effects relative to the baseline scenario.

The CO_2 Removal Supplier must in this assessment:

- Define and quantify all reasonable baseline alternatives to the proposed project activity to remove carbon with carbon financing. A baseline is a scenario that reasonably represents the natural and anthropogenic carbon removals to a permanent storage (storage durability over 100 0r 1000 years) in the absence of the carbon removal activity proposed by the CO_2 Removal Supplier. Although anthropogenic emissions may take place in the baseline scenarios, these emissions do not constitute a reference point for the quantification of CORCs (only the baseline removals do).
- Demonstrate carbon additionality to the baseline, meaning that the project must convincingly demonstrate that it is resulting to higher volumes of carbon removals than the likely baseline alternatives (question A1 and A2.).
- Demonstrate regulatory additionality, meaning that the project is not required by existing laws, regulations, or other binding obligations (question A4.).
- Demonstrate prior consideration of carbon credits through documentation demonstrating that the time period between the commitment date and production facility audit is max. 3 years. (question A5)
- Demonstrate financial additionality, meaning that the CO_2 removals achieved are a result of carbon finance. This means that the CO_2 Removal Supplier must show that the carbon credits were needed to secure the investment or to overcome specific barriers to the investment.
- To support the claim the of financial additionality, the project activity cannot already be common practice without carbon finance (question A6).

Reference documents: Puro Standard general Rules v4.0, section 6.5 and Additionality Assessment requirements v2.0.

1. 1. General questions to all CO_2 Removal Suppliers

A1. Baseline Determination			
Activity name	Activity description	Removals to storage (100+ yr) due to project activity (human activity)	Natural removals to storage (100+ yr), not man-made
Baseline: No rock application (i.e., the alternative fate of the weathering material)		None	None

Project activity: Weathering material applied to agricultural fields	The project activity (i.e., Twinterstellar 3021) entails the application of ~15,000 tonnes of olivine on ~9,000 acres (~3642 hectares / ~ 36 km^2) of agricultural soils. The associated carbon sequestered is above and beyond business-as-usual and would not happen but for the carbon project, growersabsent the carbon project. In other words, would not be using Eion ' s CarbonLock (i.e., olivine feedstock) and, consequently, removing additional carbon.	Estimated total (including losses) of 3537 tCO_2(TS) + 8748 tCO_2(3021) = 12,285 tCO_2	None

A2. Does the project lead to higher volumes of durable carbon removal than the baseline?	Yes / No
Yes, the project is expected to sequester ~12,285 t CO_2 (estimated total including inefficiencies). The baseline (counterfactual) scenario is not estimated to remove any carbon compared to the project activity. Thus, by committing to remove more carbon than would be sequestered via the baseline, the project will provide significant climate benefits.	Yes

A3. Is the project scenario aligned with net-zero transition? The following activities are considered not to be aligned with net-zero transition: a) directly leading to an increase in the extraction of fossil fuels, b) relating to coal-fired electricity generation, or c) involving other unabated fossil fuel-powered electricity	Yes / No

generation, other than new gas-fired generation that is part of increased zero-emissions generation capacity in support of national low carbon energy transitions	
The project uses existing agricultural infrastructure, and Eion's measurement techniques seamlessly integrate with standard agricultural practices, imposing no new burdens on growers while simultaneously creating new carbon removals.	Yes

A4. Is the project required by existing laws, regulations, or other binding obligations?	Yes / No
The application of the weathering material is in the U.S. (i.e., Mississippi and Louisiana). Relevant laws, regulations, statutes, legal rulings, agreements, and other regulatory frameworks that could affect the project activity include: National Laws, Regulations, and Policies • Clean Air Act (U.S. Environmental Protection Agency (EPA)) • Clean Water Act (EPA) • Toxic Substances Control Act (EPA) • Resource Conservation and Recovery Act (EPA) • Federal Insecticide, Fungicide, and Rodenticide Act (EPA) • Occupational Safety and Health Administration (OSHA) Standards, Asbestos State and Local Laws and Programs • Mississippi Agricultural Liming Materials Act • Mississippi Soil and Plant Amendment Law • Mississippi Commission on Environmental Quality – Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants • Louisiana Agricultural Liming Materials Law • Louisiana Administrative Code, Title 33 ENVIRONMENTAL QUALITY, Part III. Air (LAC 33:III) • Louisiana Administrative Code, Title 33 ENVIRONMENTAL QUALITY, Part IX. Water Quality (LAC 33:IX) International Agreements • Paris Agreement (U.S. withdrew from agreement in 2017 but rejoined 2021) • Kyoto Protocol (signed, not ratified) • United Nations Framework Convention on Climate Change • United Nations Convention on Biological Diversity (signed, not ratified) ● UNESCO World Heritage Convention	No

None of the above, as of the application date in 2023, requires the proposed enhanced rock weathering activity (and use of CarbonLock) or its associated carbon dioxide removal. Eion did not identify any other potentially relevant statute, regulation, legal ruling, or other legal authority/regulatory framework that might govern the project. The project, therefore, passes the regulatory surplus test.	

A5. What was the Commitment Date of this facility? Commitment Date is defined as "The calendar date on which the CO2 Removal Supplier committed to implementing the CO2 Removal activity (e.g., the date when contracts for the purchase or installation of equipment required for the mitigation activity were signed). In the case where a mitigation activity does not involve capital expenditure, it refers to the date when the first physical actions were taken to implement the mitigation activity." If an exception listed in clause 2.1.3 of the Additionality Assessment Requirement applies, describe the situation here.	Date
The Twinterstellar 3021 Commitment Date is determined by the date that Eion first secured and purchased weathering material for the project.	2023-01-04

A6. Is the Technological Readiness Level of the Methodology 8 or 9?	Yes/No
The Technological Readiness Level of enhanced weathering is 3-4.	No

If the answer to question A6 is Yes, please answer question A6.1 to A6.3. Questions A6.2 and A6.3 are different based on whether you are applying a distributed technology (such as enhanced rock weathering) or more centralized technology based on plants/factories producing something. See clauses 3.2.5 and 3.2.6 in the Puro Additionality Assessment Requirements with references for more information.

A6.1. Please define the region being considered and explain why it is relevant level of aggregation for the assessment if different from the host country.
[Information]

A6.2. Market size or current installations Distributed technology: What is your estimate for a realistic target market size and what constraints to the market size growth have you identified? Centralized technology (plants): What projects have you identified that fulfil the criteria in Additionality Assessment Requirements clause 3.2.6? a) output range of +/- 50% of the project, b) located in the same region, c) applying the same measure, d) produce comparable goods or services in terms of quality, properties, and applications, e) started commercial operation before the proposed start date of the project, and f) are not registered in a carbon crediting program. How many of them apply a different technology? Please mention or link to any sources you have.
[Information]

A6.3. Market penetration rate Distributed technology: What is your estimate of the market penetration rate of the activity? How common or widespread is the project activity or similar activities in the relevant sector and region, and what is the trend of adoption over time? Centralized technology (plants): Provide your calculation of market penetration rate based on the formula in clause 3.2.6 in Additionality Assessment Requirements.
[Information]

A7. Does the carbon removal project have other income sources besides carbon finance? Include also information about any subsidies you receive or expect to receive. Please describe your business model here, in a short answer (max. 100 words).	Yes / No
Project costs have been paid from our balance sheet (i.e., equity funds raised). There are no additional subsidies for this project; but for carbon finance (i.e., CORCs) to recoup costs, Eion would not be able to develop Twinterstellar 3021.	No

Please note: Questions under headings '2. Simple cost analysis', '3. Investment analysis', and ' 4. Barrier Analysis' are mutually exclusive options.

2. 2. Simple cost analysis or investment analysis

Some projects may demonstrate additionality through simple cost analysis: this is applicable for projects that have no other source of income besides carbon finance or where ex-ante investment analysis is not applicable, because capital expenditure (capex) is modest compared to operating expenditure (opex). This can include e.g. enhanced rock weathering projects.

B1. Describe how the criteria above applies to your project
Twinterstellar 3021 is an enhanced rock weathering project; the project's upfront working capital needs are funded by the company's balance sheet. There are some prepayments from customers that contracted for credit delivery from the project, and the remainder will be paid to Eion Corp upon credit delivery.

B Simple cost analysis	Project response
B2. Please describe your cost structure here and include evidence in attachment.	Upfront costs include rock deployment and MRV costs. There are some prepayments collected from customers, and the final balances will be paid upon CDR delivery. See attachment – Project Financials (pro forma)
B3. Please summarize the simple cost analysis here. Please include any public subsidies received or expected. Compare with alternative scenarios, if relevant.	Total project costs - total expected cash receipts = project net income (gain/loss). No public subsidies have been received or are expected.
B4. Please provide additional calculation spreadsheet in attachment. All formulas used in the spreadsheet shall be readable to the verifier and all relevant cells shall be viewable and unprotected. Mark confidential when needed.	See attachment – Project Financials (pro forma)
B5. Are you willing to provide full calculation spreadsheet to be visible in Puro Registry? If yes, please specify the name of the file that has been provided. If not, please ensure that there is sufficient information provided in your answers in this document.	No

B6. Is the information shared here consistent with information presented to the company's decision-making management, investors or lenders?	Yes
B7. Is the information shared here consistent with the information in the audit documentation presented to Puro and its verifiers (e.g. LCA model)? If not, please explain why there are differences.	Yes

3. 3. Investment Analysis

CO_2 Removal Suppliers can be guided by the CDM Methodological Tool 27 of the UNFCCC Clean Development Mechanism "Investment Analysis" to demonstrate financial additionality with Investment Analysis.

C. Financial Additionality – Investment analysis	Project response
C1. Describe the relevant alternative scenarios in terms of investments analysis. If the only alternative scenario is to carry out the project without CORCs, please answer the following questions: Please show your calculations to determine the benchmark rate for either equity IRR or WACC, whichever you are using. Please include documentation of how the rate is suitable for the technology and region. Please specify the currency and whether the rate is nominal or real.	
C2. Please state how CORC revenues change the expected IRR or NPV of the project.	
C3. Please conduct a sensitivity analysis in relation to the investment analysis and summarize the results here.	
C4. Is the information shared here consistent with information presented to the company's decisionmaking management, investors, or lenders?	
C5. Is the information shared here consistent with the information in the audit documentation presented to Puro and its verifiers (e.g. LCA model)? If not, please explain why there are differences.	
C6. Are you willing to provide full calculation spreadsheet to be visible in Puro Registry? If yes, please specify the name of the file that has been provided.	

C7. If you are not willing to disclose the full spreadsheet, please provide here a summary of the confidential file that has been provided to the Auditor and Puro.earth. Please include: • Overall description of the spreadsheet, including type of terms (real/nominal), currency, forecasting periodicity • Capital structure, if the measure is based on equity return • Information sources on main revenues and costs • Expected breakdown of income from the different sources • Expected or already received public subsidies • Growth assumptions • Model duration and a comparison with expected lifetime	

4. 4. Barrier Analysis

In Barrier Analysis only one barrier needs to be demonstrated but there needs to be clear, objective, and verifiable evidence to demonstrate its existence. If possible, please provide quantitative estimates for the barrier.

D. Barrier Analysis	No/yes	Project response
D1. Are there financial barriers? (e.g., financing is not accessible for the type of activity in the country due to the risks)		
D2. Are there institutional barriers? (e.g., the investor not being the beneficiary of cost savings associated with the investment)		

D3. Are there information barriers? (e.g., lack of awareness of the financial benefits of by-products)		
D4. Please explain how CORC revenues are crucial element in overcoming identified barrier(s)		
D5. Are there subsidies for the carbon removal activity? If yes, please explain how they are not sufficient to overcome the barrier.		
D6. Please attach verifiable evidence for the existence of the barrier and describe the evidence here. If the file can be included publicly in the Puro registry, please specify the name of the file here. If the evidence is not public, please ensure that you describe it in sufficient detail.		

D7. Please demonstrate that at least one other alternative in baseline determination (first question) does not face any significant barriers, including the barriers faced by your project.		

I hereby declare that all information provided is truthful and precise to the best of my knowledge.

X _____

Date, Place: 09/30/2024 Grosse Pointe, MI

Representative name, title, organization

Anastasia Pavlovic CEO Eion Corp

Stakeholder Engagement Report

CO_2 Removal Supplier	Eion
Production Facility	Twinterstellar 3021
Production Facility ID	387867
Date of report last update (YYYY -MM-DD)	2025-04-24

Stakeholder Engagement Report

The purpose of this document is to gather results of the Stakeholder Engagement that has been conducted by the CO_2 Removal Supplier, for its Production Facility, in line with Section 6.4 of the Puro General Rules 4.0 and the Puro Stakeholder Engagement Requirements.

This report is divided in the following sections:
1 Identified stakeholders
2 Consultation activities and outcomes
3 Plans for continued consultation during crediting period
4 Summary

This report will be made **publicly available** in the Puro Registry. It shall not contain information about private individuals (e.g. name, personal address) for privacy reasons. Such information shall be provided separately (e.g. list of participants to consultation activity, as an appendix to the report).

2. Identified stakeholders

Provide an overview of the stakeholders that have been identified as relevant to include in the stakeholder engagement process, following the categories defined below:

Stakeholder categories	Identified stakeholders
Local Stakeholders, i.e. stakeholders in the immediate environment of the facility of the CO2 Removal Supplier, and most prone to experience direct or indirect effects of the respective carbon removal activity.	Growers participating in the Twinterstellar 3021 project
Stakeholders with **land-tenure rights** within the vicinity of the project boundary	Growers participating in the Twinterstellar 3021 project
Representatives of relevant **local authorities** and relevant **local politicians**	Representatives of the Bureau of Plant Industry, Mississippi Department of Agriculture & Commerce, and Louisiana Department of Agriculture and Forestry
Local **non-governmental organizations** (NGOs) or international NGOs who are active in the region and relevant to the topic	The Nature Conservancy, Lower Mississippi River Conservation Committee, Mississippi Association of Resource Conservation & Development Council, and Mississippi Minority Farmers Alliance

Representatives of relevant **working groups** or **vulnerable** and **marginalized** groups within the vicinity of the project boundary	Growers participating in the Twinterstellar 3021 project (i.e., activity takes place on Justice40 Initiative tracts, a designation created by the Biden-Harris administration to identify disadvantaged communities)
Relevant **industry experts**, given there are any in the near environment	Local agronomy consulting group
Other, please specify:	Quarries
Answers are to be written in the second column without disclosing private information. For instance, instead of the name of a specific resident, use terminology like "local residents". Likewise, instead of naming specific public employees, prefer to mention the roles and departments. *In case there are no identified stakeholders in a given category, provide a brief justification instead.*	

Activity directly or indirectly impacting indigenous peoples or their livelihoods, ancestral knowledge or cultural heritage:

Question	Answer
Does the list of identified stakeholders include any indigenous peoples or communities?	☐ Yes ☒ No (There are many indigenous communities living in the two states, including Choctaw and Chickasaw, Chitimacha, Coushatta, Tunica-Biloxi, United Houma Nation, Biloxi-Chitimacha Confederation of Muskogees, Choctaw-Apache Tribe of Ebarb, Four Winds Tribe, Adai Caddo Tribe, and Atakapa-Ishak Nation; however, per the Bureau of Indian Affairs GIS data, there is no overlap between the project area and land areas of federally recognized tribes)
If answer is "Yes" to the question above, has the free, prior and informed consent (FPIC) been obtained from those indigenous peoples or communities?	☐ Yes. Please provide evidence of the obtention of the FPIC in a separate document.
As per rule 2.1.6 in the Puro Stakeholder Engagement Requirements, note that "FPIC is distinct from stakeholder engagement in that it is derived from indigenous peoples' right to self-determination. While stakeholder *engagement involves consultation and collaboration with all parties affected by a project, FPIC goes a step further by requiring the explicit consent of indigenous peoples before proceeding with activities that impact them."*	

3. Consultation activities and outcomes

Provide an exhaustive list of all the **stakeholder consultation activities** that have been conducted. Add as many rows as necessary. The activity categories can for instance be one of the followings (but not limited to these ones): public meeting, online webinar, paper questionnaire, electronic questionnaire, interviews, focus group, site visit, door-to-door visits, etc.

Activity categories	Activity name	Activity date (YYYY-MM-DD)
Meeting	Eion met and discussed project with quarry representatives.	2021-10
Meeting	Eion visited quarry and met/discussed project with quarry representatives.	2022-04
Meeting	Eion met and discussed partnership with local agronomy consulting group.	2022-04
Online	Submitted application to the Bureau of Plant Industry, Mississippi Department of Agriculture & Commerce.	2022-12
Public meeting	Meeting at a local hotel to introduce growers/farmers to Eion, ERW, and the benefits of olivine.	2023-01
Online	Submitted application to the Louisiana Department of Agriculture and Forestry.	2023-12

Provide a list of all the **stakeholder invitations** that have been sent out, grouping whenever relevant the invitations (e.g., for all local residents as one row). Add as many rows as necessary. The invitation format can be one of the followings (but not limited to these ones): postal letters, email, social media publication, public board information, telephone calls, verbal communication, etc.

Invitation format	Invitation name	Invitation date (YYYY-MM-DD)
Telephone calls	Eion's agronomy consulting partner contacted growers to invite them to the information session led by Eion at the local hotel.	2022-12-15 to 2023-01-03

As **supporting evidence** to this report, please provide in a separate subfolder, the following:

- Example of invitations sent out, for different consultation activities (e.g. letters, emails, website announcements).
- Lists of all stakeholders invited to the consultation activities and stakeholders participating in the consultation activities. The lists will not be made public, as they can contain private information.

In case identified relevant stakeholders (section 1) were not invited to the consultation activities, please provide clear **reasons for not inviting** them. Add as many row as necessary. Leave blank if not applicable.

Identified stakeholders	Reasons for not inviting
Local NGOs	Did not identify any clear role(s) in the project. Eion will continue to evaluate future opportunities and, when applicable, how to involve more organizations.

Provide an extensive summary of i) the **information that was provided to stakeholders** during the consultation activities, ii) the **feedback received** during the consultation activities (with a particular focus on concerns, potential issues and critiques), and iii) the **responses provided to stakeholders** about their feedback.

Summary of the feedback received during the consultation activities

Information provided to stakeholders:
Background on Eion, enhanced rock weathering, olivine (both in general/where sourced and as a weathering material), rock and soil sampling, benefits for growers, how the weathering material is transported and applied to fields, and costs.

Feedback received from stakeholders:
How effective and safe is olivine as an ag lime replacement, sampling and analysis requirements, does olivine lead to yield increase (or decrease), who uses it, how is it applied, and what are the costs.

Responses provided to stakeholders:
Shared Eion whitepapers, relevant studies, and projections. Also described the logistics, methodology, safety of the activity, goals, and costs. Submitted the necessary information and documentation to state agencies for registration approval.

In case any relevant stakeholders **could not take part** in the consultation activities due to reasons such as lack of mobile access or physical disability, please describe and summarize how you engaged with them, what their specific feedback was, and how it was answered. Leave blank if not applicable.

Consultation of stakeholders that could not take part in the scheduled consultation activities

Agronomy consulting partner followed up with growers unable to attend/not present at the public meeting to share information from the consultation activity via telephone calls and site visits: similar feedback and responses.

As **supporting evidence** to this report, please provide in a separate subfolder, the following:

- Materials presented during the consultation activities (e.g. presentations)
- Documentation of the feedback received (e.g. meeting notes, questionnaire answers)
- Documentation of the responses provided to stakeholders (e.g. consultation reports)

Provide an extensive description of the **changes made to the project** plans to address the concerns and issues raised during the consultation activities.

Description of the changes made to the project for addressing concerns and issues

None required.

4. Plans for continued consultation during crediting period

Provide a description of the current plans for maintaining a continued engagement of the stakeholders during the crediting period.

Description of the plans for continued consultation of stakeholders during the crediting period

Eion has scheduled check-ins with multiple stakeholders. And Eion's agronomy consulting partner maintains a working relationship, with regular communication, with the growers participating in the project. Eion also has a local team that works directly with our consulting partner and periodically with the growers involved in the project. Stakeholders that do not require frequent consultation still have open lines of communication with Eion and additional ad hoc meetings, calls, and messages are anticipated.

5. Summary

Based on all the information provided above and the evidence provided separately, write an overall summary of the stakeholder engagement. This summary must follow the structure of this report, tackling identified stakeholders, consultation activities and outcome, and plans for continued consultation. This summary is limited to 500 words. This summary must be re-used in the Project Description.

Overall summary (500-word limit)

Eion's Twinterstellar 3021 ERW project on farmland in Mississippi and Louisiana is helping to revitalize local communities and drive economic incentives to rural areas by reducing soil acidity, providing improved per-acre economics for farmers participating in the project, and creating employment opportunities; this is particularly vital since there are regions designated as Justice40 tracts within the project (these communities are deemed especially susceptible to the negative impacts of climate change, pollution, and other environmental hazards).

Eion is driven by a do-no-harm principle, leaving farmers/growers and the environment better off, while also considering environmental justice impacts. We use reducing climate change's negative impacts as our North Star, developing highly durable and verifiable carbon removal. And we do this by working with one of the country's most vulnerable communities: farmers and growers.

Twinterstellar 3021 stakeholders include the growers, along with the quarries, agronomy consulting group, and state agencies. All parties have an interest in, or are impacted by, the ERW project. Eion held and participated in numerous stakeholder consultation activities, which included providing information, considering all feedback, and discussing/working through any concerns. Overall, stakeholders have been comfortable working with Eion on, as well as motivated and excited by, the different steps and details required to realize the Twinterstellar 3021 project.

Stakeholders are engaged through both routine project management and periodic engagement sessions. Eion regularly checks in with its agronomy consulting partner. And they, in turn, are often working directly with the growers involved in the Twinterstellar 3021 project. Eion also has employees that live in the local farming communities and are able to collect feedback and provide advice. Due to our hands-on approach with stakeholders, and focus on honesty and transparency, Eion is able to make immediate changes when necessary to ensure a positive impact in the project and region. We plan to continue to host sessions and invite comments and feedback from both stakeholders and nonparticipants alike.

contact@puro.earth Puro.earth Oy, Tammasaarenkatu 1, 00180 Helsinki, Finland https://puro.earth

Environmental and social safeguards questionnaire

CO_2 Removal Supplier	Eion
Production Facility	Twinterstellar 3021
Production Facility ID	387867
Date of report last update (YYYY -MM-DD)	2024-09-22

Environmental and Social Safeguards Questionnaire

The purpose of this document is to provide a summary of how the CO_2 Removal Supplier complies with the environmental and social safeguards, as defined in Section 6.4 of the Puro General Rules 4.0. The responses from the supplier are expected to be commensurate with the identified impacts and risks.

This document consists of five sections, noting that the fifth section does not apply to all suppliers:

1. General overview and compliance
2. Labor practices and rights
3. Environmental impact and management
4. Social impact and community relations
5. Biomass sustainability

This document forms part of the evidence needed for the Production Facility Audit. It is corroborated by other documents and evidence provided by the supplier to Puro.earth and the 3rd-party auditors, demonstrating environmental and social safeguards. This questionnaire will be made **publicly available** in the Puro Registry.

6. General overview and compliance

Provide a description of your operations and the context where you are operating in, as relevant for environmental and social safeguards.
Eion looks for agricultural zones where enhanced rock weathering (ERW) can best take place: where precipitation outstrips evapotranspiration (P > ET) and where soils are acidic and in need of amelioration. Eion then works with a local partner to apply pulverized olivine to agricultural soils to generate high-quality, durable carbon removal. We chose olivine because it is a naturally abundant mineral and a highly effective ERW feedstock for many reasons; it has the highest mineral potential for carbon removal and fastest weathering kinetics of any silicate, which also create a high total neutralizing value (TNV), an essential component to its agronomic and economic value as an ag lime substitute. Olivine also contains, however, certain trace elements that should be measured and managed to ensure they do not accumulate to harmful levels at any point in the ecosystem (e.g., in agricultural soils, crops, water, air). The two most critical risk pathways to measure and monitor for the project are nickel (Ni) and chromium (Cr). The project activity primarily benefits the local community through two avenues: economic redevelopment and environmental co-benefits. Eion and its local partner work intimately with immediate project participants and indirect project stakeholders to quantify our material's impact on crop output, input efficiency (i.e., nutrient management and use), finances, and all other impacts beyond just quantified carbon removal. Overall, the project activity is safe and legal. It is not mandated and Eion abides by the statutes, regulations, and legal authority relevant to the project.

Provide an overview of the material environmental and social impacts and risks in your operations, and how they were determined.

Eion operates on the basic principle that farmers should not be burdened with additional risk in order to take positive climate action. Additionally, we believe it is our duty to provide real economic value to the rural communities that give us social license to operate on managed lands in their locale. Thus, Eion takes seriously its responsibility to accurately identify and manage any environmental and social impacts due to the project activity.

Eion has identified three categories of possible human and ecosystem impact: 1) release of trace/heavy metals (with a focus largely on nickel and chromium), 2) dust hazard, including asbestos exposure, and 3) alteration of the abiotic environment for organisms. Olivine naturally contains trace amounts of heavy metals, so project activity must be managed carefully to ensure they do not accumulate to harmful levels at any point in the ecosystem (in agricultural soils, crops, water). Additionally, the mining, processing, transportation, and handling of pulverized mineral amendments used in ERW can create dust emissions that pose health risks to workers. Olivine contains virtually no free silica, which reduces the dust hazard, but it can contain trace amounts of chrysotile asbestos. Further, the application of silicate minerals like olivine can influence the soil's cation exchange capacity (CEC) by releasing base cations (such as Mg_{2+} and Ca_{2+}) during dissolution. These cations may be absorbed by soil colloids and organic matter, contributing to the overall ionic strength of the soil solution. As such, ionic strength may fluctuate in the soil as a function of the base cation retention in the soil matrix. This ultimately has indirect implications for the transport of soil colloids in the subsurface as colloidal transport is oftentimes correlated with aqueous ionic strength. Lastly, the formation of secondary minerals (carbonate phases or larger silicic acid-based particles) may lead to shifts in the overall permeability of the soil. This has indirect implications for the transport of base cations, alkalinity, and also fertilizer amendments.

To prevent and mitigate any potential risks, Eion carefully manages every step of the project to ensure it is safe and overall beneficial. We carefully monitor the quantities of metals in the feedstock and soil samples for every deployment: ensuring that relevant thresholds are considered in each step. Numerous steps are taken to ensure the appropriate safeguards are in place for the non-harmful practice of olivine application in an agricultural terrestrial system. Additionally, multiple studies have examined the potential for olivine applications on land to affect ecosystem health, including crop yields; no studies to date have found detrimental effects. Eion also mitigates asbestos risk via rigorous feedstock characterization including a fiber management quality control program in partnership with our suppliers. We also include a dedusting conditioning step that adds a small amount of moisture to effectively eliminate excessive dust generation during field deployment Finally, Eion measures basic soil properties such as cation exchange capacity in field trials and deployments. There have not been any systematic changes observed.

Otherwise, Twinterstellar 3021 does not require growers to carry any additional risk; they receive an essential product to manage soil pH, at a discounted rate, with no requirement to change their production practices, purchase new equipment, submit any sensitive production data, or suffer yield decreases. Further, to prevent the displacement of local communities, Eion works directly with community stakeholders to ensure all projects only take place on existing and established farmland. No additional land is brought into production and no communities are displaced.

Twinterstellar 3021 takes place on Justice40 tracts (a designation created by the Biden-Harris administration to identify disadvantaged communities). These communities are deemed especially susceptible to the negative impacts of climate change, pollution, and other environmental hazards. Eion has aimed to engage growers in the community to provide an affordable soil conditioner that can also help solve the climate crisis, revitalizing these communities.

Overall, Eion implements continuous monitoring protocols to track the impact of its ERW project.

Requirement: Abide by national and local laws, objectives, programs, and regulations and, where relevant, international conventions and agreements.	**Rule** 6.4.1.1.i
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement? Please provide details considering the laws and regulations that are most relevant to your operations. Also, include any regulations that are specifically related to your carbon removal activities.	
The application of the weathering material is in the U.S. (i.e., Mississippi and Louisiana). Relevant laws, regulations, statutes, legal rulings, agreements, and other regulatory frameworks that could affect the project activity include: <u>National Laws, Regulations, and Policies</u> ● Clean Air Act (U.S. Environmental Protection Agency (EPA)) ● Clean Water Act (EPA) ● Toxic Substances Control Act (EPA) ● Resource Conservation and Recovery Act (EPA) ● Federal Insecticide, Fungicide, and Rodenticide Act (EPA) ● Occupational Safety and Health Administration (OSHA) Standards, Asbestos <u>State and Local Laws and Programs</u> ● Mississippi Agricultural Liming Materials Act ● Mississippi Soil and Plant Amendment Law ● Mississippi Commission on Environmental Quality – Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants ● Louisiana Agricultural Liming Materials Law ● Louisiana Administrative Code, Title 33 ENVIRONMENTAL QUALITY, Part III. Air (LAC 33:III) ● Louisiana Administrative Code, Title 33 ENVIRONMENTAL QUALITY, Part IX. Water Quality (LAC 33:IX) <u>International Agreements</u> ● Paris Agreement (U.S. withdrew from agreement in 2017 but rejoined 2021) ● Kyoto Protocol (signed, not ratified) ● United Nations Framework Convention on Climate Change ● United Nations Convention on Biological Diversity (signed, not ratified) ● UNESCO World Heritage Convention	

None of the above, as of the application date in 2023, requires the proposed enhanced rock weathering activity (and use of CarbonLock) or its associated carbon dioxide removal. Eion did

not identify any other potentially relevant statute, regulation, legal ruling, or other legal authority/regulatory framework that might govern the project. Many of the statutes and regulations identified above control most operations for most companies. There is no distinct statute or regulation that specifically governs the enhanced rock weathering activity. Instead, the list above includes some laws and regulations that Eion included, for conservativeness, as potentially controlling. For example, the Toxic Substances Control Act (TSCA) requires manufacturers to issue to the EPA a Premanufacture Notice for any "new" chemicals to be added to the TSCA Inventory. Naturally occurring substances are considered de facto to be on the Inventory. Olivine is a naturally occurring substance and, therefore, does not require EPA approval to be on the Inventory. Additionally, the Federal Insecticide, Fungicide, and Rodenticide Act governs a wide variety of crop inputs that must be registered with the EPA. Olivine, and its use as a lime substitute, is not included in a category of inputs that must be registered. Still, our comprehensive risk management approach aims to ensure the safe, legal, and effective implementation of ERW, so Eion monitors the project and relevant statutes and regulations to ensure compliance with any and all controlling frameworks. What is likely more unique to Eion's operations is that because olivine is marketed as a lime substitute, it must meet lime requirements, which chiefly means meeting the calcium carbonate requirements of each state (i.e., registered as a liming agent and/or soil amendment). Eion must comply with regulations for liming agents, set by each state's environmental and agricultural agencies. Pulverized olivine has a neutralizing value that is comparable to conventional ag lime, which allows it to be a legally recognized lime substitute. This is essential for Eion's agricultural product to be sold as a registered alkalizing agent: the basis of our engagement with our agricultural partners.
Identify any documents or other records that you rely upon to verify compliance.
State registration approval documents/permits.

Requirement: Respect for **human rights** and avoiding discrimination; abiding by the International Bill of Human Rights and universal instruments ratified by the host country.	**Rule** 6.4.1.1.ii
Do you comply with the requirement? Motivate below.	☒ Yes ☐ No

Twinterstellar 3021 was developed with a do-no-harm principle, guiding all environmental justice impacts. Eion uses reducing climate change's negative impacts as our North Star, through our highly durable and verifiable carbon removal. And we do this by working with one of the country's most vulnerable communities: farmers.

At a time when the rate of suicide among farmers is three and a half times higher than among the general population, according to the National Rural Health Association, Eion aims to make farmers lives easier and more rewarding, not harder. Further, according to the Centers for
Disease Control and Prevention, Mississippi has the lowest life expectancy in the United States at
71.9 years. We have worked to extend an opportunity to growers to participate in a new economy without requiring them to make any major changes in their operations.

Eion believes that society can't solve problems by using the same kind of thinking we used when we created them. Thus, Eion has built a team that looks beyond the dominant culture for clues to creating a successful workplace where every person stands in integrity. To that end, Eion is committed to a supportive and inclusive culture for women, gender minorities, and other individuals from underrepresented groups. Our core team includes racial diversity, gender diversity, and ability diversity, and we continually broaden our understanding and support for justice, equity, diversity, and inclusion. We are committed to equal employment opportunities regardless of race, color, ancestry, religion, sex, national origin, sexual orientation, age, citizenship, marital status, disability, gender identity, gender expression, protected veteran status, and any other characteristic protected under applicable state or federal laws and regulations. Eion considers these factors in engaging with all suppliers, partners, and other external stakeholders, prioritizing diversity and inclusion as a key value.

Requirement: Recognize, respect, and promote the protection of the rights of IPs & LCs (**indigenous peoples and local communities**) in line with applicable international human rights law, and the United Nations Declaration on the Rights of Indigenous Peoples and International Labor Organization (ILO) Convention 169 on Indigenous and Tribal Peoples.	**Rule** 6.4.1.1.iii
Do you comply with the requirement? Motivate below.	☒ Yes ☐ No

Eion is not aware of any indigenous peoples directly involved in the project activity. Still, Eion considers it incredibly important to consult and include any and all IPs & LCs when possible to help safeguard their interests and rights and create a more inclusive carbon market. Nearly all of American agriculture could be framed as harmed by fossil fuel infrastructure; the tillage used is entirely diesel powered, the nitrogen fertilizer is produced from natural gas, and pesticides are derived from fossil fuels. The consequences of this mode of agriculture are to mine soils of vital nutrients, to cause loss of soil organic matter, the foundation of soil health, and to reduce essential biodiversity, including that in soils. These all increase the reliance of farming communities on the very fossil fuels that created this degradation. Twinterstellar 3021 primarily benefits the local communities through two avenues: economic redevelopment and environmental co-benefits. Applications of olivine can improve nitrogen use efficiency (potentially reducing the need for this input) and increase soil biological activity (from changes in pH among others). By fostering long-term economic impact, we aim to revitalize the local communities and drive economic incentives to rural areas.

Note that there is an additional question on free, prior, informed consent below (section 4), and there is a requirement to publish a separate stakeholder engagement report based on a Puro template.

7. Labor practices and rights

Requirement: Labor rights and working conditions, including prohibiting forced labour, child labour or trafficked persons whether in own operations or employed by third parties, fair treatment of employees.	**Rule** 6.4.1.1.iv
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement?	
Eion follows and meets all state and national labor laws: verifying all proper identification and providing/requesting appropriate notices.	
Identify any documents or other records that you rely upon to verify compliance.	

Eion conforms to and references all relevant statutes, regulations, and legal authority, including:

- The Fair Labor Standards Act
- Age Discrimination in Employment Act of 1967
- Americans with Disabilities Act
- Equal Pay Act
- Title VII of the Civil Rights Act of 1964
- Family and Medical Leave Act
- Occupational Safety and Health Act
- California Labor Code

Contractual agreements, proper documentation, and notices are relied upon to verify compliance.

Requirement: Ensuring a safe working environment and mitigating occupational health and safety hazards.	**Rule** 6.4.1.1.iv

Describe occupational health and safety hazards that you have identified.

The mining, processing, transportation, and handling of mineral amendments used in ERW can affect air quality through dust emissions, posing health risks to workers and local communities.

Olivine contains virtually no free silica, which reduces the dust hazard, but it can contain trace amounts of chrysotile asbestos. The principal risk of exposure, therefore, is to extract a portion of the ore body that contains unusually high asbestos, and for this concentrated mass to be propagated through the supply chain.

Describe the measures undertaken to mitigate the hazards.

Eion provides instruction on the proper handling of minerals, use of personal protective equipment (PPE), and adherence to safety protocols to Eion's third-party partners that handle the material. We provide the information necessary to our partners to assure the safety of the workers that are directly interacting with the olivine. Both quarries that Eion sourced minerals from for Twinterstellar 3021 also have extensive safety protocols in place: the Twin Sisters Mountain in Washington State (the TS feedstock), which is operated by Milbank Materials, and a quarry located in Åheim, Norway operated by Sibelco (the 3021 feedstock).

Regarding public safety, fugitive dust of the finely ground olivine from fields in the deployment can be difficult to monitor, so it is mitigated by including a de-dusting or conditioning step in the process. This entails adding a small amount of moisture to effectively eliminate excessive dust generation during field deployment. Further, the fines were removed in the 3021 feedstock, which

results in a material with no significant risk of dust generation. Eion is proactive and uses preventive approaches to help keep local communities safe.

Additionally, Eion mitigates asbestos risk via rigorous feedstock characterization, including a fiber management quality control program in partnership with our suppliers. All products sent to production must pass the "non detected or below detection limit" threshold for asbestos fibers before proceeding as feed for the end product. Eion checks the loads of milled olivine upon arrival, using Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) methods per the RJ Lee group lab analysis by the method EPA/600/R-93/116.

Requirement: Providing for equal opportunities in the context of gender; providing equal pay for equal work and protecting against and appropriately responding to violence against women and girls.	**Rule** 6.4.1.1.v
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement?	
Eion is committed to a supportive and inclusive culture for women, gender minorities, and other individuals from underrepresented groups. Our core team includes racial diversity, gender diversity, and ability diversity, and we continually broaden our understanding and support for justice, equity, diversity, and inclusion. We are committed to equal employment opportunities regardless of race, color, ancestry, religion, sex, national origin, sexual orientation, age, citizenship, marital status, disability, gender identity, gender expression, protected veteran status, and any other characteristic protected under applicable state or federal laws and regulations. Eion considers these factors in engaging with all suppliers, partners, and other external stakeholders, prioritizing diversity and inclusion as a key value.	
Identify any documents or other records that you rely upon to verify compliance.	
Eion conforms to and references all relevant statutes, regulations, and legal authority, including: • The Fair Labor Standards Act • Equal Pay Act • Title VII of the Civil Rights Act of 1964 • Occupational Safety and Health Act We would also contact the proper authorities to appropriately respond to any violence against women and girls. Eion takes pride in cultivating a safe environment for any and all people (including for any gender).	

8. Environmental impact and management

Requirement: Pollution prevention, including pollutant emissions to air, water, and soil as well as noise and vibration, and generation of waste and release of hazardous materials, chemical pesticides, and fertilizers.	**Rule** 6.4.1.1.vi
Does the carbon removal activity result in the following impacts? For **each potential impact**, please provide detailed information about its extent and the current measures in place to mitigate these negative impacts.	
a. Pollutant discharges to air	
The project activity can affect air quality through dust emissions, posing health risks to workers and local communities. This includes a risk that a portion of the ore body that contains unusually high asbestos is extracted, and for this concentrated mass to be propagated through the supply chain. To significantly reduce dust generation, we added moisture (i.e., water) to the weathering material. Further, the fines were removed in the 3021 feedstock, which results in a material with no significant risk of dust generation. Eion also mitigates asbestos risk via rigorous feedstock characterization, including a fiber management quality control program in partnership with our suppliers. All products sent to production must pass the "non detected or below detection limit" threshold for asbestos fibers before proceeding as feed for the end product. Eion checks the loads of milled olivine upon arrival, using Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) methods per the RJ Lee group lab analysis by the method EPA/600/R-93/116.	
b. Pollutant discharges to water	
ERW increases downstream water alkalinity, facilitating the drawdown of atmospheric CO_2 as alkalinity is transferred to the oceans. Increased alkalinity can indirectly raise pH levels, helping to mitigate the effects of acidification in freshwater and marine systems. Significant changes in the speciation of aqueous ions are unlikely due to the buffering capacity of large water bodies unless large amounts of weathering products are transported. Using PHREEQC, a USGS-developed software for aqueous speciation, EPA models suggest that substantial shifts in ion concentrations would only occur in cases of extreme alkalinity enhancement. Further, while surveys indicate minimal Ni or Cr leaching in some contexts, particularly in welldrained soils, site-specific conditions such as proximity to residential buildings necessitate and support Eion's adherence to EPA application rate threshold guidelines to ensure safety. Numerous European surveys of groundwater have shown that concentrations of Ni and Cr are far below levels of concern, even in areas that have soils with Ni and Cr concentrations in the thousands of ppm. Additionally, Eion's own surveys of river water deriving from runoff from mountains in Washington state, with hundreds to thousands of ppm Ni in soils, had no detectable Ni in the water.	

c. Pollutant discharges to soil
The "enhancement" of rock weathering includes pulverizing specific silicates (to accelerate their weathering and carbon absorption) and applying them to agricultural soils (to replace a common soil amendment, ag lime). These activities may increase the reactivity of minerals under more rapid dissolution rates and introduce them into environments where they would not be present but for the actions of a project developer. ERW activity on agricultural lands, therefore, requires

the careful measurement and monitoring of trace elements and interactions that naturally occur in both applied minerals and the soils (with a focus on nickel and chromium due to their relatively higher potential for accumulation and toxicity at high concentrations). The mineral supply was analyzed in multiple phases. Eion randomly sampled roughly every 410 tons of the TS feedstock material and 125 tons of the 3021 material for heavy metal abundance (there were 11 TS feedstock stockpile samples and 84 stockpile samples of 3021 collected). For field applications, Eion analyzes heavy metals in every collected soil sample (pre and post application) to monitor thresholds and changes over time. Eion has, overall, a detailed research and outreach program regarding the release of heavy metals.
d. Noise
Beyond olivine's advantages in removing carbon, it is also strategically advantageous because it fits in with existing farming practices when deployed, so there is no introduction of new noise.
e. Vibration
Twinterstellar 3021 uses existing agricultural infrastructure, and our measurement techniques seamlessly integrate with standard agricultural practices, so there is no introduction of new vibrations.
f. Waste

The project uses existing agricultural infrastructure, and our measurement techniques seamlessly integrate with standard agricultural practices, so there is no introduction of new waste.
g. Release of hazardous materials
Eion carefully manages every step of the project to ensure it is safe and overall beneficial. We carefully monitor the quantities of metals in the feedstock and soil samples for every deployment: ensuring that relevant thresholds are considered in each step. Numerous steps are taken to ensure the appropriate safeguards are in place for the non-harmful practice of olivine application in an agricultural terrestrial system. Additionally, multiple studies have examined the potential for olivine applications on land to affect ecosystem health, including crop yields; no studies to date have found detrimental effects. Eion also mitigates asbestos risk via rigorous feedstock characterization including a fiber management quality control program in partnership with our suppliers. We preventively add moisture to mitigate dust generation too. Eion's overall risk mitigation strategy involves rigorous monitoring of soil and water conditions, adhering to EPA guidelines for application rates, and considering the unique properties of Ni and Cr in olivine's crystalline structure. Eion monitors the quantity of potentially toxic heavy metals in every deployment. In the improbable event that a threshold is exceeded, all operations for that specific deployment and/or field are immediately halted (e.g., if the concentration of Ni exceeds the soil or rock thresholds, Eion instigates a "kill switch" that marks the feedstock and/or fields as currently ineligible for application). Our comprehensive risk management approach aims to ensure the safe and effective implementation of ERW.
h. Chemical pesticides and fertilizers

The project activity does not require or include the application of any chemical pesticides or fertilizers. Eion is notified if any grower plans to apply any product containing Ni or Mg as part of their regular operations.

Requirement: Biodiversity conservation and sustainable management of natural resources, including avoiding or minimizing negative impacts on terrestrial and marine biodiversity and ecosystems; protecting the habitats of rare, threatened, and endangered species, including areas needed for habitat connectivity.	**Rule** 6.4.1.1.viii
Is the activity taking place in or near environmentally sensitive areas, including protected areas (e.g. nature reserve or national park), or other areas included in a conservation plan? Describe where the nearest such areas are.	
The fields in the project are located on private farms. There are parks and wildlife refuges located in the same counties as the project activity.	

Describe impacts and risks that you have identified
Nickel and chromium are naturally present in olivine and can move through the rock weathering ecosystem (while other trace heavy metals like cobalt, manganese, and zinc are present in small amounts in olivine, their concentrations make them less of a concern). These potentially toxic elements could negatively impact biodiversity and local ecosystems via multiple exposure pathways.
Describe the measures undertaken to minimize and address the impacts and the risks.
Eion carefully manages every step of the project to ensure it is safe and overall beneficial. We carefully monitor the quantities of metals in the feedstock and soil samples for every deployment: ensuring that relevant thresholds are considered in each step. Numerous steps are taken to ensure the appropriate safeguards are in place for the non-harmful practice of olivine application in an agricultural terrestrial system. Additionally, multiple studies have examined the potential for olivine applications on land to affect ecosystem health; no studies to date have found detrimental effects.

Requirement: Minimizing soil degradation and soil erosion.	**Rule 6.4.1.1.viii**
Describe impacts and risks to soil that you have identified.	
Pulverized olivine has a soil alkalizing value that is comparable to conventional ag lime, a common agricultural input that balances soil pH. This product is vital in maintaining healthy soil and agricultural productivity. The overapplication of olivine could potentially lead to soil degradation.	
Describe the measures undertaken to minimize and address the impacts and the risks.	

Eion works closely with an agronomic partner to determine the right rate of application for healthy soils and to yield agronomic benefits.

Requirement: Minimizing water consumption and stress.	**Rule 6.4.1.1.viii**
Are you located in an area impacted with water stress?	☐ Yes ☒ No
If yes, describe local conditions in terms of water stress and any risk analysis done on the impacts of the CO2 removal activity on water stress	

Click or tap here to enter text.
Describe any agreements and/or regulations relating to water sourcing.
Click or tap here to enter text.
Describe the measures undertaken to minimize water consumption.
Click or tap here to enter text.

Requirement: The CO2 Removal Supplier shall not convert **natural forests or high conservation value habitats.**	**Rule** 6.4.1.1.viii
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement?	
The project does not cause any land modification; Eion uses existing infrastructure and the project takes place on existing and established farmland. No additional land is brought into production and no natural forests or high conservation value habitats are displaced.	
Identify any documents or other records that you rely upon to verify compliance.	
Contractual agreements, proper documentation, and notices are relied upon to verify compliance.	

9. Social impact and community relations

Requirement: Avoiding or minimizing adverse impacts **to community health and safety**.	**Rule** 6.4.1.1.vii
Describe potential sources of impact, taking into account all relevant factors in the given context. Consider both routine and non-routine circumstances.	

In assessing the metal risks associated with olivine-based ERW, our focus centers on Ni and Cr due to their relatively higher potential for accumulation and toxicity at high concentrations. And the principal risk of asbestos exposure from the project activity is to extract a portion of the ore body that contains unusually high asbestos and for this concentrated mass to be propagated through the supply chain.

Overall, the project activity risks developing and exposing hazardous conditions via the following pathways: phytotoxicity, food safety, drinking water, particulate inhalation, and/or contact. Direct consumption is not considered a major concern since olivine sand is inedible.

Describe the measures undertaken to minimize and address the impacts and the risks.

Eion implements continuous monitoring protocols to track the impact of the project. This involves regular sampling and analysis of the feedstock and soil parameters to detect any deviations from baseline conditions.

We monitor the quantity of potentially toxic heavy metals in every deployment. In the improbable event that a threshold is exceeded, all operations for that specific deployment and/or field are immediately halted (e.g., if the concentration of nickel exceeds the soil or rock thresholds, Eion instigates a "kill switch" that marks the feedstock and/or fields as currently ineligible for application).

The mineral supply is analyzed in multiple phases. Eion randomly sampled roughly every 410 tons of the TS feedstock material and 125 tons of the 3021 material for heavy metal abundance (there were 11 TS feedstock stockpile samples and 84 stockpile samples of 3021 collected). For field applications, Eion analyzes heavy metals in every collected soil sample (pre and post application) to monitor thresholds and changes over time.

Numerous steps are taken to ensure the appropriate safeguards are in place for the non-harmful practice of olivine application in agricultural terrestrial systems:

- Feedstock chemistry was regularly pre-screened prior to application in the field and analyzed using a suite of methods (including the best methods for the feedstock), namely by the Na-peroxide fusion method but samples were also analyzed by lithium metaborate fusion-ICP for the major oxides, including Fe, Mg, and Si (reported as Fe2O3, MgO, and SiO2), neutron activation for Cr, and 4-acid digestion-ICP for Ni.
- Heavy metal (Cr, Ni) abundance is measured in the soil at pre-project time and regularly thereafter in post-application time steps. The heavy metal concentrations are measured using ICP-MS/ICP-OES analytical methods, which provide high precision assessment of the total accumulation of such metals.
- The feedstocks were registered with each state, thereby adhering to each state's regulation.
- Application rate was constrained by direct recommendation from agronomic partners and advisors. This aids in determining the most environmentally appropriate rate of application to yield agronomic benefits while minimizing over-application.

Eion also developed a screening protocol specifically for Cr. Eion confirms baseline soil conditions before deploying olivine to prevent any possible combination of oxidation and persistence and checks for Cr(VI) concentrations post-deployment.

Regarding asbestos, prior to olivine application, Eion mitigates asbestos risk via rigorous feedstock characterization, including a fiber management quality control program in partnership with our suppliers. All products sent to production must pass the "non detected or below detection limit" threshold for asbestos fibers before proceeding as feed for the end product. During milling and handling of the rock, all personnel are required to wear appropriate personal protective equipment (PPE), and fugitive dust collection and filtration (baghouse) equipment are standard in facilities with risk of dust exposure. Eion checks the loads of milled olivine upon arrival, using phase contrast microscopy (PCM) and transmission electron microscopy (TEM) methods by RJ Lee group for lab analysis by the method EPA/600/R-93/116; Eion has obtained asbestos safety reports (post-milling, pre-deployment).

Further, Eion includes a dedusting conditioning step that adds a small amount of moisture to effectively eliminate excessive dust generation during field deployment. The fines were also removed in the 3021 feedstock, which results in a material with no significant risk of dust generation. In addition to this, workers wear appropriate PPE and observe closed cab practices, as is standard in agricultural spreading.

Our comprehensive risk management approach aims to ensure the safe, legal, and effective implementation of ERW, while minimizing any adverse impacts to community health and safety.

Requirement: Preserves and protects **cultural heritage** and cultural and religious sites.	**Rule** 6.4.1.1.ix
Describe the impacts and the risks to cultural heritage and cultural and religious sites that you have identified.	
The project does not cause any land modification; Eion uses existing infrastructure and the project takes place on existing and established farmland. However, growers' livelihoods depend on protecting and preserving productive agricultural soils. There is a risk of degrading the fields if olivine is inappropriately applied (similar to any other sort of application of material). Growers also typically have set practices and certain comfort levels regarding how they manage their fields. It is, therefore, important for the project activity to seamlessly integrate into normal operations so not to concern or impose upon any grower.	
Describe the measures undertaken to minimize and address the impacts and the risks.	

No additional land is brought into production and no communities, or cultural or religious sites, are displaced. Eion uses existing agricultural infrastructure and our measurement techniques integrate with standard agricultural practices, ensuring that growers can use olivine in their existing operations.

Requirement: Avoiding **forced physical** and/or **economic displacement**. If avoidance is not feasible, CO2 Removal Suppliers shall minimize physical and/or economic displacement. This applies also to any access restrictions to lands, territories, or resources, and any customary rights of local right holders.	**Rule** 6.4.1.1.x
Did/does the activity result either in forced physical or economic displacement?	☐ Yes ☒ No
If yes, describe the impact to local communities and how it was assessed?	
Click or tap here to enter text.	
Provide a comprehensive description of the process that was undertaken, compensation arrangements and measures to mitigate the negative impacts.	
Click or tap here to enter text.	
Also describe in detail how you minimized forced physical or economic displacement.	
Click or tap here to enter text.	

Requirement: When the activity directly or indirectly impacts **indigenous peoples** or their livelihoods, ancestral knowledge or cultural heritage, the CO2 Removal supplier shall develop the Production Facility with free, prior, informed consent (FPIC).	**Rule** 6.4.2
Is the CO_2 removal activity taking place in an area inhabited by or claimed by indigenous people, or does it influence such an area?	☐ Yes ☒ No
If yes: does the activity directly or indirectly impact indigenous peoples or their livelihoods, ancestral knowledge or cultural heritage? How was that determined?	

Click or tap here to enter text.
If there is a direct or indirect impact:
a. Provide a description of the impact and the measures that were taken to minimize the impact.
Click or tap here to enter text.
b. Describe how and when the indigenous communities were identified and approached for the FPIC process.
Click or tap here to enter text.
c. Describe the mutually agreed process for the negotiations.
Click or tap here to enter text.
d. Describe how the indigenous communities were informed about the potential impacts of the activity on their livelihoods, ancestral knowledge, or cultural heritage.
Click or tap here to enter text.
e. Describe the outcome of the negotiations.
Click or tap here to enter text.
f. Describe how the ongoing consent process is managed to ensure that the indigenous communities continue to agree with the activity as it progresses.
Click or tap here to enter text.
g. Describe grievance mechanisms that are in place for the indigenous communities.
Click or tap here to enter text.

h. Describe how the impacts on the indigenous communities are monitored and addressed during the operation of the Production Facility.
Click or tap here to enter text.

10. Biomass sustainability

Puro methodologies require that whenever biomass feedstock is used in the carbon removal activity, it must be sourced in a sustainable manner.	
Is your carbon removal activity based on using biomass feedstock?	☐ Yes ☒ No
Describe how you ensure that it is sourced sustainably.	
Click or tap here to enter text.	

Note that additional evidence will be required to demonstrate adequate biomass sourcing as per the Puro Biomass Sourcing Criteria, where applicable.