



## TSM Verification Summary Report

### Facility Information

Name of company	Arch Resources
Name of facility	Leer Mine
Address	1200 Tygart Drive, Grafton, WV USA 26354
Country of operation	USA
Products/metals produced on site	Metallurgical Coal
Types of operations included in scope:	
Mining	<input checked="" type="checkbox"/>
Milling	<input checked="" type="checkbox"/> (preparation plant)
Smelting	<input type="checkbox"/>
Hydrometallurgical	<input type="checkbox"/>
Refining	<input type="checkbox"/>
Other ( <i>please explain</i> )	
Types of infrastructure included in scope:	
Roads	<input type="checkbox"/>
Rails	<input type="checkbox"/>
Ports	<input type="checkbox"/>
Other ( <i>please explain</i> )	

### Verifier and Verification Information

Verification firm	Rubinoff Environmental Inc.
Confirmation that all verifiers involved in the verification are accredited TSM verifiers	Yes  Dianne Rubinoff is a Verification Service Providers (VSP) certified by the Mining Association of Canada and meets the Terms of Reference for Verification Service Providers established by the Mining Association of Canada.
Date(s) of verification activities (dd/mm/yyyy – dd/mm/yyyy)	15/10/2023 – 15/12/2023
Verification period	Year ending December 2023



Summary of the verification methodology	The Verification of Leer Mine's 2023 Self-Assessments was completed by Dianne Rubinoff of Rubinoff Environmental Inc., in accordance with MAC's requirements for completing TSM Verifications.
Summary of the verification activities	<p>The activities undertaken during the verification process are summarized below:</p> <ul style="list-style-type: none"> <li>• Prior to the verification, copies of the facility's self-assessments and supporting documentation were made available and were reviewed</li> <li>• An opening meeting was held including an overview presentation made by the facility, followed by a site tour.</li> <li>• Evidence was collected through interviews with facility and corporate personnel, review of documents and some observations.</li> <li>• The information collected was assessed against the criteria set out in the performance standards protocols.</li> <li>• A representative sample of COIs were interviewed.</li> <li>• A debrief meeting was held daily and a closing meeting was held on the last day.</li> <li>• A verification report was produced.</li> </ul>
Was a site visited conducted?	Yes

## Summary of Findings

Criterion	Rating <i>C, B, A, AA or AAA (unless otherwise indicated)</i>	Examples of Evidence Consulted
<b>Biodiversity Conservation Management</b>		
1. Corporate biodiversity conservation commitment, accountability, and communications	A	The Arch Corporate ESG Commitments includes a commitment to biodiversity. The ESG Commitments is supported by the Corporate Standard for Biodiversity. The commitments in these documents are consistent with MAC Biodiversity Framework and include the application of mitigation hierarchy. Commitment has been communicated to employees through the annual refresher training, to contractors as part of the Surface Orientation, and to COI in the CAP meetings and through regulatory consultation processes. Responsibilities and resources have been assigned.



Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Examples of Evidence Consulted
2. Biodiversity conservation planning and implementation	A	Baseline data is available as part of the original permit application. Significant biodiversity aspects have been identified on the Aspects Management Plan which also includes information on biodiversity objectives and an action plan. The Biodiversity Management Plan, approved by facility-level senior management, includes information on roles and responsibilities, planning and implementation and training. The facility monitors biodiversity including bat studies and semi-annual benthic studies. The status of objectives is reported in the annual management review.
3. Biodiversity conservation reporting	A	The facility reports on its biodiversity objectives in management review and in ESG Review Team meetings. Biodiversity information is presented in the Sustainability Report, CAP meetings and on the WVDEP website.  Sustainability Report <a href="#">Arch Sustainability 2022_FINAL.pdf</a> (archrsc.com)
<b>Climate Change</b>		
1. Corporate climate change management	A	Data on Scope 1 and 2 GHG emissions are maintained. There is a corporate climate change strategy and climate-related risks and opportunities have been identified. The strategy and risks and opportunities are described in the Arch 2022 Sustainability Report.
2. Facility climate change management	A	There is an energy and GHG emissions Management System with senior management commitment with assigned roles and responsibility and management review. Sources of energy consumption and non-energy sources have also been identified, data is monitored and Corporate converts to GHG emissions.



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		Physical climate impacts (e.g., severe weather and drought are identified on the aspect list. There is a process for the management of physical climate change impacts. Awareness of climate change is communicated to all employees through the annual refresher training.
3. Facility performance targets and reporting	A	Arch has set corporate targets for GHG reductions which are performance based (i.e., project implementation) with an action plan. Progress is tracked. There is public reporting of energy and GHG emissions and the assessment of plans through the Arch Sustainability Report.  Sustainability Report <a href="#">Arch Sustainability 2022 FINAL.pdf</a> (archrsc.com)
<b>Crisis Management and Communications Planning - CORPORATE (YES or NO)</b>		
1. Crisis Management and Communications Preparedness	YES	The ESG Commitments and the Corporate Crisis Management Standard show that Arch is committed to supporting crisis management readiness. The CEO has endorsed the Corporate Crisis Management Plan, which identifies potential threats, roles and responsibilities, key contacts. A crisis room is located at the Corporate office in St Louis. The SVP Strategy is the designated spokesperson and has been trained. The company uses Everbridge alert system.
2. Review	YES	The Corporate Crisis Management Plan was updated in 2023 and will be reviewed annually. Team members have been trained.
3. Training	YES	A corporate level table-top exercise was conducted in May 2023 using an IT Ransomware scenario.



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<b>Crisis Management and Communications Planning - FACILITY (YES or NO)</b>		
1. Crisis Management and Communications Preparedness	YES	The Leer Mine Emergency Response and Crisis Management Plan identifies credible threats, roles and responsibilities of team members, as well as stakeholder and media lists. Facility meets regularly with local emergency response authorities.
2. Review	YES	The Leer Mine Emergency Response and Crisis Management Plan is a controlled document. The mechanism for activating the team and communicating with employees has been tested. The plan is shared with corporate through the SharePoint. Records indicate all crisis team members are familiarized with the plan.
3. Training	YES	A full crisis simulation (Mine Rescue MERD exercise) was conducted in October 2023.
<b>Indigenous and Community Relationships</b>		
1. Community of Interest (COI) Identification	A	Communities of Interest are identified and documented on the COI log. The confidential COI log is updated after each Community Advisory Panel.
2. Effective COI Engagement and Dialogue	A	The facility provides dinner to ensure COI can participate in the Community Advisory Panel (CAP) meetings. Reporting on engagement and dialogue takes place bi-monthly at COI Management Team Task Force. The engagement process is outlined in the Effective COI Engagement procedure. Capacity building occurs at the CAP meetings and through site tours. Information about the CAP meetings is included in the newsletter.
3. Effective Indigenous Engagement and Dialogue	A	During the permitting process, a study was conducted to determine the



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		presence of Indigenous groups in the area of the mine. The study determined that no Indigenous groups were present. The State of West Virginia does not recognize any Indigenous Groups. A study conducted in February 2021 reached the same conclusion. The Effective Indigenous Engagement procedure commitments are consistent with the TSM Mining and Indigenous Peoples MAC Framework.
4. Community Impact and Benefit Management	A	The Community Impact and Benefit Management procedure outlines the approach. Adverse impacts have been identified with the COI and objectives and action plans have been developed. The facility makes contributions to the community.
5. COI Response Mechanism	A	The COI Response Mechanism document outlines the process to receive and respond to community concerns. Phone numbers for key site contacts are provided in the CAP meetings. Records of concerns are maintained
<b>Preventing of Child and Forced Labour (Indicate YES or NO)</b>		
1. Preventing Forced Labour	YES	Arch's Human Rights Statement reads "We do not tolerate child labor or any form of forced labor or compulsory labor whether on behalf of Arch, its subsidiaries, vendors or suppliers." The Arch Code of Conduct also prohibits the use of forced or child labor.



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2. Preventing Child Labour	YES	US Federal regulation prohibits children under the age of 18 from working in a coal mine. Arch's Human Rights Statement reads "We do not tolerate child labor or any form of forced labor or compulsory labor whether on behalf of Arch, its subsidiaries, vendors or suppliers." Age is checked as part of the on-boarding process via the I-9 form and the E-Verify.
<b>Safety and Health</b>		
1. Commitments and Accountability	A	The Arch Corporate ESG Commitments includes Safety and Health commitments. The ESG Commitments is supported by the Corporate Standard for Safety and Health. The Safety and Health Policy has been signed by the CEO and Leer Mine General Manager. The commitments in these documents are consistent with MAC Safety and Health Framework. Form 2000-7 MSHA identifies the representative accountable for safety and health. The commitments are communicated to employees and contractors. Responsibilities are included in the Employee Handbook.
2. Planning and Implementation	A	A formal Safety and Health Management System is in place including objectives, risk assessments, workplace inspections, defined roles and responsibilities, maintenance of records. There is an industrial hygiene program. There are resources for the safety and health management system.
3. Training, Behaviour and Culture	A	A robust training system is in place. Training includes risk assessment tools and job observation programs. Trainees are assessed for competency and trainers are qualified. Records are maintained.



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4. Monitoring and Reporting	A	<p>Safety and health metrics are monitored and reported including leading and lagging indicators. There are daily and weekly Compliance and Safety emails. Safety information is communicated to employees, including signage in the common area. Safety and Health data is publicly reported in the Arch Sustainability Report.</p> <p>Sustainability Report  <a href="https://archrsc.com/Arch_Sustainability_2022_FINAL.pdf">Arch_Sustainability_2022_FINAL.pdf</a>            (archrsc.com)</p>
5. Performance	A	<p>Targets are set for leading and lagging indicators and performance is regularly reviewed and communicated. The facility is fatality-free.</p>
<b>Tailings Management</b>		
1. Tailings management policy and commitment	A	<p>Arch's Eastern Engineering Group conducted an internal audit using the MAC TSM requirements as its criteria. The internal audit confirmed MAC requirements were met.</p>
2. Tailings management system and emergency preparedness	A	<p>Arch's Eastern Engineering Group conducted an internal audit using the MAC TSM requirements its criteria. The internal audit determined that the MAC requirements related to assigned accountability were met.</p>
3. Assigned accountability and responsibility for tailings management	A	<p>Arch's Eastern Engineering Group conducted an internal audit using the MAC TSM requirements as its criteria.</p> <p>The internal audit determined the tailings management system has been developed and implemented and conforms with the MAC Guide, that the Emergency Response Plan has been developed and is in conformance with the MAC Guide and that the ERP is tested.</p>





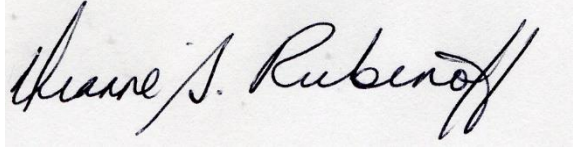
Criterion	Rating C, B, A, AA or AAA (unless otherwise indicated)	Examples of Evidence Consulted
4. Annual tailings management review	A	Arch's Eastern Engineering Group conducted an internal audit using the MAC TSM requirements its criteria. The internal audit determined an OMS Manual has been developed and is in conformance with the MAC Guideline.
5. Operation, maintenance, and surveillance	A	Arch's Eastern Engineering Group conducted an internal audit using the MAC TSM requirements as its criteria. The internal audit determined that the MAC requirements related to annual tailings management review were met.
<b>Water Stewardship</b>		
1. Water Governance	A	There is demonstrated senior management through the ESG Commitments and Corporate Water Management Standard consistent with the MAC Water Stewardship Framework. The commitment is communicated. Roles and responsibilities are defined in the corporate documents and in the Leer Water Management Plan.
2. Operational Water Management	A	The site has identified facility-level risks related to surface water and ground water. The site has a systematic approach to operational water management described in the Leer Water Management Plan. The facility has a site wide water balance that is reviewed regularly. Processes are established to monitor water performance for both surface water and groundwater. Records of water quality and quantity are maintained. Response and contingency plans have been established for water related risks and incidents (EWP, SPCC, GPP). Relevant employees and contractors have been provided with appropriate training.



<b>Criterion</b>	<b>Rating</b> <i>C, B, A, AA or AAA (unless otherwise indicated)</i>	<b>Examples of Evidence Consulted</b>
3. Watershed-scale Planning	A	Arch has identified the watershed boundary and the water related users in the Groundwater Users Inventory Map. Engagement with COI on water-related issues has taken place through the CAP. An assessment of how operational water management practices contribute to the cumulative effects has been undertaken.
4. Water Reporting and Performance	A	Leer has set water performance targets which are tracked. There is public reporting in the CAP meetings and in the Arch Sustainability Report.  <u>Sustainability Report</u> <u><a href="#">Arch Sustainability 2022 FINAL.pdf</a></u> (archrsc.com)



## Statement of Verification

Statement of Verification	
The external verification was conducted in accordance with the <i>Terms of Reference for Verifiers</i> and, accordingly, consisted primarily of interviews, data analysis, and examination (on a sample basis) of other evidence relevant to management's assertion of conformance to the requirements of the TSM performance indicators.	<input checked="" type="checkbox"/> The external verification was conducted in accordance with the <i>TSM Verifier Terms of Reference</i> .
The scores indicated in this report are verified as being accurate based on the evidence reviewed during the external verification of this facility.	<input checked="" type="checkbox"/> The scores in this report are considered accurate based on this verification.
Limitations	Leer Mine's goal for this year was to achieve Level A across all indicators and the scope of the verification was to assess criteria to Level A only. It is possible that many of the criteria for Level AA or Level AAA are in place, however the Verification did not assess these criteria.
Additional comments	Arch Resources and Leer Mine demonstrated a strong commitment to the MAC TSM program.  Personnel were well prepared for the verification process. The self-assessments were comprehensive. Excellent, professional support was received throughout the verification.
Has an additional assurance statement been provided by the verifier?	No
Name of lead verifier	Dianne Rubinoff, P.Eng.
Date of statement of verification	December 15, 2023
Signature of lead verifier	



## Appendix 1 – TSM Responsible Sourcing Alignment Supplement

*Use where applicable for verifications that incorporate other relevant standards*

Check relevant boxes	Name of Standard
	International Council on Mining and Metals Mining Principles
	World Gold Council Responsible Gold Mining Principles
	Copper Mark
	Responsible Minerals Initiative Risk Readiness Assessment
	Responsible Jewelry Council
	ResponsibleSteel
	Initiative for Responsible Mining Assurance

### Summary of Findings

Criterion	Rating YES/NO	Comments
<b>Corporate Governance and Ethical Conduct</b>		
1. Legal Compliance		
2. Code of Conduct		
3. Combating Bribery and Corruption		
4. Political Contributions		
5. Transparency of Taxes, Ownership and Transfer Pricing		
6. Accountabilities and Reporting		
7. Engagement with Corporate Communities of Interest		
<b>Integration of Sustainable Development into Corporate Strategy and Decision Making</b>		
8. Corporate Sustainable Development Strategy		
9. Supply Chain		
<b>Respect for Human Rights and Labour Rights</b>		
10. UN Guiding Principles on Business and Human Rights		
11. Conflict-Affected and High-Risk Area Due Diligence		



12. Resettlement		
13. Security and Human Rights		
14. Labour Rights		
15. Compensation for Work Related Injury, Illness & Fatality		
16. Employee Remuneration		
17. Diversity and Women in Mining		
<b>Environmental Stewardship</b>		
18. Environmental Risk Management		
19. Closure		
20. Pollution Prevention and Waste Management		
21. Noise and Vibration		
22. Emissions to Air		
23. Spills and Leakage		
24. Hazardous Substances		
25. Land Use and Deforestation		
26. Circular Economy		
<b>Economic Development, Cultural Heritage and Artisanal and Small-Scale Mining</b>		
27. Local Procurement		
28. Cultural Heritage		
29. Artisanal and Small-Scale Mining		

## Appendix 2 – Finnish Mining Association TSM Mine Closure Protocol

*Use when the facility is seeking ResponsibleSteel recognition*

Criterion	Rating C, B, A, AA or AAA	Comments
<b>Mine Closure</b>		
1. Mine Closure Policy and Operational Guidelines		
2. Mine Closure Planning and Management System		