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FINAL REPORT

# Environmental Protection Plan

Smelter and Refinery  
Decommissioning/Demolition  
Thompson, Manitoba

Prepared for: Vale Canada Ltd.

**Conestoga-Rovers & Associates**  
651 Colby Drive  
Waterloo, Ontario N2V 1C2

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## 1.0 INTRODUCTION

CRA has prepared this Environmental Protection Plan (EPP) to provide procedures for the management of environmental issues during decommissioning and demolition of the Smelter and Refinery at the Vale Mine Site (Site) in Thompson, Manitoba. Figure 1.1 presents the Site Location. Figure 1.2 presents a Site Plan.

### 1.1 PURPOSE OF THE EPP

The purpose of the EPP is to:

- Provide concise and clear instructions to project personnel regarding procedures for protecting the environment and minimizing environmental impact during the decommissioning and demolition of the Smelter and Refinery
- Document environmental concerns and appropriate protection measures
- Provide a reference document for personnel when planning and/or conducting specific activities
- Communicate changes in the program through the revision process
- Provide a reference to applicable legislative requirements

The Contractor will maintain a copy of this EPP on the Site throughout the duration of the decommissioning and demolition of the Smelter and Refinery.

### 1.2 PROJECT DESCRIPTION

This EPP was prepared to support the decommissioning and demolition of the Smelter and Refinery, which includes:

- Facility ramp down and removal of raw material, dust, and wastes from the Smelter and Refinery
- Decommissioning of aboveground and underground utilities within the Smelter and Refinery complex
- Deactivating and de-energizing equipment in the Smelter and the Refinery
- Draining and purging of process lines
- Asbestos abatement and removing transite prior to final building demolition

- Demolishing building structures to grade. Concrete floor slabs and buried foundations will be broken to prevent collection of water
- Crushing concrete generated during the building demolition for use as general fill material in the Smelter/Refinery complex
- Grading Smelter/Refinery complex to match the existing grade of the remaining hard surfaces and to convey storm water runoff via the ditch/storm sewer systems
- Grading and capping of the Slag Pile (located west of the Smelter)
- Removing waste and debris from the south yard area
- Dismantling and disposing structural material for the copper pond and grading
- Constructing a berm as part of the closure of the Manasan Quarry (located 6 kilometres south of the Smelter and Refinery)

### **1.3 KNOWLEDGE OF ENVIRONMENTAL REQUIREMENTS**

The Contractor is responsible for being knowledgeable of and complying with all applicable Federal, Provincial, and local laws, regulations, and any requirements of permits issued for the decommissioning and demolition of the Smelter and Refinery. If there is conflict among Federal, Provincial, and local laws, regulations, and permit requirements, the more stringent requirement will apply. It is the Contractor's responsibility to ensure that subcontractors comply with the EPP.

This EPP will be updated within seven calendar days each time a significant modification to activities or pollutant control practices are made. These modifications shall be recorded on the Record of Revision sheet located in Appendix A.

## 2.0 REGULATORY REVIEW

CRA completed a comprehensive review of the potential applicable Federal and Provincial environmental regulations that are applicable to the closure and decommissioning of Vale's Smelter and Refinery and other operations including the Slag Pile and Manasan Quarry. Vale will continue to operate the mines and mill at the Site.

A summary of CRA's review of federal and provincial acts and legislation is presented in Table 2.1.

### 3.0 GENERAL ENVIRONMENTAL PROTECTION PROCEDURES

This section presents environmental concerns with respect to the decommissioning and demolition of the Smelter and Refinery and environmental measures to be implemented to minimize impacts to the environment.

#### 3.1 CLEARING OF VEGETATION

##### Environmental Concerns

Vegetation clearing (e.g., trees, shrubs) will be required in advance of constructing the rock berm around the Manasan Quarry. Environmental concerns with respect to clearing of vegetation include the uncontrolled burning of slash and piling of vegetation. The Heritage Survey indicates that there is little risk of discovering historical artifacts in the project area.

##### Environmental Procedures

Measures will be implemented to minimize the potential impacts of vegetative removal. Clearing activities will be limited to those areas that are required for access for constructing the berm and the berm itself. Whenever possible, existing access routes will be used. A cutting permit will be obtained from Manitoba Conservation prior to the start of any clearing.

Clearing will consist of cutting to within 150 millimetres of the ground and disposing of all standing trees, including the removal of shrubs, debris and other perishable materials from the area. All slash will be piled for subsequent burning at the Vale Disposal Facility (Permit Number 35818). Slash and any other construction material or debris will not be permitted to enter any watercourse and will be piled above spring flood levels.

A 15-metre (m) buffer zone from the high water mark will be established in areas where clearing of vegetation is within the vicinity of a waterbody<sup>1</sup>. Timber shall be felled inward toward the work area to avoid damaging any standing trees outside the immediate work area.

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<sup>1</sup> Section 2.10). McCubbin, R.N., A.B. Case, D.A. Rowe, and D.A. Scrutton, 1990. Resource Road Construction: Fish Habitat Protection Guidelines. Fisheries and Oceans Canada and Canadian Forestry Service 28 pp.

### 3.2 GRUBBING AND DISPOSAL OF RELATED DEBRIS

#### Environmental Concerns

Grubbing will also be required in advance of constructing the rock berm around the Manasan Quarry. The principle concerns associated with grubbing and disposal of related debris are the potential impacts on wildlife, marine and freshwater ecosystems and water quality.

#### Environmental Protection Procedures

Measures undertaken to minimize impact on habitat and resources are as follows:

- Grubbing of the organic vegetation mat and/or the upper soil horizons will be minimized, and left in place where possible.
- Where possible, grubbing of material will not occur within 2 m of standing timber in order to minimize damage to the root systems of adjacent standing trees.
- The organic vegetation mat and upper soil horizon material which has been grubbed will be spread in a manner which attempts to cover exposed areas. Any surplus of such material will be stored or stockpiled for site rehabilitation and revegetation purposes elsewhere in the project area. Topsoil will be stockpiled separately from the overburden. The location of the stockpiles will be recorded and accessible for future rehabilitation purposes.
- Measures will be implemented to minimize and control runoff of sediment-laden water during grubbing, and the re-spreading and stockpiling of grubbed materials. Where grubbed materials are re-spread or stockpiled, as many stumps and roots as possible will be left on the ground surface to maintain soil cohesion, to dissipate the energy of runoff, and promote natural revegetation. Erosion control measures will be implemented in areas prone to soil loss; these measures could include brush cover, stone rip rap, wire mesh, settling ponds, and drainage channels.
- The length of time that grubbed areas will be left exposed to the natural elements will be minimized to prevent unnecessary erosion.
- Grubbing activities will be avoided in areas of high slope(s) near watercourses. A buffer zone of 12 m + 1.5 x slope (%) will be maintained between grubbed areas and watercourses. The width of the buffer zone must be no less than 15 m from the high



water mark. Where possible, grubbing limits adjacent to watercourses will be flagged in the field<sup>2</sup>.

- During grubbing, care will be taken to ensure that grubbed material will not be pushed into areas which are to be left undisturbed.

### **3.3 PETROLEUM PRODUCTS HANDLING AND STORAGE**

#### Environmental Concerns

The major concern regarding the use of petroleum products is the potential for uncontrolled release to the environment through spillage and subsequent adverse effects on terrestrial, aquatic and marine habitat and species, soil, groundwater quality, and human health and safety.

#### Environmental Protection Procedures

The Contractor will transport, store, and handle petroleum products in accordance with the Manitoba Dangerous Goods Handling and Transportation Act (Manitoba Act), the Federal Transportation and Dangerous Goods Act (TDG Act), and Manitoba Regulation 188/2001, Storage and Handling of Petroleum Products and Allied Products (M.R. 188/2001), and the Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (CCME, 2003).

At a minimum, the Contractor will comply with the following procedures when storing and handling petroleum products:

- Storage sites for petroleum or hazardous products will be secured. Signs indicating hazard warnings, emergency contacts, access restrictions, and under whose authority the access is restricted will be posted
- Oils, grease, gasoline, diesel or other fuels will be stored at least 100 m from any surface water
- Petroleum product containers will be inspected on a daily basis and product inventory will be recorded on a daily basis and retained for future reference
- Smoking will be prohibited within 10 m of a fuel storage area

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<sup>2</sup> McCubbin, R.N., A.B. Case, D.A. Rowe, and D.A. Scrutton, 1990. Resource Road Construction: Fish Habitat Protection Guidelines. Fisheries and Oceans Canada and Canadian Forestry Service 28 pp.

- All employees involved in the handling and storage of fuels will have completed Workplace Hazardous Materials Information System (WHMIS) training and an operator will be present at all times during refueling
- The Contractor will designate on-site Emergency Spill Response Coordinators
- In the event of a spill, the Contractor will contact Vale's designated contact and the Manitoba Conservation 24-hour spill reporting line at (204) 945-4888
- Materials required for spill containment and clean up must be available at all storage sites and all vehicles hauling fuel must carry materials and equipment for emergency spill containment
- All necessary precautions will be taken to prevent and minimize the spillage, misplacement or loss of fuels and other hazardous materials

The Contractor shall register fuel storage tanks greater than 5,000 litres with Manitoba Conservation. The Contractor will obtain necessary approvals from Manitoba Conservation prior to installing new tanks. The Contractor shall adhere to the requirements of the Manitoba Fire Code for smaller stationary and portable tanks.

Any above-ground fuel tank will be equipped with overfill protection and secondary containment. The secondary containment including the floor and walls, shall be constructed of an impervious material and be constructed to contain a minimum of 110 percent of the capacity of the tank. If more than one storage tank is placed in the secondary containment, the containment area shall be constructed to contain a minimum of 110 percent of the capacity of the largest tank or 100 percent of the capacity of the largest tank plus 10 percent of the aggregate capacity of all the other tanks whichever is greater. Otherwise approved self-dyked storage tanks will be used where required. The floor of the containment area must slope away from the tank base towards a sump at a slope greater than 1 percent.

The Contractor shall record the product inventory in aboveground storage tanks on a weekly basis. The Contractor shall inspect the secondary containment area for visual evidence of leaks on a daily basis. The Contractor shall keep all inspection and inventory control and reconciliation records on Site for the duration of the project.

Fuel storage areas and non-portable transfer lines will be clearly marked or barricaded to ensure that they are not damaged by moving vehicles. The markers will be visible under all weather conditions. Barriers will be constructed in compliance with local regulations.

Waste oils, lubricants, and other used oil will be disposed according to the Waste Management Plan.

Temporary fueling or servicing of mobile equipment in areas other than the main fuel storage site will not be allowed within 100 m of a watercourse.

Within 30 days of known decommissioning of a storage tank system, the Contractor will empty the system of all products, remove the tank and associated piping from the ground, remove any contaminated soil, clean the area and restore the site. Any soil contaminated by small leaks of oil or grease from equipment will be disposed of in accordance with the provincial regulations and the Waste Management Plan.

A copy of the Contingency Plan for Petroleum and Hazardous Material Spills (Section 5.1) will be present at storage facilities and during transfer of fuel. In the event of a spill, the procedures outlined in Section 5.1 will be followed.

### **3.4 HAZARDOUS MATERIALS AND WHMIS**

#### Environmental Concerns

The major concern regarding the use of hazardous materials is the potential for uncontrolled release to the environment through spillage and subsequent adverse effects on terrestrial, aquatic and marine habitat and species, soil, groundwater quality, and human health and safety.

#### Environmental Protection Procedures

The Contractor will transport, store, and handle hazardous materials in accordance with the Manitoba Act and the TDG Act. In accordance with Part 35 of the Workplace Safety and Health Regulation (M.R. 217/2006), the Contractor must make available the material data safety sheets (MSDS) for all hazardous materials brought on Site.

At a minimum, the Contractor will comply with the following procedures when storing and handling hazardous materials products:

- Label and store all hazardous materials in accordance with the Manitoba Act and TDG Act and MSDS. The Contractor shall keep an inventory of hazardous materials stored on Site

- All employees involved in the handling and storage hazardous materials will have completed WHMIS training
- Based on the information available on the MSDSs, incompatible materials shall be kept in separate storage areas
- Storage sites for hazardous materials will be secured. Signs indicating hazard warnings, emergency contacts, access restrictions, and under whose authority the access is restricted will be posted
- Hazardous materials will be stored at least 100 m from any surface water
- The Contractor will designate on-Site Emergency Spill Response Coordinators
- Bulk storage of hazardous materials will be within dyked containment areas
- In the event of a spill, the Contractor will contact Vale's designated contact and the Manitoba Conservation 24-hour spill reporting line at (204) 945-4888
- Spill containment and clean up materials must be available at all storage sites
- All necessary precautions will be taken to prevent and minimize the spillage, misplacement, or loss of hazardous materials

A copy of the Contingency Plan for Petroleum and Hazardous Material Spills (Section 5.1) will be present at storage facilities. In the event of a spill, the procedures outlined in Section 5.1 will be followed.

### **3.5 ASBESTOS PROGRAM**

#### Environmental Concerns

Asbestos-containing material (ACM), if not properly controlled and disposed of, may cause human safety and health concerns.

#### Environmental Protection Procedures

The Contractor shall ensure all ACM has been removed from the buildings and the Contractor has inspected the areas prior to demolition. The Contractor must dispose of all ACM in the on-Site landfill in accordance with the Site-Specific Health and Safety Plan, the Waste Management Plan, the Transportation & Logistics Plan, and the Storage Plan, and Vale's Waste Disposal Facility Permit (No. 35818).

During asbestos removal on the exterior of the building a provision for air monitoring for asbestos should be considered to confirm the asbestos Contractor's procedures are

not causing the release of ACM to Site personnel in areas adjacent to the Smelter and Refinery.

### **3.6 SANITARY/SEPTIC WASTE**

#### Environmental Concerns

The release of untreated sewage is a concern to human health, drinking water quality, and freshwater and marine ecosystems.

#### Environmental Protection Procedures

The Contractor must provide and maintain required temporary sanitary facilities and enclosures in accordance with Part 4 of M.R. 217/2006<sup>3</sup>. Existing facility use is not permitted. The sewage disposal system will comply with the provincial regulations.

### **3.7 DOMESTIC SOLID WASTE DISPOSAL**

#### Environmental Concerns

Solid waste (e.g., domestic waste, paper, cardboard, wood), if not properly controlled and disposed of, will be unsightly and may cause human safety and health concerns and could result in conflict with wildlife.

#### Environmental Protection Procedures

No solid material, including building materials, is permitted to be discharged to surface waters or buried on Site. All domestic solid waste materials incidental to the work activity including paper, food wrappers, beverage containers, etc., will be collected in containers or closed containers/dumpsters. The collection containers will be emptied periodically and the collected material hauled to the Vale solid waste facility. The Contractor and its subcontractors will collect and segregate solid waste as required by Vale procedures for proper disposal.

A foreman or supervisor will be designated to oversee, enforce and instruct workers on proper solid waste procedures.

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<sup>3</sup> Manitoba Regulation 217/2006 Work Place Safety and Health Regulation

### **3.8 SOLID WASTE DISPOSAL**

#### Environmental Concerns

Solid waste, including untreated wood, non-ACM insulation, roofing materials, fibre-reinforced plastic tanks, creosote wood (rail ties and cribbing) and used filter cloth (washed), generated as part of the decommissioning and demolition of the Smelter and Refinery may cause human safety and health concerns, if not properly controlled.

#### Environmental Protection Procedures

The Contractor will handle, store, and transport for disposal all solid waste generated from the decommissioning and demolition activities in accordance with Waste Management Plan, the Transportation & Logistics Plan, and the Storage Plan.

### **3.9 HAZARDOUS AND REGULATED WASTE DISPOSAL**

#### Environmental Concerns

Hazardous waste and regulated waste such as polychlorinated biphenyls (PCB) ballasts, laboratory packs containing unused chemicals, used transformer and other oils generated as part of the decommissioning and demolition of the Smelter and Refinery may cause human safety and health concerns, if not properly controlled.

#### Environmental Protection Procedures

The Contractor will handle, store, and transport for disposal all hazardous and regulated waste generated from the decommissioning and demolition activities in accordance with Waste Management Plan, the Transportation & Logistics Plan, and the Storage Plan.

### **3.10      NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM) WASTE DISPOSAL**

#### Environmental Concerns

The refractory brick in the furnaces, converters, and stack may be identified as NORM and may cause human safety and health concerns, if not properly controlled.

#### Environmental Protection Procedures

The Contractor will handle, store, and transport for disposal all NORM waste generated from the decommissioning and demolition activities in accordance with Waste Management Plan, the Transportation & Logistics Plan, and the Storage Plan.

### **3.11      RINSE WATER DISPOSAL**

#### Environmental Concerns

Rinse water generated from cleaning areas impacted with PCBs during the decommissioning and demolition of the Smelter and Refinery may cause human safety and health concerns, if not properly controlled.

#### Environmental Protection Procedures

The Contractor will handle, store, and transport for disposal all rinse water generated during the decommissioning and demolition activities in accordance with Waste Management Plan, the Transportation & Logistics Plan, and the Storage Plan.

### **3.12      SURVEYING**

Site surveying activities for vegetation removal and control points will be conducted primarily within the Smelter and Refinery area including the Slag Pile, within the asbestos landfill area, and on undisturbed land around the Manasan Quarry.

#### Environmental Concerns

Surveying activities may disturb wildlife species and vegetation.

## Environmental Protection Procedures

### Vegetation Removal

- Width of survey lines will be limited to that which is absolutely necessary for line of sight and unobstructed passage.
- Whenever possible, cutting lines to the boundary between treed and open areas will be avoided.
- Trees and shrubs will be cut flush with the ground wherever possible.
- Cutting of survey lines will be kept to a minimum. Where possible, alternate areas not requiring cut lines will be used.
- All trees not exactly on transit lines shall be left standing and trees partly on line should be notched (notch not to exceed 1/3 tree's diameter) instead of removal, to allow sighting.
- Discretion should be used when large trees are encountered. For example, trees 30 centimetres (cm) at diameter breast height (dbh) or larger should, whenever possible, not be cut. On grid lines, trees of 30 cm diameter or larger shall be left intact and shall be traversed to continue the line.
- When surveying construction layouts, areas that will be cleared require a modified adherence to the above, except trees, shrubs and areas to be saved or left natural as noted on the plans or marked in the field.
- Personnel shall not harass or disturb wildlife.
- Vehicles will yield the right-of-way to wildlife.
- There will be no cutting in areas designated as sensitive without notification and approval of Vale.

### Establishing Control Points

- Personnel shall not harass or disturb wildlife. Access to sensitive areas (if required) is to be approved by Vale
- Standard iron bars and sledge hammers are to be used to establish benchmarks
- Heavy equipment will not access sensitive areas
- Temporary photo targets established for the purposes of aerial survey work must be removed as soon as work is complete



### 3.13 EQUIPMENT MOVEMENT/SUPPLY

#### Environmental Concerns

Heavy equipment will be used during the decommissioning and demolition of the Smelter and Refinery including but not limited to the following activities:

- Asbestos abatement and transite removal
- Demolishing the building structures to grade
- Grading the Smelter/Refinery complex
- Grading and capping the Slag Pile (located west of the Smelter)
- Removal of waste and debris from the south yard area
- Dismantling the structural material of the copper pond and regrading the areas
- Clear vegetation and construct a berm to close the Manasan Quarry (located 6 kilometres south of the Smelter and Refinery)

The majority of physical disturbances to the environment and Plant site are a result of vehicle movement.

#### Environmental Protection Procedures

The Contractor will use the following procedures to minimize disturbances:

- Where the road is open to Vale personnel, the Contractor will maintain traffic flow through the Plant site as well as possible. The Contractor will provide detours if necessary, during the decommissioning and demolition activities.
- Maintain all roadways in a clean and safe condition for construction and use by Vale personnel as appropriate.
- When temporary closure of a road is necessary, the Contractor will ensure appropriate traffic control and traffic safety measures are in place prior to initiating activities.
- In areas outside of the Plant site (i.e., Manasan Quarry), restrict and minimize the use of heavy equipment in and near watercourses; where possible and buffer zones as described in Section 4.3 will be utilized.

### **3.14**      **PUMPS AND GENERATORS**

#### Environmental Concerns

A variety of water pumps, hoses and generators are in frequent use in many areas of the site. Environmental concerns are associated with any accidental spills or chronic leaks contaminating waterbodies and ground surface.

#### Environmental Protection Procedure

The Contractor will use the following procedures to minimize environmental concerns:

- Oils, grease, gasoline, diesel, or other fuels will be stored at least 100 m from any surface water
- Drip pans should be placed underneath pumps and generators located near waterbodies
- Hoses and connections on equipment located near waterbodies should be inspected routinely for leaks and drips
- All leaks should be reported immediately to Vale

### **3.15**      **BLASTING OF SMELTER STACK**

#### Environmental Concerns

The Smelter stack may be demolished using explosives following demolition of the Smelter and Refinery.

All blasting will be done in compliance with the appropriate permits' and approvals. All temporary magazines for explosive storage will have the appropriate approvals.

#### Environmental Protection Procedures

The handling, transportation, storage and use of explosives and all other hazardous materials will be conducted in compliance with all applicable laws, regulations, and the TDG Act. The following measures will be implemented to minimize the impact of the use of explosives and blasting.

- Explosives will be used in a manner that will minimize damage or defacement of landscape features, trees and other surrounding objects by controlling through the best methods possible, the scatter of blasted material beyond the limits of activity.
- Blasting pattern and procedures will be used which minimize shock or instantaneous peak noise levels. Time delay blasting cycles will be used to control the scatter of blasted material.
- Blasting will not occur in the vicinity of fuel storage facilities.
- The Blasters Safety Certificates and the Temporary Magazine Licence will be obtained prior to blasting.
- Use of explosives will be restricted to authorized personnel who have been trained in their use.

The immediate area of the blasting site will be surveyed within three hours prior to a blast and operations. The immediate area will be evacuated of all personnel prior to blasting. The Contractor will develop a work plan that outlines the exclusion zone/safe zone within the Plant site.

### **3.16      EROSION PREVENTION**

#### Environmental Concerns

Erosion prevention practices will be applied throughout all work areas on exposed or erodible materials.

#### Environmental Protection Procedures

Primary means of erosion control are avoidance of activities contributing to erosion.

All areas of exposed erodible soils are to be stabilized by back-blading or grading to meet engineered slope requirements. Where erosion along exposed erodible slopes is a potential concern and a natural vegetation buffer of less than 15 m from the high water mark exists between erodible areas and waterbodies, a silt fence will be constructed to control silt runoff.

Engineering requirements will vary depending on the locations of the silt fence and will take such factors into consideration as drainage/surface area of exposed soils and time of year the silt fences employed.

In no case shall exposed soil be left unstabilized for a time period in excess of 30 days. Should work occur after such a time as revegetation is ineffective (late in growing season), straw mulch will be mixed into stabilized soil for over winter protection.

Erosion and sediment control practices can be divided into three broad categories: (1) soil stabilization, (2) structural controls, and (3) management practices. Each of these categories has temporary and permanent control measures to be considered. Soil stabilization, which will be applied as work progresses, and structural controls will be selected and implemented in accordance with industry-accepted best management practices and Site conditions. Not all of the structural controls and techniques will necessarily apply to this project, but will be implemented as required.

### **3.16.1 SOIL STABILIZATION**

Due to the nature of the earthwork activities, the following methods of soil stabilization will be applied:

- Contouring/sloping and protection of sensitive areas
- Permanent hydroseeding/mulching

The Contractor shall incorporate best management practices and erosion control techniques as required to protect the impacts to the watercourse and natural resources in the vicinity of the Site.

### **3.16.2 STRUCTURAL CONTROLS**

Erosion and sediment controls will be selected, designed, constructed and installed according to manufacturer's specifications, accepted best management practices, and Site conditions. Listed below are the structural controls that may be used at the Site. These controls are described in more detail in Section 4.2:

- Sediment/Silt Fence
- Stabilized Construction Entrance/Staging Area
- Rock Check Dams
- Angular riprap armour
- Straw Bale Checkdam

- Coir Logs (or similar)
- Temporary sediment impoundment berms
- Take-off ditches

Additional control techniques and structures may be considered and implemented as needed during construction.

### **3.16.3 MANAGEMENT PRACTICES**

The following are some management considerations which will be employed in conjunction with the erosion and sediment controls described above:

- Sequence/plan construction so that no area remains exposed for unnecessarily long periods of time.
- Anticipate the Site conditions that will exist as the construction progresses toward the final product (i.e., monitor weather on a daily/weekly basis).
- Have the materials on-hand to complete the work without delay.
- Apply temporary and permanent stabilization immediately after grading.
- Stage the construction, if possible, so that one area can be stabilized before another is disturbed.
- Consider the time of year; be prepared for prolonged rainfall events, sudden thunderstorms and/or snow melt.
- Install erosion and sediment controls prior to commencement of construction activities.
- Use straw mulch for grass seed, especially during poor germination periods.
- Physically mark off limits of disturbance on the Site with tape, signs or other methods, so that workers can see areas to be protected.
- Carry out a regular maintenance schedule for erosion and sediment control practices.
- Designate one individual responsible for implementing the Environmental Protection Plan operationally. Make sure that all workers understand the provisions of the EPP and establish reporting procedures for problems identified by workers.

### 3.17 DUST CONTROL

#### Environmental Concerns

The environmental concerns associated with dust include human health effects and potential impacts on aquatic ecosystems and vegetation.

Demolition activities, including grading of the Slag Pile, are expected to generate dust that must be controlled to provide a safe working environment for all workers including Site production personnel and the surrounding community. A demolition dust control plan provides the measures to control dust during demolition of the Smelter and Refinery and associated structures.

#### Environmental Protection Procedures

During demolition activities, the following measures will be used to control dust, as applicable:

- The daily, or more frequently if required, wetting of all soft and hard surfaces and any excavation face on the project site, with the addition of calcium chloride or other recognized materials as a dust suppressant, if required.
- The designation of truck loading points to avoid trucks tracking potentially contaminated demolition debris off Site. Such loading points should be on a gravel base to minimize tracking of soil onto other roadways. If the loading point becomes contaminated it should be cleaned and replaced.
- All trucks and vans leaving the Site should be cleaned of all loose soil and dust from demolition debris including the washing of tires and sweeping or washing of exteriors and tailgates by a designated labourer. A daily log of each truck leaving the demolition area should be kept by the demolition contractor noting when the truck was cleaned and by whom.
- Tarping all transport units leaving the project site which have been loaded with indigenous demolition debris.
- Workers shall notify the Site Supervisor if they observe a dusty condition, who will in turn implement the dust control measures.
- An air monitoring program with a dust monitor, if necessary, to determine if dust concentrations are high enough to implement control measures or upgrade personal protective equipment (PPE). Action levels for dust/particulate, metals, and asbestos are provided in the Site-Specific Health and Safety Plan.

- Provide adequate measures to control dust during demolition such as wetting of the immediate area generating the dust, use of exhaust fans with socks to direct dust outside and/or use of dust masks or respirators by workers.
- If dust concentrations cannot be decreased to an acceptable level, work will be ceased to access additional procedures or measures to resolve the issue.

Dust from construction activities will be controlled by using water. Waste oil will not be used for dust control, but other agents such as calcium chloride may be used with the approval of regulatory agencies.

### **3.18      STORM WATER MANAGEMENT**

#### Environmental Concerns

After the Smelter and Refinery are demolished but prior to breaking up the building floors to allow drainage, storm water from a rain event may accumulate in the basements and at lower elevation areas. The major concern associated with water accumulation in the basements of the building is the accumulation of sediment.

#### Environmental Protection Procedures

Water pumped from work areas, or any runoff or effluent directed from the project Site must have silt removed by settling ponds, filtration or other suitable treatment before discharging to a storm sewer catch basin.

During the decommissioning and demolition activities, storm water will be managed through the erosion and sediment controls discussed in Sections 3.14 and 4.2.

### **3.19      NOISE AND VIBRATION CONTROL**

#### Environmental Concerns

A variety of noises associated with clearing and grubbing for placement of a berm around the Manasan Quarry can cause negative effects on wildlife resources in terms of their distribution and abundance.

There are also noises and vibration related to the decommissioning and demolition activities that can impact project personnel, as well as other Vale personnel within the Plant site.

#### Environmental Protection Procedures

Measures will be implemented wherever possible to minimize potential impacts arising from a variety of noise sources, including adherence to all permits and approvals and all equipment will have exhaust systems regularly inspected and mufflers will be operating properly.

Project activities that include working in close proximity to heavy equipment and/or industrial operations, or using power tools that generate noise levels exceeding the decibel range of 85 dBA, will require the use of hearing protection with a Noise Reduction Rating (NRR) of at least 20. Hearing protection (earplugs/muffs) will be available to personnel and visitors requiring entry into the demolition areas. When in operation, there are some specific areas within the Refinery and Smelter where you must wear hearing protection. Following the cessation of production operations, hearing protection related to the former process operations is not anticipated. However, decommissioning and demolition activities can generate high noise levels that are inconsistent and may occur without warning for workers in areas adjacent to locations where high decibel work is being conducted. As a result, all decommissioning/demolition personnel are required to carry hearing protection (earplugs/muffs) within the demolition area. High decibel work will be conducted a sufficient distance from roadways/walkways adjacent to the decommissioning/demolition area to prevent exposure of Site production personnel to noise above 85 dBA.

When it is difficult to hear a co-worker at normal conversation distance, the noise level is approaching or exceeding 85 dBA, and hearing protection is necessary. All site personnel who may be exposed to high noise levels will participate in their employer's Hearing Conservation Program to be developed as part of the Contractor's Safety and Health Program in accordance with M.R. 217/2006 Part 12 - Hearing Conservation and Noise Control. The Contractor's Safety and Health Program must include consideration of production staff in the areas adjacent to the demolition area.



## 4.0 ENVIRONMENTAL MONITORING

The Contractor shall integrate the following items into the inspection and maintenance program.

### 4.1 INSPECTION SCHEDULE/REPORTING

All areas disturbed as a result of construction activities will be inspected daily during active periods of earthwork activities. Inspections shall be conducted and documented by a designated and qualified person who is familiar with the requirements of this Environmental Protection Plan. Documentation may take the form of a note in a diary or completion of an inspection form such as the example provided in Appendix B.

### 4.2 EROSION AND SEDIMENT CONTROL INSPECTIONS

- *Construction Entrance/Access:* Locations where vehicles enter/exit the Site shall be inspected for evidence of erosion and degradation. Periodic regrading and top dressing with additional stones may be necessary.
- *Material Storage Inspection:* Stockpile areas will be inspected to ensure that materials exposed to precipitation are protected and/or impounded so that pollutants cannot be discharged from storage areas.
- *Mulching:* Inspect for thin or bare spots caused by natural decomposition or weather-related events. Mulch will be replaced on a regular basis to maintain uniform protection.
- *Rock Check Dam:* When silt reaches a depth equal to one-third of the height of the berm or 30 cm, whichever is less, the silt shall be removed and disposed of in an approved location.
- *Silt Fence:* Removal of built up sediment will occur when the sediment reaches one-third the height of the fence. Accumulated silt material shall be removed and disposed of in an approved location. Repairs will be implemented as needed.
- *Straw Bales and Coir Logs:* Replace those which show signs of deterioration. When silt reaches a depth equal to one-third of the height of the bales or logs, the accumulated silt shall be removed and disposed of in an approved location.
- *Vegetation:* Seeded areas will be inspected until permanent vegetation is established.

- *Good Housekeeping*: Litter, construction debris, and construction chemicals exposed to storm water shall be prevented from becoming a pollutant source for storm water discharges through screening of outfalls and daily pickup of litter.

In the event that sediment is transported off the construction Site by means of erosion, off-Site accumulations of sediment will be removed at a frequency sufficient to minimize adverse impacts to the environment. Additional mitigations may be required and will be made in conjunction with Vale.

### 4.3 BUFFER ZONES

Where possible, a buffer zone of undisturbed natural vegetation is to be maintained between construction areas and all waterbodies.

Silt runoff control fences will be constructed at the toe of the slope outside the buffer zone when required to control runoff from areas of exposed soils towards waterbodies. Silt fences and buffer strips will be inspected on a regular basis by the Contractor. Any accumulations of silt witnessed should be removed and disposed in an area where it will not re-enter any water body. Also, repairs and replacement of damaged silt fences will be addressed immediately.

A minimum buffer zone of natural vegetation of 15.0 m from the high water mark of waterbodies will be maintained around work areas where available space poses a constraint. If the available space allows for establishing wider buffer zones, then wider zones will be maintained between construction areas and watercourses, and will be developed in consultation between the Contractor, Vale, and Manitoba Conservation.

Where possible, fish habitat protection guidelines recommend the minimum width of the buffer zone between construction areas and all waterbodies will be calculated by the following formula:

$$\text{Buffer Width (m)} = 12 \text{ m} + 1.5 \times \text{slope (\%)};$$

but, a minimum buffer zone of 15 m will be maintained at all times, except where specified otherwise<sup>4</sup>.

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<sup>4</sup> McCubbin, R.N., A.B. Case, D.A. Rowe, and D.A. Scrutton, 1990. Resource Road Construction: Fish Habitat Protection Guidelines. Fisheries and Oceans Canada and Canadian Forestry Service. 28 pp.

#### 4.4 MAINTENANCE OF POLLUTION CONTROL FACILITIES

The Contractor shall maintain all constructed pollution control facilities and control devices during the decommissioning and demolition. At a minimum, the maintenance activities will include the following:

- The Contractor shall ensure that containment areas are kept free of rainwater or any other substance. The Contractor shall immediately repair containment areas that are damaged.
- Erosion and Sedimentation Control Devices: The Contractor shall immediately repair damaged erosion and sedimentation control devices and remove accumulated sediment.
- Storm Drains and Catch Basins: The Contractor shall ensure sediment does not block storm drains and catch basins and shall be responsible for cleaning blocked drains and catch basins due to erosion or sediment from the work area.

## 5.0 CONTINGENCY PLANS

The following contingency plans were developed in the event of a spill or release of fuel or hazardous material, a wildlife encounter, or a forest fire.

### 5.1 FUEL AND HAZARDOUS MATERIAL SPILLS

A foreman or supervisor will be designated to oversee, enforce, and instruct construction workers on proper waste procedures. The location of any fuel/lubricant storage areas will be located a minimum of 30 m from any watercourse or pathway (e.g., ditch) to sensitive habitat.

Oil absorbent materials will be present on-Site at the refueling site/staging area(s) in case of spills. Spill kits will also be available for equipment for emergency spills, leaks, and for routine maintenance in case of spills.

In the event of a spill, the area will be isolated and measures taken to stop and contain any release followed by the immediate cleanup of the contaminant. If the spill occurred on soil, outside of a previously identified contaminated area, the Contractor will immediately consult with the Vale to determine the appropriate response.

Part 8 the TDG Act requires persons in charge of facilities (including transport vehicles, vessels and aircraft) to report any release of a hazardous substance in a quantity equal to or greater than its reportable quantity (specified in Part 8 of the TDG Act), as soon as that person has knowledge of the release, to the following:

1. Manitoba Department of Conservation at (204) 945-4888 and either the local police or the fire department
2. The person's employer
3. The consignor of the dangerous goods
4. For a road vehicle, the owner, lessee or charterer of the road vehicle
5. For a railway vehicle, CANUTEC at (613) 996-6666
6. For a ship, CANUTEC at (613) 996-6666, a Vessel Traffic Services Centre or a Canadian Coast Guard radio station
7. For an aircraft, an aerodome or an air cargo facility, CANUTEC at (613) 996-6666 and the nearest Regional Civil Aviation Office of the Department of Transport and, if the aerodome is an airport, the operator of the airport

8. For Class 1, Explosives, and Class 6.2 Infectious Substances, CANUTEC at (613) 996-6666
9. For an accidental release from a cylinder that has suffered a catastrophic failure, CANUTEC at (613) 996-6666

All spills must be immediately identified to the Contractor to evaluate and complete the reporting requirements. The Contractor will report all required information as detailed in Part 8.2 and then follow-up with a 30-day report as required by Part 8.3. Required pertinent information includes:

1. Name of reporter and phone number
2. Time of spill or leak
3. Time of detection of spill or leak
4. Type of product spilled or leaked
5. Amount of product spilled or leaked
6. Location of spill or leak
7. Source of spill or leak
8. Type of accident - collision, rupture, overflow, other;
9. Owner of product and phone number
10. If the spill or leak is still occurring
11. If the spill or leaked product is contained, and if not, where it is flowing
12. Wind velocity and direction
13. Temperature
14. Proximity to waterbodies, water intakes, and facilities
15. Snow cover and depth, terrain, and soil conditions.

The contact information for CANUTEC is listed below:

**CANUTEC:**

Information: (613) 992-4624

Emergency: (613) 996-6666

Facsimile: (613) 954-5101

[CANUTEC@tc.gc.ca](mailto:CANUTEC@tc.gc.ca)

The contact information for TDG for the Prairie and Northern Region is listed below:

**Prairie and Northern Region**

Winnipeg: (204) 983-5969  
Facsimile: (204) 983-8992  
Saskatoon: (306) 975-5105  
Facsimile: (306) 975-4555  
E-mail: TDG-TMDPNR@tc.gc.ca

**Transport Canada Dangerous Goods Directorate Internet address**

<http://www.tc.gc.ca/eng/tdg/safety-menu.htm>

**5.2 WILDLIFE ENCOUNTERS**

Wildlife encounters pose a risk for stress or injury to both site personnel and wildlife. Control measures and environmental protection procedures should be used to minimize this risk to wildlife and humans.

The Contractor is responsible for keeping all work areas free of food scraps and waste, for collecting all waste for disposal, and for inspecting work areas to ensure these safety measures have been implemented.

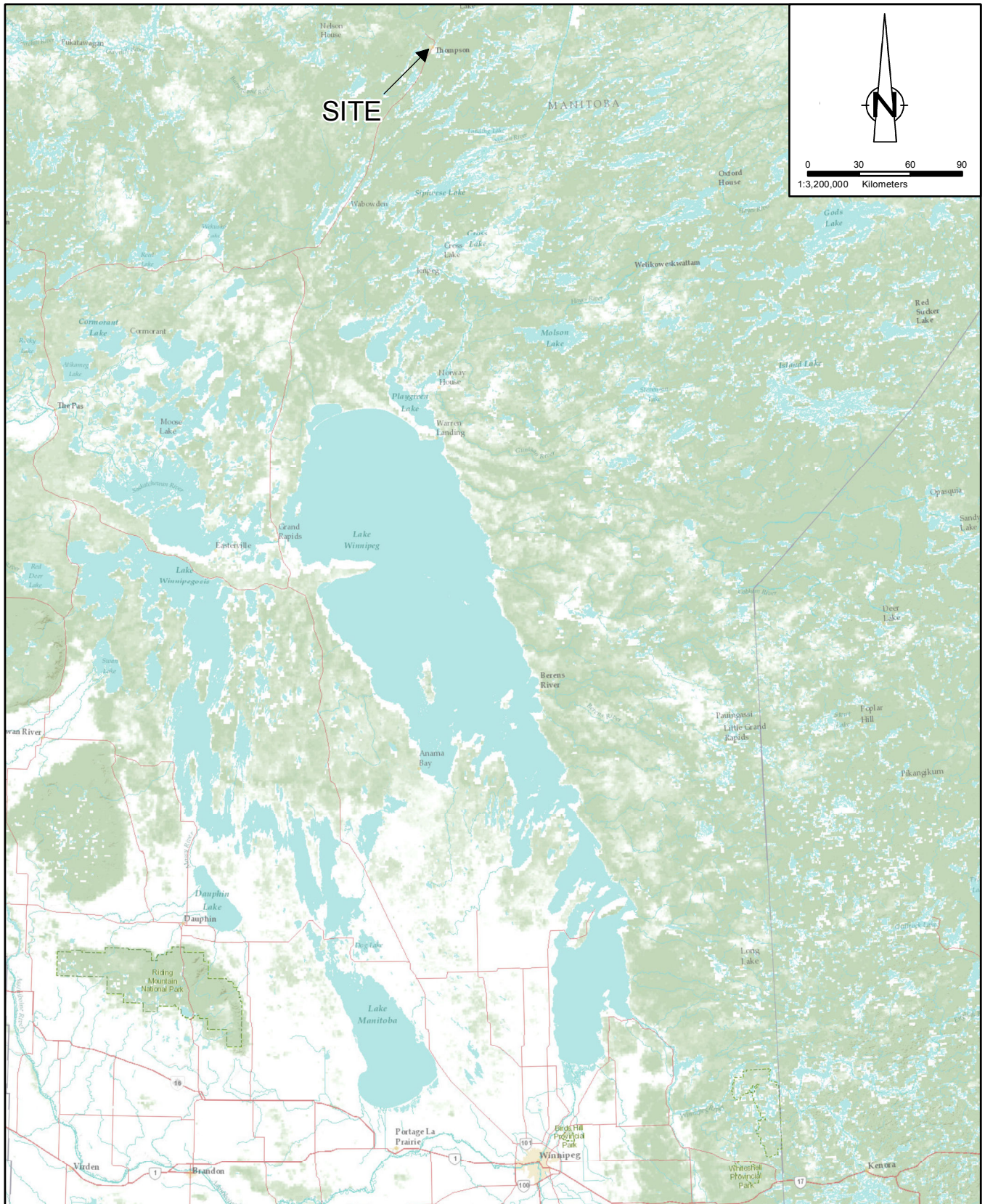
All project personnel will abide by the following rules in cases of wildlife encounters:

- No attempt to chase, catch, divert, follow or otherwise harass wildlife by ATV, equipment, or on foot will be made by any person at the project Site.
- Equipment and vehicles will yield the right-of-way to wildlife.
- No personal pets, domestic or wild, will be allowed on the Site. However, if a dog is required for deterrence purposes, approval will be considered.
- All personnel should be aware of the potential for encounters with black bears and instructed to immediately report all sightings to the Site Supervisor.
- When nuisance animals (e.g., black bear) are identified in the project area, the Site Supervisor will be responsible for all subsequent actions.

### 5.3 FOREST FIRES

The Contractor will take all necessary precautions to prevent fire hazards when working at the Site including but not limited to the following:

- Disposal of all flammable waste on a regular basis.
- Make available sufficient fire fighting equipment, in proper operating condition, to suit its labour force and fire hazards. The Contractor shall maintain the equipment in accordance with the manufacturer's standards.
- Ensure that its personnel are trained in the use of such equipment.
- In the event of a forest fire, take immediate steps to contain or extinguish the fire.
- Fires should be reported immediately to Vale:
  - name of the reporter and phone number
  - time of detection of the fire
  - size of the fire
  - location of the fire
- Notify the City of Thompson Emergency Services immediately.



Source: ESRI Topographic Basemap, Accessed 2012; Coordinate System: NAD 1983 UTM Zone 14N

figure 1.1

**SITE LOCATION MAP**  
**VALE-MANITOBA OPERATIONS**  
*Thompson, Manitoba*





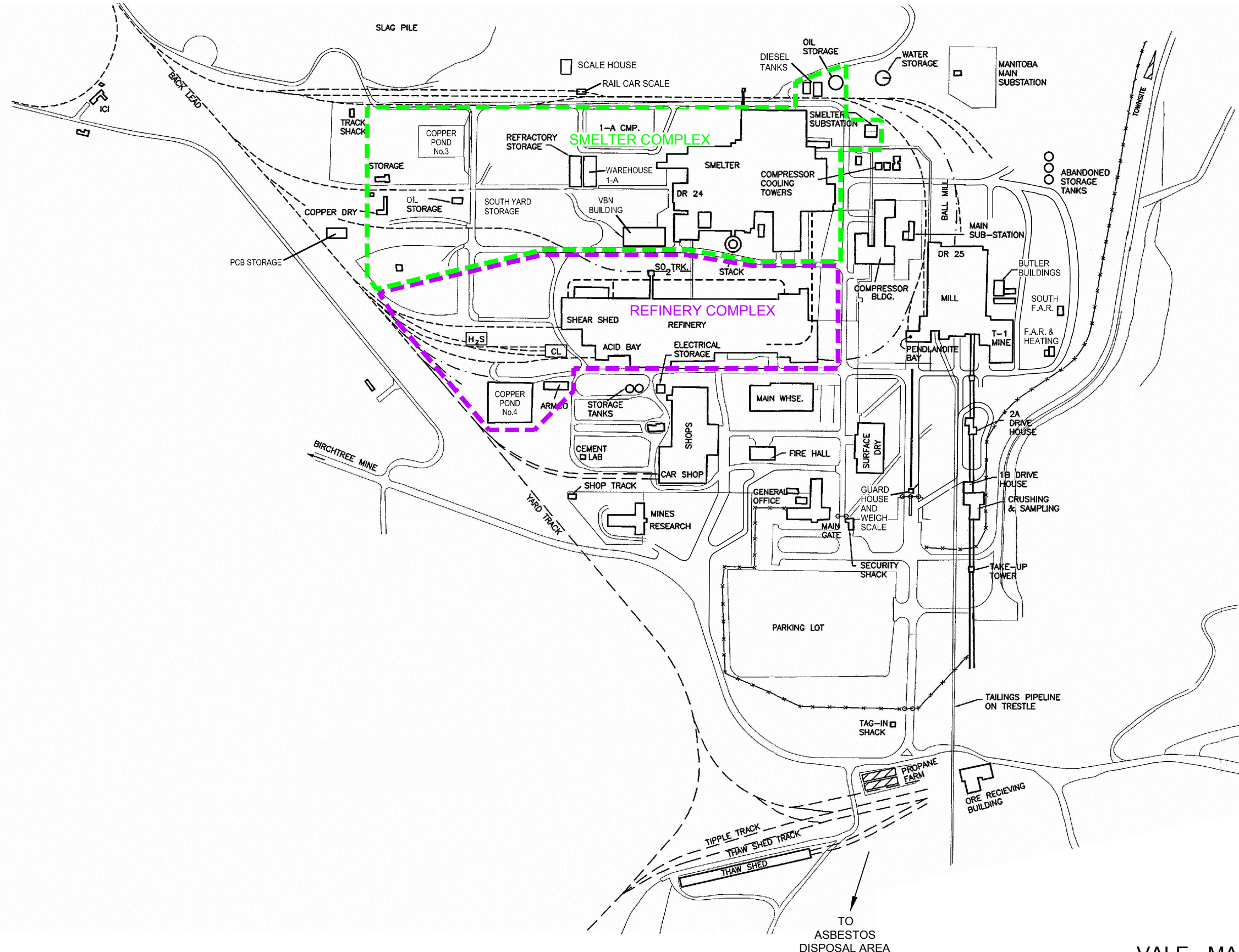


figure 1.2  
 SITE PLAN  
 VALE - MANITOBA OPERATIONS  
 Thompson, Manitoba



SOURCE: AMEC EARTH & ENVIRONMENTAL LIMITED, 2003 MINE CLOSURE PLAN, THOMPSON PLANT, SITE PLAN.

**TABLE 2.1**  
**REGULATORY REQUIREMENTS**  
**VALE THOMPSON MINE SITE**  
**THOMPSON, MANITOBA**

<i>Act/Regulation</i>	<i>Reference</i>	<i>Current Applicability (Yes/No)</i>	<i>Applicability During Closure (Yes/No)</i>	<i>Regulatory Requirements and Concerns</i>	<i>Application to Closure</i>	<i>Associated Permit</i>	<i>Emission Limits</i>	<i>Comments</i>	<i>Website</i>
<b>FEDERAL REQUIREMENTS</b>									
The Canadian Environmental Protection Act	Notice Requiring the preparation and implementation of Pollution Prevention Plans	NO	NO	Require the preparation and implementation of pollution prevention plans for sulphur dioxide and particulate	None during closure. Vale will have to prepare plans as require		Sulphur dioxide release target of 22 800 tonnes per year Particulate release target of 198 tonnes per year	Vale will still be required the preparation of plans for any particulate and sulphur dioxide emissions after 2015	<a href="http://gazette.gc.ca/archives/p1/2006/2006-04-29/html/notice-avis-eng.html">http://gazette.gc.ca/archives/p1/2006/2006-04-29/html/notice-avis-eng.html</a>
The Canadian Environmental Protection Act	National Pollutant Release Inventory (NPRI) reporting including air, water, land releases as well as transfers for disposal and recycling	YES	YES	Prepare and submit annual NPRI reports	Vale to continue with the development and submission of reports for the entire Site			Vale to continue with annual reporting as necessary. 2016 report will reflect changes in air emissions.	
The Canadian Environmental Protection Act	Export and Import of Hazardous Waste and Hazardous Recyclable Material	YES	YES	Shipment of hazardous wastes across provincial borders is covered under this regulation. Additional requirements may be imposed by the provinces where the materials are shipped through and received.	Vale to continue following regulatory requirements	NA	NA	Vale to continue with generator registrations and manifesting of waste shipments	
The Canadian Environmental Protection Act	National Fire Code	YES	YES	Federal Fire code requirements for existing structures and new construction	Vale to continue following provincial regulations and requirements	NA	NA		
The Canadian Environmental Assessment Act (CEAA)		NO	NO	The federal EA process is applied whenever a federal authority has a specified decision-making responsibility in relation to a project. This is known as a "trigger". Specifically, CEAA is triggered when a federal authority: - proposes a project (i.e., is the proponent for a project); - provides financial assistance to a proponent to enable a project to be carried out; - sells, leases, or otherwise transfers control or administration of federal land to enable a project to be carried out;	No actions required for the closure of the smelter and refinery	NA	NA		
The Canadian Fisheries Act	Fisheries Act	YES	NO	Act regulates the discharge or deposit of deleterious substances to a surface body that may adversely impact fish habitats	No actions required for the closure of the smelter and refinery	NA	NA		
The Canadian Fisheries Act	Metal Mining Effluent Regulation SOR/2002-2222	YES	YES	Establishes discharge criteria for final effluent leaving a mining site.	No actions required for the closure of the smelter and refinery. Applies to mining sites, administered jointly by Fisheries Canada and Manitoba Conservation	NA	NA	Vale to continue testing demonstration of conformance to MMER discharge requirements	
Nuclear Safety and Control Act	S.C. 1997, c. 9	YES	YES	The Acts limits to a reasonable level and in a manner that is consistent with Canada's international obligations, of the risks to national security, the health and safety of persons and the environment that are associated with the development, production and use of nuclear energy and the production, possession and use of nuclear substances, prescribed equipment and prescribed information; and the implementation in Canada of measures to which Canada has agreed respecting international control of the development, production and use of nuclear energy, including the non-proliferation of nuclear weapons and nuclear explosive devices.	See regulation below				

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Nuclear Substances and Radiation Devices Regulations SOR/2000-207	CNSC	YES	YES	Regulates the use of any nuclear substance or a radiation devices.	Vale currently has devices in the smelter and refinery. Continue with inspections and report of any devices which will continue to be used Vale will need to sell or transfer ownership of devices as per regulation and update permits as needed.	License No 01701-8-11.0	NA	Vale to maintain annual compliance reporting to the CNSC until the instruments are transferred or sold in accordance with CNSC regulations. Will have to modify license to remove any equipment that is sold or removed from the Site	
<b>PROVINCIAL REQUIREMENTS</b>									
<b>Manitoba Acts &amp; Regulations</b>									
Environmental Act	C.C.S.M. c. E125	YES	YES	The intent of this Act is to develop and maintain an environmental protection and management system in Manitoba which will ensure that the environment is protected and maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations, and in this regard, this Act.	Vale will need to continue demonstrating compliance will applicable regulations as stated below	NA	NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/e125e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/e125e.php</a>
Mines and Minerals Act	C.C.S.M. c. M162	YES	YES	The object and purpose of this Act is to provide for, encourage, promote and facilitate exploration, development and production of minerals and mineral product in Manitoba, consistent with the principles of sustainable development. Requires that decisions respecting the economy and mining activities be integrated with decisions respecting protection and management of the environment so that mining activity is commenced with due regard for its impact on the environment and environmental programs or initiatives are instituted with proper regard for their economic impact.	Vale will need to demonstrate compliance will applicable regulations as stated below	NA	NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/m162e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/m162e.php</a>
Contaminated Sites Remediation Act & Regulation	Act - C.C.S.M. c. C205	NO	NO	The principal purpose of this Act is to provide for the remediation of contaminated sites, in accordance with the principles of sustainable development, in order to reduce or mitigate the risks of further damage to human health or the environment and, where practicable, to restore such sites to useful purposes.  Except as otherwise provided in the regulations, this Act does not apply to a site to which the provisions of The Oil and Gas Act or The Mines and Minerals Act respecting the rehabilitation of land apply.	Vale is exempted under Mines and Minerals Act	NA	NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/c205e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/c205e.php</a>
Contaminated Sites Remediation Act & Reg	105/97	NO	NO	Establishes a registry of Contaminated Sites in Manitoba and specifies information requirements for each Site. Established regulatory framework for hearing and appeals	None	NA	NA		<a href="http://web2.gov.mb.ca/laws/regis/pdf/c205-105.97.pdf">http://web2.gov.mb.ca/laws/regis/pdf/c205-105.97.pdf</a>
The Dangerous Goods Handling and Transportation Act	C.C.S.M. c. D12	YES	YES	No person shall handle or dispose of dangerous goods or cause dangerous goods to be handled or disposed of except in compliance with this Act and the regulations.	Vale to continue following regulatory requirements and maintain permits/licenses. Update permit to reflect change in Site status	NA	NA	Vale to continue with proper disposal of all waste generated during production and closure. Operation of petroleum Storage facilities	<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/d012e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/d012e.php</a>
The Dangerous Goods Handling and Transportation Regulation	55/2003	YES	YES	Adoption of Transportation of Dangerous Goods Regulations, SOR/2001-286 Details Permitting, Inspection, Certification, Record Keeping requirements	Vale to continue following regulatory requirements and maintain permits/Licenses	NA	NA		<a href="http://web2.gov.mb.ca/laws/regis/pdf/d012-055.03.pdf">http://web2.gov.mb.ca/laws/regis/pdf/d012-055.03.pdf</a>
The Dangerous Goods Handling and Transportation Fees Regulation	164/2001	YES	YES	Establishes \$250 fee for license application	Vale to pay applicable fees as required	NA	NA		<a href="http://web2.gov.mb.ca/laws/regis/pdf/d012-164.01.pdf">http://web2.gov.mb.ca/laws/regis/pdf/d012-164.01.pdf</a>

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Environmental Accident Reporting Regulation	439/87	YES	YES	(1) A person who is responsible for or who has custody and control of a contaminant involved in an environmental accident shall immediately after the occurrence of the environmental accident report the accident by calling (a) the Manitoba Department of Environment and Workplace Safety and Health in Winnipeg at (204) 944-4888; or (b) the local police or fire department, as appropriate. 3(2) The report referred to in subsection (1) shall include the following information where it is either known or is readily available: (a) the location and time of the accident; (b) the name and telephone number of the person reporting the accident; (c) a brief description of the circumstances of the accident and its status at the time of the report; (d) the identity and quantity of the contaminant;	Vale to file reports as required	NA	NA		<a href="http://web2.gov.mb.ca/laws/regs/pdf/d012-439.87.pdf">http://web2.gov.mb.ca/laws/regs/pdf/d012-439.87.pdf</a>
Generator Registration and Carrier Licensing Regulation	175/87	YES	YES	Registration of generators, reporting requirements and application for a license to transport hazardous waste requirements	Vale to maintain transporter registration and update license as required.	MBG00598 MB2001330	NA		
Manifest Regulation	139/88	YES	YES	Defines hazardous waste manifest requirements and reporting.	Vale to maintain generator registration and update waste descriptions as necessary for the closure. Fill out manifests in accordance with regulation and maintain records	MBG00598			<a href="http://web2.gov.mb.ca/laws/regs/pdf/d012-139.88.pdf">http://web2.gov.mb.ca/laws/regs/pdf/d012-139.88.pdf</a>
PCB Storage Site Regulation	113/2003	YES	YES	Regulates PCB waste storage, storage area design, labelling, record keeping and reporting	Vale to continue to following regulatory requirements and maintain inspection frequencies, labeling requirements, inventory labeling and reporting	NA	NA		<a href="http://web2.gov.mb.ca/laws/regs/pdf/d012-474.88.pdf">http://web2.gov.mb.ca/laws/regs/pdf/d012-474.88.pdf</a>
Storage and Handling of Petroleum Products and Allied Products Regulation	188/2001		YES	Regulates the permitting design and storage of petroleum products	Vale to continue to following regulatory requirements and maintain permits/Licenses. Close Underground and above ground petroleum storage tanks in accordance with the appropriate guidance using a licensed petroleum technician. Licensed petroleum technician to obtain necessary permit prior to conducting and removal or decommissioning work. Manage petroleum impacted soils in as specified in Manitoba Conservation Guideline 96-05.	Permit #23390	NA	Vale may wish to close storage facility without completing a complete remediation.	<a href="http://web2.gov.mb.ca/laws/regs/pdf/d012-188.01.pdf">http://web2.gov.mb.ca/laws/regs/pdf/d012-188.01.pdf</a>
Inco Limited And Hudson Bay Mining and Smelting Co. Limited Smelting Complex Regulation	165/88	YES	YES	Limits sulphur dioxide and particulate emissions. Specifies ambient air monitoring and reporting requirements for Vale Thompson	Vale to continue monitoring and reporting as required for any emissions from the Mill and new concentrator.	Operating a Stack covered by 960VC Order. Order Valid until new revision	Valenco shall not emit sulphur dioxide into the atmosphere in excess of 23 kilotonnes per calendar month and 220 kiltonnes per calendar year and shall not emit particulate matter into the atmosphere in excess of 310 tonnes per calendar month and 3,000 tonnes per calendar year.	Emission limits will be overridden by Federal regulation as presented above.	<a href="http://web2.gov.mb.ca/laws/regs/pdf/e125-165.88.pdf">http://web2.gov.mb.ca/laws/regs/pdf/e125-165.88.pdf</a>

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On-Site Wastewater Management Systems Regulation	83/2003	YES	YES	This regulation applies to onsite wastewater management systems with a combined sewage or greywater flow of less than 10,000 L (2,200 gallons) per day and to privies. No person shall construct, install, site, locate, replace, expand or modify an onsite wastewater management system, pit privy, pail privy or vault privy in whole or in part, except in compliance with this regulation. The regulation further details prohibitions, permitting, approval and decommission requirements for wastewater management system	Vale to maintain certifications, records etc.		NA		<a href="http://www.canlii.org/on/laws/regu/1998r.361/20070614/whole.html">http://www.canlii.org/on/laws/regu/1998r.361/20070614/whole.html</a>
Waste Disposal Grounds Regulation	121/94	YES	YES	Regulates the disposal of all garbage, solid waste, liquid waste, bulky metallic waste and industrial waste created within its jurisdiction. Provides further details types of landfills, permitting requirements, operators responsibilities and duties	Vale to document compliance with waste disposal permit condition, records etc. during closure and receipt of demolition debris at the permitted landfill	Permit No 5-055 Rev. 4	NA		<a href="http://www.e-laws.gov.on.ca/DBILaws/Regs/English/900360_e.htm">http://www.e-laws.gov.on.ca/DBILaws/Regs/English/900360_e.htm</a> <a href="http://www.canlii.org/on/laws/regu/1990r.360/20060517/whole.html">http://www.canlii.org/on/laws/regu/1990r.360/20060517/whole.html</a>
Water and Wastewater Facility Operators Regulation	77/2003	YES	YES	This regulation established classification of treatment facilities and identifies operator training and certification requirements	Maintain certifications, records etc.	Certificate Number 2007-126	NA		<a href="http://web2.gov.mb.ca/laws/regu/pdf/e125-077.03.pdf">http://web2.gov.mb.ca/laws/regu/pdf/e125-077.03.pdf</a>
Manitoba Fire Code	155/2011	YES	YES	Subject to the amendments set out in the Schedule, the National Fire Code of Canada 2010, issued by the Canadian Commission on Building and Fire Codes, National Research Council of Canada, is adopted as the fire code for Manitoba. Further details include specific requirement for fire detection and alarm devices, maintenance and inspection etc.	Vale to maintain compliance with code requirements for construction/demolition projects	NA	NA		<a href="http://web2.gov.mb.ca/laws/regu/pdf/f080-155.11.pdf">http://web2.gov.mb.ca/laws/regu/pdf/f080-155.11.pdf</a>
THE WORKPLACE SAFETY AND HEALTH ACT	C.C.S.M. c. W210	YES	YES	The objects and purposes of this Act are to secure workers and self-employed persons from risks to their safety, health and welfare arising out of, or in connection with, activities in their workplaces; and to protect other persons from risks to their safety and health arising out of, or in connection with, activities in workplaces.		NA	NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/w210e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/w210e.php</a>
Operations of Mines Regulation	212/2011	YES	YES	This regulation applies to a mine. For certainty, the Workplace Safety and Health Regulation, Manitoba Regulation 217/2006, also applies to a mine, but if there is a conflict between a provision of this regulation and a provision of The Workplace Safety and Health Regulation, the provision of this regulation prevails. Duties of employers Duties of supervisors Duty of workers Workplace safety and health committees and representatives Accident Investigation and reporting PPE, Fall Protection, Alcohol and Drugs, Sanitary facilities, Lunch Rooms, First Aid, Working Environments, Hazardous Materials etc. Buildings, etc. left at discontinued mine	Decommission and close building and structures as required, Consistent with Mine Closure Reg. Follow Mine Closure Plan Guidelines	NA	NA		<a href="http://web2.gov.mb.ca/laws/regu/pdf/w210-212.11.pdf">http://web2.gov.mb.ca/laws/regu/pdf/w210-212.11.pdf</a>
Manitoba Labour Board (The Workplace Safety and Health Act) Rules of Procedures	387/88R	YES	YES	Procedural Rules for the Manitoba Labour board Worker rights etc.	Vale to continue following regulatory and requirements	NA	NA		

**TABLE 2.1**  
**REGULATORY REQUIREMENTS**  
**VALE THOMPSON MINE SITE**  
**THOMPSON, MANITOBA**

<i>Act/Regulation</i>	<i>Reference</i>	<i>Current Applicability (Yes/No)</i>	<i>Applicability During Closure (Yes/No)</i>	<i>Regulatory Requirements and Concerns</i>	<i>Application to Closure</i>	<i>Associated Permit</i>	<i>Emission Limits</i>	<i>Comments</i>	<i>Website</i>
Mine Closure Regulation	67/99	YES	YES	<p>Application to non-aggregate quarries</p> <p>2 The provisions of this regulation relating to the filing of a closure plan in respect of a mine apply with necessary modifications to the persons and closure plans referred to in subsections 128(3) and 188(2) (closure plan for private non-aggregate quarry) of the Act.</p> <p>Operator of mine to file notice and plan</p> <p>5(1) The operator of a mine that is in operation, or the operation of which is suspended, on the day this regulation comes into force and in respect of which no closure plan has been filed with the director under section 111 of the Act shall file with the director</p> <p>(a) within 60 days after that day, the name and address of the operator, the name of the mine, and the person authorized by the operator to be the contact person in respect of the mine; and</p> <p>(b) within 120 days after that day, a closure plan that conforms to the requirements of section 111 of the Act and this regulation, and includes a statement that the operator is aware of the requirements of sections 188 (plan to be carried out), 189 (progressive rehabilitation) and 190 (annual report on rehabilitative work) of the Act.</p> <p>Content of closure plan</p> <p>9 A closure plan must include the following:</p> <p>(a) the name and address of the proponent or operator of the project;</p> <p>(b) the name of the project;</p> <p>(c) the legal description of the project site;</p> <p>(d) the name, address and telephone number of any person authorized to act on behalf of the proponent or operator in respect of the plan;</p> <p>(e) the surface rights, mineral rights or mineral access rights held by the proponent or operator in respect of the project site;</p> <p>(f) the previous use of the project site;</p> <p>(g) a description of any previous disturbance or other activity that has, or could have, resulted in contamination of the project site or land adjoining the site;</p> <p>(h) current conditions and activities on the site and security measures employed;</p> <p>(i) a plan showing the location and use of equipment, machinery, buildings and other structures on the project site or in the area in which the site is located;</p> <p>(j) a plan of the project site or the area in which the site is located, drawn to scale and showing the boundaries of the proponent's surface rights and the areas within those boundaries that will or could be subject to disturbance, alteration or contamination as a result of the project.</p>	Decommission and close building and structures as required, Consistent with Mine Closure Regulation and Guidelines	NA	NA		<a href="http://web2.gov.mb.ca/laws/regs/pdf/m162-067.99.pdf">http://web2.gov.mb.ca/laws/regs/pdf/m162-067.99.pdf</a>
Water Rights Act	W80	YES	YES	<p>Prohibition against use of water except as otherwise provided in this Act or the regulations, no person shall in any manner whatsoever use or divert water, unless he or she holds a valid and subsisting license to do so; or construct, establish, operate or maintain any works, unless he or she holds a valid and subsisting license to do so; or control water or construct, establish, operate or maintain any water control works, unless he or she holds a valid and subsisting license to do so.</p>		NA	NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/w080e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/w080e.php</a>
Steam and Pressure Plants Act	C.C.S.M. c. S210	YES	YES	<p>This Act does not apply to pressure plants, pressure vessels or steam plants that are subject to inspection under</p> <p>(a) the Canada Shipping Act;</p> <p>(b) the Explosives Act (Canada); or</p> <p>(c) the Railway Act (Canada).</p>			NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/s210e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/s210e.php</a>
Steam and Pressure Plants Regulation	108/87R	YES	YES	Rules for certification, design use and inspection of steam and pressure vessels	Vale to update permits and certification to remove decommissioned equipment		NA		<a href="http://web2.gov.mb.ca/laws/regs/pdf/s210-108.87r.pdf">http://web2.gov.mb.ca/laws/regs/pdf/s210-108.87r.pdf</a>

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**THOMPSON, MANITOBA**

<i>Act/Regulation</i>	<i>Reference</i>	<i>Current Applicability (Yes/No)</i>	<i>Applicability During Closure (Yes/No)</i>	<i>Regulatory Requirements and Concerns</i>	<i>Application to Closure</i>	<i>Associated Permit</i>	<i>Emission Limits</i>	<i>Comments</i>	<i>Website</i>
The Water Resources Conservation Act	C.C.S.M. c. W70	YES	YES	The Act allows the province to manage and administer all those matters that relate to the construction or operation of water control works, and, in particular, those matters dealt with under the following Acts, or regulations made thereunder: The Dyking Authority Act. The Ground Water and Water Well Act. The Water Power Act. The Water Rights Act. The Water Supply Commissions Act.	Vale to maintain permit document compliance with requirements and record keeping.	Renewal of Water Rights Licence # 71-32, which expired March 8, 1992 and was renewed on Feb 5, 2009.	NA		<a href="http://web2.gov.mb.ca/laws/statutes/ccsm/w072e.php">http://web2.gov.mb.ca/laws/statutes/ccsm/w072e.php</a>
Water Resources Conservation Regulation	179/2010	NO	NO	Lists exceptions from the act	None	NA	NA		<a href="http://web2.gov.mb.ca/laws/regs/pdf/w072-179.10.pdf">http://web2.gov.mb.ca/laws/regs/pdf/w072-179.10.pdf</a>
Water Rights Regulation		YES	YES	Licensing requirements for any water control works including application requirements, fees, record keeping requirements etc.	Vale to maintain certifications, records etc.	Renewal of Water Rights Licence # 71-32, which expired March 8, 1992 and was renewed on Feb 5, 2009.	NA		<a href="http://web2.gov.mb.ca/laws/regs/pdf/w080-126.87.pdf">http://web2.gov.mb.ca/laws/regs/pdf/w080-126.87.pdf</a>

APPENDIX A

RECORD OF REVISION





APPENDIX B

INSPECTION FORM

APPENDIX B

INSPECTION REPORT

ENVIRONMENTAL PROTECTION PLAN  
VALE - MANITOBA OPERATIONS  
THOMPSON, MANITOBA

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

Site Conditions: \_\_\_\_\_

<i>Measures and Controls</i>	<i>In Conformance with Design Standards</i>	<i>Effective Pollutant Control Practice</i>
Construction Entrance/ Staging Area	YES / NO	YES / NO
Sediment/Silt Fence	YES / NO	YES / NO
Soil Stabilization	YES / NO	YES / NO
Straw Bales	YES / NO	YES / NO
Solid Waste Disposal	YES / NO	YES / NO
Equipment Fueling/ Storage	YES / NO	YES / NO
Hazardous Materials Storage	YES / NO	YES / NO
Waste Storage	YES / NO	YES / NO
Sanitary/ Septic	YES / NO	YES / NO
	YES / NO	YES / NO
	YES / NO	YES / NO

**VIOLATIONS NOTED:** (Explain each "NO" circled above)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

APPENDIX B

INSPECTION FORM

ENVIRONMENTAL PROTECTION PLAN  
VALE - MANITOBA OPERATIONS  
THOMPSON, MANITOBA

<i>Project Activity Area</i>	<i>Date Activity Commenced or Ceased</i>	<i>Temporary or Permanent</i>	<i>Date Soil Stabilization Implemented</i>	<i>Date Activities Resumed</i>