

Tier 3: Transportation Orientation

1. L&D_Orientation_PowerPointDesign_T3_Transportation

1.1 *Transportation*

Transportation Department Orientation

Tier Three – Site Specific Access

Click on the arrow to continue

1.2 Course Objectives

Course Objectives

Upon completion of this module as a worker you will be able to:

- Follow Plant Entry Procedure
- Identify Site Specific Hazards and Controls for the Transportation Department.

- Follow Procedures in the event of:
 - Equipment Damage
 - Personal Injury
 - Process Upset (Emergency Preparedness)
- Complete Plant Exit Procedure Checklist



2. Transportation Department Overview

2.1 Overview



2.2 Overview

Overview

The Transportation Department's primary function is to service other plants by transporting bulk materials by rail or by road.

Our rail sector transports liquid sulfur products, waste molten slag, mineral concentrates, and ore from the mines to the Clarabelle Mill, among other products.



2.3 Overview

Overview

The Transportation Department has two parts to this function:

- Operations of loading, shipping and sorting products
- Maintenance of rail equipment and track system



2.4 Overview

Overview

Ore and Concentrates

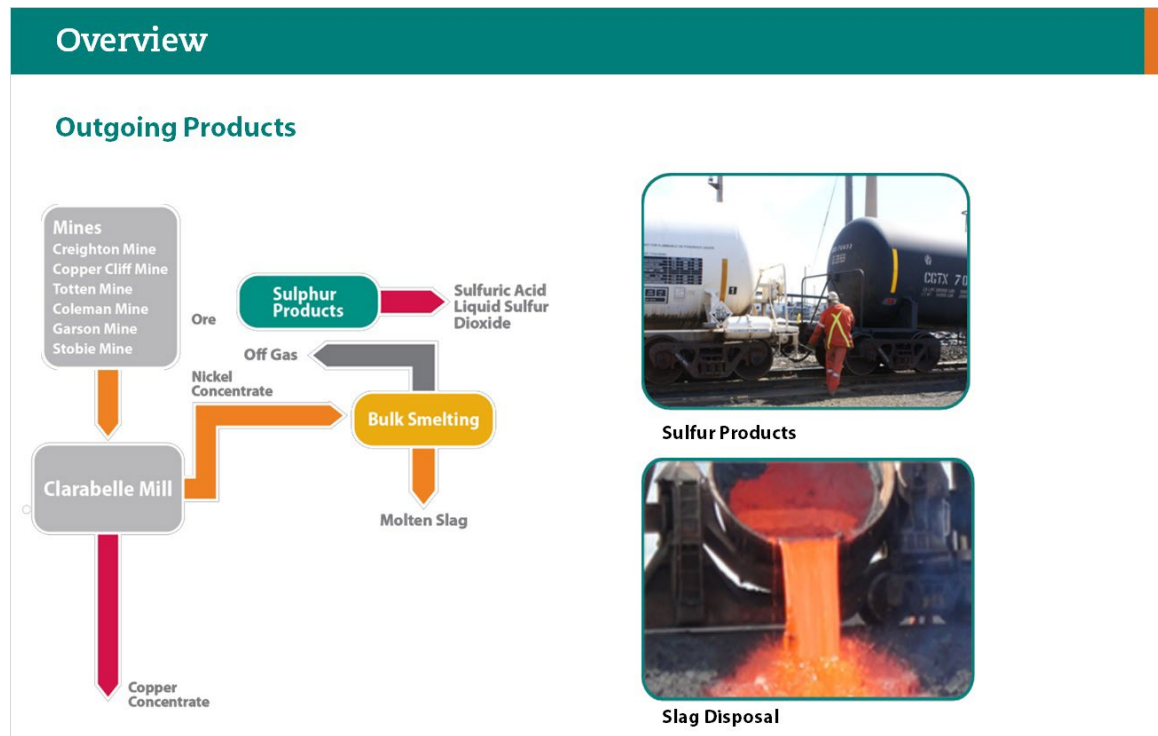
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graph TD; Mines["Mines  
Creighton Mine  
Copper Cliff Mine  
Totten Mine  
Coleman Mine  
Garson Mine  
Stobie Mine"] -- Ore --> ClarabelleMill["Clarabelle Mill"]; ClarabelleMill -- Nickel Concentrate --> NickelConcentrate["Nickel Concentrate"]; ClarabelleMill -- Copper Concentrate --> CopperConcentrate["Copper Concentrate"];
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The diagram illustrates the flow of materials from various mines to the Clarabelle Mill. The mines listed are Creighton Mine, Copper Cliff Mine, Totten Mine, Coleman Mine, Garson Mine, and Stobie Mine. Ore from these mines is transported to the Clarabelle Mill. From the mill, Nickel Concentrate is produced and transported to the right, while Copper Concentrate is produced and transported downwards.

Concentrate Offloading Facility

Loading Ore at Creighton Mine

2.5 Overview



2.6 Overview

Overview

Outgoing Products

Transportation of products and materials at Vale affects the efficiency of the business.

Many plants rely on Transportation's services in order to maintain production and not to disrupt it.



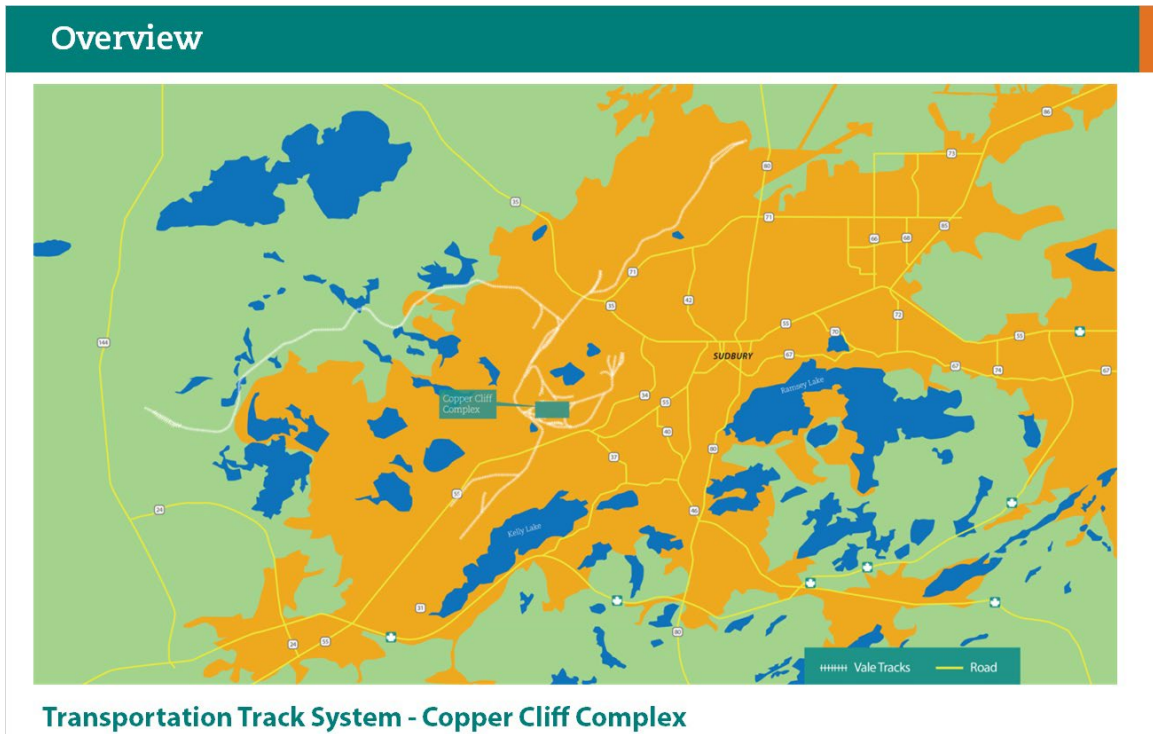
2.7 Track System Maps

Overview

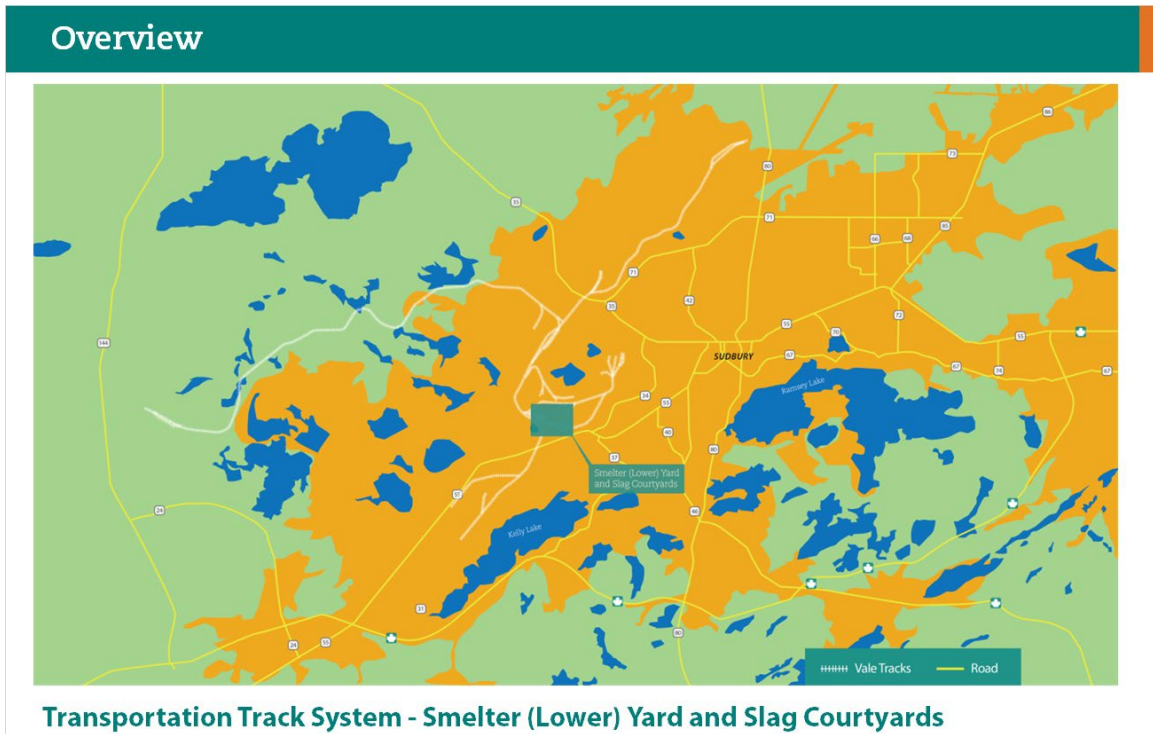
The following slides depict the main areas of rail operation of the Transportation Department.



2.8 Copper Cliff Complex



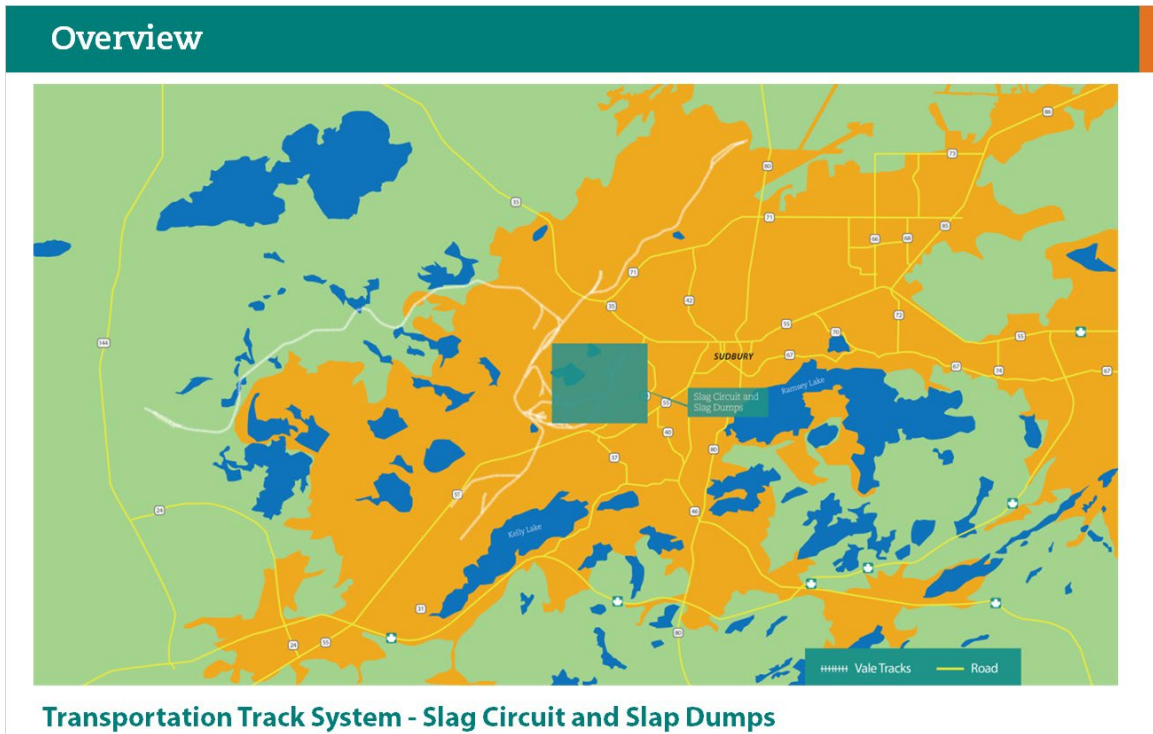
2.9 Smelter (Lower) Yard and Slag Courtyards



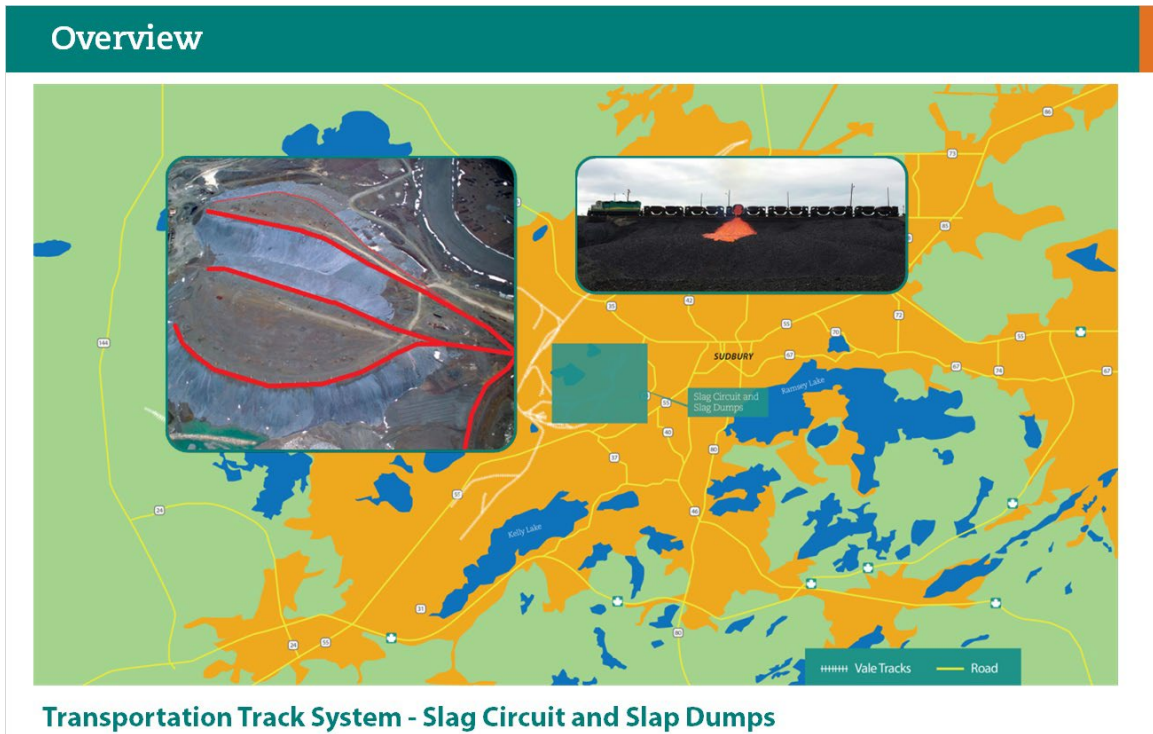
2.10 Smelter (Lower) Yard and Slag Courtyards



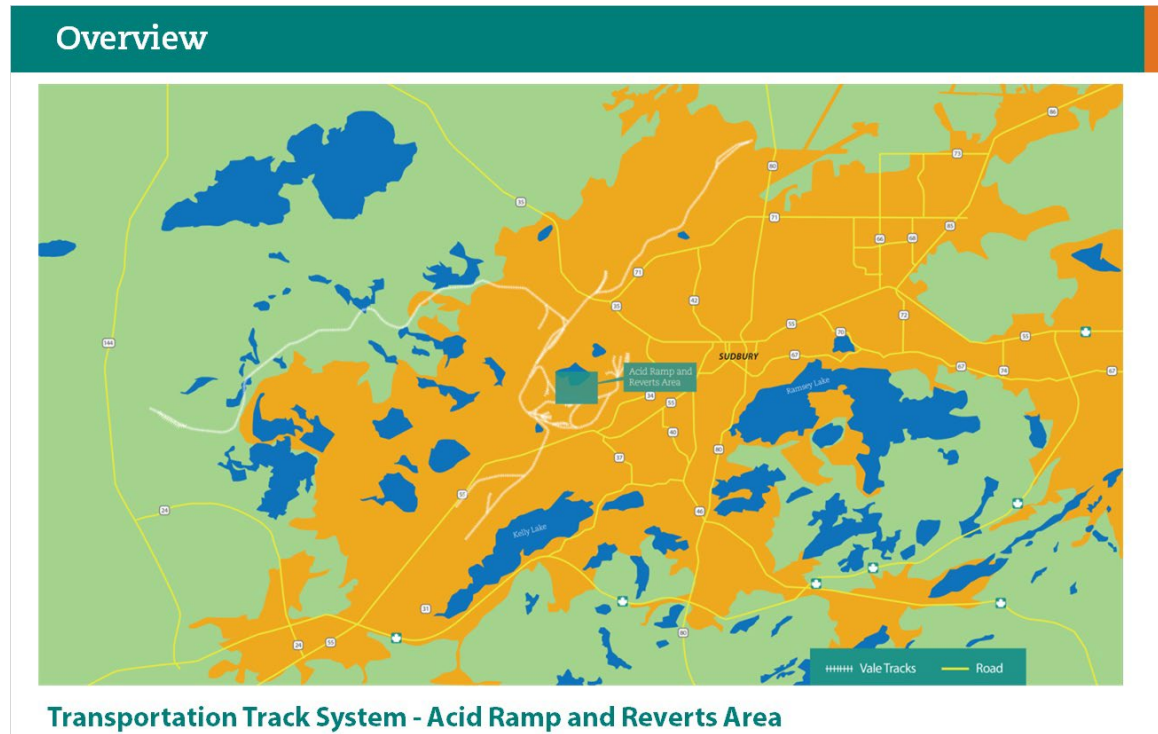
2.11 Slag Circuit and Slap Dumps



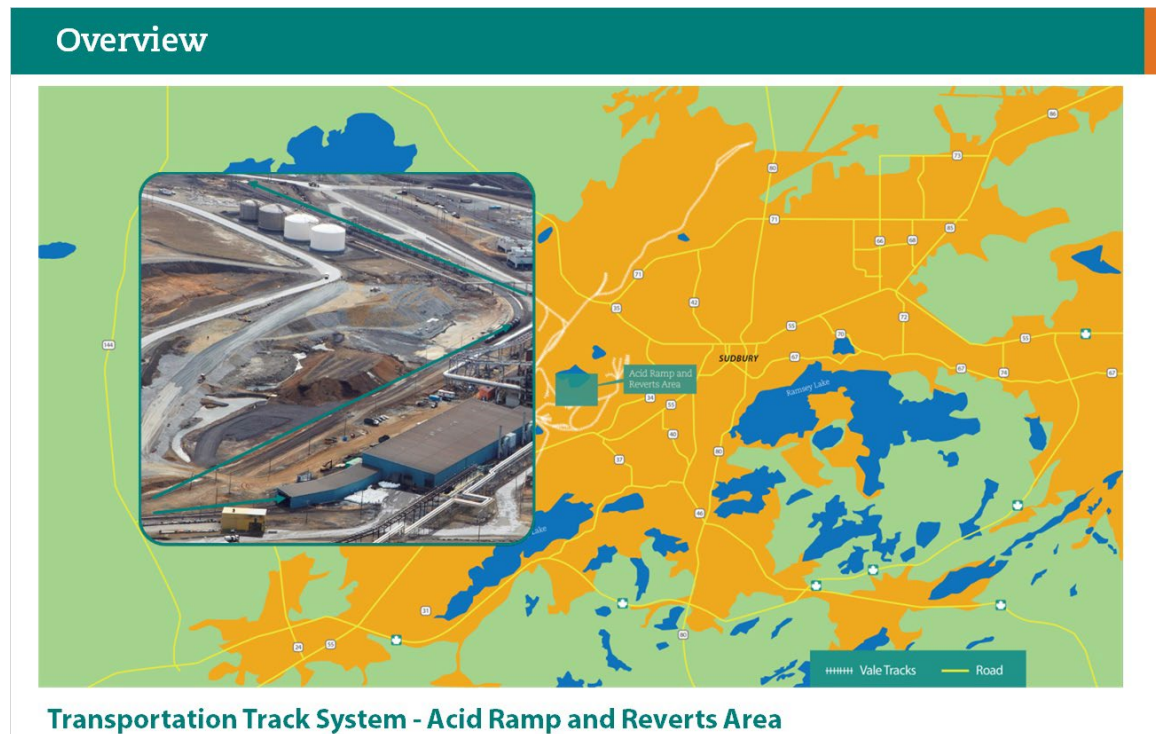
2.12 Slag Circuit and Slap Dumps



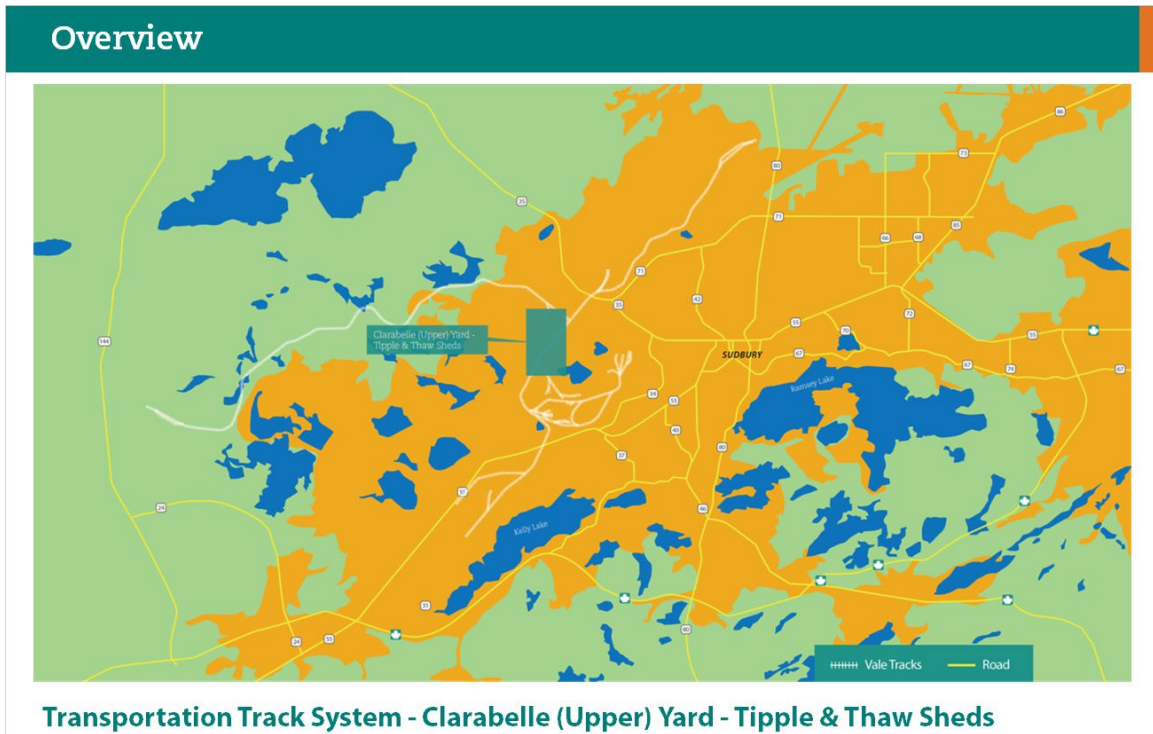
2.13 Acid Ramp and Reverts Area



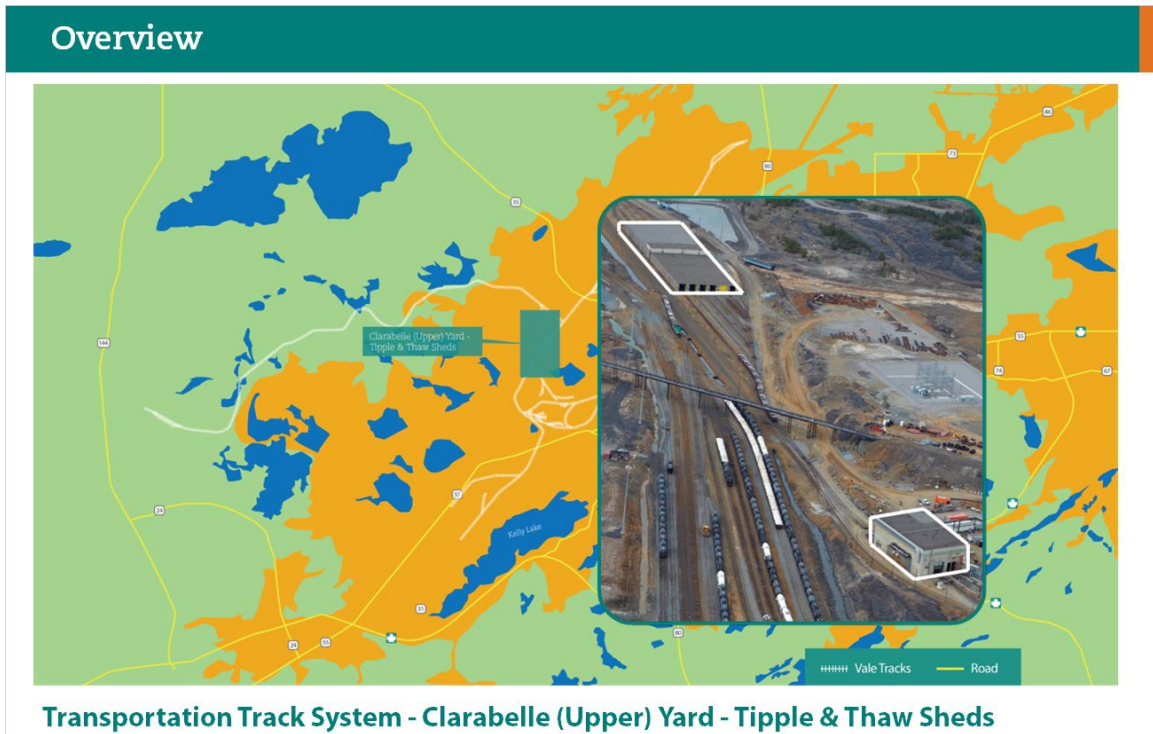
2.14 Acid Ramp and Reverts Area



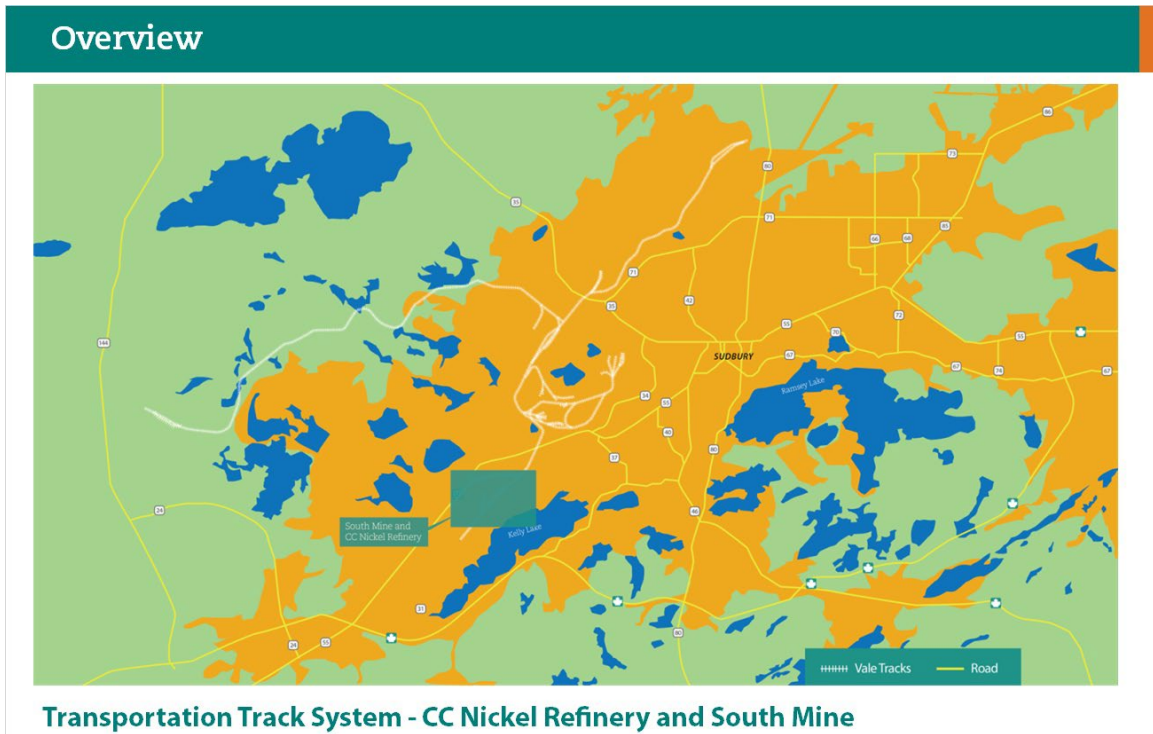
2.15 Clarabelle (Upper) Yard - Tipple & Thaw Sheds



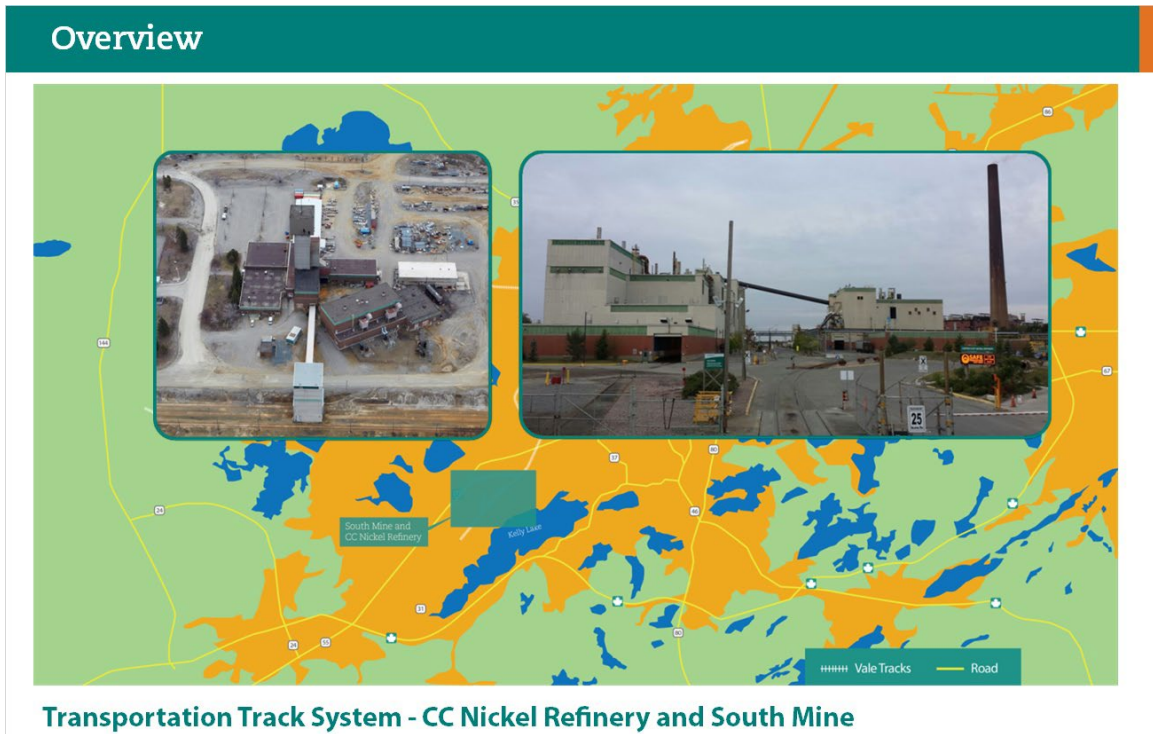
2.16 Clarabelle (Upper) Yard - Tipple & Thaw Sheds



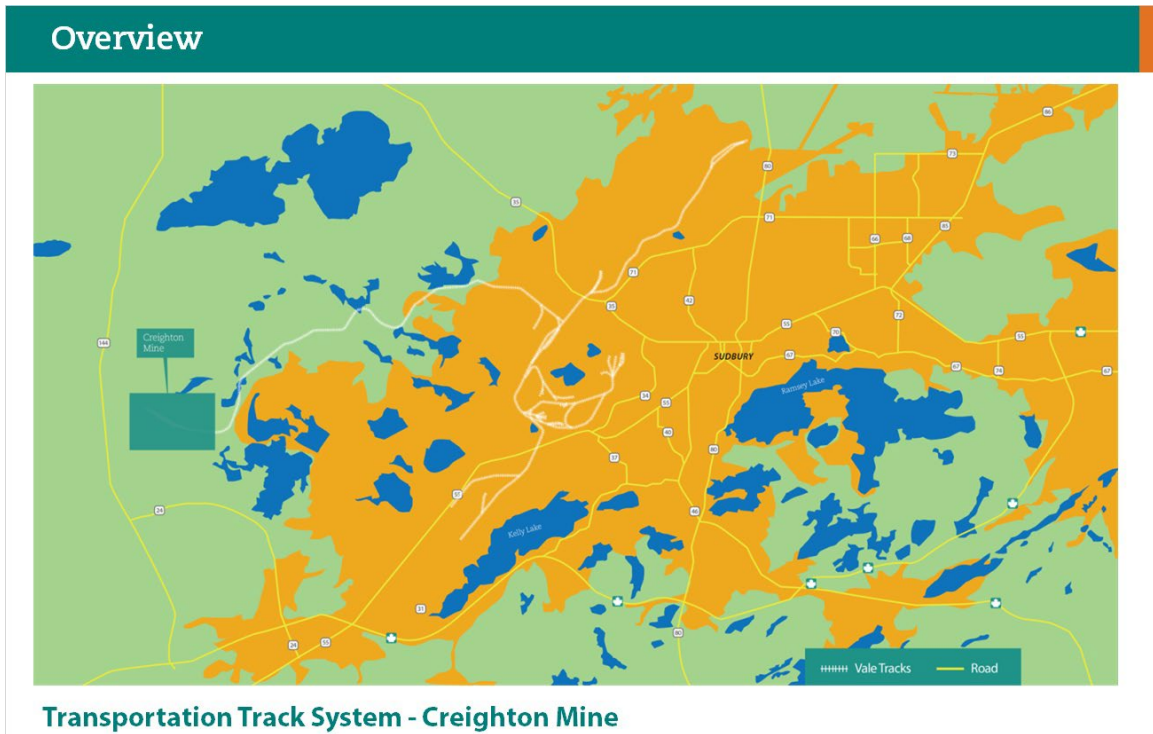
2.17 CC Nickel Refinery and South Mine



2.18 CC Nickel Refinery and South Mine



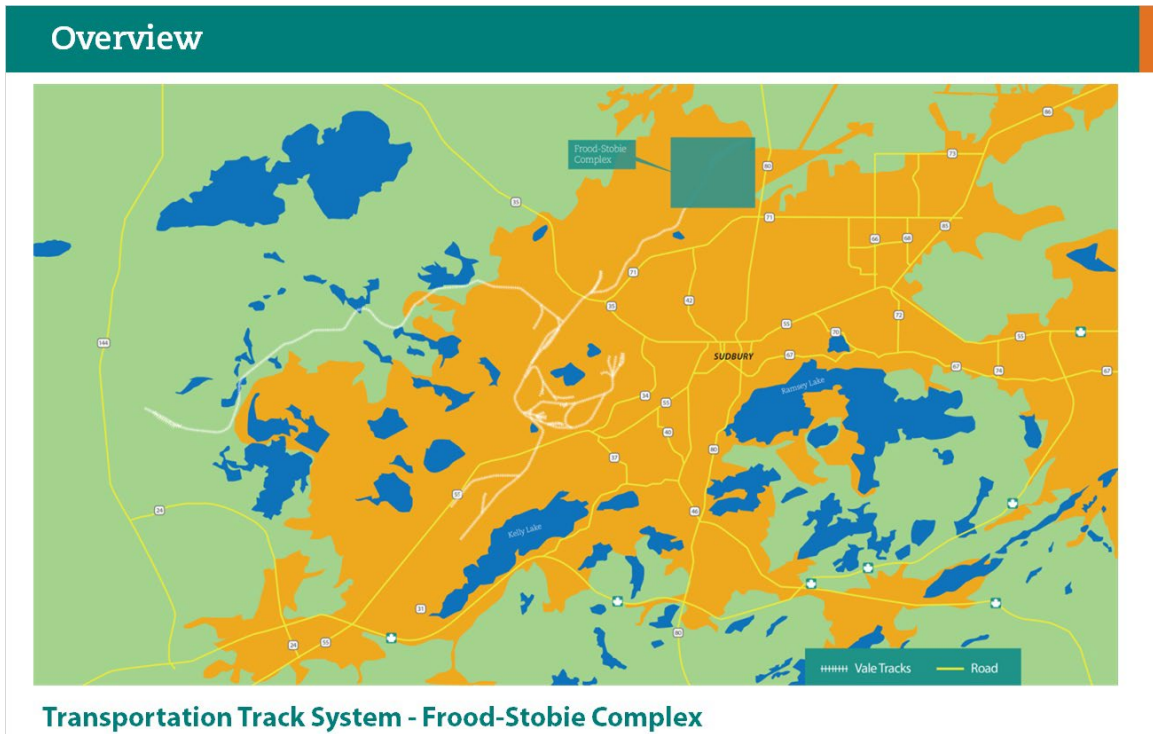
2.19 Creighton Mine



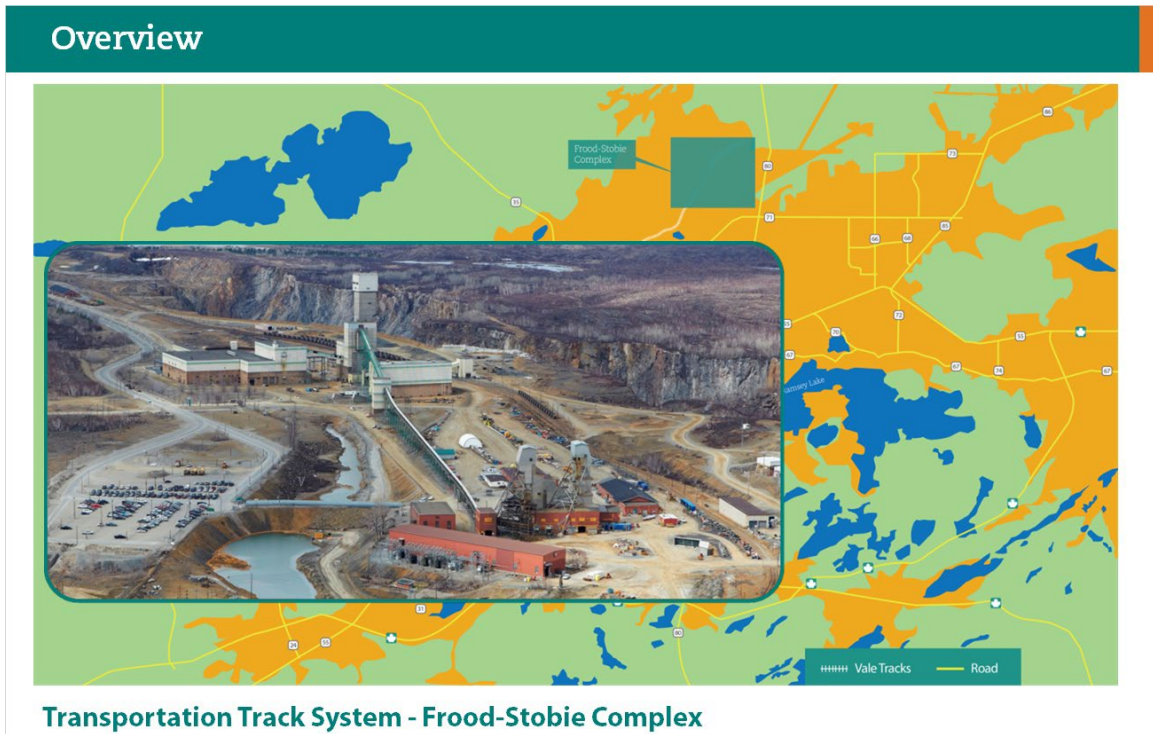
2.20 Creighton Mine



2.21 Frood-Stobie Complex



2.22 Frood-Stobie Complex



3. Plant Entry

3.1 *Plant Entry*



Plant Entry

Driving In, Walking In

3.2 Approaching The Plant

Plant Entry

Approaching The Plant

Using the main gate entrance to the Smelter, follow the main route and turn left on Ring Road South at the 'Y', continue to door 519.

Transportation is across from the warehouse.

Some workers may have access through the General Office gate.

All gates are secured through either Lenel access or Plant Protection. You must have associated approvals prior to entering the gates.

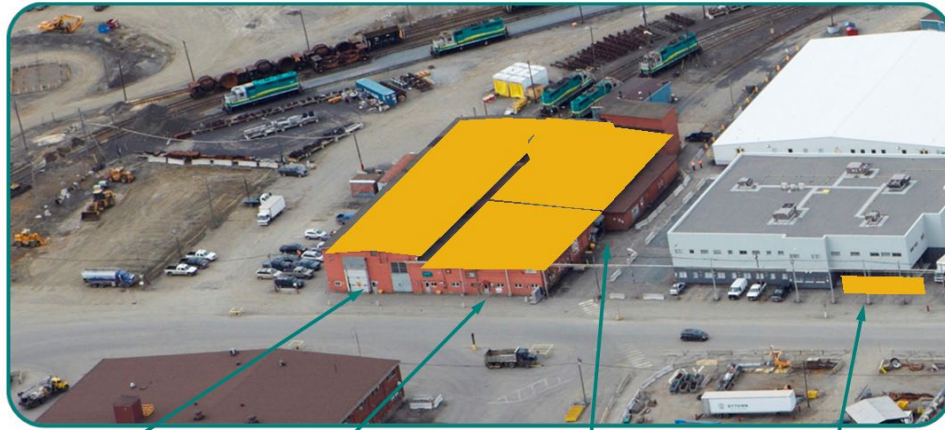


3.3 Plant Entry

Plant Entry

Transportation Building

Some of the areas to know around Transportation include the following.



Loco Shop

Administration
Upstairs Lunchroom (Door 519)

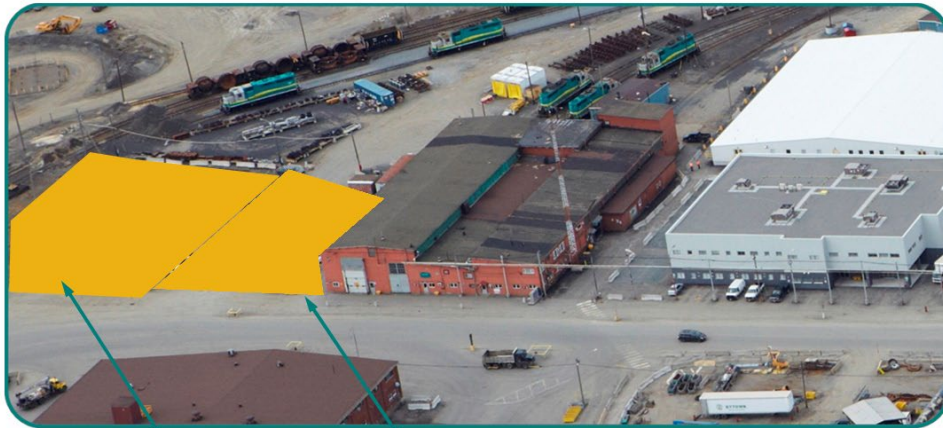
Loco Extension (Door 518)

Smelter Administration
(Learning and Development)

3.4 Designated Parking

Plant Entry

Designated Parking



The Compound
For large heavy equipment and
product-contaminated trucks

Light Trucks
This is for personal vehicles and
other light trucks.

Do not park in front of the building on
the designated walkway.

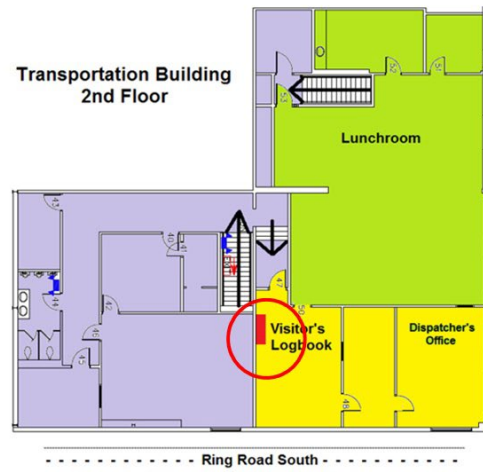
3.5 Sign in Location

Plant Entry

Sign-in Location

All contractors and visitors entering need to be signed in.

When entering the loco shop building at door 519, the visitor's log book is located next to the work permit station on the 2nd floor.



3.6 Sign in Location

Plant Entry

All contractors and visitors entering need to be signed in.

Workers and contractors that are working elsewhere on the property under Transportation's authority may be required to sign the book.



Verify with your Vale
contact person
for sign-in procedure

4. Hazards and Controls

4.1 Hazards and Controls

✔ Hazards and Controls

4.2 Site Specific Hazards

Site Specific Hazards

Using the tools that you learned in Tier 1 Orientation, ensure you apply the necessary operation controls to mitigate risk associated with the identified hazards.



Be Aware

Be aware of your surroundings and the risks around you.



Follow Policies & Procedures

Our internal policies and procedures guide us in doing our work in a manner that reduces risk.

The following section lists identified hazards that may be encountered in the work you're doing. Knowing if these hazards apply to your work can be found through:

- Vale Contact Person
- PHA/PHR (or other Risk Assessment Tools)
- SLAM

4.3 Rail Network

Rail Network

4.4 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Introduction

The Transportation Department extends throughout Sudbury operations with a multitude of pieces of heavy equipment, rail network, slag dump areas and stockpiles. Throughout this area are hazards that you need to be aware of to implement the proper controls to limit your risk.

- Adverse Weather Conditions
- Rail Crossings
- Rail Movement



4.5 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Adverse Weather Conditions - Hazard

The majority of tasks within the Transportation Department can expose workers to the environment which in turn sometimes presents adverse weather hazards such as:

- Heat stress/stroke
- Cold stress
- Hypothermia
- Frostbite
- Sun and radiation burns



4.6 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Adverse Weather Conditions - Control

To mitigate the risks associated to adverse weather, in addition to standard PPE in the plants, be sure your PPE reflects the weather conditions present and the work being performed.

This could include:

- Sun block
- Rain gear
- Insulating layered clothing
- Work Procedures
- Heat/Cold Stress Training



4.7 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Rail Crossings – Hazard

Rail Crossings exist wherever a train intersects a road or walkway. Given the extensive network of rail lines in Sudbury Operations, it's inevitable that you'll come across a rail line while working on Vale Property.

Hazards associated with Rail Crossings are:

- Collisions
- Splashing (of hot metal from pots)
- Derailments



4.8 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Rail Crossings – Control

To mitigate the risks associated with rail crossings be sure to:

- Obey road signs while driving (Golden Rule #3).
- Only use approved railroad crossings.
- Always come to a complete stop, look, and only proceed when it is safe.
- Expect the movement of equipment at any time, on any track, in either direction.



Most collisions at rail crossings are due to poor visibility or poor choices.

Always be aware of your surroundings and proceed with caution.

4.9 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Rail Movement – Hazard

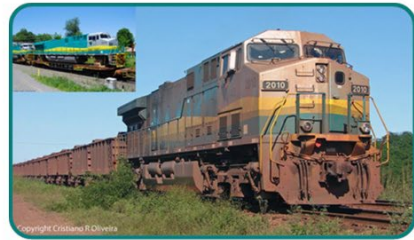
Aside from the hazard of Rail Crossings, Vale operates an extensive network of rail lines, a failure to understand it's complexity can result in a number of different hazards:

Collisions

- Failure to communicate can lead to trains colliding with each other or other pieces of equipment.
- Walking between trains and unexpected movement occurring can result in personal injury.

Derailment:

- Improperly lined switches can result in trains entering restricted areas.



4.10 Hazards and Controls - Rail Network

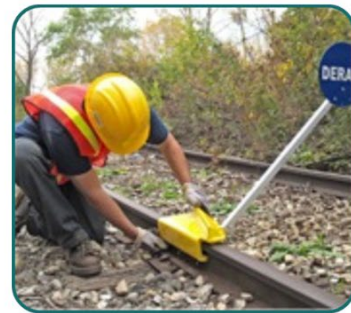
Hazards and Controls - Rail Network

Rail Movement – Control

The Transportation Department requires all work that is conducted within 12 feet or 3.6 meters of rails to have a “Transportation Work Permit” and workers are to follow all necessary safety requirements and applicable work procedures.

Workers are not permitted to obtain a Transportation Work Permit without proper authorization and prerequisite qualifications.

You will learn about the *Transportation Work Permit* in the *Working Around Rail Section* of this module.



4.11 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Rail Movement – Control

To ensure the safety of all people working near, around and on rail, workers need to:

Never stand on the track in front of an approaching engine or train

Never stand or walk between rails

Never step on frogs, switches or connections

Effectively communicate with:

- Transportation Supervisors
- Dispatch
- Train Conductors
- Train Crews



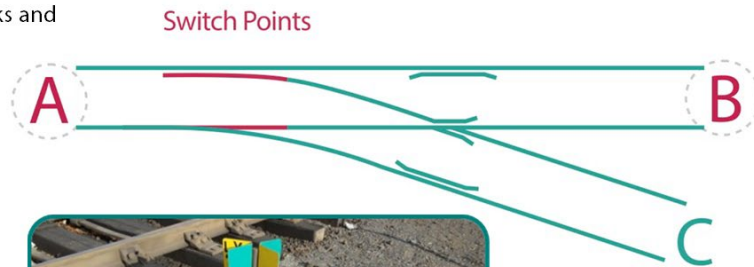
4.12 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Rail Movement – Control

The Transportation Department uses two types of isolating devices to restrict movement on rail and work areas through locking and tagging procedures. They are:

- Switch Locks and
- Derails



Energy-isolating device:

A mechanical device that physically prevents the transmission or release of energy.

4.13 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

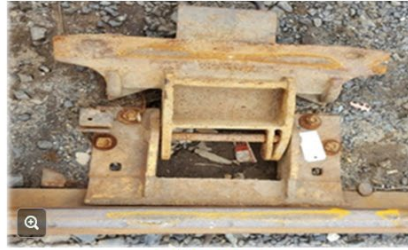
Rail Movement – Control

Derail:

A track device used to derail a train or rolling stock in the case of an emergency. A permanent derail can be positioned in the ON (derailing) position or OFF to allow train passage. Portable derails must be secured and locked to the rail.



On Position



Off Position



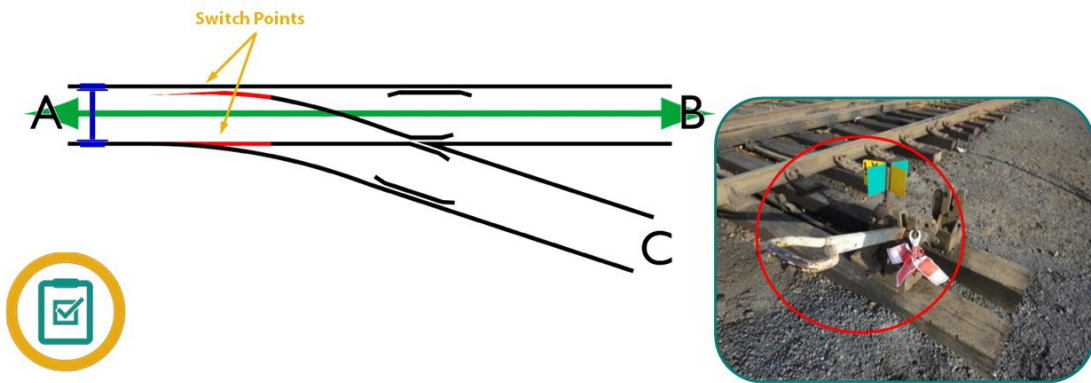
4.14 Hazards and Controls - Rail Network

Hazards and Controls - Rail Network

Rail Movement – Control

Switch Locks:

Are track devices placed on a track switch that has been lined away from the work area that isolates the tracks to protect workers who are performing work on, or near rail.



4.15 Hazards and Controls - Loco Shop and Extension Buildings

Loco Shop and Extension Buildings

4.16 Hazards and Controls - Loco Shop and Extension Buildings

Hazards and Controls - Loco Shop and Extension Buildings

Introduction

The loco shop and loco extension is the maintenance area designated for locomotives, railcars, slag cars and slag bowls.

Due to maintenance activities in these buildings you need to be aware of the hazards in order to mitigate the risk associated with this heavy equipment.

Non shop personnel are required to:

- Obtain permission from the Shop Supervisor to work in their area
- Sign in the visitor's log-book

Observe all safety policies and procedures because of the hazards associated with:

- Track Pits
- Hot Work
- Movement of Slag Bowl Cars
- Train Movement



Transportation has an exemption from wearing a standard hardhat inside the Loco Shop.

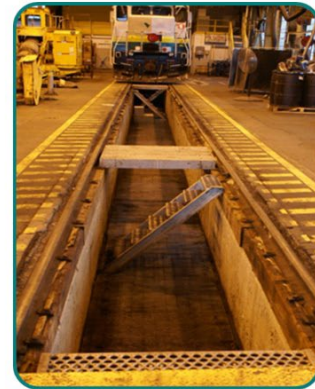
4.17 Hazards and Controls - Loco Shop and Extension Buildings

Hazards and Controls - Loco Shop and Extension Buildings

Track Pits - Hazard

To facilitate some of the work with tracked mobile equipment, there are track pits installed in the Loco Shop that can create a hazard.

Due to their construction the pits create a risk for unaware workers for falls and the rails alongside the pits have the potential of a trip or slip.



4.18 Hazards and Controls - Loco Shop and Extension Buildings

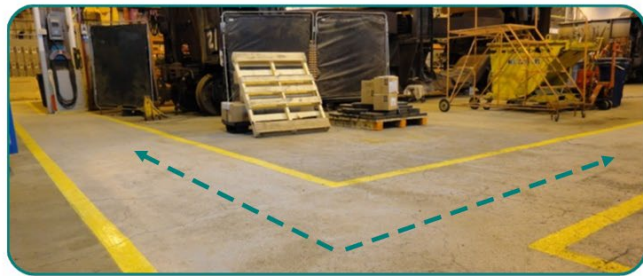
Hazards and Controls - Loco Shop and Extension Buildings

Track Pits - Control

To mitigate the risks in the pit areas the following controls have been put in place.

When walking through work areas:

- Designated walkways are clearly painted with yellow lines to avoid walking through work areas.
- Follow the designated walkways when passing through the shop area.
- Avoid stepping on the ball of the rail (top of rail).



4.19 Hazards and Controls - Loco Shop and Extension Buildings

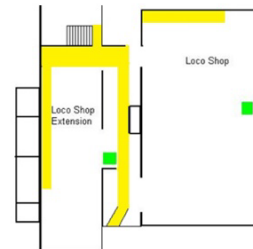
Hazards and Controls - Loco Shop and Extension Buildings

Track Pits - Control

To mitigate the risks in the pit areas the following controls have been put in place.

When walking through work areas:

- Stay clear of pits which are clearly marked with yellow hatched borders.
- Portable walking platforms can be relocated to simplify crossing the pits.
- Leave egress points at both ends of equipment when working underneath in the pit area to avoid creating a confined space.



4.20 Hazards and Controls - Loco Shop and Extension Buildings

Hazards and Controls - Loco Shop and Extension Buildings

Hot Work - Hazard

Hot work is defined as any burning or welding as well as work with any heat generating tools.

The Loco Shop performs hot work activities through many maintenance tasks. Without following and adhering to appropriate controls, hot work presents the hazard of creating fires or explosions within the facility.



Regular shop personnel are exempt from requiring hot work permits. Consult your Vale contact person about burning permits before you start work.

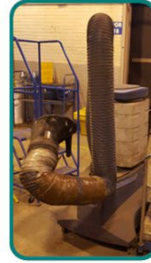
4.21 Hazards and Controls - Loco Shop and Extension Buildings

Hazards and Controls - Loco Shop and Extension Buildings

Hot Work - Control

To mitigate the risk of fires or explosions from hot work, the following controls are in place:

- Fire Suppression is installed in designated areas in the shop; those that do not have fire suppression must adhere to Vale's Hot Work Policy including the initiation/completion of appropriate hot work permits.
- Pre-operational checks for workers, equipment and workplaces (including fire extinguishers).
- Flash screens for arc flash exposure protection.
- Exhaust fans or snorkels to divert hot work fumes.



4.22 Movement of Slag Bowl Cars - Hazard

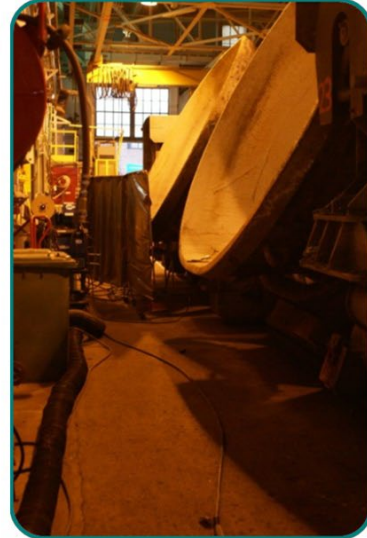
Hazards and Controls - Loco Shop and Extension Buildings

Movement of Slag Bowl Cars – Hazard

The Loco Shop conducts routine maintenance on Slag Bowl Cars in their shop. The cars are moved in and out of the shop as well as rotated as part of the maintenance work.

This work presents risks due to:

- Movement of trains and cars
- Rotation of slag bowls
- Excessive Noise



4.23 Movement of Slag Bowl Cars - Control

Hazards and Controls - Loco Shop and Extension Buildings

Movement of Slag Bowl Cars – Control

To standardize the work with Slag Cars, the Transportation Department has a Job Procedure that provides instruction on how to do this job safely.

Other controls include:

- Wearing hearing protection while slag bowls are being turned.
- Warning other workers in the area before turning slag bowls.
- Isolating the bowls through locking and tagging using the appropriate lockout devices.



4.24 Hazards and Controls - Loco Shop and Extension Buildings

Hazards and Controls - Loco Shop and Extension Buildings

Movement of Slag Bowl Cars – Control

Train engines bringing equipment in and out of the Loco Shop for maintenance and repairs presents hazards to workers in the area.

This work presents risks due to:

- Collision with pedestrians and other equipment
- Unexpected movement of equipment



4.25 Hazards and Controls - Loco Shop and Extension Buildings

Hazards and Controls - Loco Shop and Extension Buildings

Movement of Slag Bowl Cars – Control

For the protection of workers in the area, warning signs are posted and sirens are sounded.

- Warning signs on yellow plastic chains are placed across walkways and doorways to alert workers of moving equipment.
- The sound of a Siren indicates rail equipment is entering or leaving the shop.
- Siren signal buttons are located at all rail entrance doors.



4.26 Slag Dumps, Stockpile and loadouts

Slag Dumps, Stockpiles and Loadouts

4.27 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Introduction

Because Slag Dumps can present several hazards related to the environment, the Smelter Property Land Use Plan identifies several controls to observe, some of which include:

- Mobile Equipment
- Roadways
- Molten Metal
- Load-outs & Stockpiles



The slag dumps are a restricted area and are for Authorized Personnel Only

4.28 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

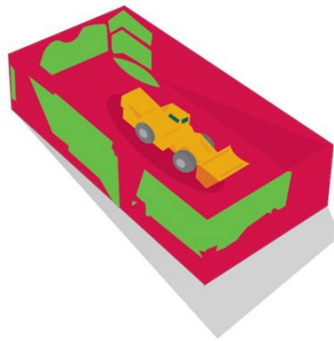
Mobile Equipment – Hazards

The general hazards of mobile equipment that were reviewed in Tier 2 apply in this area as well, however;

One needs to understand that the Transportation Department has many pieces of larger equipment that pose additional hazards:

- Operators working in remote areas may not expect others to be in their workplace.

● Not Visible
● Visible



4.29 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Mobile Equipment – Hazards

In addition to the general controls associated with mobile equipment, Transportation has additional prescribed controls applicable to mobile equipment:

- Vehicles are to be equipped with flags.
- Increased illumination in areas where workers will be present.
- If working alone, adhere to instructions provided by your Vale Contact Person such as:
 - know your plant contact phone number or radio channel.
 - be sure to communicate with your designated contact prior to commencing work and every two hours after that at a minimum.



4.30 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Roadways – Hazard

The Slag Dumps and Stockpile areas have a wide network of roadways to accommodate the movement of material to active dump sites. Granular slag gets excavated and hauled to other inactive dumping areas. Both of these activities result in:

- Roadways and roadway clearances in the slag dumps and stockpile areas may change according to the work being done creating a constantly changing workplace.
 - many one way routes
 - traffic signs being moved often
 - very steep grades
- The size of equipment, the location of work being done and weather conditions create the hazard of restricted visibility.
- Uneven and bumpy roadways lend to the hazard of personal injury to operators or damage to equipment.



4.31 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Roadways – Hazard

Roadways & Traffic Plan
Aerial View of Slag Dumps



4.32 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Roadways – Control

Transportation follows the same standards that would be expected in a surface mining operation to control the hazards at our loading, dumping and haulage areas.

- Haulage ways are proper width to accommodate the widest equipment using the route.
- Haulage ways are properly graded to avoid the potential of skidding.
- Sufficient berms or barriers are in place on open sides to keep vehicles on the road.



4.33 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Roadways – Control

In addition to controls specific to roadway construction, these controls also apply:

- Effective illumination to increase visibility for operators.
- Adequate dust suppression in accordance with environmental mandates and the Smelter Property Land Use Plan.



Be sure to consult your Vale contact to ensure all workplace conditions are met.

4.34 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Molten Slag – Hazard

The Transportation Department is responsible for the collection, transportation and disposal of molten slag which is a waste-product of our furnace operations.

These pots are taken to the slag dump where the molten slag is then deposited in the appropriate dumping area resulting in a flow of molten metal.

Hazards associated to molten slag dumped at the slag dumps are:

- Burns from splashing slag
- Steam Explosions from molten material being poured into moist areas; either through rain or snow
- Gasses from the chemical composition of the molten slag
- Open Hole Conditions and/or Fall Hazards



4.35 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Molten Slag – Control

Although this area is restricted and only those that are required to work are allowed in this area the following controls are put in place to protect workers from the hazards of molten slag:

- Special work procedures and training for dumping slag pots.
- Some areas are considered open hole conditions and will require fall protection.
- Stay clear if working in or around active slag dumping areas.
- Wind socks are located at various points around the slag dumps so that workers can aim to work upwind from gas sources while slag is dumping.



Ask your Vale contact if your work area is near active slag dumps to see if there are any additional controls.

4.36 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Load-outs and Stockpiles – Hazards

The reach of the Transportation Department extends well beyond the boundaries of the slag and stockpile areas and into the individual train loadouts located at the following mine sites:

- Stobie Mine
- Creighton Mine
- KGHM (near Coleman Mine)

These mine sites may have additional requirements to address hazards when transporting material from load-out building or when loading ore cars from stockpile with mobile equipment. Hazards include:

- Mobile Equipment
- Ore Chutes
- Site Specific Hazards
- Wet Muck



4.37 Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Load-outs and Stockpiles – Hazards

To mitigate the various hazards, workers must comply with identified controls for each area:

- Consult your Vale contact person to schedule Tier 3 Orientations to familiarize yourself with the hazards in worksite areas as required.
- Follow general mobile equipment controls and ensure you are qualified and authorized to use equipment.
- Load-out chutes must always have the safety chains attached when performing work except when loading out the bins.



4.38 Wet Muck - Hazard

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Wet Muck - Hazard



Ore (muck) from all mines is delivered and dumped in the Tipple by truck and rail car to feed the Clarabelle Mill process.

Wet muck has excessive amounts of water in the ore and appears:

- Wet
- Soupy
- Has a slurry type consistency
- Water is visibly draining from the ore material



4.39 Wet Muck - Hazard

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Wet Muck - Hazard



Wet muck has the potential to create “run of muck” conditions and poses a significant risk to workers and equipment farther down the process including:

- Uncontrolled movement of wet material
- Engulfment of workers
- Damage to equipment



4.40 Wet Muck - Control

Hazards and Controls - Slag Dumps, Stockpiles and Loadouts

Wet Muck - Hazard

Due to the risks associated with wet muck, the driver must be aware of the controls that are in place to mitigate the uncontrolled movement of wet material.

If the wet muck condition is recognized at the point of loading, the truck needs to be off-loaded to ground at the Copper Cliff Mine Stock Pile Yard.

If the wet muck condition is recognized while dumping the ore at the Tipple, then the driver must immediately:

- Contact Clarabelle Mill DSC Control Room to advise that wet muck has been dumped into the Tipple Bin.
- Advise on the location of the source material (i.e. – which mine was the ore loaded from for delivery).
- Advise the supervisor of the driver so that the ore is stopped being loaded and is investigated.

Clarabelle Mill DSC Control Room
705-682-6659

5. Working Around Rail

5.1 Working Around Rail

✔ Working Around Rail Work Permit Procedures

5.2 Objectives

Working Around Rail Work Permit Procedures

Objectives

Upon completion of this section, you will be aware of:

- Purpose, and requirements of a Transportation Work Permit.
- Requirements of obtaining a Transportation Work Permit Variance.
- Pertinent rules from the Transportation Handbook of Rules and Special Instructions.
- Energy isolating devices used as protection against hazards of rolling stock.
- How to obtain ZES by installing switch locks and or derails for a work permit.
- Requirements of track flag signals.



5.3 Introduction

Working Around Rail Work Permit Procedures

Introduction

The Transportation Department has specific rules and procedures in place to protect their crews work on their rails, as well as specific procedures for other workers performing maintenance or construction projects near or over the tracks.

The work permit procedure (P66 TRC 98-001) has been created to:

- Protect workers performing work within 12 feet of the tracks from rolling stock, and
- Protect rail equipment from impassable track due to that work.



5.4 Introduction

Working Around Rail Work Permit Procedures

Introduction

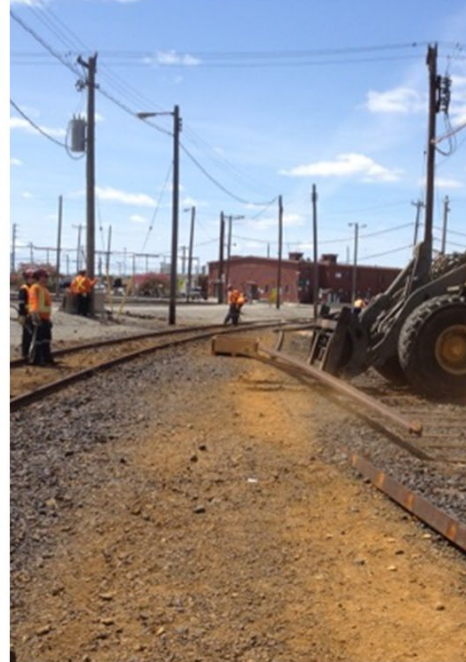
All Non-Vale employees must comply with our ZES program for personal protection when obtaining a work permit.

There are other logistic forms of protection that can be used in certain cases when ZES is not obtainable or practical, which include;

- Lookout protection, and
- Flagman Protection.



ONLY qualified Vale Transportation Employees can perform these procedures!



5.5 Work Permit Procedure Variance

Working Around Rail Work Permit Procedures

Work Permit Procedure Variance

Some examples of current work permit variances, include the following;

- Acid Plant Operation Inspection of Safety Shower (61RZA005).
- Contractor Cleaning in Skull Pit Area.
- Loading Ore Cars at Creighton or Stobie mines.



5.6 Rail Network

Transportation Handbook of Rules

5.7 Work Permit Procedure Variance

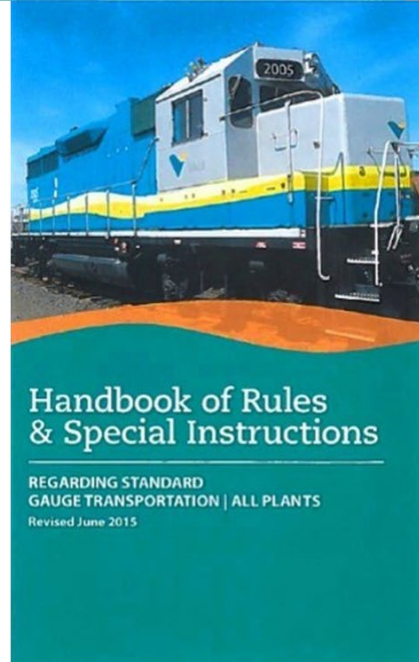
Working Around Rail Work Permit Procedures

Handbook of Rules and Special Instructions

The following information is intended to provide awareness for any employee working under the authority of the Transportation Department.

Your Vale Transportation contact is your essential source of all other information once you begin work.

They shall provide all other rules, policies or procedures that may apply to the work being performed.



5.8 Work Permit Procedure Variance

Working Around Rail Work Permit Procedures

Handbook of Rules and Special Instructions

Section 1

11.01 - Vale employees in any department and non-Vale employees connected with the movement of trains, including the use of track switches, track work, are subject to all applicable rules and shall;

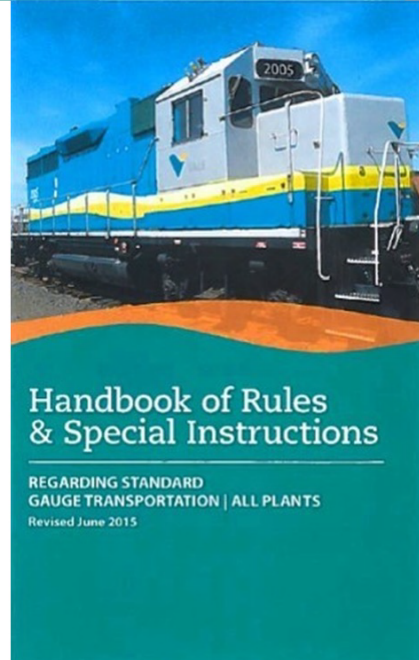
11.02 - Be subject to and conversant with these rules;

11.04 - Communicate by the quickest available means to proper Transportation Supervision any condition which may affect the safe operation on rail;

11.05 - Obtain assistance when required to control a harmful or dangerous condition;

11.07- Expect the movement of equipment at any time, on any track and in either direction;

11.09 - Not stand on the track in front of an approaching engine or train;



5.9 Work Permit Procedure Variance

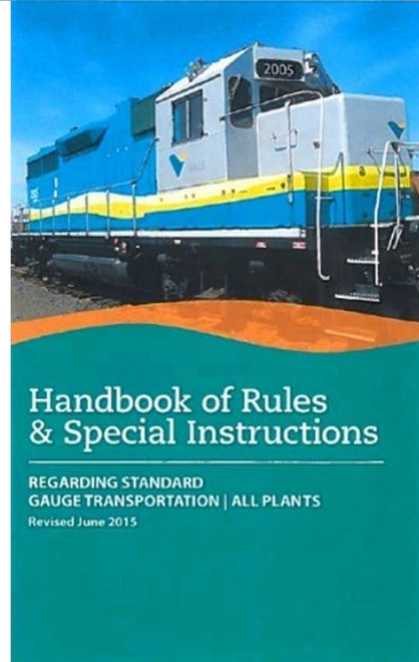
Working Around Rail Work Permit Procedures

Handbook of Rules and Special Instructions

Section 1

11.01 - Vale employees in any department and non-Vale employees connected with the movement of trains, including the use of track switches, track work, are subject to all applicable rules and shall;

11.12 - Have a firm footing and grip, exert steady pull, keep clear and see that others are clear of moving parts when lining a switch.



5.10 Using ZES

Using ZES with Work Permits

5.11 Responsibilities

Working Around Rail Work Permit Procedures

Using ZES with Work Permits

Responsibilities

It is the supervisor's responsibility to ensure that their employees are properly trained, qualified and current, (ZES modules 1 to 3 are minimum requirements to lock and tag).

Supervisors require ZES module 4 to know their additional responsibilities under the Health and Safety Act.

Every person working under the protection of a Transportation work permit shall install their own approved personal protection lock and tag and ensure that ALL energy sources are:

- Isolated
- Locked
- Tagged



5.12 Responsibilities

Working Around Rail Work Permit Procedures

Using ZES with Work Permits

A tagger must ensure the switch is lined in the proper direction.

- Trains will travel towards the track on the side of the switch with the open point.
- Be sure the switch points are set to direct rail traffic away from the work area,
- Ensure the switch point on the closed side is tight!



5.13 Work Permit Procedure - Protection

Working Around Rail Work Permit Procedures

Work Permit Procedure - Protection

Non-Vale employees must comply with our ZES program for personal protection when obtaining a work permit.

Handbook of Rules and Special Instructions (section10)

60.03 – When protection of workers from rail movement is required, the alignment and locking of a track switch away from the work area is the preferred method of protection.



5.14 Work Permit Procedure - Protection

Working Around Rail Work Permit Procedures

Work Permit Procedure - Protection

Non-Vale employees must comply with our ZES program for personal protection when obtaining a work permit.

Handbook of Rules and Special Instructions (section10)

60.04 – If it is not practical to align a track switch away from the work area, a derail must be installed.



5.15 Work Permit Procedure - Protection

Working Around Rail Work Permit Procedures

Work Permit Procedure - Protection

Non-Vale employees must comply with our ZES program for personal protection when obtaining a work permit.

Handbook of Rules and Special Instructions (section4)

27.03 – Each derail must be left in the derailing position when:

- Protecting doors;
- Protecting work sites;
- Protecting equipment;
- Protecting loading or unloading sites;

27.05 – Derails will be locked in the derailing position when being used as personal protection and/or when directed by special instruction.



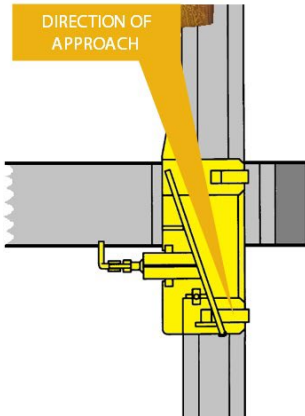
5.16 Derails

Working Around Rail Work Permit Procedures

Work Permit Procedure - Protection

Derails

The function of the derail is to guide the flange of the rolling stock or locomotive over and towards the outside of the rails, on to the ground.



5.17 Derails

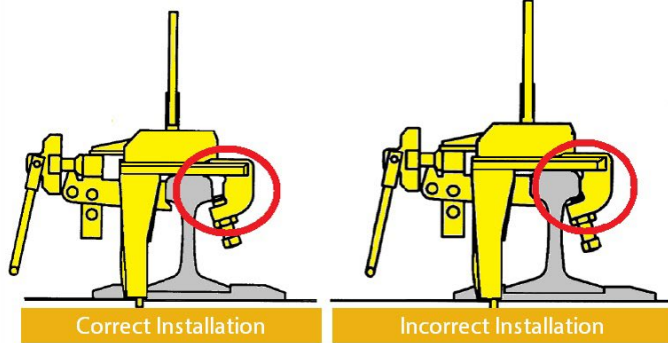
Working Around Rail Work Permit Procedures

Work Permit Procedure - Protection

Derails

Portable derails must be secured and locked flush to the rail.

The graduated teeth must be against the corner of the tie or tie plate.



5.18 Rail Signals

Rail Signals

5.19 Rail Signals

Working Around Rail Work Permit Procedures

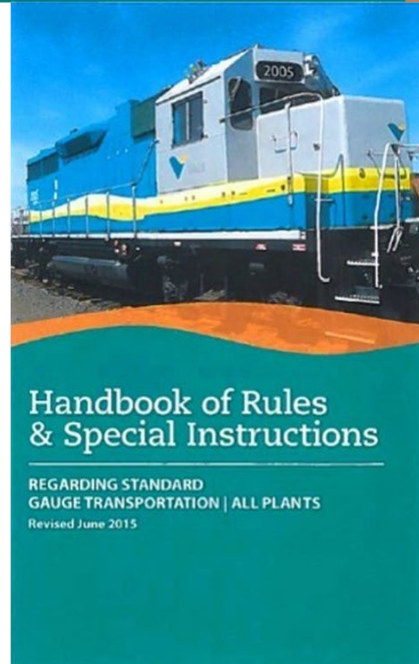
Handbook of Rules and Special Instructions

Section 3

23.02 – Protection signals will be placed to protect people, equipment, impassable track, and designated work areas.

23.05 – Before undertaking any work which may render the track unsafe for train movement, workers must display appropriate protection signals.

The Transportation Flag Storage Lockers are located on the West side of the Transportation Building.



5.20 Rail Signals

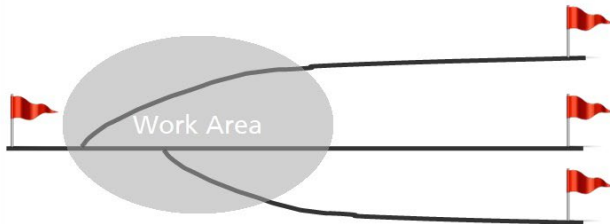
Working Around Rail Work Permit Procedures

Handbook of Rules and Special Instructions

When installing protection signals, you must ensure that they are;

- Clamped securely to the rail with flag positioned in between the rails.
- Visible from all directions of travel.
- Tagged.

Flags **must** be returned to the lockers after use.



5.21 Rail Signals

Working Around Rail Work Permit Procedures

Handbook of Rules and Special Instructions



Ensure the switch is correctly aligned.
Lock it – Tag it.



Flag the Track
Tag it.



Place a Derail?
Lock it - Tag it

5.22 Rail Signals



Work Permit

5.23 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Overview

The **Work Permit** is written permission and authorization to allow work within 12 feet of tracks.

The **Vale Project Sponsor** is the Vale contact person that is assigned to provide Transportation a scope of work including but not limited to:

- Ensuring all members of the work group has proper site safety training,
- Ensuring all safety procedures and policies are planned into the work.

The **Designated Contact** is the worker who completes the Work Permit Form, and is responsible for remaining in contact with the Train Dispatcher in the case of an emergency.



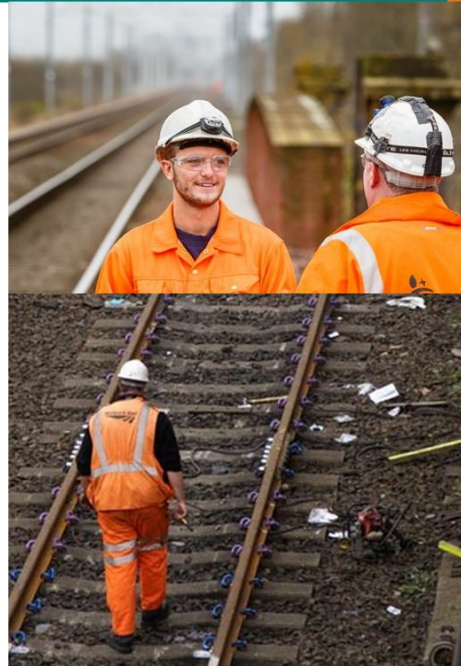
5.24 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Overview

When the scope of work is generated by the **Transportation Department**:

- The **Project Sponsor**, in conjunction with the Train Dispatcher, will determine the level of protection required.
- The Train Dispatcher will verify the details as required by the Work Permit.
- The Sponsor will designate a worker to provide a completed work permit.
- Train Dispatcher will grant permission by signing the work permit.
- Level of protection must be **approved and confirmed** by the Transportation Department's Field Supervisor.
- Transportation Field Supervisor will demonstrate proper aligning of track switches, placement of locks, tags, flags and/or derails that may be used as protection, or act as the designated tagger.



5.25 Work Permit Responsibilities

Working Around Rail Work Permit Procedures

Work Permit Responsibilities

The **Project Sponsor** plans the work and determines the level of protection for the tagger. *(Type of protection can be listed in a procedure)*.

The **Train Dispatcher** is the equipment owner and grants permission to lock and tag tracks, verifies, then signs the work permit.

The **Field Supervisor** acts as a designated tagger if the Designated Contact is not qualified. The Field Supervisor works with the Dispatcher in the field to ensure all personal protection is in place.

The **Designated Contact** must communicate the details of the work permit to the work crew and ensure that the work remains within the specified boundaries. The Designated Contact must not leave the plant and remain in contact with the dispatcher.

2.2.1 Identify all sources of energy and all isolating device(s) to be locked and tagged. Project Sponsor . (or Procedure)	2.2.2 Get permission from the person in charge of the equipment or process.	2.2.3 Use an Isolation Equipment Operator to isolate all energy sources.	2.2.4 Install your Red Personal Protection Lock and Tag on all Energy Isolating Devices.	2.2.5 De-energize all stored energy and Verify Zero Energy State.
Project Sponsor (or Procedure)	Dispatcher	Field Supervisor	Tagger	

5.26 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Overview

Workers obtaining a work permit **shall**:

- Fill in all required fields in appropriate locations. *(The work permit will not print if all required fields are not filled in).*
- Print the work permit, sign it and obtain approval from the Train Dispatcher.
- File a copy of the Work Permit in the “Open Permits” section in the binder.
- Keep a copy of the work permit on the jobsite.
- When the work has been completed and, or protection removed, the Designated Contact will sign off the original work permit with the dispatcher, terminating the work permit.

The following is an example that illustrates the process of filling out a work permit.



5.27 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

The following is an example that illustrates the process of filling out a work permit:



5.28 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER
PRINT		6657
VALE PROJECT SPONSOR:		DATE: 19-Jun-20
PROJECT SPONSOR PHONE NUMBER:		
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:
LEVEL or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:
ZES TRAINING: Are all workers under this permit qualified	YES	NO
SCOPE OF WORK		
PROTECTION REQUIRED		
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:		
PROJECTED DURATION OF WORK		
IDENTIFY THE TYPE OF PROTECTION REQUIRED		
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>		
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>		
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>		
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT		
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)		
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT
DATE:	6/19/2020 10:33	DATE:
DESIGNATED CONTACT:		DESIGNATED CONTACT:

The **Permit Number** refers to a sequential number assigned to each new work permit which is automatically generated.

5.29 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER
PRINT		6657
VALE PROJECT SPONSOR:		DATE: 19-Jun-20
PROJECT SPONSOR PHONE NUMBER:		
DEPARTMENT OR COMPANY:	DESIGNATED CONTACT:	
LENEL or VALE SERIAL NUMBER:	DESIGNATED CONTACT NUMBER:	
ZES TRAINING: Are all workers under this permit qualified	YES	NO
SCOPE OF WORK		
PROTECTION REQUIRED		
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:		
PROJECTED DURATION OF WORK		
IDENTIFY THE TYPE OF PROTECTION REQUIRED		
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>		
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>		
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>		
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT		
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)		
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT
DATE:	6/19/2020 10:33	DATE:
DESIGNATED CONTACT:		DESIGNATED CONTACT:

The **Date** is generated automatically.

A regular Work Permit is only valid for the day on which it was generated.

It must be surrendered at the end of the work period, and a new work permit must be taken out the next day if work is to be continued.

5.30 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER
PRINT		6657
VALE PROJECT SPONSOR:		DATE: 19-Jun-20
PROJECT SPONSOR PHONE NUMBER:		
DEPARTMENT OR COMPANY:	DESIGNATED CONTACT:	
LEVEL or VALE SERIAL NUMBER:	DESIGNATED CONTACT NUMBER:	
YES TRAINING: Are all workers under this permit qualified	YES <input type="checkbox"/> NO <input type="checkbox"/>	
SCOPE OF WORK		
PROTECTION REQUIRED		
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:		
PROJECTED DURATION OF WORK		
IDENTIFY THE TYPE OF PROTECTION REQUIRED		
SERIALS <input type="checkbox"/> FLAGMAN <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>		
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>		
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>		
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT		
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)		
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT
DATE:	6/19/2020 10:33	DATE:
DESIGNATED CONTACT:		DESIGNATED CONTACT:

The **Project Sponsor** refers to the person requesting the work to be performed.

If the sponsor is not a Transportation employee, they are responsible for providing the Transportation Department the scope of work.

The sponsor must also ensure all members of the work group have all proper safety training.

5.31 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

PRINT		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER
				6657
VALE PROJECT SPONSOR:				DATE: 19-Jun-20
PROJECT SPONSOR PHONE NUMBER:				
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:		
LENEL or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified		YES <input type="checkbox"/> NO <input type="checkbox"/>		
SCOPE OF WORK				
PROTECTION REQUIRED				
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:				
PROJECTED DURATION OF WORK				
IDENTIFY THE TYPE OF PROTECTION REQUIRED				
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>				
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>				
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>				
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT				
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)				
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT		
DATE:	6/19/2020 10:33	DATE:		
DESIGNATED CONTACT:		DESIGNATED CONTACT:		

The **Project Sponsor's** Phone Number.

The project sponsor would need to be contacted if the scope of work changes affecting the level of protection required.

5.32 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

<input type="button" value="PRINT"/>		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657	
VALE PROJECT SPONSOR:			DATE: 19-Jun-20		
PROJECT SPONSOR PHONE NUMBER:					
DEPARTMENT OR COMPANY:			DESIGNATED CONTACT:		
LEVEL or VALE SERIAL NUMBER:			DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO					
SCOPE OF WORK					
PROTECTION REQUIRED					
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:					
PROJECTED DURATION OF WORK					
IDENTIFY THE TYPE OF PROTECTION REQUIRED					
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>					
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO					
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES					
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT					
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)					
SIGNATURES TO OPEN PERMIT			SIGNATURES TO CLOSE PERMIT		
DATE: 6/19/2020 10:33		DATE:			
DESIGNATED CONTACT:		DESIGNATED CONTACT:			

The **Designated Contact** refers to the person who completes the work permit.

The Designated Contact must be within the plant and readily available to be contacted by the Train Dispatcher.

5.33 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

PRINT		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER
				6657
VALE PROJECT SPONSOR:				DATE: 19-Jun-20
PROJECT SPONSOR PHONE NUMBER:				
DEPARTMENT OR COMPANY:				DESIGNATED CONTACT:
LENEI or VALE SERIAL NUMBER:				DESIGNATED CONTACT NUMBER:
ZES TRAINING: Are all workers under this permit qualified		YES <input type="checkbox"/> NO <input type="checkbox"/>		
SCOPE OF WORK				
PROTECTION REQUIRED				
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:				
PROJECTED DURATION OF WORK				
IDENTIFY THE TYPE OF PROTECTION REQUIRED				
CERIALS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>				
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>				
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>				
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT				
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)				
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT		
DATE: 6/19/2020 10:33		DATE:		
DESIGNATED CONTACT:		DESIGNATED CONTACT:		

The **LENEI** Number refers to the Designated Contact's Lenei number or Vale Serial Number.

5.34 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER
<input type="button" value="PRINT"/>		6657
VALE PROJECT SPONSOR:		DATE: 19-Jun-20
PROJECT SPONSOR PHONE NUMBER:		
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:
LENEL or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:
ZES TRAINING: Are all workers under this permit qualified	YES <input type="checkbox"/>	NO <input type="checkbox"/>
SCOPE OF WORK		
PROTECTION REQUIRED		
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:		
PROJECTED DURATION OF WORK		
IDENTIFY THE TYPE OF PROTECTION REQUIRED		
DETAILED <input type="checkbox"/> FLAGMAN <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>		
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>		
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>		
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT		
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)		
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT
DATE:	6/19/2020 10:33	DATE:
DESIGNATED CONTACT:		DESIGNATED CONTACT:

The **Designated Contact** Number refers to a cell phone number, radio or other device that enables the Train Dispatcher to communicate with the Designated Contact.

5.35 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

PRINT		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657
VALE PROJECT SPONSOR:			DATE: 19-Jun-20	
PROJECT SPONSOR PHONE NUMBER:				
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:		
LENG or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified YES NO				
SCOPE OF WORK				
PROTECTION REQUIRED				
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:				
PROJECTED DURATION OF WORK				
IDENTIFY THE TYPE OF PROTECTION REQUIRED				
<input type="checkbox"/> DETAILS <input type="checkbox"/> FLAGMAN <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT				
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/> EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>				
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT				
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)				
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT		
DATE:	6/19/2020 10:33	DATE:		
DESIGNATED CONTACT:		DESIGNATED CONTACT:		

ZES qualified refers to the ZES training applicable to the work being performed.

All taggers working under the protection of a work permit must be ZES trained and qualified.



5.36 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

PRINT		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657
VALE PROJECT SPONSOR:			DATE: 19-Jun-20	
PROJECT SPONSOR PHONE NUMBER:				
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:		
LENEI or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO				
SCOPE OF WORK				
PROTECTION REQUIRED				
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:				
PROJECTED DURATION OF WORK				
IDENTIFY THE TYPE OF PROTECTION REQUIRED				
<input type="checkbox"/> DETAILS <input type="checkbox"/> FLAGMATS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT				
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO				
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES				
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT				
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)				
SIGNATURES TO OPEN PERMIT			SIGNATURES TO CLOSE PERMIT	
DATE:		6/19/2020 10:33		DATE:
DESIGNATED CONTACT:				DESIGNATED CONTACT:

The **Scope of Work** describes the work being performed.

More detail may be required to ensure proper level of protection is obtained.

NOTE: If there are changes to the Scope of Work that go outside of the boundaries originally stated by the project Sponsor, a new Work Permit must be taken.

5.37 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

<input type="button" value="PRINT"/>		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657	
VALE PROJECT SPONSOR:			DATE: 19-Jun-20		
PROJECT SPONSOR PHONE NUMBER:					
DEPARTMENT OR COMPANY:			DESIGNATED CONTACT:		
LENC or VALE SERIAL NUMBER:			DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO					
SCOPE OF WORK					
PROTECTION REQUIRED					
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:					
PROJECTED DURATION OF WORK					
IDENTIFY THE TYPE OF PROTECTION REQUIRED					
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>					
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO					
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES					
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT					
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)					
SIGNATURES TO OPEN PERMIT			SIGNATURES TO CLOSE PERMIT		
DATE: 6/19/2020 10:33		DATE:		DESIGNATED CONTACT:	
DESIGNATED CONTACT:		DESIGNATED CONTACT:		DESIGNATED CONTACT:	

The **Tracks Occupied or Removed from Service** identifies by name, which tracks need to be taken out of service to protect workers working under the Work Permit.

Switch numbers may also be identified if required.



5.38 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example



The dispatcher has many information boards to help dispatch safely, including the Track Occupancy Authorization Board (TOA).

The Tracks Occupied or Removed from Service indicates to the dispatcher which tracks need to be taken out of service on his TOA board (highlighted in red) to direct train traffic away from protected workers.

5.39 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

<input type="button" value="PRINT"/>		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657	
VALE PROJECT SPONSOR:			DATE: 19-Jun-20		
PROJECT SPONSOR PHONE NUMBER:					
DEPARTMENT OR COMPANY:			DESIGNATED CONTACT:		
LEVEL or VALE SERIAL NUMBER:			DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO					
SCOPE OF WORK					
PROTECTION REQUIRED					
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:					
PROJECTED DURATION OF WORK					
IDENTIFY THE TYPE OF PROTECTION REQUIRED					
DETAILS <input type="checkbox"/> FLAGMAN <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>					
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO					
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES					
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT					
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)					
SIGNATURES TO OPEN PERMIT			SIGNATURES TO CLOSE PERMIT		
DATE: 6/19/2020 10:33		DATE:		DESIGNATED CONTACT:	
DESIGNATED CONTACT:		DESIGNATED CONTACT:		DESIGNATED CONTACT:	

The **Projected Duration of Work** refers to the time required to perform the work as outlined in the Scope of Work field.

This informs the dispatcher how long the tracks will be out of service in order to plan train movement for the shift.

5.40 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

PRINT		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657
VALE PROJECT SPONSOR:			DATE: 19-Jun-20	
PROJECT SPONSOR PHONE NUMBER:				
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:		
LENEI or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>				
SCOPE OF WORK				
PROTECTION REQUIRED				
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:				
PROJECTED DURATION OF WORK				
IDENTIFY THE TYPE OF PROTECTION REQUIRED				
SERIALS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>				
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>				
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/>				
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT				
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)				
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT		
DATE:	6/19/2020 10:33	DATE:		
DESIGNATED CONTACT:		DESIGNATED CONTACT:		

Type of Protection Required refers to the type of protection that will be applied that isolates rail movement of rolling stock only.

The project Sponsor is responsible for determining the level of protection.

The Field Supervisor will confirm the protection once in place (for example: derail or switch locks).

5.41 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

Extended Work Permit Form <small>Appendix to Original Work Permit Form</small>			
Date: _____ Work Permit NO. _____ Describe Scope of Work: _____ _____			
Daily Sign In		Daily Sign Out	
Date:	Signature	Date	Signature

PERMIT	WORK PERMIT NUMBER 6657
DATE:	19-Jun-20
ATED CONTACT:	
ATED CONTACT NUMBER:	NO
ED	
REQUIRED	
on)	
SIGNATURES TO CLOSE PERMIT	
ATED CONTACT:	

Whenever an **Extended Work Permit** is required, the following form must be filled out and attached to the original Work Permit, then placed in the open permits section of the Extended Work Permit binder.

The Extended Work Permit must be signed in at the start of every shift...and signed out at the end of every shift.

5.42 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

PRINT		TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER 6657
VALE PROJECT SPONSOR:			DATE: 19-Jun-20	
PROJECT SPONSOR PHONE NUMBER:				
DEPARTMENT OR COMPANY:		DESIGNATED CONTACT:		
LENEL or VALE SERIAL NUMBER:		DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO				
SCOPE OF WORK				
PROTECTION REQUIRED				
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:				
PROJECTED DURATION OF WORK				
IDENTIFY THE TYPE OF PROTECTION REQUIRED				
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>				
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO				
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES				
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT				
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)				
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT		
DATE: 6/19/2020 10:33		DATE:		
DESIGNATED CONTACT:		DESIGNATED CONTACT:		

Now you can print the work permit.

The program will prompt the user to fill in empty fields before enabling the printing feature.

Two copies will be printed: File one in the binder and one must remain at the work site.

5.43 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER	
<input type="button" value="PRINT"/>		6657	
VALE PROJECT SPONSOR:		DATE: 19-Jun-20	
PROJECT SPONSOR PHONE NUMBER:			
DEPARTMENT OR COMPANY:	DESIGNATED CONTACT:		
LENEL or VALE SERIAL NUMBER:	DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified	YES <input type="checkbox"/> NO <input type="checkbox"/>		
SCOPE OF WORK			
PROTECTION REQUIRED			
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:			
PROJECTED DURATION OF WORK			
IDENTIFY THE TYPE OF PROTECTION REQUIRED			
DETAILS <input type="checkbox"/> FLAGMAS <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>			
FLAGS: YES <input type="checkbox"/> NO <input type="checkbox"/>			
EXTENDED WORK PERMIT REQUIRED: NO <input type="checkbox"/> YES <input type="checkbox"/>			
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT			
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)			
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT	
DATE:	6/19/2020 10:33	DATE:	
DESIGNATED CONTACT:		DESIGNATED CONTACT:	

The **Signatures to Open Permit** area is at the bottom left of the printed copies.

This area will have the date automatically generated.

The Signatures to Open Permit area must be signed by the Designated Contact and the Train Dispatcher.

5.44 Work Permit Overview

Working Around Rail Work Permit Procedures

Work Permit Example

TRANSPORTATION WORK PERMIT		WORK PERMIT NUMBER	
<input type="button" value="PRINT"/>		6657	
VALE PROJECT SPONSOR:		DATE: 19-Jun-20	
PROJECT SPONSOR PHONE NUMBER:			
DEPARTMENT OR COMPANY:	DESIGNATED CONTACT:		
LEVEL or VALE SERIAL NUMBER:	DESIGNATED CONTACT NUMBER:		
ZES TRAINING: Are all workers under this permit qualified <input type="checkbox"/> YES <input type="checkbox"/> NO			
SCOPE OF WORK			
PROTECTION REQUIRED			
IDENTIFY THE TRACKS OCCUPIED OR REMOVED FROM SERVICE:			
PROJECTED DURATION OF WORK			
IDENTIFY THE TYPE OF PROTECTION REQUIRED			
DETAILS <input type="checkbox"/> FLAGMAN <input type="checkbox"/> SWITCH LOCKS <input type="checkbox"/> 77 LOOK OUT <input type="checkbox"/>			
FLAGS: <input type="checkbox"/> YES <input type="checkbox"/> NO			
EXTENDED WORK PERMIT REQUIRED: <input type="checkbox"/> NO <input type="checkbox"/> YES			
IF YES, ATTACH A COMPLETED EXTENDED WORK PERMIT			
TRANSPORTATION SUPERVISOR APPROVAL (Scope of work and level of protection)			
SIGNATURES TO OPEN PERMIT		SIGNATURES TO CLOSE PERMIT	
DATE:	6/19/2020 10:33	DATE:	
DESIGNATED CONTACT:		DESIGNATED CONTACT:	

The **Signatures To Close Permit** must be manually dated and signed once the work has been completed, and workers and equipment are removed from the tracks.

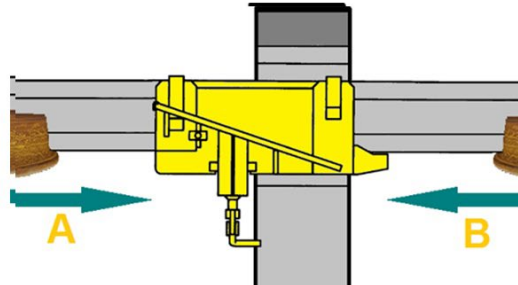
Once this section is signed off, the work permit will be terminated.

5.45 Question 1 Multiple Choice

(Multiple Choice, 10 points, unlimited attempts permitted)

This portable derail is installed to derail rolling stock traveling from which direction?

- Both directions
- Direction A (from left to right)
- Direction B (from right to left)
- None of the above



Submit

Correct	Choice
	Both directions
	Direction A (from left to right)
X	Direction B (from right to left)
	None of the above

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response. Please Try again.

Correct (Slide Layer)

Correct

That's right! You selected the correct response.

Continue

Incorrect (Slide Layer)

Incorrect

You did not select the correct response. Please Try again.

Try Again

Try Again (Slide Layer)

Incorrect

You did not select the correct response. Please Try again.

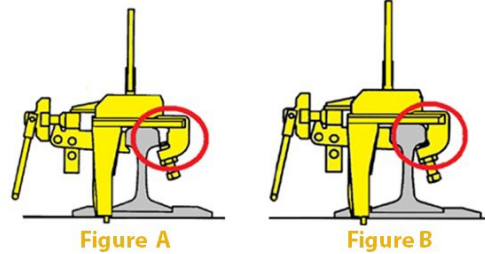
Try Again

5.46 Question 2 Multiple Choice

(Multiple Choice, 10 points, unlimited attempts permitted)

Which is the correct way to install a portable derail?

- Both are correct
- Figure A
- Figure B
- None of the above



Submit

Correct	Choice
	Both are correct
	Figure A
X	Figure B
	None of the above

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response. Please Try again.

Correct (Slide Layer)

Correct

That's right! You selected the correct response.

Continue

Incorrect (Slide Layer)

Incorrect

You did not select the correct response. Please Try again.

Try Again

Try Again (Slide Layer)

Incorrect

You did not select the correct response. Please Try again.

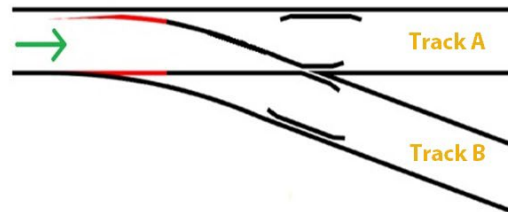
Try Again

5.47 Question 3 Multiple Choice

(Multiple Choice, 10 points, unlimited attempts permitted)

Which track will a train travel to when passing over the following track switch?

- Both Track A and B
- Only Track A
- Only Track B
- None of the above



Submit

Correct	Choice
	Both Track A and B
X	Only Track A
	Only Track B
	None of the above

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response. Please Try again.

Correct (Slide Layer)

Correct

That's right! You selected the correct response.

Continue

Incorrect (Slide Layer)

Incorrect

You did not select the correct response. Please Try again.

Try Again

Try Again (Slide Layer)

Incorrect

You did not select the correct response. Please Try again.

Try Again

6. Equipment Damage

6.1 *Equipment Damage*

✔ Equipment Damage

6.2 Equipment Damage

Equipment Damage

An incident is an event that results in loss or harm to personnel (injury/illness), environment, asset, or equipment.

Even with "near misses", all workers, including Offsite Personnel are encouraged to initiate and/or participate.

Intent is to prevent recurrences and reduce or eliminate any further injuries.

Get in touch with your Vale Contact Person for any information required on the Incident/Accident Investigation system.

Incident Management (SAP IM)

SAP IM

Click to log into the SAP IM database to process incident, near miss, or unsafe condition reports.

SAP IM
SEARCH
TOOL

Web-based search tool. Records are from prior day or earlier.

Procedures
Tools &
Resources

SAP IM procedures tools and resources.

7. Personal Injury

7.1 Personal Injury

✔ Personal Injury

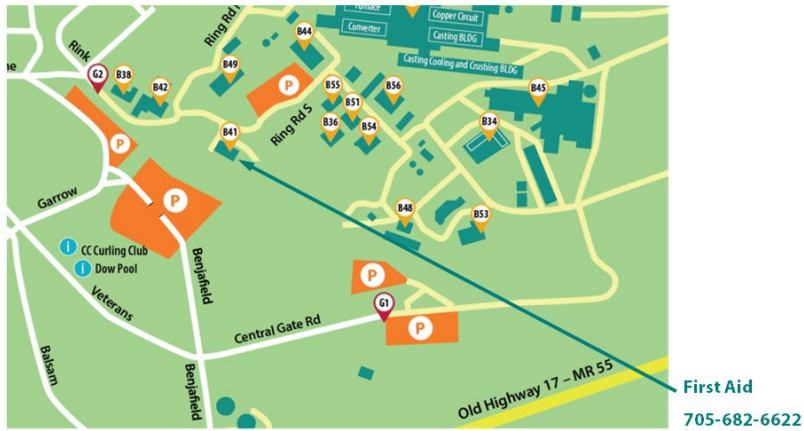
7.2 Personal Injury

Personal Injury

Transportation Department Numbers

In the case of personal injury, contact your Supervisor and report immediately to First Aid.

In the event you cannot physically report to First Aid, contact first aid for emergency response.



8. Emergency Preparedness

8.1 Emergency Preparedness

✔ Emergency Preparedness

8.2 Emergency Preparedness

Emergency Preparedness

Introduction

The Surface Tier 2 Orientation provided guidance on the application of Emergency Preparedness including activating an emergency and how to classify one.

The following is how to respond to an emergency at the Transportation Department.



8.3 Notification – Central Tailings Area

Emergency Preparedness

Notification – Transportation Department

Before you begin work, find out:

- Where the nearest phone is
- Where the emergency numbers are posted
- What the nearest door number is
- The nearest safe assembly area(s) to your work location in the case of a notification
- All roads have signage
- All maps have routes



Transportation Department Emergency Numbers:

#1 First Aid 6622
Dispatch 6033

8.4 Emergency Preparedness

Emergency Preparedness

Fire Evacuation Area



The External Safe Assembly Area for Transportation is located in the parking lot East of the building.

This is where to proceed in the case of a continuous tone alert emergency.

8.5 Emergency Preparedness

Emergency Preparedness

Surface Safe Assembly



The Surface Safe Assembly Area at Transportation is located in the upstairs lunchroom above door 519.

This is where to proceed in the case of an intermittent tone alert emergency.

8.6 Safe Assembly Area

Site Specific Emergency Procedure

If working in an area outside of the immediate Transportation Building, the Emergency Preparedness Procedure is task specific and needs to be communicated/reviewed with your Vale Contact Person prior to commencing work.

Topics of discussion shall include as a minimum:

- How will you receive notification of an emergency?
- To which safe assembly area do you report to account for yourself during an emergency?
- While in a safe assembly area, is there anybody you need to make contact with?
- What do you do if there is no designated safe assembly area?



9. Plant Exit

9.1 *Plant Exit*



✔ Plant Exit

9.2 Plant Exit

Plant Exit

Good work practices dictate that you close the loop on work you were doing to avoid creating risks or hazards for other work groups, cross shifts, or other work in the area. Here are some tasks to consider when getting ready to exit the plant to ensure your safety and that of those around you:

- ✓ **Housekeeping** - Is your worksite cleaned up after your job?
- ✓ **Personal Lock and Tag** - Has your personal protection been removed at the end of the shift?
- ✓ **Status Tagging** - Is there ongoing work that needs a status tag placed or is there equipment in Bad Order that needs to be identified?
- ✓ **End States** - Have you left the process in the proper state?
- ✓ **Waste Segregation** - Have you disposed of materials in the appropriate waste receptacles/bin/area?

- ✓ **Control room** - Do I need to let the control room know that I'm clear of an area?
- ✓ **Vale Contact Person** - do they need an end of shift report from me?
- ✓ **Permits** - do I need to close or hand in any permits?
- ✓ **Sign out** at the gate or other designated areas.

10.15 Summary

Summary

You have now completed the Transportation Department Orientation Tier Three – Site Specific Access Module.

You will now be required to complete a final exam to test your knowledge of the following:

- Plant Entry Procedure.
- Site Specific Hazards and Controls.
- Transportation Work Permit Procedure.
- Procedures in the event of, Equipment Damage, Personal Injury, Process Upset, (Emergency Preparedness) and Plant exit procedures.

