



Towards Sustainable Mining
Vers le développement minier durable

TSM Verification Summary Report

Facility Information

Name of company	Vale
Name of facility	Sudbury Operations
Address	18 Rink Street Copper Cliff, ON P0M 1N0
Country of operation	Canada
Products/metals produced on site	Nickel powder, Nickel pellets, nickel oxide, Precious Metals residue, Nickel-cobalt carbonate, Sulphuric acid, Copper cathodes, Copper concentrate, Copper matte
Types of operations included in scope:	
Mining	<input checked="" type="checkbox"/>
Milling	<input checked="" type="checkbox"/>
Smelting	<input checked="" type="checkbox"/>
Refining	<input checked="" type="checkbox"/>
Other (<i>please explain</i>)	Acid Plant
Types of infrastructure included in scope:	
Roads	<input checked="" type="checkbox"/>
Rails	<input checked="" 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
Date(s) of verification activities (dd/mm/yyyy – dd/mm/yyyy)	30/06/2022-18/10/2022



Verification period	Year prior to Verification end date
Summary of the verification methodology	All Protocols were verified for this operation.
Summary of the verification activities	Planning: Site Visit: Opening meeting, virtual tour, interviews with corporate and site personnel, document review, interviews with COI, closing meeting; Follow-up; Reporting

Summary of Findings

Criterion	Rating <i>C, B, A, AA or AAA (unless otherwise indicated)</i>	Comments
Biodiversity Conservation Management		
1. Corporate biodiversity conservation commitment, accountability, and communications	AAA	The Vale Sustainability policy includes a commitment to biodiversity. The policy is supported by the Guidelines and Processes for Biodiversity Management and its appendix Biodiversity Management Manual which includes the application of the mitigation hierarchy. The commitments in these documents are consistent with MAC Biodiversity Framework. A draft Biodiversity Framework has been prepared. Commitment has been communicated to employees and COI. Responsibilities and resources have been assigned. An independent verification of the commitment was conducted. Vale's commitment includes a stated ambition of no net loss. Vale actively partners with other organizations and Vale personnel sit on these boards. Facility meets the requirements of Level AAA.
2. Biodiversity conservation planning and implementation	AAA	Baseline data is available. Significant biodiversity aspects have been identified. The facility monitors biodiversity. Global and site-specific biodiversity objectives exist related to reduction of impacted land. The status is reported monthly. Biodiversity is integrated with business process and budgeting. An independent



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		verification of the management system implementation was conducted. The facility has made investments in research, is contributing to greater scientific understanding and has national recognition for biodiversity conservation. Facility meets the requirements of Level AAA.
3. Biodiversity conservation reporting	AA	The facility reports on its biodiversity KPI monthly to management and to Vale corporate. This information is reported on an aggregate basis in the Vale Sustainability Report. The biodiversity data in the Sustainability Report is externally verified. Biodiversity information is also included in the Report to the Community. Sustainability Reports (vale.com) Facility meets the requirements of Level AA.
Crisis Management and Communications Planning (Indicate YES or NO)		
1. Crisis Management and Communications Preparedness	YES	The Hazard Identification Risk Assessment (HIRA) identifies Material Unwanted Events (MUE) as credible threats. Emergency Plans exist to respond. EMQnet is used to manage the crisis including roles and responsibilities. EMQnet allows remote access; and the Maple Conference Room at the North Atlantic Operations Centre (NAOC) is designated as a crisis room. Location specific documents on EMQnet include stakeholder lists and media lists. Facility meets regularly with local emergency response authorities. Facility meets all criteria for this indicator.
2. Review	YES	EMQnet acts as a document control system for crisis documents. The facility's plans are shared with corporate



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		<p>through the document management system. The notification system was tested (recently through actual crises). Records indicate all crisis team members are familiarized with the plan. Training can be through EMQnet modules, facilitated training or participation in an exercise.</p> <p>Facility meets all criteria for this indicator.</p>
3. Training	YES	<p>A tabletop drill was conducted in December 2021 for a truck accident with NACL. A full crisis events occurred with Totten Mine employees trapped underground and for 2 fatalities events. Facility meets all criteria for this indicator.</p>
Energy Use and GHG Emissions Management		
1. Energy Use and GHG Emissions Management Systems	AAA	<p>The Sustainability Policy and Climate Change Policy demonstrates senior management commitment. An Energy Use and GHG emissions management system is in place and is described in the Energy and GHG Management Program documents. Energy data is disaggregated by operation. Standard factors are used for conversions and are described in a GHG Manual for process sources and in Credit 360 for energy sources. General awareness training is provided and operations are provided with 5CP training. The Energy and GHG Management System was subject to verification as part of the VPS audit. Vale has made voluntary corporate investments through the Low Carbon program and has invested in wind projects at Voisey's Bay and in hydro-electric infrastructure in Sudbury. Facility meets the requirements of Level AAA.</p>



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2. Energy Use and GHG Emissions reporting systems	AAA	<p>Energy use and GHG are reported regularly to site management and corporate and publicly as part of Federal and Provincial GHG Reporting programs. The energy use and GHG emissions reporting system is internally verified by Vale personnel. Aggregated Vale performance against targets and Vale's corporate strategy are included in the Sustainability Report. Energy and GHG emissions are externally verified as part of the regulated GHG programs and some scope 3 emissions are included in corporate reporting. Facility meets the requirements of Level AAA</p> <p>Sustainability Reports (vale.com) <i>include link to public disclosure or reference the form of public reporting if no web link available</i></p>
3. Energy Use and GHG Emissions performance targets	AAA	<p>Vale has set corporate targets for GHG reductions (33% by 2030) and for zero-net GHG emissions by 2050. The facility set GHG targets (monthly planned). The facility met its planned targets in 2021 and 2020 and met its Smelter natural gas reduction target in 2018. Energy use and GHG emissions performance has been externally verified. The facility has some performance strategies that meet an additionality test. For example, the Roadmap shows NPV (a proxy for ROI) and has made investments in new technologies (battery electric vehicles). Facility meets the requirements of Level AAA.</p>



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Indigenous and Community Relationships		
1. Community of Interest (COI) Identification	AAA	Communities of Interest are identified and documented on the Ontario Stakeholders List. There is a documented process in place for COI identification and is described in corporate documents. The Copper Cliff Liaison Committee (CCLC) has been replaced with the Community Liaison Committee (CLC) which has a broader scope and spectrum of COI. Terms of Reference provides guidance and the CLC provides input into how the facility identifies COI. The Terms of Reference and Committee membership are annually reviewed with the CLC. The Sudbury Stakeholder map was updated in 2021. Facility meets the requirements of Level AAA.
2. Effective COI Engagement and Dialogue	AAA	The facility provides assistance to ensure COI are able to participate. Reporting on engagement and dialogue takes place at monthly leadership performance meetings. Engagement requirements are included in the formal agreements with First Nations and Metis and in the CLC Terms of Reference. The agreements were co-developed with the COI and annual reports summarize the effectiveness of the engagement. Communications are bilingual (English/French) as appropriate. Information on engagement, including feedback, is included in the Vale Sudbury Community Report. Facility meets the requirements of Level AAA.
3. Effective Indigenous Engagement and Dialogue	AAA	There is demonstrated senior management commitment to Indigenous engagement consistent with the TSM



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		<p>Frameworks as evidenced by the site engagement with the Indigenous community (e.g., CLC, IBA, Engagement Agreement and Relationship Agreement). The Terms of Reference of the CLC and these agreements outline the engagement process. All Canadian personnel have access to the Indigenous Foundations training module. The training was developed with the Indigenous communities. Specific training was given to managers and the COO. Vale Sudbury works with these groups to identify opportunities for collaboration including on mutually identified objectives (e.g., employment, procurement). On-site cultural activities occur, and community events are supported. Traditional practices are integrated into business practices. Facility meets the requirements of Level AAA.</p>
4. Community Impact and Benefit Management	A	<p>Vale's Sustainability Policy commits to being a Sustainable Operator, Local Development Catalyst and Global Sustainability Agent. Social impacts are identified and controlled through B Wise Mitigation Controls. Vale contributes to a number of organizations to benefit a broad spectrum of the community. Contributions are discussed in the CLC. Benefits are included in the agreements and include consideration of procurement and employment. These contributions are noted in the Report to the Community. Facility meets the requirements of Level A.</p>
5. COI Response Mechanism	A	<p>A Community Concerns Hotline is in place supported by a documented Response Protocol. Concerns from the</p>



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		<p>hotline are documented and followed-up and tracked. Reports are provided monthly to the Base Metals Executive Committee. COI are proactively informed on how to access the response mechanism</p> <p>Facility meets the requirements of Level A.</p>
Preventing of Child and Forced Labour (Indicate YES or NO)		
1. Preventing Forced Labour	YES	<p>Vale's Human Rights Policy states "We prohibit the use of any types of employment practice that may be construed as equivalent to forced or mandatory labor."</p> <p>Vale's Supplier Code of Conducts requires "All suppliers must prohibit and renounce the use of child labour, forced labour and slave-like labour."</p> <p>Vale meets the requirements of a Yes.</p>
2. Preventing Child Labour	YES	<p>Federal regulation prohibits children under the age of 17 from working in an underground mine. Various Provincial regulations (including Ontario, Manitoba and Newfoundland & Labrador) prohibit children under the age of 18 from working in an underground mine. Vale's Human Rights Policy states "We prohibit the use of child labor..." Vale's Supplier Code of Conducts requires "All suppliers must prohibit and renounce the use of child labour, forced labour and slave-like labour."</p> <p>Vale meets the requirements of a Yes.</p>
Safety and Health		
1. Commitments and Accountability	AA	<p>The Sustainability Policy defines the policy commitments. The Policy has been communicated to employees and contractors. A senior management representative is accountable for safety</p>



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		and health. An internal VPS audit was conducted by Vale in 2021. Facility meets the requirements of Level AA.
2. Planning and Implementation	AA	A formal Safety and Health Management System is in place including objectives, risk assessments, critical control verification, workplace inspections, defined roles and responsibilities, maintenance of records. The industrial hygiene program is overseen by a qualified hygienist. An internal Vale Performance System (VPS) audit was conducted by in 2021. Critical controls have been identified and verified. Facility meets the requirements of Level AA.
3. Training, Behaviour and Culture	AAA	A robust training system is in place. Senior leadership demonstrates a commitment and a safety-based culture is encouraged. Trainees are assessed for competency and trainers are qualified and evaluated for effectiveness annually. The facility promotes health and wellness with programs to support work mental health. The commitment to safety and health is visibly embedded and management demonstrated the commitment through one-on-one interactions. Facility meets the requirements of Level AAA.
4. Monitoring and Reporting	AA	Safety and health metrics are monitored and reported including leading and lagging indicators. Leadership reviews performance weekly. Safety information is communicated to employees through town halls. Safety and Health data is publicly reported in the Vale



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		Sustainability Report. An internal VPS audit was conducted in 2021. Sustainability Reports (vale.com) Facility meets all requirements of Level AA.
5. Performance	AA	Targets are set for leading and lagging indicators and performance is regularly reviewed and communicated. The facility had a fatality in February 2021. Facility benchmarks its performance against its peers. Facility has not met its targets in at least 3 of the last 4 years. Facility meets all requirements of Level AA.
Tailings Management		
1. Tailings management policy and commitment	A	The Dam Safety Group conducted an internal audit using the MAC TSM requirements as its criteria. The internal audit confirmed MAC requirements were met. The commitment (i.e., Policy for Dam Safety and Geotechnical Mining Structures) is communicated to all Canadian employees, with employees, contractors and consultants understanding the policy to a degree appropriate to their roles and there is budget allocation. Facility meets the requirements of Level A.
2. Tailings management system and emergency preparedness	A	The Dam Safety Group conducted an internal audit using the MAC TSM requirements as its criteria. The internal audit determined the tailings management system has been developed and implemented and conforms with the MAC Guide. The Emergency Response Plan has been



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		developed and is in general conformance with the MAC Guide. The ERP is tested. Facility meets the requirements of Level A.
3. Assigned accountability and responsibility for tailings management	A	The Dam Safety Group conducted an internal audit using the MAC TSM requirements its criteria. The internal audit determined the MAC requirements were met. Facility meets the requirements of Level A.
4. Annual tailings management review	A	The Dam Safety Group conducted an internal audit using the MAC TSM requirements its criteria. The internal audit determined the MAC requirements were met. Facility meets all requirements of Level A.
5. Operation, maintenance, and surveillance	A	The Dam Safety Group conducted an internal audit using the MAC TSM requirements as its criteria. The internal audit determined an OMS Manual has been developed and is in conformance with the MAC Guideline. Facility meets all requirements of Level A.



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Water Stewardship		
1. Water Governance	A	<p>There is demonstrated senior management through the Sustainability Policy and the Water and Water Resources Policy consistent with the MAC Water Stewardship Framework. The commitment is communicated through Tool Talks. Roles and responsibilities are defined in the Management of Water Resources document.</p> <p>Facility meets the requirements of Level A.</p>
2. Operational Water Management	A	<p>The site has identified facility-level risks related to surface water and ground water. Processes are established to monitor water performance for both surface water and groundwater. Records of water quality and quantity are maintained.</p> <p>The site has a systematic approach to operational water management described in the Water Quality 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 (ERP, SPCP). Relevant employees and contractors have been provided with appropriate training (peer-to-peer training on discharge, review of ERP in safety meetings, Class III operators for potable water).</p> <p>Facility meets the requirements of Level A.</p>

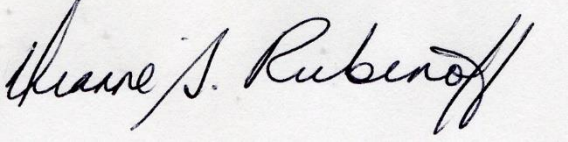


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3. Watershed-scale Planning	AAA	<p>Vale has identified watersheds in the Water Quality Management Plan and in the Spanish and Vermillion Rivers Water Management Plan (SVRWMP). Relevant COI have been identified. Responsibility of water-shed planning is documented in the Management Plans.</p> <p>Engagement with Sagamok FN, Atikmeshing FN happen on a regular basis as outlined in agreements and in the permitting process. Vale participates in watershed governance groups (SVRWMP, Junction Creek). The Environmental Effects Monitoring Studies allow the facility to assess its contribution to cumulative effects in the watersheds.</p> <p>Vale has engaged with various inter-ministerial agencies to set priorities in the SVRWMP. Vale communicates with relevant COI through FN agreement committees and through open houses. The SVR activities are beyond the control of the facility.</p> <p>The SVRWMP involves collaborative monitoring with Domtar, Conservation Sudbury and government agencies. Facility meets the requirements of Level AAA.</p>
4. Water Reporting and Performance	AA	<p>Vale's water performance target is documented on the Vale website. Progress is reported in the monthly HSER meeting. Public reporting of performance against target is included in the Vale Sustainability report. The data in the Sustainability report was independently verified. The Sudbury target was not met in the reporting year; however, study work is ongoing to identify opportunities. Site level MDMER results are published.</p>



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		Sustainability Reports (vale.com) Facility meets the requirements of Level AA.

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	Even though the information provided by the company was thoroughly reviewed, Rubinoff Environmental Inc. was required to rely on this information without being able to independently verify its accuracy.
Additional comments	
Name of lead verifier	Dianne Rubinoff, P.Eng.
Date of statement of verification	14/12/2022
Signature of lead verifier	



1. Verification Evidence

This section presents a summary of the key evidence used to verify the self-assessed levels.

1.1 Biodiversity Conservation Management

Key Personnel Interviewed:

- Vale Sudbury Advisor Environment
- Vale Sudbury Project Engineer
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy
- PNR-000029 Guidelines and Processes for Biodiversity Management
- PNR-000029 Guidelines and Processes for Biodiversity Management - Appendix 1 - Biodiversity Management Manual
- Draft Vale Biodiversity Framework
- Internal Verification/Review of TSM Performance, by G. Remington, August 2022
- Green Tool Box – Biodiversity – The Birds and the Bees (Oct 2021)
- Green Tool Box – Biodiversity – Seedlings and Pollinators (May 2022)
- CTV Report Oct 2021 Vale resumes annual reseedling program, this time near Wahnapiatae – Article and video
- VETAC Annual Report 2021
- Cooperative Freshwater Ecology Unit (Laurentian) PDD Funding Approval
- Environmental Department Budget (including revegetation projects)
- Canadian Land Reclamation Association website (Quentin Smith Director)
- Junction Creek Stewardship Committee (Allison Merla President)
- Dr. Nkongolo (Laurentian) Study on Monitoring Land Reclamation and Ecosystem Sustainability
- Nickel Refinery and EW Environmental Aspect Impacts Map
- Nairn Falls GS Replacement Supporting Environmental Studies Ecological Resource and Habitat Characterization – Kilgour – April 2019
- Bank Swallow Mitigation Plan – Garson Sand Pile
- June 16, 2021 Bank Swallow Monitoring Data Sheet
- Species at Risk Survey 2021 Creighton Mine – Golder
- Aquatic Survey Meatbird Lake – Golder – Dec 2021
- Butternut Health Assessment – Golder – Nov 2022
- Technical Memo: Nest Sweeps and Butternut Survey – Garson Mine Sept 2020
- Stakeholder Summary document
- Preliminary Risk Analysis and Aspects Assessment
- Nairn Falls Generating Station (NFGS) Project Preliminary Risk Analysis and Aspect Assessment
- Biodiversity Training for Exploration Group (Permit Intro for Exploration
- NEO Environmental Training Section 3 Biodiversity and Species at Risk
- Operations budget Environment Soil and Water
- Aerial seeding and liming invoice
- Invoice for Tree Planting



- NFGS Indigenous Community Consultation Log
- AAFN-Vale Environmental Technical Subcommittee Minutes Feb 2022
- Env KPI-North Atlantic August 2022 and YTD with RAD (Recovery of Degraded Areas) KPI
- Sudbury VETAC Biodiversity Action Plan 2018
- VETAC 5-Year Operating Plan 2021-2025
- Vale Letter of Support L-Care proposal
- Environmental Manual for Projects MA-G-650E and SHE Checklist
- C006536 Environmental Project Checklist Whissel Dam Seepage Detailed Design and Execution
- NAV-TP-0144 Environmental Project Checklist_No. 6 Bridge - Onaping River
- L-Care (Landscape Carbon Accumulation Through Reductions in Emissions CFWU (Laurentian)
- MAC TSM Environmental Excellence Award 2018 – Biodiversity
- HSER Performance Meeting Dashboard Dec 2021
- SPE Project Manual
- Vale Sustainability Report 2021 and ESG Data Book
- Report to the Community' Sudbury Operations Update 2020-2021

1.2 Crisis Management and Communications Planning

Key Personnel Interviewed:

- Vale Sudbury Lead Emergency Response and Mine Rescue
- Vale Disaster Management Specialist for Base Metals
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- PNR-000033-HIRA for Material Unwanted Events (MUEs)
- HIRA – Loss of Containment Natural Gas from Piping Distribution System (including bow-tie analysis)
- Ontario Division Material Unwanted Events Overview
- CCNR Emergency Preparedness Manual
- EMQnet
- Base Metals Severity Matrix EMQnet
- Ontario Crisis Management Team (EMT Team) membership
- EMQnet Profile Packs
- EMQnet contact documents (Location Specific Documents)
- Job Description Specialist, Corporate & Indigenous Affairs, Ontario Operations
- NAOC Maple Room
- Sudbury Stakeholder Map
- GSEMAP quarterly drill (Sandstorm April 2022)
- Ontario Crisis Management Team training records
- Team Status Report
- EMQnet reports for Tabletop Exercise Dec 2021 – Collision with Haulage Truck and Truck Carrying NACN
- EMQnet reports for Totten Mine Actual Event Sep 2021- Employees Trapped Underground



1.3 Energy Use and GHG Emissions Management

Key Personnel Interviewed:

- Vale Energy Management Lead North Atlantic
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy (with healthy, safe work environment and to zero harm)
- POL-002-G Climate Change Policy
- GHG Manual
- Vale Copper Cliff Smelter GHG Emissions spreadsheet (including non-energy sources)
- Vale Copper Cliff Nickel Refinery GHG Emissions spreadsheet
- EnMP 1-1 Energy GHG Management Plan 2016
- EnMP 5-2-25 5CP DR Contacts
- 5CP Overview Presentation
- Sample 5CP Forecast, Alert and Performance emails
- 5CP Forecast and Alert emails for August 25-26, 2021
- Natural Gas 101 presentation
- Energy Management North Atlantic presentation
- Energy Efficiency Program 2020 Summary presentation
- TV monitors at the plant – sustainability including energy/GHG video
- MIRO Board
- Our New Pact with Society: Creating a cleaner, greener, brighter future video
- EnMP 5-2-8
- Performance Management Dashboard
- VPS Audit Element 14
- Battery Energy Storage System (BESS) Project
- Credit360
- 2021-12 Sustainability Performance presentation
- 2018 Copper Cliff Smelter Natural Gas Consumption
- 2020 and 2021 North Atlantic GHG Performance
- NPRI/GHG data on Greenhouse Gas Reporting Program (GHGRP) website
- NA GHG Variance Analysis by Location
- 2020 NA Roadmap Workshop
- 2021 GHG Verification Report by RWDI
- Vale Sustainability Report
- Vale ESG Databook
- Vale Community Report: Sudbury Operations Update 2020-2021



1.4 Indigenous and Community Relationships

Key Personnel Interviewed:

- Vale Sudbury Specialist Corporate and Indigenous Affairs
- Vale Sustainability and Government Relations Specialist
- COI Representative Environmental Coordinator, Atikameksheng Anishnawbek First Nation
- COI Representative Director of Resource Development, Atikameksheng Anishnawbek First Nation
- COI Representative Mineral Development Advisor, Atikameksheng Anishnawbek First Nation
- COI Representative Community Liaison Committee and Copper Cliff Community Action Network

Documents Reviewed:

- PNR 79 Vale's Social Performance
- PNR 65 Listening and Response Mechanism
- PNR 70 Health, Safety, Environment, Community and Operational Event Management
- Vale SDI (Stakeholders Demands and Issues) System
- Ontario Stakeholders – July 2022
- Sudbury Stakeholder Map
- Ontario Ministry of Mines Consultation Framework
- Sections of Sagamok Anishnawbek First Nation Totten Mine IBA
- Sections of Wahnapiatae First Nation Engagement Agreement
- Sections of Atikameksheng Anishnawbek First Nation Relationship Agreement \
- Sections of Metis Nation Ontario Region 5 Engagement Agreement
- Community Liaison Committee Terms of Reference
- Copper Cliff Liaison Committee Sept 2021 minutes
- SDI Monitoring presentation – Aug 2022
- Performance Meeting Base Metals Sustainability July 2022 (presented to Exec Committee)
- Stakeholder Community Relations 2022 Focus Areas
- Bilingual (English/French) Emergency Response ACT postcard
- CLC July 4, 2022 minutes email (sent July 15 2022)
- Indigenous Foundations training module
- Sudbury Operations 2020-2021 Community Engagement Report
- Feedback postcard
- Cultural Competency Training Sept 2021 (in person to 50 managers)
- Overview of Indigenous Affairs in Ontario Operations for one-on-one training for new COO
- Indigenous Peoples and Traditional Community section of Vale website
- Sudbury Operations Indigenous and Community Agreement Summary
- Mining Project CCM Pit Indigenous Consultation Log
- Community Procurement Program Sudbury
- Sagamok IBA minutes 2022 03 10
- CAPRE Project 2022 Induction training (showing culturally sensitive site)
- Indigenous Foundations Training Stakeholder Feedback
- AAFN and Vale Relationship Agreement Annual Report 2021



- Sagamok IBA Annual Report 2021
- Residential School Memorial Garden (at NAOC) June 2022 Invitation
- Vale News – promoting community pow wow
- Vale News – highlighting Indigenous employees
- Indigenous Heritage Month Wrap Up showing average score on quiz
- June 2020 Vale sponsorship of National Indigenous Peoples Day pow wow
- Vale News – Project Starts with Ceremony and Feast (Dec 8/21)
- Sustainability Policy Poster
- B Wise Mitigation Controls for Sustainability Risks
- Job Description for Specialist Corporate and Indigenous Affairs
- Material Unwanted Events for Environment
- Community Investment 2023 Plan (3 pillars – Greener Future, Good Health, Resilient Livelihoods and Communities)
- Presentation on R-Area Tailings Jan 2022
- VPS Internal Assessment – Relationships with Local Communities
- Near Surface Mining Project Stakeholder Engagement and Communications Plan Aug 2021
- Indigenous Relations Action Plan – Sudbury Priorities 2022
- Contribution to Supervised Consumption Site – July 2022 news release
- Social Progress Program (now Community Procurement Program) Summary of Indigenous Community Engagement Sessions
- CCLC May 2021 Blast Impact Monitoring
- AAFN HR Subcommittee minutes 2022.06.02
- Community Concerns Line Response Protocol
- SDI database for community concerns (e.g., Interaction 81252 re: Oxygen Plan Noise, 8/9/22)
- Letter to Agnew Lake Residents and Cottagers – Aug 2022

1.5 Prevention of Child and Forced Labour

Key Personnel Interviewed:

- Vale HR Manager NA
- Vale PMO Analyst for HR Team
- Vale Analyst Talent Acquisition
- Vale Procurement Manager
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- Human Rights Policy
- Human Rights Guide
- Supplier Code of Ethics and Conduct
- General Service Agreement (Section 15)
- Terms and Conditions
- Vendor Registration requiring Vendors to accept Supplier Code of Ethics



1.6 Safety and Health

Key Personnel Interviewed:

- Vale Sudbury Manager Safety, Health and Risk – Processing Plants
- Vale Sudbury Health, Safety and Risk Partner – Nickel Refinery
- Vale Sudbury Safety - Smelter
- Vale Sudbury Health, Safety and Risk Partner – Garson Mine
- Vale Sudbury Learning & Development Superintendent
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy (with healthy, safe work environment and to zero harm)
- Sustainability Policy posted throughout operations
- Vale Production System (VPS)
- Signage throughout the facility regarding VPS, SafeHome and other safety message
- Job Description Manager Safety and Health, Ontario Operations (Surface & UG)
- SHEEC Statement of Purpose and monthly meeting topics
- New Employee Orientation Training Itinerary
- New Employee S&H Orientation
- Supervisor Induction Program – Surface Plant Maintenance Supervisor, Surface Plant Production Supervisor, Surface Plant General
- Site Orientation for Contractor
- Contractor Agreement
- Vale Education System (VES)
- Base Metals Organizational Chart for S&H in Teams
- HSR Org Chart
- VPS Formal Assessment Report for CCNR
- SAP-IM for incident investigation and reporting
- HIRA Final Reports for CCNR, Clarabelle Mill, Copper Cliff Smelter, Coleman Mine, Creighton Mine, Garson Mine, Copper Cliff Mine, Totten Mine, Transportation
- CCNR HIRA – Bowtie for Loss of Containment of CO and Carbonyl Gas
- Critical Control Dashboard for Clarabelle Mill
- Critical Control One-Pagers
- Risk Register
- OO-SHEMS-E01-P Roles, Responsibilities, Accountabilities & Authorities
- Safety Supervisor Job Description
- 2022 North Atlantic Operations Goals
- OO-OHP-P01 Occupational Hygiene Program
- OH-OEMP-P-01 Quantitative Occupational Exposure Monitoring Program
- OO-OH-HCP-P-01 Hearing Conservation Program
- OH-DSP-P-01 Designated Substance Program
- Dashboard OEMP Summary for Copper Cliff Mine
- 2022 Annual Plan Samples by SEG and Agent
- 2022 Annual Sampling Plan Summary
- Exposure Profile Summary 2022
- Occupational Health JHSC Report – Smelter & Filter Plant 5/2022
- Smelter OH JHSC Minutes – May 2022



- SLAM – Totten Mine LOTO
- Job Hazard Analysis – Totten Mine – Steps to safely complete 3238 OP CMS Scan from 3250L
- Job Hazard Analysis - Mobile - replacement of hoist cylinder on Epiroc ST1030 Scoop
- PNR 0070 Health, Safety, Environment, Community and Operational Events Management and associated Annexes
- Furnace Risk Register
- JHSC Inspection – Nov 2021 – Area 19 M-J-K Floors Flash Furnaces
- Smelter JHSC Calendar 2022
- CCNR-EW March 202 OHSE Inspection Clydach Pit
- CRM/Bwise for Critical Control Verification
- VESCAT Training Needs
- Vale Education System (VES)
- Instructor Training Syllabus-Mines Learning and Development
- Training records for PB (Trainer)
- U/G Bolter MTCU Modules/McLean 928 Automatic Bolter Training Qualification Form
- Equipment Training Syllabus Bolter – DM Sept 2021
- Fall Protection Instructor-Lead presentation and TQF
- Fall Protection – Training Qualification Form for GG Oct 2018
- Fall Protection – Training Qualification Form for PL Nov 2021
- Job Observation Informal May 2022 Electrowinning (review safe work permit)
- Job Observation Informal May 2022 Electrowinning (review mobile platform)
- Job Observation Formal May 202 IPC (review SAR and SCBA)
- Performance Appraisal 2021
- L&D Supervisor’s Audit of Classroom Training Session – PL March 2022
- L&D Supervisor’s Audit of Classroom Training Session – AN May 2022
- AIP for CRM and N2s
- Key Changes – 2022 AIP Cycle
- AIP North Atlantic Update May 2022
- Leadership in the Field (LIF) Dashboard
- NA Weekly Performance Meeting May 30, 2022 with review of KPIs
- Q1 2022 CCNR Town Hall Presentation
- Mobile Equipment Critical Control verifications
- Vale Sustainability Report
- Vale ESG Data Book
- Vale Community Report: Sudbury Operations Update 2020-2021

1.7 Tailings Management

Key Personnel Interviewed:

- Vale Manager Tailings and Dams North Atlantic
- Vale Senior Specialist Geotech Governance
- Vale Sudbury Responsible Tailings Facility Engineer
- Vale Manager Dams – Vale Base Metals
- Vale Senior Governance Specialist in Dams
- Vale Sustainability and Government Relations Specialist



Documents Reviewed:

- POL-0037-G Policy for Dam Safety and Geotechnical Mining Structures
- Tailings and Dams Management System PNR-000096 and associated references (e.g., PNR-0097 Monitoring Performance Evaluation of Tailings Storage Facilities)
- Sustainability Communication (July 26, 2022) re: Policy for Dam Safety and Geotechnical Mining Structures
- Internal Audit Report – Copper Cliff Central Tailings Area Facility and completed Table of Conformance – August 2022
- Internal Audit Report – Inactive Sites and completed Tables of Conformance – August 2022
- TSM Indicator Numbers spreadsheet
- BGG (Basic Geotechnical Guidelines) Indicator and TSM-GISTM Requirements Alignment spreadsheet
- BGG CCCT 2022 May Dashboard and Specific Area Assessment
- BGG Inactives 2022 May Dashboard and Specific Area Assessment
- 2021 CTA Table of Conformance
- 2022 Inactive Dams Table of Conformance
- Tailings Action Register All Sites
- Dams Monthly Summary (downgrades, upgrades, red flag explanations, milestones, relevant actions in progress)
- BMNA DMS Roles and Responsibilities (PSG-04524)
- Vale Base Metals NA Tailings Dam Presentation March 2022
- OMS Manual Table of Contents

1.8 Water Stewardship

Key Personnel Interviewed:

- Vale Sudbury Superintendent Environment
- Vale Sudbury Advisor Environment
- Vale Sudbury Advisor Environment
- Vale Sudbury Operating Superintendent for Water Plants
- Vale Sudbury Senior Environmental Analyst
- Vale Sustainability and Government Relations Specialist

Documents Reviewed:

- POL-0019-G Sustainability Policy
- POL-0032-G Water and Water Resources Policy
- PNR-0035 Management of Water Resources and Effluents
- SAP-EC for PTTW and ECA records
- SAP-NC for incident management
- A3 (water stewardship goals) for L. Kelly, Head of Environmental Affairs
- A3 (water stewardship goals) for P. James, Head Health, Safety, Environment and Risk
- 2021-04 Water Conservation Tool Talk – Overview and weekly talks
- Life of Operations Plan
- Superintendent Environment Job Description



- Process Superintendent Job Description
- Copper Cliff Liaison Committee
- Junction Creek Liaison Committee
- FN Agreements
- Aspects and Impacts Register
- Draft Surface Water Sampling procedure
- 2022 Water Sampling Calendar
- Water Quality Monitoring Plan (WQMP)
- Water Process flow sheets (data for Garson Mine)
- Garson Mine Wastewater Treatment System Emergency Response Plan
- Spill Prevention and Control Plan for Garson Mine
- Natural Input Estimate
- Water Management Minutes
- Central Area Water Management System
- G6 Project to ensure capacity at Nolan WTP Slag East
- Risk – Bowtie for Loss of Containment for HFS Unloading
- Risk – Bowtie for Loss of Containment for HCl2
- Release of Off-Spec one-pager
- SUD-CCWTP-14 Critical Controls Preventative and Mitigative
- 2022 Field Verification of Critical Controls (pH probe)
- 2020 Garson Groundwater data
- Closure Plan – Copper Cliff North Mine
- CAWMS Studies
- Operating Reporting Portal
- 2021-Q1 Effluent Monitoring Report
- PTTW report
- Junction Creek Stewardship Committee minutes May 2022
- 70% FEL-1 Study
- Froid-Stobey Watershed Map
- Spanish and Vermillion Rivers Watershed Management Plan (SVRWMP)
- EEM – Totten Mine – Feb 2022 – Kilgour
- Inter-ministerial Meeting Nov 2021 presentation
- Open House presentation boards
- SVR Stewardship presentation – Dec 2021
- Meeting with Agnew Lake residents March 10, 2022
- Aquatic Environmental Assessment – Whistle Mine Site – June 2019
- Vale.com for targets
- HSER performance meeting
- 2021 Sustainability Report
- 2021 ESG Data Book
- Review of Vale Sudbury Fresh Water Consumption Scoping Study
- Status Report on the Performance of Mines Subject to MDMER in 2018