REMEDIATION OF
THE SYDNEY TAR PONDS
AND COKE OVENS SITES

ENVIRONMENTAL MANAGEMENT PLAN

Prepared for:

NOVASCOTIA

Sydney Tar Ponds Agency
P.O. Box 1028, Stn. A
1 Inglis St., (#3 Gate)
Sydney, Nova Scotia
B1P 6J7

Prepared by:

AMEC Earth & Environmental
A division of AMEC Americas Limited
55 Townsend Street
Sydney, Nova Scotia
B1P 5C5

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Figure 1.1
Project Site and Associated Features

Environmental Management Plan
Sydney Tar Ponds and Coke Ovens Site

December 2004 1:17,500
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1.0 INTRODUCTION

The Government of Canada and the Government of Nova Scotia, through the Sydney Tar Ponds Agency ("Proponents"), intend to remediate (i.e., cleanup) the Sydney Tar Ponds and Coke Ovens sites located in Cape Breton Regional Municipality (CBRM), Nova Scotia (the "Project"). Figure 1.1 shows the general features of the proposed Project area.

Remediation of the sites will reduce the ecological and human health risks from the existing contamination, and will result in properties suitable for future development.

1.1 PURPOSE

To ensure the protection of the environment this Environmental Management Plan ("EMP") has been developed to communicate to all project participants and stakeholders the commitment and efforts to be undertaken to prevent, manage and minimize any potential environmental impacts related to the Project. The EMP is the principle vehicle for ensuring that mitigation is implemented as directed by all applicable regulatory requirements and provides an opportunity to outline responsible construction practices.

This EMP was developed as a guidance document in order to demonstrate and ensure due diligence is constantly maintained for any Project activities undertaken by the Sydney Tar Ponds Agency ("STPA").

The purpose of this EMP is to:

- Support the Project’s commitments to minimize environmental effects;
- Document environmental concerns and appropriate protection measures; and
- Provide instructions to relevant project personnel regarding procedures for protecting the environment and minimizing environmental effects, thereby supporting the project goal of zero incidents.

The Project will involve a wide range of activities necessitating the implementation of remedial options that will be developed as the Project proceeds. All mitigation that will be recommended in the EIA, as well as any regulatory requirements, or conditions of permits/approvals, will be implemented via the mechanisms outlined in the EMP. It also provides implementation guidelines to help ensure compliance with the mitigation, monitoring, and follow-up commitments and requirements identified through the environmental assessment.

1.2 ENVIRONMENTAL POLICY AND GUIDING PRINCIPLES

The EMP is based on three fundamentals, which are:

- Compliance with legislative requirements and to all environmental regulations;
- Adherence to the Proponent’s own guidelines, practices and procedures; and
- Conformity with the best management practices and industry standards.

It should also be recognized that the EMP is a dynamic “living” document that will continuously require revision due to site activities, changes in legislation, new technological approaches, etc. It will be incumbent on the Proponents to ensure that routine reviews of the document are completed and that the contents remain current over the entire length of the Remediation
FIGURE 1.1  Project Site and Associated Features
Remediation of the Sydney Tar Ponds and Coke Ovens Sites
ENVIRONMENTAL MANAGEMENT PLAN

Project and beyond. Modifications to existing documented protocols may be required to suit particular applications and conditions as they are identified.

1.3 ROLES AND RESPONSIBILITIES

For the success of any EMP, it is important that all participants understand their roles and responsibilities, as they pertain to environmental protection. The following is an outline of the management structure associated with the Project, and the responsibilities associated with the various positions. As the Project evolves the management structure may be altered, and responsibilities may be added or taken away from these positions and allocated to others. In addition, field specific roles and responsibilities shall be outlined in more detailed site specific protection plans (see Section 5.0) as they are developed.

STPA Chairman and Chief Executive Officer

The STPA Chairman and Chief Executive Officer will bear overall accountability for ensuring that the environmental management plan is in effect and adequately resourced.

STPA Project Manager

The STPA Project Manager will be responsible for the day-to-day implementation of the environmental management plan. This will include having mechanisms in place to ensure that the environmental policies and procedures are being adhered to by contractors and by staff engaged on the project.

Safety, Health and Environmental Coordinator

STPA will appoint a Safety, Health and Environmental Coordinator who will have responsibility for safety, health and environmental management. The following functions are required to fulfil this responsibility:

- Coordinate all safety, health and environmental management functions;
- Report on safety, health and environmental matters to the STPA Project Manager;
- Monitor compliance with relevant safety, health and environmental standards;
- Ensure all project participants have received the required training and any refresher training programs throughout the duration of the Project;
- Document all training programs and certifications; and
- Act as a spokesperson on safety, health and environmental issues.

Contractors

All contractors and subcontractors working on the site will be responsible for implementing, enforcing and maintaining their activities in accordance with the EMP for the duration of their contractual activities at the site. Each contractor and subcontractor will designate a person who will be responsible for compliance with the EMP. The contractor/subcontractor will ensure that his designated environmental coordinator has appropriate training.

Other Staff

All STPA staff will have a responsibility to comply with this EMP.
2.0 BACKGROUND

Located in the heart of the CBRM, the landscape of the Muggah Creek Watershed and its estuary includes a recently closed steel making operation, the remains of a coke production facility, a rail yard, and a number of active and abandoned waste material dumps.

Many of the production activities associated with the early coal and steel industry used raw materials, or produced wastes. Generic non-site specific studies have shown that these materials and chemicals can cause adverse effects for human health and the environment. In general, during these earlier times when the coal and steel industry was prospering, little was known of the negative effects of industrial emissions, which was considered to be a necessary by-product of prosperity.

The industrial by-products of the Sydney coke production operations included coal tar, ammonia, sulphur, light hydrocarbons (benzene, xylene, toluene), and polycyclic aromatic hydrocarbons (PAHs). In the early years of coke production, the contribution of contaminants to the environment was reduced through the internal recycling and recovery of these by-products. As the demand for these materials diminished for these processes, recycling and recovery operations were no longer economically viable. Formerly valuable by-products became waste materials and were allowed either to accumulate in unsecured storage areas at the plant site, or were deposited directly onto the soil, or into site watercourses. As a result of these activities, contaminants entrained in the raw materials and wastes are now present in the soils and groundwater of the Coke Ovens site, and in the waters and sediments of the Tar Ponds, Coke Oven Brook, Muggah Creek and Sydney Harbour.

The environment of Muggah Creek and Sydney were also impacted by the by-products of the steel making process, which included huge quantities of the relatively inert waste material known as slag. Over the last century of operation of the steel plant, slag and waste iron were deposited as infill material along the northeastern shoreline of the Muggah Creek estuary and Sydney Harbour. Over time the infilling operations encroached upon the former salt marsh and greatly changed the configuration of the natural shoreline. Other sources of contaminants associated with the coal and steel industry that may have impacted upon the Tar Ponds include the raw coal and coke product, flue dust from the blast furnaces and ovens, coal tars, sulphur (from the sulphuric acid plant), and miscellaneous waste water effluents.

The steel and coke industry was not the only industry operating in this area of Sydney. There was, for example, a coal tar plant, a cement plant, asphalt paving company, a fuel gas and oil company, metal processors, and a brick manufacturing company located in or in proximity to this area. Any or all of these operations may also have contributed to the contaminants in the area’s soils, sediments, surface and groundwater, and air.

Environmental contamination of the Muggah Creek watershed in and around the area of former steel and coke making operations is known to be extensive and complex. Government and community efforts towards the cleanup of and remediation of impacted lands and water within the watershed have focused primarily on four areas (JAG, 1998a):

- the North and South Ponds of the Muggah Creek (the Tar Ponds);
- the former Coke Ovens site;
- the Coke Oven Brook Connector (a tributary to Muggah Creek); and
- the former municipal landfill.
This area, including the Tar Ponds and Coke Ovens sites, has been referred to as one of the worst contaminated sites in Canada (JAG, 1998a).
3.0 SCOPE OF THE PROJECT

The scope of the Project will consist of the various undertakings proposed by the proponents to be carried out in relation to the physical works and activities of the Project. This will include the specific construction, operation and decommissioning components of the Project. The specific components of the remediation of the Tar Ponds and Coke Ovens sites are summarized in Table 3.1. More detailed information regarding the various components of the Project can be found in the associated Project Description Report (AMEC 2004).

### TABLE 3.1 Proposed Remediation Program

<table>
<thead>
<tr>
<th>Activity</th>
<th>Tar Ponds Site</th>
<th>Coke Ovens Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control Water</td>
<td>Construct watercourse diversion channels to redirect surface water flowing through the Tar Ponds. This will isolate brooks and streams from contaminated Tar Pond sediments.</td>
<td>Reroute groundwater and surface water flowing through the site to minimize water contact with contaminants.</td>
</tr>
<tr>
<td>2. Remove and Destroy Selected Contaminants</td>
<td>Remove and destroy 120,000 tonnes (92,000 m$^3$) of sediment containing PCB material in an approved temporary PCB incinerator that will be constructed offsite in Industrial Cape Breton.</td>
<td>Remove and destroy 1,300 tonnes (1,000 m$^3$) of PAH contaminated sediment from Coke Oven Brook and 25,000 tonnes (12,500 m$^3$) of PAH contaminated material from the in-ground Tar Cell in an approved temporary incinerator that will be constructed offsite in Industrial Cape Breton.</td>
</tr>
<tr>
<td>3. Treat Selected Contaminants In-place</td>
<td>Solidify and stabilize, in-place, the top 1 to 2 m of remaining sediment with a binder (such as Portland cement) using on-site auger or grout injection systems.</td>
<td>Treat, in-place, 253,700 tonnes (128,800 m$^3$) of remaining contaminated surface soils using bioremediation. Landfarming of the top 0.5 m of contaminated soil will be used to promote biological breakdown of contaminants in surface soils.</td>
</tr>
<tr>
<td>4. Contain Residual Contaminants</td>
<td>Install a containment system designed to reduce human and ecological exposure to contaminants and to prevent the movement of contaminants off-site. The containment system will consist of low permeability barrier walls installed at various locations around the perimeter of the Tar Ponds and an engineered cap.</td>
<td>Install a containment system designed to reduce human and ecological exposure to contaminants and to prevent the movement of contaminants off-site. The containment system will consist of low permeability vertical walls installed at various locations around the perimeter of the Coke Ovens site and a soil cover designed to facilitate future site use(s).</td>
</tr>
<tr>
<td>5. Site Surface Restoration and Landscaping</td>
<td>Site restoration and landscaping will be compatible with the natural surroundings and future use.</td>
<td>Site restoration and landscaping will be compatible with the natural surroundings and future use.</td>
</tr>
<tr>
<td>6. Long-term Monitoring and Maintenance Plan</td>
<td>Monitor air quality, water quality and the performance of the containment system after completion of the project.</td>
<td>Monitor air quality, water quality and the performance of the containment system after completion of the project.</td>
</tr>
</tbody>
</table>

The remediation of the Tar Ponds and Coke Ovens sites will use technologies that have been demonstrated to be safe and effective on similar contaminated sites.

The worst (high levels of PCBs and PAHs) contaminants will be removed and safely destroyed using high temperature incineration. The licensed and approved temporary incinerator will be located offsite, within 20 km of the Tar Ponds and Coke Ovens sites, in industrial Cape Breton. Materials to be incinerated include 120,000 tonnes (92,000 m$^3$) of sediment containing PCB materials from the Tar Ponds and 26,300 tonnes (13,500 m$^3$) of PAH contaminated sediment from the Coke Ovens site (Coke Oven Brook sediment and Tar Cell contents).
The remaining contaminants will be treated in place. The remaining sediment in the Tar Ponds will be treated using solidification and stabilization. The remaining contaminated soil at the Coke Ovens site will be treated using landfarming, a form of bioremediation.

Both sites will then be encapsulated using engineered containment systems designed to prevent human and environmental exposure to contaminants, and to prevent the movement of contaminants off site. Containment at the Tar Ponds will consist of impervious vertical walls installed at various locations around the edges of the Tar Ponds, and an engineered cover consisting of a semi-impervious, reinforced, multi-layered soil barrier designed to limit water penetration and facilitate future site uses. Containment at the Coke Ovens site will include impervious vertical walls installed at various locations around the perimeter of the site, and a covering of soil designed to facilitate future uses of the site.

Final restoration and landscaping of both sites will be compatible with the natural surroundings and future use.

Containment systems require long term monitoring to ensure their continued effectiveness. The remediation plan includes provisions for long term monitoring of air quality, water quality, and the performance of the containment system, and long-term maintenance of the sites.
4.0 REGULATORY CONTEXT

The Project is regulated under various federal and provincial legislation as well as related policies and/or guidelines and industry codes of practice. These requirements, in Canada and Nova Scotia, have evolved over a number of years to increasingly provide environmental protection and sustainable development and ensure that environmental implications of projects are considered during the planning phase.

Other legal requirements related to environmental management of the Project include any terms and conditions of regulatory approval such as those arising from the Environmental Impact Assessment process and other approvals required to construct and operate the Project. Typically these terms and conditions would include commitments made by the proponent (e.g., mitigation and monitoring measures) as well as those specified by regulatory approval agencies. All of these requirements will obligate the proponent throughout the life of the Project and, to a significant extent, direct the course of environmental management planning.

All persons working on the Project will therefore receive environmental orientation training, which will include awareness of applicable legislation/guidelines to ensure protection of the environment and compliance with applicable legislation (refer to Section 8 for more information on training).

The following tables provide an overview of the regulatory requirements of the Project. While this is not intended to be an exhaustive list of pertinent federal and provincial legislation and policies, it does provide an overview of key regulatory requirements for Project planning and implementation. A refined list, incorporating all regulatory requirements, including terms and conditions, will be incorporated into the final EMP and updated as necessary during maintenance of the EMP document.

4.1 PERMITS AND APPROVALS SCHEDULE

When it has been determined that the Project is unlikely to result in significant adverse environmental effects, the federal responsible authorities and provincial government are in a position to support the Project, the Proponent can move forward with applications for the relevant permits and authorizations required for the Project. As noted in Tables 4.1 and 4.2, many of these approvals are required prior to start of construction. For example, approvals required from NSEL under the Activities Designation Regulations (e.g., Industrial and Water Approvals) can take up to 60 days to process.

The regulatory approval schedule will be incorporated into the overall planning schedule for the Project to ensure the necessary permits and approvals are obtained prior to construction and/or operation as required and all applicable environmental control measures are in place prior to initiating activities that otherwise could result in adverse environmental effects.
<table>
<thead>
<tr>
<th>Permit/Approval</th>
<th>Legislation</th>
<th>Responsible Government Department or Agency</th>
<th>Information</th>
<th>Potential Project Related Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment Approval (Federal)</td>
<td>Canadian Environmental Assessment Act (CEAA)</td>
<td>Canadian Environmental Assessment Agency</td>
<td>Required for projects meeting relevant federal criteria. Environmental Assessment process has not yet been finalized and may involve harmonized process with provincial government. Specific triggers for CEAA assessment include: Any aspect of project implementation that uses Federal funds Defined federal authorizations (e.g., HADD, NWPA) Transfer of interest in federal land Federal proponent</td>
<td>Any aspect of project construction, operation or decommissioning covered within the approved scope of assessment and/or federal/provincial agreement for EA process.</td>
</tr>
<tr>
<td>Harmful Alteration Disruption and Destruction of Habitat Authorization</td>
<td>Fisheries Act (Section 35)</td>
<td>Department of Fisheries and Oceans Canada</td>
<td>Required prior to harmful alteration, disruption or destruction of fish habitat. Cannot be issued until project is released from the federal environmental assessment process. Usually requires habitat compensation.</td>
<td>Alterations to surface streams, wetlands, etc. comprising fish habitat Dredging sediments Sub aqueous capping of sediments Infilling areas of the tar ponds and estuary Construction of cofferdams in the estuary Alterations to Tar Ponds shorelines Blasting near water</td>
</tr>
<tr>
<td>Navigable Waters Protection Act Authorization</td>
<td>Navigable Waters Protection Act</td>
<td>Transport Canada</td>
<td>Required prior to construction/obstruction within navigable waters. Cannot be issued until project is released from the federal environmental assessment process. Requires Transport Canada navigation assessment and advertising period.</td>
<td>Alteration to potentially navigable surface streams, wetlands as a result of rerouting, culvert installation etc. Dredging sediments Sub aqueous capping of sediments Infilling areas of the tar ponds and estuary Construction of coffer dams in the estuary</td>
</tr>
</tbody>
</table>
| Disposal at Sea permit                               | Canadian Environmental Protection Act, Disposal at Sea Regulations | Environment Canada                          | Requires habitat assessment in areas not previously used for ocean disposal. In addition, the following information may also be Movement /replacing/ sidecasting of sediments in the Tar Ponds Will be limited to North Pond | }
<table>
<thead>
<tr>
<th>Permit/Approval</th>
<th>Legislation</th>
<th>Responsible Government Department or Agency</th>
<th>Information</th>
<th>Potential Project Related Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Mobile PCB Treatment and Destruction Regulations – Ministerial Authorization</td>
<td>Federal Mobile PCB Treatment and Destruction Regulations, Canadian Environmental Protection Act (CEPA)</td>
<td>Environment Canada</td>
<td>Authorization is required under Section 11 of the Regulations to operate a mobile PCB treatment or destruction system</td>
<td>Operation or testing of a mobile PCB treatment or destruction system</td>
</tr>
<tr>
<td>Notification – New Substances Notification Regulations</td>
<td>New Substances Notification Regulations, Canadian Environmental Protection Act (CEPA)</td>
<td>Environment Canada</td>
<td>Notification is required when chemicals or biotechnology new to Canada is imported to the Country</td>
<td>Import of chemicals or biotechnology new to Canada for use on site in bioremediation and/or treatment processes</td>
</tr>
<tr>
<td>Permit</td>
<td>Ozone Depleting Substances Regulations, Canadian Environmental Protection Act (CEPA)</td>
<td>Environment Canada</td>
<td></td>
<td>Import of chemicals or biotechnology new to Canada for use on site in bioremediation and/or treatment processes</td>
</tr>
<tr>
<td>License - Federal Real Property</td>
<td>Federal Real Property Regulations, Federal Real Property Act</td>
<td>Transport Canada</td>
<td>The Act governs the conduct of federal government in respect to the acquisition, administration and disposition of real property. Under Section 4(2)(a) of the Regulations, the Minister may give or acquire the license for any use or occupation of real property</td>
<td>Physical activities that use or occupy Federal lands (or use or occupy the seabed within the boundaries of Sydney Harbour)</td>
</tr>
</tbody>
</table>
### TABLE 4.2 Summary of Applicable Provincial Approvals, Permits and Authorizations

<table>
<thead>
<tr>
<th>Permit/Approval</th>
<th>Legislation</th>
<th>Responsible Government Department or Agency</th>
<th>Information</th>
<th>Potential Project Related Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment Approval</td>
<td>Environmental Assessment Regulations, Environment Act</td>
<td>NSEL</td>
<td>Environmental assessment approval may be required under the provincial Environmental Assessment Regulations. Although environmental assessment process for this Project is not yet determined, it is likely that a harmonized assessment process with the federal government will occur.</td>
<td>Any aspect of project construction, operation or decommissioning covered within the approved scope of assessment and/or federal/provincial agreement for EA process.</td>
</tr>
<tr>
<td>Industrial (Division V) Approval</td>
<td>Activities Designation Regulations and Approvals Procedure Regulations, Environment Act</td>
<td>NSEL</td>
<td>Required for activities falling under the Activities Designation Regulations. Approval required prior to construction, but cannot be issued until project is released from environmental assessment process.</td>
<td>Development of new pits/quarries for construction/fill material Other industrial activities</td>
</tr>
<tr>
<td>Water (Division I) Approval</td>
<td>Activities Designation Regulations and Approvals Procedure Regulations, Environment Act</td>
<td>NSEL</td>
<td>Required for activities falling under the Activities Designation Regulations for alterations to watercourses (e.g., culvert installation) or wetland alterations (e.g., infilling). Approval required prior to construction, but cannot be issued until project is released from environmental assessment process.</td>
<td>Alterations to watercourses, including diversions, placement of culverts, bridges, infills, etc Infilling of wetlands</td>
</tr>
<tr>
<td>Water and Wastewater Facility Regulations</td>
<td>NSEL</td>
<td></td>
<td></td>
<td>Any new or altered facility for treatment of water</td>
</tr>
<tr>
<td>Sulphide Bearing Material Disposal Regulations</td>
<td>NSEL</td>
<td></td>
<td></td>
<td>Excavation and disposal of acid producing bedrock</td>
</tr>
<tr>
<td>Petroleum Management Regulations</td>
<td>NSEL</td>
<td></td>
<td></td>
<td>Storage of fuels on-site for refuelling</td>
</tr>
<tr>
<td>Approval</td>
<td>Dangerous Goods Transportation Regulations, Nova Scotia Dangerous Good Transportation Act</td>
<td>Nova Scotia Department of Transportation and Public Works</td>
<td></td>
<td>Transportation of contaminated materials and dangerous goods to and from the site</td>
</tr>
<tr>
<td>Archaeological Research Permit</td>
<td>Nova Scotia Special Places Protection Act</td>
<td>Nova Scotia Museum</td>
<td>Permit required to conduct archaeological surveys.</td>
<td>Any activity that threatens or disturbs sites declared special places under the Act (archaeological/cultural/ecological)</td>
</tr>
<tr>
<td>Clearance under the Beaches Act</td>
<td>Beaches Act</td>
<td>Nova Scotia Department of Natural Resources</td>
<td>Provides clearance under the Beaches Act required for works seaward of the ordinary high water mark (OHWM).</td>
<td>Any sampling or remediation activity that takes place between the high and low tide mark of a marine or estuarine environment, including access by equipment</td>
</tr>
</tbody>
</table>
5.0 ENVIRONMENTAL PROTECTION PLANS

Environmental Protection Plans are compilations of the environmental protection measures, procedures, and mitigation measures related to a Project or specific activity or area of a Project. They are used during all Project stages, but mainly are used in the field as practical reference documents during construction, operation, and maintenance activities, to help ensure environmental commitments are met.

The EPPs, in essence, represent the environmental action plan for construction and operation activities.

5.1 OBJECTIVES AND APPROACH

The objectives of the Environmental Protection Plans will be as follows:

- The plans will provide a consolidation of environmental concerns identified in the EIA and any supporting and/or related requirements into one “document”.
- The plans will provide a consolidation and outline of environmental protection and mitigation measures required to address environmental concerns.
- The plans will be used as a training tool for Project personnel. All personnel who may be involved in activities relating to any particular EPP will be trained on the protection measures prior to that activity being initiated.
- The plans will be written in clear language, so that they can be easily understood and implemented by all Project personnel.
- The EPPs will allow for changes and modifications as the Project progresses, in order to continually improve environmental protection practices.
- The EPPs can be used to assist with compliance monitoring.

The approach to development of the EPPs will involve:

- A review of all related documentation, such as EIA, Conditions of Approval, and any supporting documentation.
- Define the requirement for EPPs based on the review of the above information, including the rationale and intent of each EPP.
- Development of specific environmental protection measures to help ensure the environment is protected.
- Work with the Project design team to ensure proposed environmental protection measures can be coordinated with the project activities, and conversely, to ensure the design meets environmental protection expectations.
- Input into the plans will be sought from regulatory agencies.
- Update the EPPs as necessary.

5.2 SCHEDULE

Both the generic and the site-specific EPPs will be developed following the approval of the Environmental Impact Assessment for the Project. The EPPs will be finalized before the onset of any related Project activities. The plans must be prepared before Project activities commence to allow for training of appropriate personnel.
5.3 GENERAL PLANS

Generic EPPs include information about protection measures for certain types of activities or certain environmental consideration. For example, a generic EPP may be prepared for work near watercourses, and would include general information such as:

- obtain necessary permits prior to starting the work;
- install sediment fencing before starting any work;
- do not drive machinery into the watercourse; and
- ensure trees are felled away from the watercourse, etc.

These measures are meant to be generally applicable to work near any watercourse, for the example above. Typical sections of an EPP include: description of the activity and associated concerns, required permits and approvals, definition of responsible authority, reporting procedures, documentation requirements and mitigation measures.

Generic EPPs are developed for construction through to decommissioning of projects. Some generic EPPs, which are likely required for the Project, include but are not limited to:

- Clearing and grubbing
- Management of precipitation
- Cofferdam construction
- Work near watercourses
- Earth excavation
- Equipment maintenance and fuelling
- Product storage and handling
- Erosion and sediment control installation
- Erosion and sediment control maintenance
- Dust control
- Noise Control
- Work yard development

5.4 SITE-SPECIFIC ENVIRONMENTAL PROTECTION PLANS (“SSEPPs”)

Site-specific EPPs (SSEPPs) include detailed information with respect to protection measures for a specific location. These site-specific measures are to be implemented in addition to the measures outlined in the generic protection plans. The SSEPPs will include the following elements:

- A map and/or figure illustrating and defining the area covered by the SSEPP.
- A brief description of the activities to be undertaken in the specific area.
- A description/listing of the environmental considerations for the specific area (i.e. what environmental features are causing a SSEPP to be required for this area, such as “the watercourse is known to have salmonids or species at risk present”).
- A listing of any permits and approvals necessary to be in place before the work starts.
• Definition of the on-site responsible authority for environmental matters.
• Detailed mitigation measures for the work to be carried out within the limits of the SSEPP. These are typically shown as detailed, step-by-step procedures. For example, for work near a watercourse, a specific instruction may be: use flagging tape or snow fencing and appropriate signage to delineate the sensitive feature to the southeast of the work area before any work is undertaken, to ensure the area is not disturbed during construction.

The SSEPPs, which will be required for the Project, will be determined once the EIA for the Project has been completed, and they will be developed once project-specific details become known. It is expected that SSEPPs will be required for areas such as:

• Incinerator site
• Watercourse locations or diversions
• Wetlands locations
• Dredging sites
• Water Treatment Facilities
• Decontamination Operations
• Environmental Monitoring Activities
• Site Specific Health and Safety Plan
6.0 MONITORING

As part of the Project commitments to environmental protection, environmental monitoring will be conducted to ensure that any recommended mitigative measures and best management practices are implemented properly and that the result of these measures is "no significant environmental impact". Environmental monitoring programs will be classified into three areas: Environmental Effects Monitoring, Environmental Compliance Monitoring, and Post-construction Monitoring. In addition, as part of continual improvement processes and internal environmental management policies, it will be necessary to conduct periodic environmental inspections and audits of the Project to ensure that all environmental protection objectives are met. The results of these monitoring programs will be documented when complete.

6.1 ENVIRONMENTAL EFFECTS MONITORING ("EEM")

Environmental Effects Monitoring ("EEM") programs are intended to assess the accuracy of any predictions (concerning environmental impacts) made in the Environmental Impact Assessment for the Project, and to confirm these predictions, both the negative and positive. EEM programs are one of the many "early warning" tools to detect negative impacts on the environment from the Project, and allow for a review of the impacts and implementation of corrective actions, if they are required. EEM programs are typically carried-out over a period of several years.

6.1.1 Objectives and Approach

The objectives of a typical Environmental Effects Monitoring Program are as follows:

- Verify the actual environmental impacts as predicted in the EIA
- Verify the effectiveness of mitigation measures
- Verify the application of appropriate restoration measures (where applicable)
- Provide for early detection of undesirable conditions
- Assess the effects of the Project on environmental components (where applicable)

The approach to development of EEM programs will include:

- A review of all related documentation, such as EIA, Conditions of Approval, and any supporting documentation.
- Define the requirement for EEM programs based on the review of the above information, including rationale, intent, and monitoring parameters of each EEM program.
- Establishment of baselines by which changes in parameters associated with environmental features can be determined by comparing with the results obtained from the EEM program.
- Undertake the monitoring. This may include photographic and written records of conditions, other visual inspections/examinations, aerial observations, on-the-ground field surveys, and sampling (air, land, water). The type of monitoring will be dependent on the environmental features and associated predictions from the EIA.

Environmental Effects Monitoring plans would describe the rationale and objectives for each plan, the potential Project/environment interactions, and a detailed scope for the monitoring (for example detailed sampling procedures, and reporting requirements).

Some examples of typical EEM programs include:
6.2 ENVIRONMENTAL COMPLIANCE MONITORING/INSPECTIONS

6.2.1 Objectives and Approach

A comprehensive monitoring and/or inspection program will be developed to verify the compliance of treatment technology utilized in the remediation of the tar ponds and coke ovens sites. These programs will be developed in association with various branches of the regulatory agencies and then implemented and maintained by the respective contractor, consultant or regulatory agency personnel as determined prior to the start of the activity.

6.2.2 Specific Monitoring Programs

It is anticipated that compliance monitoring programs can be subdivided into four (4) specific programs, which in turn can be applied to a variety of operations. These programs are summarized in the following sections. Several of these programs may involve pre-operational sampling and monitoring to create a baseline or background database which will then be used for comparison purposes during shutdown and decommissioning of the specific activity.

**Sediment Removal Monitoring**

Removal, treatment or stabilization of contaminated sediment identified during previous site assessment activities will be the primary focus of cleanup activities. Existing data and reports will be reviewed to provide estimates for the amount of contaminated sediment requiring various treatments and to identify where further sampling (if any) may be required to fully and accurately delineate volumes of contaminated sediment. Sampling and analysis of sediment will be conducted as needed during and after site excavation, but prior to backfilling, to assess the completeness and effectiveness of removal procedures. Sampling and analysis of treated materials will also be required during in situ and ex situ treatment activities to assess effectiveness.

Site Specific Target Levels ("SSTL’s") have already been defined for the project and will be the criteria used to determine whether remediation activities are satisfactory. SSTLs exist for contaminants of concern within the sediment, surface water, groundwater or soils of the North and South Ponds and the Coke Ovens site.

**Noise Monitoring**

Periodic noise monitoring in the vicinity of the selected treatment technologies may be performed in order to ensure compliance with the Guideline for Environmental Noise...
Remediation of the Sydney Tar Ponds and Coke Ovens Sites
ENVIRONMENTAL MANAGEMENT PLAN

Measurement and Assessment (Nova Scotia Department of Environment 1998), operating permits and the local or regional noise control by-law. The intent of the monitoring program is to ensure that operating equipment does not produce measurable changes to the environmental sound exposure at the noise monitoring sites. Noise minimization techniques (i.e.; enclosures, landscaping, noise barriers, silencers) may need to be implemented to ensure impacts (if any) are properly managed.

**Effluent Monitoring**

Prior to removal, release or discharge from a site, all effluent streams (ie; wastewater, incinerated materials, stack emissions,) will require analytical testing and approval. The type of analytical testing will be entirely dependent on the nature of the effluent to be released or discharged.

Incinerated solids will be sampled on a batch basis to verify the PCB destruction criteria are met. Testing will also be completed for polychlorinated dibenzo-p-dioxins ("PCDD's") and polychlorinated dibenzofurans ("PCDF's") and heavy metals in the incinerated soils.

Liquid effluents are generally anticipated to consist of incinerator process liquids, decontamination water from site run-off collection and equipment washing (decontamination) activities and treated wastewater from various water treatment operations. Process liquids consist of boiler blowdown water, which can generally be discharged to the sanitary sewer after testing and brine from the air pollution control system scrubber which can be transported for commercial use or discharged to the environment, depending on analytical results and regulatory approvals. Liquid effluents will be tested for sewer use disposal parameters, disposal at sea parameters, PCBs, PCDDs and PCDFs as applicable.

Gaseous effluent from the stack will be tested through a series of stack tests. The main requirement of stack testing is to extract exhaust gas samples from the incinerator stack and then to perform laboratory analysis on the extracts. The scientific requirements for stack testing are very rigorous which makes stack testing a specialized and expensive monitoring procedure.

An extensive list of organic and inorganic contaminants will also be analyzed from the stack gas extracts including PCBs, PCDDs, PCDFs, particulates, hydrochloric acid, chlorobenzenes, volatile organic compounds ("VOCs"), polycyclic aromatic hydrocarbons, chlorophenols and heavy metals.

Also during stack testing the PCB and PAH waste materials fed into the incinerator will be regularly sampled. This allows the proper calculation of the incinerator performance standard known as the Destruction Removal Efficiency ("DRE"). The minimum DRE requirement is 99.9999% for PCBs and 99.99% for PAHs.

The selected technology vendor will be required to prepare and submit a Quality Assurance Project Plan, which will document the details of the technology operation and establish the operating parameters for the duration of the project under various scenarios and waste feed characteristics.

**Process Monitoring**

Operating conditions of the various treatment technologies that are selected will be recorded by the operator as a condition of their permit or certificate of approval. The type and level of detail of information to be collected and reviewed will be the subject of the approval process and will depend on the characteristics of the proposed technology.
As an example, operating conditions for an incinerator can be continuously recorded through a data acquisition and control computer that is programmed to comply with operational requirements stipulated by the regulatory agencies. Data such as minimum operating temperatures, carbon monoxide levels, carbon dioxide levels, maximum allowable feed rates and proper functioning of automatic waste feed shut offs can be tracked, recorded and monitored. Routine inspections of the system by designated regulatory inspectors will ensure that treatment technology is operating as designed and within the stipulated parameters of its’ operational permit.

**Decontamination Monitoring**

Prior to leaving a project site or a contaminated area, any equipment that contacted contaminated material or potentially contacted contaminated material will require testing to ensure it is either clean or has been properly decontaminated. Decontamination monitoring will cover media such as contractors equipment, incinerated materials, treated water, brine, sediment, concrete, steel surfaces, etc.

Sampling protocols will be developed for application by designated project staff to ensure defensible analytical results are obtained which in turn will allow decisions to be made on whether an item or material is suitable for release from the project site. All sampling protocols will be clearly written and available for review and application as needed. Designated employees responsible for sample collection, sample preparation, completion of chain of custody forms and transportation of samples to analytical laboratories will undergo appropriate training prior to beginning work on a project.

It is anticipated that an extensive database will be required to record, monitor and manage the large amount of samples that are typically collected during projects of the type proposed for Muggah Creek. In conjunction with the EMP for the MCRP a separate Environmental Monitoring Manual will be developed specifically to provide guidance, procedures and protocols for the wide variety of sampling events and media that the MCRP will generate.

**6.3 ENVIRONMENTAL INSPECTIONS AND QA/QC**

Compliance with the large number of applicable environmental legislative requirements will be of utmost importance on a project of this size, scope and duration. It is anticipated that the Provincial and Federal governments may require full time regulatory inspectors on-site during critical operational activities to ensure full compliance with conditions stipulated in approval permits. As operations become more routine, full time presence can be cut back to random unannounced inspections.

Inspectors will need to be assigned, trained and mobilized to the respective site(s) and provided with the means to carry out their regulatory requirements. Several technologies such as incineration and water treatment are likely to operate 24 hours per day, 7 days per week necessitating the use of shifts and a team of regulatory inspectors to monitor ongoing operations. Overlap in shifts will likely need to be arranged to ensure a proper transfer of notes, information and reports from the outgoing inspector to the incoming inspector.
6.4 ENVIRONMENTAL AUDITS

Suitably qualified external consultants should also conduct environmental audits of the operations at least every two (2) years. This will ensure a consistent environmental management program for the site.

An Environmental Audit is an objective evaluation of how well an organization's management and practices are performing in meeting the goal of safeguarding the environment. It facilitates management control of environmental policies and provides an assessment of compliance with internal policies of the Proponents. The purpose of the Environmental Audit is to:

- Identify key impacts of the Project on the environment.
- Provide a true and factual assessment of the Project's operations with regard to environmental policies.
- Document the environmental status of the Company's operations.
- Act as a feedback mechanism to determine where improvements are required (e.g., poor operating and maintenance practices, opportunities for cost reduction and improvements).
- Identify risk exposures with regard to environmental issues.
- Improve employee awareness with regard to environmental issues.

The auditors conducting the work shall be selected so as to ensure the objectivity and impartiality of the audit. The Auditors shall be guided in their work by existing international and national standards as well as internal policies of the Proponents. The Auditors should be familiar with industry standards and practices relating to remediation projects.
7.0  CONTINGENCY AND EMERGENCY RESPONSE PLANNING

7.1  INTRODUCTION AND PURPOSE

This section outlines the commitments that have been established by the government partners regarding Emergency Response and Contingency Planning including the format, level of detail and the necessary technical content requirements for the preparation and submission of mandatory Emergency Preparedness and Response (“EPR”) plans.

Each contractor/consultant will be required to develop and implement a set of project specific policies and procedures to address operational emergencies including both man-made and natural events. The hazard analysis shall include but not be limited by events such as:

- Fires;
- Explosions;
- Spills;
- Operational upsets;
- Equipment malfunction(s);
- Severe weather;
- Power outages; and,
- Transportation accidents.

The purpose of any emergency plan is to provide the management framework including the technical and financial decision making, authorization, and controls to provide an effective and coordinated response to an identified hazard or risk.

An appropriate emergency plan will:

- ensure the safety of workers, emergency responders and the general public;
- reduce and minimize property damage;
- reduce the magnitude of any related environmental impacts;
- provide an appropriate set of procedures to ensure that proper emergency and remedial actions are undertaken quickly and effectively;
- reduce recovery time and costs; and
- promote confidence in response personnel, project management team contactors and or consultants and the general public.

Although every emergency is unique, remedial operations have several common elements including the following:

- Prevention;
- Preparedness;
- Response; and
- Recovery.
Each contingency plan will be consistent with the framework to be established under the Master EPR for the project. All plans will be required to document and communicate reportable incidents and establish clear callout and notification procedures for all relevant agencies. The plan will also establish roles and responsibilities for the key personnel identified within the plan.

7.2 **HAZARD ANALYSIS AND RISK DETERMINATION**

All contractors/consultants will be required to identify the risk associated with each operational component under their direction and develop appropriate response and mitigation strategies to meet the objectives of the overall contingency plan.

7.3 **EMERGENCY PLANNING LEGISLATION**

The following table outlines the legislation that establishes the framework for environmental emergency planning and will be applied where applicable within the scope of the project.

7.4 **MINIMUM PLANNING REQUIREMENTS**

All plans shall be developed in accordance with the Nova Scotia Department of Environment and Labour Contingency Planning Guidelines and/or the October 2003 document - CAN/CSA – Z731-03 Emergency Preparedness and Response for Industry. EPR’s will include as a minimum the following key elements associated with managing an emergency response.

- A senior level statement committing to implement and maintain the contingency plan;
- Identification of the physical and chemical properties and characteristics of the substance being handled; where they are located in relation to the surrounding area; and how they are stored, handled or transported;
- Assessments of any reasonable foreseeable emergency scenarios associated with release of the substance, including both on-site and off-site, which could adversely affect public health and safety, the environment, and property;
- A description of the measures to be used to prevent, prepare for, respond to and recover from any emergency scenarios identified above;
- A description of the roles and responsibilities of key personnel and responders during an emergency;
- The identification of training requirements for key personnel and responders;
- Accurate contact lists for emergency resource personnel and equipment;
- Provision for ensuring that the plan is improved on a continual basis (i.e. updates, exercises, debriefings);
- Measures to be taken to notify members of the public who may be adversely affected by the emergency; and
- The requirement to document and communicate reportable incidents and establish clear callout and notification procedures for all relevant agencies.
### TABLE 7.1 Applicable Emergency Response Legislation

<table>
<thead>
<tr>
<th>Legislation</th>
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<tbody>
<tr>
<td><strong>Federal</strong></td>
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<tr>
<td><strong>Canadian Environmental Protection Act (CEPA 1999)</strong></td>
<td>The Governor in Council may, on the recommendation of the Minister and after the Committee is given an opportunity to provide its advice to the Minister under section 6, make regulations</td>
</tr>
</tbody>
</table>
| Requirements for Environmental Emergency Plans — CEPA 1999 | a) establishing a list of substances that, if they enter the environment as a result of an environmental emergency,  
   i) have or may have an immediate or long-term harmful effect on the environment or its biological diversity,  
   ii) constitute or may constitute a danger to the environment on which human life depends, or  
   iii) constitute or may constitute a danger in Canada to human life or health; |
| Subsection 200(1) | b) prescribing, in respect of a substance on the list established under paragraph (a), a minimum quantity; |
| | c) respecting the identification of the places in Canada where a substance referred to in paragraph (a), in any quantity or in the quantity prescribed for that substance under paragraph (b), is located and requiring notification to the Minister of those places; |
| | d) respecting the prevention of, preparedness for, response to and recovery from an environmental emergency in respect of a substance; |
| | e) respecting the notification and reporting of an environmental emergency; |
| | f) respecting the notification and reporting of the measures taken  
   i) to prevent the environmental emergency, or  
   ii) to repair, reduce or mitigate any negative effects on the environment or human life or health that result from the environmental emergency or that may reasonably be expected to result from it; |
<p>| | g) respecting the implementation of international agreements entered into by Canada in relation to environmental emergencies; and |
| | h) respecting any other matter necessary for the purposes of this Part. |
| <strong>Transportation of Dangerous Goods Act</strong> | Requirement for an Emergency Response Assistance Plan (ERAP) |
| (1) | A person who offers for transport or imports a consignment of dangerous goods must have an approved emergency response assistance plan when the quantity of dangerous goods exceeds the ERAP limit referred to in subsection (4), |
| Subsection (1) deals with one consignment of dangerous goods and one transport event. If the |
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<th>Legislation</th>
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<tr>
<td></td>
<td>quantity of dangerous goods in the consignment exceeds the ERAP limit an ERAP is required. Subsection (2) deals with an accumulation of consignments.</td>
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<td></td>
<td>(2) A person who offers for transport or imports more than one consignment of dangerous goods at the same time must have an approved ERAP if the consignments are in more than one large means of containment required by Part 5, Means of Containment, and the total quantity of dangerous goods in all the required large means of containment exceeds the ERAP limit referred to in subsection (4).</td>
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<td>Under subsection (2), an accumulation of large tubes making up a standard hydrogen tube trailer would need an ERAP but an accumulation of small camping gas cylinders would not need an ERAP. Only dangerous goods in consignments that require a large means of containment are counted.</td>
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<tr>
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<td>(3) A person who offers for transport or imports, in a road vehicle or railway vehicle, dangerous goods included in any one of the following classes must have an approved ERAP if the total quantity of any one of those dangerous goods offered for transport or imported by that person in the road vehicle or railway vehicle exceeds the corresponding ERAP limit referred to in subsection (4) for those dangerous goods:</td>
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<tr>
<td></td>
<td>(a) Class 1, Explosives;</td>
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<td></td>
<td>(b) Class 3, Flammable Liquids, with a subsidiary class of Class 6.1, Toxic Substances;</td>
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<td>(c) Class 4, Flammable Solids, Substances Liable to Spontaneous Combustion; Substances That on Contact with Water Emit Flammable Gases (Water reactive Substances);</td>
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<td></td>
<td>(d) Class 5.2, Organic Peroxides, that are Type B or Type C; and</td>
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<td>(e) Class 6.1, Toxic Substances, that are included in Packing Group I.</td>
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<td>(4) A quantity of dangerous goods exceeds the ERAP limit if the dangerous goods have an index number in column 7 of Schedule 1 and</td>
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<td></td>
<td>(a) if a solid, have a mass that is greater than the index number when that number is expressed in kilograms;</td>
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<td>(b) if a liquid, have a volume that is greater than the index number when that number is expressed in litres;</td>
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<td>(c) if a gas, including a gas in a liquefied form, are contained in one means of containment that has a water capacity greater than the index number when that number is expressed in litres; or</td>
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<td></td>
<td>(d) if an explosive in a road vehicle or railway vehicle, have a net explosives quantity greater than the index number when that number is expressed in kilograms.</td>
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<td></td>
<td>If there is no index number set out in column 7 of Schedule 1, an ERAP is not required.</td>
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<td>(5) Despite subsections (1), (2) and (3), a person other than a manufacturer or producer is not required to have an approved ERAP if that person offers for transport or imports one or more consignments of dangerous goods for which an ERAP is required on behalf of another person who already has an approved ERAP for the dangerous goods.</td>
</tr>
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</table>

**Provincial**

**Environment Act - 78(2)(h)**

The Minister may direct a person responsible for dangerous goods or waste dangerous goods to prepare and submit to the Minister a written contingency plan respecting the handling of dangerous goods or waste dangerous goods.
<table>
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<th>Legislation</th>
<th>Requirements</th>
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| Dangerous Goods Management Regulations – Sections 10(1) and 10(2)          | every person responsible for a storage facility may require contingency plans to be approved before allowing dangerous goods or waste dangerous goods to be stored if they have the following:  
  (a) a combined capacity of 2000 kg of dangerous goods or waste dangerous goods  
  (b) a combined capacity of 2000 l of dangerous goods or waste dangerous goods, or  
  (c) waste dangerous goods in quantities greater than those listed in Column II of Schedule “A” or “B” shall have contingency plans respecting  
  (i) fires or other emergencies; and  
  (ii) discharges, emissions, escapes, leaks or spills of dangerous goods or waste dangerous goods. |
| PCB Management Regulations                                                 | Fire protection and emergency procedures are required for an owner, operator, or person responsible for a storage site and this includes an emergency procedures plan, approved by an Administrator, which must be in effect, and all employees must be trained in its application. A copy of the plan must also be deposited at  
  (i) the local fire department,  
  (ii) the storage site, and  
  (iii) the place of business of the owner, operator, or the person responsible; |
| Other Legislative Requirements                                              | Depending on the nature of activities and technology implemented on the MCRP several other legislative requirements will also need to be considered from the perspective of EPR planning. These include, but are not limited to:  
  • Petroleum Management Regulations  
    No person shall operate a bulk plant without having in place a contingency plan approved by an Administrator or an inspector.  
  • Pesticide Regulations  
    The Minister or an Administrator may require contingency plans respecting a release of a pesticide to be prepared for approval by the Minister or the Administrator by a person who holds a Class IX certificate of qualification or by an approval holder who applies a commercial class or restricted class pesticide.  
  • Approval Procedure Regulations  
    Unless specified otherwise in an application form or by the Minister or an Administrator under subsection (2), an application shall be accompanied by the following information:  
    (s) contingency plans to deal with any reasonably foreseeable sudden or gradual release of a substance, which is likely to have a significant adverse effect. |
8.0 TRAINING AND EDUCATION

8.1 OBJECTIVES AND APPROACH

Awareness of Project health, safety and environmental policies and procedures is crucial to the protection of worker, public health and safety and the environment. All personnel working on the Project must be familiar with the EMP and applicable environmental protection documents that will be prepared during the course of this Project. Awareness of environmental commitments and obligations, including compliance with terms and conditions of approval are essential to the success of the Project.

The following sections outline anticipated requirements for worker training and education required to support the various other aspects of the EMP and ensure a high level of environmental protection and compliance with legal requirements. This information is presented at a preliminary level for initial planning purposes. It will be refined through the environmental approval process and included in a revised and updated EMP once all the specific education and training components have been determined.

8.2 INSPECTION STAFF TRAINING AND CERTIFICATION REQUIREMENTS

Following regulatory approval, but prior to commencement of work, an environmental inspection team will be hired to monitor the environmental aspects of the Project. This team will consist of trained and qualified individuals that may include biologists, technicians, and engineers. The focus of each inspector in the field will be directly related to his/her expertise and experience on similar projects. Some senior inspectors will be assigned special roles with regard to QA/QC, supervision and auditing of environmental procedures including the provisions of the EMP.

Inspection Staff will receive worker orientation training and other specific education programs described in Section 8.4. In addition, Inspection Staff will be trained, depending on their areas of responsibility, in inspection and monitoring programs specific to this Project. Section 6 outlines potential compliance monitoring programs to be implemented for the Project.

8.3 WORKER ORIENTATION TRAINING

To ensure that personnel are informed of the environmental requirements and issues of special concern, an Environmental Orientation Training Program will be established. All personnel will receive orientation training to familiarize themselves with the Project components and site locations, as well as the applicable environmental protection procedures and commitments.

The training program will revolve around the EMP and environmental protection plans. These documents, based on input from the environmental assessment report and conditions of Project approval, will identify sensitive environmental features in the study area as well as general and specific protection procedures to be implemented during Project activities.

The Safety, Health and Environmental Coordinator will be responsible for providing a program to ensure that all personnel have received orientation training prior to commencement of work. A written record will be kept of individuals who have received orientation training. Updates to the EMP and other applicable procedures subsequent to the orientation training session will be communicated through internal communication procedures as described in Section 9 of this document.
8.4 SPECIFIC EDUCATION PROGRAMS

In addition to the general worker orientation, specific education programs may also be required, depending on an individual’s assigned role and area of responsibility. The Project Manager must maintain records of all the training undertaken by Project staff. The following summarizes other anticipated education programs that may be required as the Project proceeds.

8.4.1 Health and Safety Training

All personnel working on the Project will receive health and safety training to include, but not be limited to:

- Health and Safety Plan;
- Contingency and Emergency Response Plan;
- Safe Work Practices;
- Personal Protective Equipment Use;
- 40 Hour HAZWOPER
- Confined Space Entry Awareness
- Fall Arrest Training
- Emergency Contact Information;
- Hazard Identification;
- WHMIS; and
- Transportation of Dangerous Goods (as applicable).

8.4.2 Treatment Technology Processes

Personnel involved in treatment technology processes will be certified as required; the Safety, Health and Environmental Coordinator will ensure these certifications are up to date. These personnel will receive training on Project-specific treatment technologies and operations.

8.4.3 Waste Management

All personnel will receive training on waste management as part of the Worker Orientation Program. However, personnel responsible for handling and transporting wastes will require specific training related to the Transport of Dangerous Goods. Waste haulers will be licensed contractors, knowledgeable of appropriate handling and disposal procedures for domestic and hazardous wastes.
9.0 COMMUNICATIONS AND REPORTING

9.1 OBJECTIVES AND APPROACH

Part of the success of the Project will require clear lines of reporting, and communication, both within the Project and externally. Specific guidelines shall be developed that outline mechanisms for communication among Project personnel, as well as means of engaging and responding to concerns or comments from the public.

9.2 DOCUMENT CONTROL

In order for the proper implementation of environmental protection measures, it is essential that all Project personnel have access to the most current documentation, including any revisions to the EPPs. The responsibility for ensuring that EPP copy holders have the most recent version resides with both supervisory staff and Project personnel. Maintenance of this EMP will be the responsibility of the Project Manager or designate to ensure the most current and comprehensive version of this EMP as well as SSEPPs, to Project staff, applicable regulating agency representatives, stakeholders, interested parties and others as listed on a Project distribution list. The following outline the various responsibilities of the Proponents:

- provide a training course for relevant Project personnel including Contractors, to ensure proper implementation of this document;
- distribute copies of the EMP and SSEPPs to appropriate locations and Project personnel;
- review EMP/EPP revision requests in a timely manner;
- issue approved revision pages to the EMP/EPP to control copy holders; and
- conduct a full review of the contents of the EPP on a periodic basis to ensure that recommended mitigative measures and Best Management Practices (BMPs) are current and comprehensive.

The Safety, Health and Environment Coordinator shall:

- Review and approve revision requests;
- Conduct a review of the EPP on an as needed basis;
- Ensure that revisions are distributed to EPP holders;
- Maintain Document Control;
- Ensure that EPP holders and their staff are familiar with the EPP and its procedures;

EPP Holders shall:

- Keep copy current and ensure that all revisions are entered on the revision control record;
- Familiarize themselves and their personnel with the EPP and any revisions; and
- Initiate changes to improve the quality of the plan.
EPP holders and readers may initiate proposed revisions by forwarding recommended revisions to the Coordinator on a Revision Request Initiation Form. The Coordinator and Project Manager must approve the revision request. When the Coordinator obtains the approved Revision, it will be issued to all EPP Holders. Each revision will be accompanied by a Control Sheet that:

- Provides the revision instructions; and
- Lists the sections being superseded.

### 9.3 PUBLIC INFORMATION AND COMMUNICATIONS

The Public Information Program will be developed to inform the public and stakeholders about the Project and invite the parties to take part in the process at appropriate stages of the Project. Local media will be used to convey information to stakeholders and others who express an interest in the process. Media interviews and other public representation will be referred to the STPA Project Manager for determining the appropriate response and responder.

All issues will be documented, tracked and channelled to the appropriate proponent or project personnel for resolution. The issues management process enables individuals and groups to raise issues and concerns and have them addressed in a systematic manner. Issues will be periodically reviewed to determine if closure has been reached. Information that is collected may include:

- Stakeholder/Personal Information (e.g. organization’s name, address, person contacted).
- Form of Communication (e.g. e-mail, media, workshop, group meeting, individual meeting, telephone, letter).
- Primary Purpose of Contact (e.g. compliance monitoring, data collection, regulatory, ongoing consultation).
- Relevant location.
- Stakeholder Category (e.g. Academic/Institute, Community Group, Aboriginal Community).
- Stakeholder sector (e.g. Environment, Fishery, Social).
- Stakeholder issues (e.g. air quality, employment, environment, water quality, socio-economic effects).
- Follow-up required.

### 9.4 REPORTING

As part of the reporting mechanism for the Project, procedures will be developed for preparing an environmental report covering the results of monitoring with the agreed environmental standards. A compliance audit report should also be included in the Project files.

The Project will also require the development of procedures for handling and recording environmental incidents and near misses. This will include the response and follow up to complaints, an investigation of the root cause and recommendations to prevent reoccurrence.
9.4.1 Reporting Procedures

A number of environmental reports will be generated annually as part of the Project. It will be necessary to develop specific reporting procedures for these various reports to ensure that all relevant information is being forwarded to the appropriate parties, in an appropriate time frame. These procedures will be developed for:

- Compliance monitoring as outlined in permits and approvals
- Reportable environmental incidents, as defined in Project EPPs, regulations, permits and approvals
- Project defined environmental inspections

9.4.2 Compliance/Regulatory Reporting

The environmental field inspection activities shall be documented on standardized forms to provide consistency in reporting. These forms shall be generated and updated as necessary to reflect specific site conditions and changes in work activities or environmental requirements. In addition to written reports, photographs shall also be used to document environmental compliance. The STPA will be responsible for assigning an individual(s) for the logging and filing of all environmental documentation.

An action items list shall be maintained to track the compliance inspection and reporting aspects of the project. As action items are identified, they shall be added to the list along with:

- The date the action item was issued;
- The party responsible for completing the action item;
- The data that completion is due; and
- Any necessary documentation or special conditions to be met.