



**DEFICIENCIES AND QUESTIONS IN RELATION TO  
THE SYDNEY TAR PONDS AGENCY'S  
ENVIRONMENTAL IMPACT STATEMENT  
AS PRODUCED BY AMEC CONSULTING**

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## 1. Presentation of the EIS

According to the Environmental Impact Statement Guidelines for the Environmental Assessment of the Sydney Tar Ponds and Coke Ovens Site Remediation Project (“the Guidelines”), section 5.3, “The EIS shall be concise, analytical and complete.”

### Intervenor Request

Sierra Club of Canada urges the Joint Review Panel to express its displeasure with the EIS for its flagrant disregard of this directive. The process of EA and the multi-million dollar industry of consulting firms like AMEC that depend upon it, increasingly churn out over-long documents, padded with extraneous, irrelevant and useless information. Sierra Club of Canada believes that there are two purposes to the excess padding of an EIS: 1) to intimidate the local and concerned public from reading the forbidding pile of tomes; and 2) to create the impression the document is complete and that real and useful information on the environmental and health risks must have been included.

One of the worst examples we have ever reviewed of an EIS padded with unnecessary detail on the irrelevant with scant attention to the essential is this document. Why was it necessary to describe in detail the number of kilometers of road in CBRM, the organization of the police department, or to conduct a survey of ambient noise, including recording the number of barking dogs in New Waterford, in a report aimed at reviewing the environmental and health impacts of the clean-up of the country’s more serious toxic waste site in the midst of a populated area?

That level of detail is absent from more germane questions. The EIS does not specify what kind of incinerator is being proposed (the EIS provides superficial descriptions of six different technologies at section 3.0, Volume 2)). The EIS fails to specify the location of the incinerator (section 4.0, Volume 2, Victoria Junction or Phelan Mines?). The EIS leaves the details of the single largest element of the plan, the stabilization and solidification, completely vague – by concrete or other medium, stirred or poured (at sections 6.3.5.1 of Volume 1, p.6-42-43 and sections 1.1.4, p.1-2 and 5.4.1, p. 5-13, Volume 3)? The

implications of stirring hundreds of thousands of tonnes of sludge, contaminated with toxic chemicals capable of volatilizing and migrating off site, are large for human health. The failure to do more than suggest in vague terms the approach to be pursued is astonishing.

The description of toxic contaminants is consistently described in banal and benign terms, as, for example at section 5.4.2, p. 5-19 of Volume 1 where the assertion that the toxic contaminants in the toxic waste of the tar ponds and coke ovens are ubiquitous in the community. The Sierra Club of Canada will detail these further in this request for additional information. At this point, we wish to identify an unacceptable level of bias throughout the EIA. The purpose of minimizing the extent of the problem is counter-intuitive, given that if the Sydney Tar Ponds and Coke Ovens site were not accepted as one of the most urgent of toxic sites requiring remediation in Canada, the \$400 million of public funds would not be available to the proponent to conduct the clean-up at all. It is hard to avoid the conclusion that the proponent and its consultant are minimizing the extent of the problem in order to minimize the need for appropriate measures to reduce off-site migration of hazardous substances to the community at large. These concerns will be further explored in section 5. *Ecological and Human Health* in this submission.

We request a cost breakdown of funds received by AMEC for the production of the EIS.

## **2. Baseline Information**

### **2.1 Tar Ponds Area**

In the Guidelines of Section 9, p.16, it is required that the EIS, "...provide baseline descriptions of the physical, biological and human (socio-economic) environments. A baseline environment is the condition that exists prior to Project development. The Proponent shall clearly indicate baseline data/information that is not available or existing data that cannot accurately represent environmental conditions in the project area year around."

## **Intervenor Request**

- 2.1.1** Please provide the review methodology that was used to ensure that all reports were captured? Please provide instructions from the STPA on what reports to include in the EIS.
- 2.1.2** Please conduct an extensive literature review on all studies related to existing contamination, and provide a list of the findings. Please report the major discrepancies in the information presented in the EIS with respect to existing contamination and that found in the review.
- 2.1.3** Please provide a single map showing the delineation of the PCB contaminated sediments greater than 50 ppm in north and south ponds. Specifically indicate where previous grid sampling has been conducted.
- 2.1.4** Indicate on a map all areas of the north and south tar ponds where the current EIS calls for PCBs to be excavated and their approximate volume.
- 2.1.5** Provide the raw data to support the delineation of the PCB contaminated sediments greater than 50 ppm, and PCB contamination in the remainder of the ponds.
- 2.1.6** Provide the Review Panel with a map of the tar ponds showing the sampling grid necessary to ensure with 95% confidence that all hotspots of PCB contaminated material >50 ppm of volumes of 10, 100, and 1000 m<sup>3</sup> will be excavated, given the existing data. What is the maximum volume of a potentially remaining hotspot of PCB contaminated material that may remain after the proposed excavation, given the current sample data?
- 2.1.7** Provide maps showing levels of contamination in all environmental mediums surrounding the tar ponds site. Please provide the raw data to support these maps.

**2.1.8** This should include all data collected from soils, groundwater, sediment, sumps from the western shoreline and in urban Sydney, i.e., north end and downtown. The surface soil data has been referenced in Drawing No. 3, Risk Assessment Locations Outside NOCO (JDAC 2001, Human Health Risk Assessment). However, individual site assessments have been done on properties which may not be represented on this map. Please include all of this data. Include the western shoreline data, and all groundwater monitoring results.

**2.1.9** Please show a map of the deposition of contamination from the steel and coke facilities to indicate the impact on tar ponds area. The impact in this area was documented while the facility operated by: Katz and McKay 1959 (Analysis and distribution of dustfall in the Sydney area, during the period February 1958 through September 1959, Department of National Health and Welfare Canada, November 1959), and Katz, Sandeson and McKay 1965, (Evaluation of air pollution levels in relation to steel manufacturing and coal combustion in Sydney Nova Scotia. July 1965). There are additional references that may be applicable. This information is not present in the EIS or on the STPA website.

Based on existing contamination levels, in the residential soils in the vicinity of the ponds, please provide maps showing the grid sampling necessary to ensure that with 95% confidence, all soils exceeding Canadian Council of Ministers of Environment residential and parkland soil quality guidelines have been identified.

**2.1.10** Please present a remedial action plan to ensure that in future all soils shall meet Canadian soil quality guidelines for parkland and residential criteria as appropriate. Please provide a 'community protection plan' that will be used in conjunction with the implementation of the remedial action plan to ensure that any public health risks associated with remediation will be mitigated.

**2.1.11** Please show a map of current and historic contamination impacts on the western shoreline, and levels of environmental contamination measured in sumps, ground water, basements and subsurface soils. Please provide all supporting data.

**2.1.12** Please comment on existing data gaps with respect to knowledge of existing contamination impacts on the western shoreline, indicating where groundwater monitoring, subsurface soils, sump monitoring and basement floor samples should be collected.

**2.1.13** Please show a map where groundwater 'containment walls' will be constructed surrounding the tar ponds. Please indicate the specific timing of their installment in relation to any proposed remedial activities on the tar ponds.

**2.1.14** Please provide a detailed explanation of the impact on water movement and displacement of water in the tarponds from the proposed solidification and stabilization process.

**2.1.15** Please show a map and provide an explanation of the impact on groundwater movement from the groundwater containment walls, i.e., groundwater migration towards the tar ponds. Include the impacts from surface to groundwater interactions, 25 and 100 years storm events, and 25 and 100 year high tide events. Specifically evaluate on the potential migration of existing contamination both in the tar ponds and on the western shoreline.

With the information collected in all of the above, please develop a detailed conceptual model of all existing contamination in the vicinity of the tar ponds, detailed remedial and risk management plans, and future monitoring requirements.

## **2.2 Coke Ovens Site**

**2.2.1** Please provide maps showing delineation of all existing contamination on the coke ovens site boundaries adjacent to residential areas, i.e., north and south areas of the coke ovens site, and adjacent residential lands. The surface soil data has been referenced in Drawing No. 3, Risk Assessment Locations Outside NOCO (JDAC 2001, Human Health Risk Assessment). However, individual site assessments have been done on properties which may not be represented on this map. Additional soil

contamination in this area has been presented for this area by Lambert and Lane (2004). Please include all of the raw data to support the maps.

- 2.2.2** Please provide the grid sampling necessary to show that the coke oven lands meet future intended land use, i.e., commercial or parkland.
- 2.2.3** Please provide the grid sampling necessary to show that the residential lands adjacent the coke ovens site meets Canadian Council of Ministers of Environment residential soil quality guidelines.
- 2.2.4** The EIS does not indicate any remedial or risk management activities in area 5 of the coke ovens, the southern area of the coke ovens site. Please indicate how contamination will be prevented from blowing off this area of the site onto the adjacent residential lands.
- 2.2.5** JDAC (2001) NOCO site assessment, JDAC (2001) human health risk assessment discuss contaminants in sumps and basements, Acres (1997, 1998) present data for existing contamination in groundwater, and soils north of the coke oven site.
- 2.2.6** Please show a map of the deposition of contamination from the steel and coke facilities to indicate the impact on the lands in the vicinity of the coke ovens. The impact in this area was documented while the facility operated by: Katz and McKay 1959 (Analysis and distribution of dust fall in the Sydney area, during the period February 1958 through September 1959, Department of National Health and Welfare Canada, November 1959), Katz, Sandeson and McKay 1965, (Evaluation of air pollution levels in relation to steel manufacturing and coal combustion in Sydney Nova Scotia. July 1965), and Atwell et. al. 1984 (Ambient air polynuclear aromatic hydrocarbons Study, Sydney, Nova Scotia). There are additional references that may be applicable, in particular, modeling studies of the atmospheric deposition of particulate matter. This information is not present in the EIS or on the STPA website.

- 2.2.7** Please comment on existing data gaps with respect to knowledge of existing contamination in the areas adjacent the coke ovens site.
- 2.2.8** Please provide the sampling necessary to complete delineation of areas impacted by existing contamination in groundwater, sumps, basements and subsurface soils adjacent the coke ovens site.
- 2.2.9** Based on the information collected above, please provide a conceptual model for representing all existing contamination, in the vicinity of the coke ovens site, and an appropriate remedial and risk management plan.
- 2.2.10** Please provide a community protection plan for remediation of all existing contamination associated with the coke ovens and adjacent lands.

### **2.3 Urban Sydney Existing Contamination**

- 2.3.1** Please provide a series of maps showing the time-frame development of urban Sydney (Whitney Pier, Ashby, North End, downtown Sydney, and south Sydney).
- 2.3.2** Please provide a map of all existing contamination in the urban areas (Drawing No. 3, Risk Assessment Locations Outside NOCO), and locations in NOCO (JDAC 2001). These maps should cover at least surficial soil contamination, subsurface soil contamination, sump contamination, basement contamination, and groundwater contamination.
- 2.3.3** Please provide a statistical analysis of soil contamination in urban Sydney, with the historic background concentrations of contaminants (MGI 2001, Far A Field Sampling program).
- 2.3.4** Please provide maps of the historic atmospheric deposition of the contaminants in the urban Sydney area (Katz and McKay 1959, Katz, Sanderson and McKay 1965, Atwell

et. al. 1984) and modeled impact of the steel and coke oven emissions on urban Sydney (Havlock 1973, Choquette 1974, Band et. al. 2004).

**2.3.5** The Human health risk assessment for the NOCO area identified many residential properties where remedial measures of surficial soil are recommended (JDAC 2001, Human Health Risk Assessment, NOCO, Table 1, Executive Summary). The delineation of contaminated material in residential properties is not presented in the EIS, and was recommended by JDAC (2001, Human Health Risk Assessment). Please provide existing contamination and data that has been obtained. Propose appropriate risk management for the range of additional residential properties which require mitigation.

**2.3.6** The JDAC 2001 human health risk assessment for the NOCO area identified many residential properties where unacceptable levels of contamination is present in basements as a result of seepage into homes. Please present remedial and risk management approach to prevent further seepage into residential homes.

**2.3.7** Please develop a conceptual model of all existing contamination, and develop a remedial and risk management approach for the existing contamination to reduce the ecological and human health risk.

**2.3.8** Please develop a community protection plan to be implemented with the remedial action plan for these areas.

## **2.4 North Sydney as Background Area**

The EIS and background reports do not provide the data collected in North Sydney to allow for evaluation of the report.

North Sydney is considered a 'reference urban community'. There is no information presented on how the two areas are similar and different, and the suitability of North Sydney for generating 'background contaminant levels' following the Ontario Ministry of

Environment (1993, 1996) Guideline for contaminated sites, “background approach” referenced in the EIS.

**2.4.1** Please provide a phase 1 assessment of North Sydney. Please detail all industrial activity in North Sydney: historical and existing point sources (shipyards, foundry, rail yards, and other industrial stacks) and line sources (railyards, etc.). Please map all of these industrial sources in comparison to soil sample locations. Please identify any historical reports showing the deposition of contaminants from point sources onto North Sydney. 2.3.2 Please provide historical maps of the development of North Sydney to show the age of the locations which were sampled in proximity to the industrial activity.

**2.4.2** Provide the surface soil data represented on Drawing 4, Background Locations in North Sydney in JDAC (2001) Human Health Risk Assessment. Please encode the data such that the location of each data point on Drawing 4, can be known.

**2.4.3** Please conduct a spatial distribution of the surface soil data from North Sydney.

**2.4.4** Please provide the sampling logs for each of the sample locations (3 locations) used in creating the composite samples which were analyzed.

**2.4.5** Please provide the rationale for sample locations.

**2.4.6** Please provide a statistical comparison of the soil data in North Sydney with respect to the ‘background concentrations’ of soil contaminants generated for the Sydney area, i.e., the MGI Ltd. (2001) “Far A Field” soil study.

## **2.5 Background Soil Contamination Levels.**

The EIS does not compare the existing contamination at the coke ovens and adjacent communities with the pre-industrial or background soil contaminant levels in and around Sydney.

- 2.5.1** Please provide a map and data showing the background, “far a field” sampling program data.
- 2.5.2** Please provide a statistical comparison of existing soil contamination in NOCO, urban Sydney non-NOCO (North end, Whitney Pier, and Ashby), with the background soil data.

### **3. Stakeholder Involvement**

At section 5.2.2 of the Guidelines, the proponent is required to “demonstrate how the concerns of residents, Aboriginal people, local government and other stakeholders who are likely to be affected by the Project have been identified and addressed. The EIS will describe objectives, methods and results achieved in these discussions.”

#### **Intervenor Request**

- 3.1** Section 3.1, Volume 1 of the EIS, at page 3-2, fails to note that the technology advanced by the proponent was rated “least acceptable” by the JAG community consultation. The STPA should explain, in a clear and transparent manner to the Joint Review Panel, why this advice from the community was rejected.
- 3.2** At section 3.3, Volume 1, “Stakeholder Consultation” (p.3-3 to 3-4), the EIS introduces the acronym “CLC” without explanation. This must refer to the Community Liaison Committee. The CLC is described as “a group of people that represent a wide cross-section of the community of Sydney and who have an interest in participating in the planning and implementation of the Project.” It is not noted that the STPA refused to allow the Sierra Club of Canada to participate, despite an application to do so and the naming by Sierra Club of Canada of a long-standing volunteer who dedicated hundreds of hours to the JAG process, Marlene Kane, as its designated representative. The EIS should not have ignored the exclusory and judgmental nature of STPA’s “community consultation.”

The CLC is a proponent selected group of stakeholders that excludes key stakeholders, like SCC and others. The meetings are *in camera* and exclude the public and media. This design does not address the concerns of stakeholders, media or general public.

**3.3** Please address the deficiency of how concerns of these stakeholders have been addressed by CLC (6.1.1)

At section 7.11.5.1, Volume 1, (p.7-84), the EIS sets out the approach to “Inform citizens of Project activities and progress” as to impacts of construction on “quality of life.” The primary mode of communication is described as a website: “The STPA website already informs citizens of the nature and timing of Project activities, and this should continue during construction activities, particularly regarding scheduled disruptions.”

The EIS does not provide any information as to the adequacy of a website as a means of communicating impacts and disruptions.

**3.4** How many residents of Sydney have home computers? How many regularly access websites?

In summary, contrary to the Guidelines, no description is provided of how the concerns of stakeholders will be addressed in a meaningful way during remediation activities.

**3.5** Provide details and objectives meaningful public input during remediation activities going forward (section 6.1.2)

**3.6** The proponent has not described how public will express concern. Please detail (section 6.1.3) as set out in EIS Guidelines 17 (p.27).

#### 4. Alternatives to the Project

At section 7.1.3 of the Guidelines, the proponent is required to provide an analysis of alternatives to the project. Specifically, the EIS was to describe, *inter alia*:

- The alternatives to the Project (those functionally different ways to achieve the Project need and purpose;
- The “do-nothing” alternative;
- Broad clean-up options;
- Criteria for assessing the alternatives; and
- The major beneficial and adverse effects of the alternatives considered.

#### Intervenor Request

4.1 This requirement is virtually absent from the EIS. Sierra Club of Canada does not accept that a conclusory acceptance, found at section 2.13 of Volume 1, of the non-transparent process that occurred between the conclusion of the JAG process and the announcement by STPA of its choice of the least desired option, as determined through community response, satisfies the requirement of the Guidelines. Please address.

4.2 The alternatives to the project are inadequately considered especially with respect to the community recommendation. In appendix E 3.1.2.9 the first part is a description of a generic soilwashing process and presents an unsupported claim that it would produce a large quantity of residual material that requires treatment or disposal.

Why was a generic soil washing considered as an alternative but not the proprietary (TD ENVIRO) process and complete treatment train (option 3 for the tar ponds)?

4.3 Vol. 1. p. 2.81 “complete removal of all contaminants from the two sites may not be practical or even technically feasible”

- 4.4** Please justify this conclusion given that the technical demonstration showed that complete removal and destruction, the preferred JAG recommendation, demonstrated the feasibility of Option 3 for the tar ponds.
- 4.5** Vol. 1, Table 2.13-2 The disadvantages listed for Excavation, Soil Washing, Bioremediation, Co-Burning and Containment do not seem to be supported by the facts of the Technical Demonstration.
- 4.6** Please provide a detailed explanation of these disadvantages.
- 4.7** Vol. 1, p. 2-87, indicates independent financial reviews were carried out by Conestoga Rovers, (CRA), Public Works and Government Services Canada, SAIC Consultants and STPA staff.
- 4.8** Please provide the independent reviews with a detailed comparison of how these costs were arrived at and a comparison of how they would vary between the proposal and the alternatives (TD Enviro, modified option 3 in particular). Provide a justification that disposal of destruction process byproducts may present challenges for a complete destruction clean up strategy beyond the disposal problems associated with incinerator ash.
- 4.9** Alternatives to the Proposal in Vol. 1 Table 2-13.2 p. 2-82-86, is a discussion of the alternatives to the proposal.
- 4.10** This is an inadequate consideration of the alternatives and their cost. Please do a detailed analysis of the alternatives.

## 5. Groundwater

The Guidelines require that the proponent shall provide significant detail of the groundwater regime (section 9.9.2), including specifically the instruction to “describe the characteristics of surface water and groundwater interactions...produce a conceptual/analytical model of the groundwater conditions under and around the Project site.”

### Intervenor Request

5.1 The EIS is completely deficient in meeting this requirement. At p. 5-99, volume 1 within section 5.6.3.4, the EIS states:

“No detailed studies have been undertaken of the GWSI (Groundwater Stream Interaction). As noted in Section 5.6.2.5 a groundwater pump and treat system was installed and is now operational which is expected to reduce the extent of GWSI. The presence of a contaminant plume was noted in surface waters commencing near the CWP. *However the complexity of the groundwater flow field made it impossible to derive meaningful rates of groundwater flows into the brook based on one set of data.*” (emphasis added).

Similarly, the hydrological description of the Victoria Junction site (section 5.6.1.3, Vol. 1, p.5-73, notes: “No additional field work was undertaken for this EIS.” And at section 5.6.1.5, Vol 1, p. 5-77: “Limited hydrogeological work has been undertaken over the Phalen Mine Site ...”

5.2 Why were no detailed studies undertaken? Why is it impossible to respond to the requirements of the Guidelines?

5.3 Sections 11.7 and 11.8 of the EIS Guidelines request Mitigation Measures for surface water and ground water. These are also not adequately described. Please provide full detail and cost of remedial options. (6.4.3)

- 5.4 Table 4. 3-1 states that deposition from the incinerator is not a big concern on groundwater resources.
- 5.5 Provide scientific justification for this assertion given that the adjacent lakes including drinking water supplies for New Waterford are within 1500 meters.
- 5.6 Volume 1 5.6.3.4 p5-99, to adequately gauge groundwater-stream interactions meaningful rates of groundwater-stream interactions must be determined.
- 5.7 The lack of analysis is a deficiency. Please do all necessary to determine these interactions.

## **6. Ecological and Human Health**

The Guidelines at section 10.3 require the proponent to “Describe and evaluate the potential effects of the Project on human health.”

### **Intervenor Request**

The EIS fails to adequately respond to this requirement of the Guideline. At section 5.9.6.1 of Volume 1, p, 5-226, the EIS states that “this description of community health does not seek to explain current health status through causation factors simply because it would not serve the objective of the environmental assessment.”

This assumption is not valid. The health status of local residents, to the extent that health has already been impacted through exposure to toxic chemicals, reduces the ability of that population to be exposed to additional loadings of toxic chemicals.

- 6.1 The proponent should re-calculate its health risk assessment in recognition of the existing level of contamination and health impacts in the community.

The proponent further claims that “Sydney residents do not have greater cancer risks than people living elsewhere in Cape Breton County.” (p. 5-230, Vol 1) What is relevant is not estimated, hypothetical *cancer risk* but actual *cancer rates*.

- 6.2 The EIS should be amended to include results from epidemiological studies such as those that demonstrate a higher cancer rate in Sydney than in the rest of Canada (Band, P and M.Camus, “Mortality Study of Cape Breton County and Sydney, Nova Scotia: standardized Comparisons with Canada, 1951-1994,” Environmental Health Directorate , Health Canada, September 1988) and those that demonstrate a higher cancer rate in Sydney than in the rest of industrial Cape Breton. (Guernsey, J.R. et al, “Cancer Incidence in Cape Breton County,” 1998). An extensive epidemiological study of cancer rates in Sydney by researchers at Dalhousie University compared to other municipalities in industrial Cape Breton and concluded that the cancer rates were significantly higher in Sydney.
- 6.3 Further, at p. 5-240, the EIS “None of the studies identified a health risk to nearby residents through exposure to any of the contamination found on-site.” This statement reflects a selective reliance on health risk assessments that, by design, sought to establish no risk. Independent analysis has detected health risks. (see *Lead, Arsenic, and Polycyclic Aromatic Hydrocarbons in Soil and House Dust in the Communities Surrounding the Sydney, Nova Scotia, Tar Ponds* Timothy W. Lambert and Stephanie Lane, *Environmental Health Perspectives* • VOLUME 112 | NUMBER 1 | January 2004.).
- 6.4 The proponent should be required to either provide a full literature review, including those studies that point to a health risk, or re-state its EIS to admit some studies have shown health risks from the contamination levels in residential neighbourhoods.
- 6.5 The scoping document prepared by Public Works Canada (January 2005) says the objective of the project is reduction of ecological and human health risk from existing contamination.

AMEC/JWEL have refined this and state that the EIS has two primary project objectives (EIS volume 1, section 2.1.4, p. 2-3). This section reviews the EIS from the perspective of 'meeting' these objectives.

The EIS says: "This project has two primary objectives. The first is to reduce the current ecological and health risk from existing soils, sediments and water contamination." (EIS, volume 1, section 2.1.4, p. 2-3).

The EIS is deficient in meeting both objectives. A brief rationale is provided to support this claim and the necessary information requests to address the deficiency. All existing contamination in Sydney has not been identified in the EIS. In particular existing contamination has not been specifically identified and discussed within the Sydney community, the coke ovens site, the western shore of the tar ponds and the tar ponds.

A conceptual model presenting all existing contamination and potential pathways of exposure, and remedial and management efforts to address the existing contamination is not presented in the EIS. In addition, future land use is not specifically addressed in the EIS. Therefore, the EIS cannot meet the first objective, reduce current ecological and health risk from existing soils, sediments and water contamination.

Remedial actions and delineation are limited to historic site boundaries yet objective 1 and 2 in particular, refer to Sydney as a whole, i.e., affect property values in Sydney as a whole and the development and growth of Sydney. The EIS refers to select remediation and management of residential properties in Sydney, and mainly the NOCO area, and calls for the further delineation of residential properties. This has not been completed and all areas treated the same, i.e., remedial action where necessary. Therefore the EIS is deficient in meeting the first objective.

The EIS says: "The second objective of the Project is to "enhance the development potential and investment climate in CBRM and to provide social benefits for CBRM as a whole. The tar ponds have created a stigma for Sydney which has acted as a serious impediment to the attraction of new business opportunities to the municipality. Remediation efforts are expected to result in considerable qualitative and tangible socio-economic benefits. These

benefits will include, in the short-term the transformation of unused vacant lands near the centre of Sydney to an area suitable for passive and active recreation, commercial development, or light industrial land uses. It is anticipated that the remediated lands will enhance the overall aesthetics of the urban landscape and stimulate renewed conviction in Sydney as a place to invest and grow commercial enterprise” (EIS, volume 1, section 2.1.4, p. 2-5).

The second objective is thought to be met based on public surveys with the real estate community and business leaders. In addition the EIS says: “After remediation of the tar ponds and coke ovens sites is completed, a positive effect on property values is expected. This positive effect arise from the transformation of the previously contaminated sites into new, more desirable land uses, as well as the reduction in perceived risks human health risks.” (EIS volume 1, p. 7-25).

The public surveys, in particular with the real estate community, do not reflect the preferences and views of an informed real estate community, as the EIS materials and communication on clean-up options did not disclose the full existing contamination. Therefore there is no evidence in the EIS with respect to the impact of leaving the residential contamination in place on the perception of Sydney as a contaminated community.

- 6.6** There is no detail of planned remediation of soil in residential areas. The Proponent should be requested to provide detail on contamination of residential soils and basements to set out proposed activities for remediation.
- 6.7** All existing contamination in soil, subsurface soil, sediment and groundwater has not been presented and delineated in the tar ponds, coke ovens site, and adjacent lands.
- 6.8** The EIS lacks a conceptual model presenting all existing contamination, interaction of existing contamination with ecological and human receptors, remedial actions and risk management for all existing contamination, and assessment of potential impact on the

movement of contamination as a result of remedial actions and in particular groundwater and volatilization of contamination.

- 6.9** The EIS has not presented a risk management plan to reduce the health risk from existing soils in the residential community adjacent the site and therefore fails to meet the first objective.
- 6.10** The EIS is deficient in public consultation. The EIS requires full disclosure of all information with respect to existing contamination, such that public, and all other relevant people, can make informed decisions with respect to their participation in review of the EIS. The EIS has not presented all information to participants in the public consultation program such that they can make informed decisions and comment accordingly. In particular, the EIS does not present any information with respect to public consultation and preferences of the public with respect to remedial and risk management for existing soil contamination in the residential communities adjacent the coke ovens and tar ponds to reduce the ecological and human health risk from existing soils.
- 6.11** The EIS does not present any data on solicitation of public preferences or perspectives with respect to meeting objective 2 in relation to existing contamination in the residential community, i.e., the adverse impact on Sydney as a contaminated community due to the soil contamination in residential community surrounding the site, and the need for remedial actions to address this risk in order to change the perception of Sydney as a contaminated community and the adverse impact this has on the development and growth of Sydney.

## **7. Health Risk Assessment**

- 7.1** The assessment of emissions during remediation of the tar ponds is based on one trial. Please show that emission monitoring accurately captured emissions during the trial. Show the partitioning of volatile contaminants from the sediment and water phase, to the air phase. Provide prediction of the release of volatile compounds and there

probable concentrations downwind of the excavation. Compare these predictions with the contaminant levels measured during the trial remediation.

- 7.2** The EIS indicates that the sediments in the trial were an order of magnitude less contaminated than sediments that are going to be excavated (EIS volume 3, p. 5-3): trial naphthalene sediment = 41 mg/kg, vs mean PCB area = 491 mg/kg; trial benzene 1.1 mg/kg vs PCB sediment mean = 10 mg/kg. The health risk modeling was done using emission factors in the trial. Please detail the assumptions and calculations to show the emission factors developed from the trial scenario are applicable to the more contaminated sediments.
- 7.3** Please provide a comparative evaluation in the reduction of health risk for the tar ponds and coke ovens using a covered structure vs other risk management options, and no structure.
- 7.4** The carcinogenic potential from exposure to PAHs in air can be calculated using a complex mixture model, rather than with individual PAHs. A complex mixture approach was not used (EIS volume 5). The Ontario Ministry of Environment, (Mueller P 1997) PAH Hazard Identification and Dose-Response assessment has a complex mixture based on PAHs from coke ovens and coal tars. The carcinogenic potency for the PAH mixture is applicable to the PAH existing contamination on the sites. Please re-calculate the health risks associated from PAH mixture using the whole mixture model carcinogenic potential from existing soils, and air emissions during remediation. Include the recommended 10x factor for acute exposures. For comparison please include the WHO (2004) complex mixture approach to PAHs.
- 7.5** The EIS has not considered child specific health risk assessment procedures. US EPA has developed specific guidelines for health risk assessment for children. Please recalculate health risks associated with existing contamination and from remedial measures for children following the US EPA guidelines for children.

- 7.6** The health risk assessments were conducted following a number of site-specific factors. Typically when such procedures are done, the risk assessment contains in addition the calculated risks using default assumptions for parameters. Please provide health risk assessments using base case inputs. Please specifically tabulate all incidences where site-specific inputs have been used, and show the impact on the risk assessment.
- 7.7** The intake rate for contaminants from soil does not include indoor dust (JDAC 2001, human health risk assessment, section 2.3.4 equation 1). Dust has been shown as the primary pathway for exposure to lead, and also shown as a pathway for arsenic exposure. Dust levels of lead and arsenic have been documented in Sydney (Lambert and Lane 2004). Please recalculate the human health risk for children and adults given the soil and dust concentrations. For contaminants without dust measurements, please provide an approximation of contaminants in dust, i.e., PAHs.
- 7.8** The JDAC (2001) health risk assessment did not assess acute exposures, pica events and other incidences of direct soil ingestion, but rather was limited to incidental ingestion rate (JDAC 2001, Table 2-8). Please calculate the mass of soil required to produce a blood level of 5 ug/dL given existing lead contamination in residential soils. Please calculate expected arsenic body burdens given the mass of soil consumed identified above.
- 7.9** The human health risk assessments assume the population has not been previously been exposed to contaminants originating from the steel and coke facility, and that the residents of Sydney are typical health status, such that risk are a result of additional incremental exposures only. However, the EIS also says: “For more than 100 years, the Sydney airshed has been impacted by air emissions from the production of steel at the former SYSCO site. Significant air emissions were generated in particular from the coking process at the coke ovens site.” (Executive Summary p. 5-19). It has been documented that the residents were exposed to the emissions from the coke ovens and steel plants (Katz and McKay, 1959, Atwell et. al. 1984), and predictions of exposure to particulate matter and SO<sub>2</sub> (Havlock 1973, Choquette 1974). It has been

documented that the residents of Sydney have been show to have increased cancer mortality 1951-1994 (Band et. al. 1999), cancer mortality and disease of circulatory system, 1961-1988 (Band et. al. 2004), cancer incidence 1979-1997 (Guernsey et. al. 2001) an increase in congenital anomalies from 1988 to 1998 (Dodds and Seviour 2001). The human health risk assessments should be recalculated with the assumption that the population has been previously exposed to the contaminants, and that they are currently living in existing contamination in their residential soils and dust within their homes (Lambert and Lane 2004). At a minimum this suggests that a cancer risk of  $1 \times 10^{-6}$  should be used, which is common for many regulatory agencies in Canada, regardless of historical exposures. Please provide rationale and assumptions to address this deficiency.

- 7.10** The proposed 1 hour and 24 hour concentrations for naphthalene are exceptionally high (Human Health Risk Assessment, Table ES.5). The rationale proposed has no actual health basis but simply derivations and manipulations of uncertainty factors (Appendix A-1) (Human Health Risk Assessment). Please provide the protocol, detailed health rationale and assumptions to justify the development of the proposed guidelines. By comparison, AMEC is proposing for naphthalene “health based guidelines of 75,000 ug/m<sup>3</sup> as 1 hour average, and 2,250 ug/m<sup>3</sup> as 24 hour average”. In comparison Ontario Point of Impingement guidelines are “30 ug/m<sup>3</sup> for 30 minutes based on odour, and the ambient air quality guidelines is 22.5 ug/m<sup>3</sup> for 24 hours based on health, and a 10 minute guideline of 50 ug/m<sup>3</sup> based on odour”. The US EPA IRIS system, the 24 hour risk based guideline is 3 ug/m<sup>3</sup>.
- 7.11** If naphthalene guideline proposed in the EIS is used, given 75000 ug/m<sup>3</sup> for 1 hour measured in the community, please provide a map showing the size of the odour plume.
- 7.12** The proposed 1 hour and 24 hour proposed concentrations for benzene are exceptionally high (Human Health Risk Assessment, Table ES.5). Please provide detailed health rationale, and assumptions in developing the guidelines.

**7.13** Given this project will last several years, please provide the rationale why the project should not be conducted following typical point of impingement and ambient air quality guidelines.

## **8. Follow-up and Monitoring Measures**

The EIS does not specifically specify any follow-up or monitoring that will take place should there be any upset conditions or fugitive emissions where the public or ecological receptors are exposed. The EIS says that such a contingency will be considered for workers but there is nothing with respect to the public. The Executive Summary, section 1, says monitoring and follow-up measures have also been proposed as required, to verify environmental effects predictions and the effectiveness of mitigation measures. There is no detail on these follow-up monitoring or measures.

- 8.1** The EIS should propose a specific health monitoring program for each remedial activity should releases occur into the community. For example, with respect to the proposed incineration, a specific plan should be developed to monitor for PCBs, dioxins and furans, and metals for human and ecological receptors. This plan should specifically address future planning such that monitoring program occurs in a timely fashion, i.e., almost immediately, in order to understand the peak exposures after potential releases, in particular, for upset conditions.
- 8.2** Please conduct a background study of the PCB levels in the community and ecological receptors, to establish a baseline, such that, in the case of inadvertent releases of PCBs occur, there potential impact can be understood.
- 8.3** Please conduct a background study of dioxin and furan levels in ecological and human receptors to establish a baseline such that incremental exposures will be able to be identified.
- 8.4** Please provide a sampling plan to periodically confirm that PCBs and dioxins/furan levels have not changed in ecological and human receptors.

## **9. Ambient Air Monitoring**

According to the EIS Guidelines, section 9.7 p. 18, the Proponent shall: “(5) Provide detailed methodology for ambient and emission air quality monitoring, including location, methods, instrumentation, calibrations, protocols, procedures, and rationale.”

### **Intervenor Request**

The EIS (Vol. 1, Table 12.1-1 p. 12-4) includes none of this detail. Without detail it is impossible for the panel or public to assess if either the purpose of the EIS guidelines (4.1 ESI guidelines p. 8) have been met or the objective of the monitoring programs will be met. EEM programs (12.1.1 vol. 1) and EMP are not developed, monitoring locations are not detailed and are deferred to the proponent and its designates. This is a serious deficiency that needs to be addressed.

**9.1** Please provide the detail required by the Guidelines.

## **10. Detail of Remedial Technologies**

The EIS Guidelines, at section 7.2.3, p.15, directs the EIS to detail all proposed remedial technologies and their design. Details of how the Stabilization and Solidification will be accomplished are not adequately described. (Vol. 1, section 2.2.1.4, p2-19-20.)

**10.1** What combination of reactive additives is planned? Please provide full details. (6.2)

**10.2** There is no standard designed to ensure compliance with stated primary purpose for solidification, the necessary strength to support construction equipment. “The EPA recommends a minimum compressive strength of 50-200 psi” (H. F. Freeman & E. F. Harris, Hazardous Waste Remediation, Technomic Publishing Co., Inc., 1995, p. 267; bottom - left column).

The EIS Guideline (6.5), (7.2) directs attention to all applicable guidelines codes and best practices.

**10.3** Volume 1, page 2-20 does not comply with this requirement. It refers solely to visual inspection. Please provide the standard and method of verification.

## **11. Mitigative Measures**

The EIS Guideline, at section 11, p.23, directs the proponent to address all mitigative measures.

### **Intervenor Request**

The plan for restitution through replacement, restoration, compensation in particular is deficient. The compensation options have not been addressed.

**11.1** Please provide these plans (6.4.1).

## **12. Dispute Resolution**

At section 11.3 of the EIS Guidelines (p.23) the proponent is directed to “provide a dispute resolution policy and concerns from nearby land owners.”

### **Intervenor Request**

**12.1** The EIS is deficient in this respect. Please provide a fully developed policy (6.4.2)

EIS Guidelines, section16 directs the proponent to develop a framework for compliance and monitoring.

## **Intervenor Request**

Compliance and effects monitoring and follow-up programs are not described adequately. Contingency procedures/plans are not detailed. Plans for public and peer review are inadequate. Please provide these plans (6.5).

### **13. Information Management**

Vol 1 12.3 p 12-3

## **Intervenor Request**

The information management plan is inadequate. The form and frequency of reporting requirements are not specified. The public should be guaranteed the raw data, results and record of exceedence in a timely manner. Real time monitoring data (internet based) should be guaranteed. Please address (6.7.1).

**13.1** Less frequent publication of public data over time is unacceptable. Please address this deficiency (6.7.2)

### **14. Ash Disposal**

Volume 1, 2.4.3.3, p. 2-51 does not define compliance criteria for incinerator ash disposal.

## **Intervenor Request**

**14.1** Provide scientific justification that the incinerated materials will be inert if it meets the unnamed disposal criteria given that heavy metals and other contaminants will be concentrated in the ash.

**14.2** Describe the assumptions as set out in EIS Guidelines 7.2 that underlines the plan to use incinerator ash as granular fill and or to prepare incinerator feed materials

## **15. Malfunction and Accident Scenarios**

EIS Volume 1, 2.10 p. 2-61 describes Malfunction and Accident Scenarios. The EIS Guidelines (8) directs that a strategy for predicting and evaluating project effects on the environment be developed.

### **Intervenor Request**

**15.1** Given the potential serious consequences of malfunctions and accident scenarios, please address all conceivable abnormal occurrences. Assess the impacts and do a risk analysis for all technologies and techniques being considered for the incineration process including accident and malfunction scenarios.

## **16. Public Comments Respecting Scope of Project. Subject Temporary Incinerator**

Vol 1, Table 3.3-1 p. 3-7 provides an issue summary of public concern about the incinerator.

### **Intervenor Request**

**16.1** Despite the claim in the commentary that these issues of public concern will be addressed in the EIS, full details on incineration design and operation, including control systems and emissions have not been addressed. Please provide full design details. EIS Guidelines requirement (16) that a framework for compliance and effects monitoring and contingency procedures/plans have not been met. Please provide these details. EIS guidelines (8) directs that strategies for predicting and evaluating effects, mitigation remediation and/or compensation and evaluating residual effects must be clearly defined. Please address these deficiencies.

## **17. Key Criteria for Choice of Incinerator Sites**

EIS Volume 1, 2.13.2.2, p. 2-100 Under Temporary Incinerator Locations, “Key criteria for choice of incinerator sites included 1. A site must not have a residence located within 500 meters

of its property boundary.” CCME guidelines guaranteed the community during JAG deliberations states that no homes should be within 1500 meters of the incineration facility.

### **Intervenor Request**

**17.1** Provide scientific justification for not complying with CCME. There are 17 homes within 1500 meters of the proposed Victoria Junction site. A dairy farm is less than 500 meters from proposed VJ site. Cows biomagnify persistent pollutants by several orders of magnitude. How can the risk analysis fail to recognize these risks as unacceptable?

### **18. Waste Material Disposal and Management**

Volume 1, table 2.9.2, p. 2-62, Number 6 in table 2.9-2 estimates that 620 kg/tonne of ash will be generated by the incinerator.

### **Intervenor Request**

**18.1** The requirement set out (EIS Guidelines (7)) to provide sufficient detail to clarify the nature of the Project with respect to volume reduction of incinerated waste is deficient. With 70% of tar ponds sediment being PAH (poly aromatic hydrocarbons), how can a 99.99 reduction in PAH result in only a 38% reduction in volume?

### **19. Malfunction and Accident Scenarios**

Volume 1, table 2.10-1, p. 2-64 Combustion, emission control, computer software failures are forwarded for further investigation.

### **Intervenor Request**

EIS Guidelines (8) requirement for a strategy to predict and evaluate effects, mitigation, remediation and compensation have not been met.

**19.1** The EIS and RA are incomplete or meaningless without consideration of these fundamental issues. Please complete these possibilities and provide a risk analysis for all possible technologies considered.

**19.2** Failure in power supply to incinerator is screened but no detail is provided. Provide details of plans including backup power supply details and response time of backup system.

## **20. Incinerator Emissions Control Failures**

Volume 1, page 8-5, Incinerator Emissions Control Failures (8.2.1.3) defers consideration of these failures to an EMP to be developed.

### **Intervenor Request**

**20.1** EIS Guideline (8) requirement for determining effects, necessary mitigation, and evaluating residual effects has not been met without a developed EMP. Please develop an Environmental management plan.

## **21. Atmospheric Dispersion Modeling**

In Volume 2, 4.2.1, the atmospheric dispersion modeling is deficient in a number of ways as set out in EIS Guidelines (10.3, 10.4). If modeled incinerator was basic (without controls), how was post combustion air capture of volatile inorganics achieved? The exhaust gas temperature was assumed to be 120° C when scrubber is bypassed.

**21.1** Provide justification and model for prolonged upset with temperatures of exit gasses up to 1000° C. The worst case emission of PCB is estimated to be 0.0001 % of feed rate. Redo modeling assuming upset bypassing controls for up to 1 hour, for up 100 and 1,000 times normal emissions.

## **22. Estimated Emission Rates for the Incinerator**

Volume 2, table 4.1, p. 11. Estimated emission rates for the incinerator omits dioxin emissions.

### **Intervenor Request**

**22.1** EIS Guideline (10.4) requirements have not been met. Please include dioxin in the air modeling and remodel for worst case (1 hour bypass) scenario.

The Guidelines at section 7.2, p. 14, set out a requirement for the proponent to “describe the project as it is planned to progress through the construction, operation, and decommissioning phases of its life.”

### **23. Proposed Incineration of Contaminated Materials**

The Guidelines at section 7.2, p. 14, set out a requirement for the proponent to “describe the project as it is planned to progress through the construction, operation, and decommissioning phases of its life.” Vol. 1 2.4 p.2-41 states no decision on incinerator design have been made.

### **Intervenor Request**

The following questions relate to deficiencies in the description of the incinerator design and operation:

**23.1** How will the Destruction Removal Efficiency or DRE be calculated (what is the precise formula?) since slightly to significantly different calculation methods may be used since surrogate chemicals are typically used to demonstrate PCB destruction efficiency?

**23.2** What specific surrogate chlorinated chemicals will be used to demonstrate PCB destruction efficiency?

**23.3** What volume of surrogate chlorinated chemicals will be used to demonstrate PCB destruction efficiency?

**23.4** Will the hysteresis effect be taken into consideration in the DRE tests since surrogate chlorinated chemicals like hexachlorobenzene can take longer to travel through the incinerator than anticipated and de novo dioxin formation can continue to occur for up to several hours after a typical stack performance test has concluded, which will clearly bias the DRE tests?

**23.5** Will a total chlorine mass balance calculation be performed to demonstrate that the total chlorine input into the incinerator equals the total chlorine output in order to account for 100% of all chlorine-containing chemicals?

**23.6** Why is the incinerator not being required to perform an hourly and daily demonstration of the DRE through the use of better chlorine input measurements and more continuous emissions monitors such as dioxin?

**23.7** What are the incinerator stack test performance protocols that will be used during the DRE testing and other tests to demonstrate the destruction efficiency?

**23.8** After the incinerator has been shut down periodically for routine maintenance and repairs or unpredicted malfunctions, what standards will be used to determine if the incinerator is safe to operate again?

**23.9** Will an engineer with experience in incineration technology be on duty during operations of the incinerator?

**23.10** What background checks will be conducted on the incinerator operators?

**23.11** What type of fugitive VOC gas monitoring system will be used to routinely measure for possible leaks from the incinerator during operations?

**23.12** How frequently will operators conduct visual leak checks to look for visible leaks of fugitive vapors escaping due to damage to the incinerator?

- 23.13** Will the incinerator be tested with the same or similar kinds of PCBs and other wastes during the initial performance tests as it will be burning during daily routine operations?
- 23.14** If the initial incinerator performance and DRE tests are different in waste materials, what differences and range of waste materials and PCBs will be allowed?
- 23.15** Will the incinerator be built from spare parts from other older incinerators or will brand new equipment be built and designed from scratch?
- 23.16** What is the history and track record of the incinerator design company and what accidents and malfunctions have happened to previous incinerators built by the same firm?
- 23.17** Will firms with bad actor records of designing poor incinerator units be excluded from the design and construction contracts?
- 23.18** What kind of bonds, financial guarantees and contract conditions will be required for the incinerator design firm to meet?
- 23.19** Will a community warning or alert system be in place to warn the public every time the incinerator malfunctions, bypass events, explosions, fires, and accidental releases occur?
- 23.20** What community ambient air monitoring system will be used to test for emissions from the incinerator?
- 23.21** Due to the fact that the bulk of the chlorine from the PCBs will be burned to become HCl or hydrochloric acid, will a community corrosion monitoring program be set in place to test for the exceptional corrosive effects of a strong, aggressive inorganic acid such as HCl which produces corrosive effects at levels of 0.1 parts per million or 100 parts per billion?

- 23.22** What protocols will be utilized to guard against manual over ride by operators of the Automatic waste feed shut off controls and keep the incinerator burning waste despite operational problems?
- 23.23** How many rotary kiln puffs and leaks of fugitive unburned waste gases will be allowed before the incinerator is shut down for inspections and repairs? One? Five? Ten? Twenty?
- 23.24** How many thermocouples will be installed in the incinerator to measure temperature levels during incineration?
- 23.25** What kinds of incinerator malfunctions and accidental scenarios are expected or possible from the incinerator?
- 23.26** How will the incinerator operators be trained to respond to each specific malfunctions and accidental scenario?
- 23.27** What modeling will be performed on the levels of uncontrolled emissions from use of the thermal relief vent or bypass dump stack since the bypass stacks are almost never required to have air pollution control and monitoring devices on them?
- 23.28** How many seconds or minutes will the thermal relief vent or bypass dump stack be used before the incinerator operators begin a controlled shut down sequence?
- 23.29** How many minutes or hours will incinerator shutdown take during an emergency situation?
- 23.30** What kinds of emergencies will result in incinerator shutdown?
- 23.31** What methods will be used for the calibration of the thermocouples?

**23.32** What potential measurement or other technical errors are in the methods used for the calibration of the thermocouples?

**23.33** How frequently will the thermocouples be calibrated?

**23.34** How will the operators know if one or more of the thermocouple temperature readings are too low for safe combustion and the incinerator is not operating under its required permit optimum combustion parameters?

**23.35** How often will the thermocouples be replaced due to damage or deterioration?

**23.36** How will the thermocouples be installed?

**23.37** What is the metal composition of the thermocouples?

**23.38** What are the purchase guarantees of the manufacturer of the thermocouples?

**23.39** What methods will be used for the calibration of the oxygen sensors in the rotary kiln and secondary combustion chamber?

**23.40** What potential measurement or other technical errors are in the methods used for the calibration of the oxygen sensors?

**23.41** How frequently will the oxygen sensors be calibrated?

**23.42** How will the operators know if one or more of the oxygen sensors oxygen readings to maintain excess air are too low for safe combustion and the incinerator is not operating under its required permit optimum combustion parameters?

**23.43** How often will the oxygen sensors be replaced due to damage or deterioration?

- 23.44** How will the oxygen sensors be installed and where in the rotary kiln and secondary combustion chamber?
- 23.45** What is the design and reliability of the oxygen sensors?
- 23.46** What are the purchase guarantees of the manufacturer of the oxygen sensors?
- 23.47** What is the track record of the manufacturer of the oxygen sensors?
- 23.48** What methods will be used for the calibration of the pressure sensors in the rotary kiln and secondary combustion chamber?
- 23.49** What potential measurement or other technical errors are in the methods used for the calibration of the pressure sensors?
- 23.50** How frequently will the pressure sensors be calibrated?
- 23.51** How will the operators know if one or more of the pressure sensors readings to maintain negative pressure are too low or too positive for safe combustion and the incinerator is not operating under its required permit optimum combustion parameters?
- 23.52** How often will the pressure sensors be replaced due to damage or deterioration?
- 23.53** How will the pressure sensors be installed and where in the rotary kiln and secondary combustion chamber?
- 23.54** What is the design and reliability of the pressure sensors?
- 23.55** What are the purchase guarantees of the manufacturer of the pressure sensors?
- 23.56** What is the track record of the manufacturer of the pressure sensors?

- 23.57** What fail safe mechanisms will be installed in the electrical control systems to prevent electrical failures, kiln puffs, loss of negative pressure, accidents, explosions, fires, resulting in toxic chemical releases of harmful gases and particulate matter?
- 23.58** Will the incinerator be required to install and operate triple redundant backup electrical control systems to insure the optimum incinerator operation when one computer system fails, crashes or suffers electronic glitches?
- 23.59** What are the design parameters of triple redundant backup electrical control systems?
- 23.60** What is the track record of the manufacturer of the triple redundant backup electrical control systems?
- 23.61** How will the incinerator operators be alerted when one of the electrical control systems malfunctions or gives false readings that appear normal?
- 23.62** How will the incinerator operators be alerted when one of the computer system fails, crashes or suffers electronic glitches?
- 23.63** What electronic protection will be built into the electrical control system to prevent electrical damage due to lightning strikes, power failures due to thunderstorms or other events, electrical surges and dips on the power grid, and other electrical problems?
- 23.64** Why is no continuous emissions monitoring system (CEMS) proposed for emissions of hydrochloric acid (HCl), a common breakdown product of PCBs?
- 23.65** What is the cost of an HCl CEMS and was this cost considered during the development of the incinerator plans?
- 23.66** Why is HCl not being continuously monitored since it will be one of the primary toxic gases emitted by the incinerator during normal operations and many waste incinerators today are required by law and permit to track HCl stack emissions?

- 23.67** Why is no continuous emissions monitoring system (CEMS) proposed for emissions of dioxins and furans, a potential byproduct of PCB incineration?
- 23.68** What is the cost of a dioxin/furan CEMS and was this cost considered during the development of the incinerator plans?
- 23.69** What is the maximum concentration of dioxins/furans that the incinerator could emit during a worst case scenario and how was this concentration calculated? Were any assumptions used and what were they?
- 23.70** Will dioxins/furans be emitted from the bypass dump stack during its use?
- 23.71** Will dioxins/furans be continuously monitored from the bypass dump stack during its use?
- 23.72** What is the maximum concentration of HCl gas that the incinerator could emit during a worst case scenario and how was this concentration calculated? Were any assumptions used and what were they?
- 23.73** Will HCl gas be emitted from the bypass dump stack during its use?
- 23.74** Will HCl be continuously monitored from the bypass dump stack during its use?
- 23.75** What is the proposed stack height of the incinerator's main exhaust stack?
- 23.76** How will the public have access to the log records, emissions data and other data for the incinerator?
- 23.77** Will a video camera system be installed to monitor operations inside the control room and outside the incinerator especially around the rotary kiln, secondary combustion chamber, bypass dump stack/thermal relief vent, and the main exhaust stack?

**23.78** What is the cost of installing and operating a video camera system as described in #77?

**23.79** Was any consideration given to installing a video camera system?

**23.80** How will the incinerator's stack emissions be routinely calculated based on CEMS or other parameters and what reliable calculation methods will be used?

**23.81** What stack emissions will not be calculated and why?

**23.82** What is the cost of calculating stack emissions?

**23.83** Will the bottom ash or fly ash be analyzed for metals, dioxins/furans, PCBs or other contaminants?

**23.84** What sampling methods will be used to collect the bottom ash or fly ash and how often will samples be collected?

**23.85** Who will be in charge of collecting the bottom ash or fly ash samples and who will analyze them?

**23.86** What criteria will be established to determine if the dioxins/furans or PCBs are too high in the bottom ash or fly ash and the material has to be burned again?

**23.87** What fuel will be used to operate the incinerator?

**23.88** How long will incinerator startup take and how soon will waste material be fed into the combustion units?

**23.89** How long will it take for an Emergency Electrical Generator to come online during a power failure?

- 23.90** Are higher than normal stack emissions expected to occur during a power failure and what emissions volume might be expected to occur?
- 23.91** What will happen to incinerator operations during a fuel interruption?
- 23.92** What contingency measures will be in place when one or more of the stack CEMS fail to operate?
- 23.93** What backup control plans will be in place to address an interruption or total failure of the incinerator's main ID fan resulting in loss of negative pressure to the combustion system and the entire air pollution control system?
- 23.94** How often will the ID fan be calibrated?
- 23.95** What firm will be the manufacturer of the ID fan and what is their track record on such equipment items?
- 23.96** Will an independent auditor be utilized to insure that the incinerator has been designed properly on paper, will be able to operate as optimum as possible, the permit conditions are adequate to protect public health and the environment, the equipment items are of high quality, and proper QA/QC methods are in place for optimum waste destruction?
- 23.97** What are the worst case accident scenarios that could happen to the incinerator based on information from its design/operating parameters and from the thousands of incinerator accidents at other reasonably similar hazardous waste incinerators?
- 23.98** What is the basis for selecting the worst case accident scenarios that were analyzed?
- 23.99** What criteria will be set in place to determine that the incinerator has become unsafe to operate and should be shut down?

**23.100** What enforcement mechanism will be used to take action when the incinerator violates its permit conditions?

#### **24. Excavation of Contaminated Materials**

Vol.1, Page 2-18. There is no detail on turbidity control systems during excavation of PCBs.

##### **Intervenor Request**

The Guidelines at section 7.2, p. 14, set out a requirement for the proponent to “describe the project as it is planned to progress through the construction, operation, and decommissioning phases of its life.”

**24.1** Without details, it is impossible to determine the effectiveness of proposed measures in controlling downstream PAH and PCB migration. Please outline detailed plans and modeling that will demonstrate acceptable downstream impacts.

#### **25. Chemicals of Concern**

A -08 SSTL page 3. Page 3 of CRA-08 states: “During the identification of COC’s, JDAC inadvertently screened out 2,3,7,8 TCCD (dioxin) – toxicity equivalents out of the HHRA even though the mean concentrations exceeded the screening concentration.” Further, the risk calculations have not considered inhalation as a potential risk.

##### **Intervenor Request**

EIS Guidelines 4.1 direct the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation.

**25.1** The HHRA should be redone including dioxin TEQ for exposure by oral, dermal and inhalation routes.

## **26. Risk to Biota in the Water Column and Sediment Dwelling Organisms**

CRA-08 SSTL page 5-6 “PAH were estimated to be the primary source of risk to biota in the water column and sediment dwelling organisms.”

EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation. Without consideration of all CoC the impacts on biota cannot be evaluated.

### **Intervenor Request**

**26.1** All COC, in particular BTEX, PCB, TCDD, SVOC should be included in the RA. Please redo with all COC and their biomagnification (PCB and TCDD) in sediment and water column.

## **27. Remediation Criteria**

Vol. 1, p. 2-6, 2.1.6 (par. 1, par.6) There is a logical error in Paragraph 1. “The SSTLs define levels of concentration with environmental media ([surface] soil, sediments, surface water and groundwater) that may function as a pathway to human health. CCME guidelines define critical human health impacts.

### **Intervenor Request**

**27.1** Please redo HHRA for COCs using CCME health based criteria to define human health impact point.

Page 2-6 2.1.6 (par.6) Where contaminated groundwater may affect surface water environments (contribution to baseflow) CCME not SSTL values must be applied. Site specific criteria. Groundwater, based on human and ecological risk calculations are unacceptable. CCME criteria are health based risk calculations. Apply the CCME criteria now not in consultation with regulators to apply lesser standards.

## **28. Risk Based Approach to the Management of Contaminated Sites**

APPENDIX D, RAER Executive Summary p. ii describes how a Tier 2 approach is intended to complement an initial Tier 1 assessment (reliance on established standards and guidelines).

### **Intervenor Request**

**28.1** EIS Guidelines 10.3 require human health effects be described and evaluated.

It is deficient that no Tier 1 approach has been done (reliance on established standards and guidelines). Please apply a Tier 1 approach and provide scientific justification for Tier 2 approach.

## **29. Flooding**

Vol.1,10.5, p 10-6 The assessment of flooding events is inadequate.

### **Intervenor Request**

EIS Guidelines (8) requirement for a strategy to predict and evaluate effects and mitigation, have not been met. The coffer dam design is not finalized. The claim that the coffer dam will accommodate a 1:100 year event is not supported.

**29.1** Please provide the specific engineering designs for Battery Point Cofferdam, tar ponds channels, CO Brook re-alignment and modeling results. Model for anticipated global warming increase in 100 year events. How will a coffer dam with a 150 foot opening mitigate migration of contaminants during remediation activities?

## **30. Wastewater Treatment**

Volume 1, 2.2.1.6, P 2-23 Indicates that discharge standards will be developed. The cost and risk calculations for wastewater treatment are dependent on the design and discharge standards of water treatment.

## **Intervenor Request**

The Guidelines at section 7.2, p. 14, set out a requirement for the proponent to “describe the project as it is planned to progress through the construction, operation, and decommissioning phases of its life.”

**30.1** Please provide detailed engineering criteria and costs for waste treatment and specific discharge standards to be applied. Include capacity requirements for single treatment plant or two plants and design criteria to meet capacity needs for 100 year storm events. Provide detailed risk analysis for the various options for all the possible permit parameters.

### **31. Groundwater Contamination with Radioactivity**

CRA-12, 3.1, 3.2, 3.3, p12 contain a number of contradictory statements and deficiencies.

“Groundwater in the study area is not currently in use nor will it be considered for potential use...The PMC concludes that exposure to radioactivity does not pose an unacceptable risk within the Study Area. As a result, radiological parameters do not need to be considered in the human health or ecological risk assessments. Furthermore, no further evaluation of radiological parameters is required.”

States that for groundwater “The highest detection (of radioactivity) generally occurred in waste and fill material, which suggests that the materials associated with coking processes at the coke ovens site, is the primary source of the radioactive detections.”

“The highest detections and concentrations that were above the CCME criteria consistently occur in the groundwater sampled from the Domtar, Coal Pile Runway, and the MAID site.... This is strong evidence that radioactivity is being produced from radionuclides that were potentially found naturally in the study area and/or were associated with the coking processes.”

EIS Guidelines 11.4 directs the proponent to describe actions that will be taken to mitigate adverse effects on human health. EIS Guidelines 4.1 directs the proponent to provide sufficient data and

analysis on any potential environmental effects to permit a proper evaluation. This report does not meet these conditions.

### **Intervenor Request**

**31.1** There appears to be no evidence that radioactivity is produced from naturally occurring sources. Please provide scientific justification for the naturally occurring theory. Provide plans for treatment of these wastes that originate or flow onto the coke ovens property from groundwater planned to be discharged into CO Brook and CBRM sewers. Provide mitigation plans for the two domestic wells on Upper Frederick St. (vol 1 6.3.5.1 P6-46) permitted withdrawal of water from Crystal Springs for ice making and other potential users. (See also CBEG-8 Section 2.0, 3.0, appendix A and B). These impacts do not appear to be modeled in HHRA. Please include consideration of these COCs in the as yet undeveloped EMP and ERAs and model in HHRA.

Given that groundwater is in use in the study area (Solokowski residence, Conway disposal, Crystal Springs to make ice and others) the conclusions cannot be valid.

**31.2** Please include the risks to sensitive humans (toddler drinking groundwater, workers treating leachate and sewage) and other ecological receptors. Provide evidence that native soils have these elevated background radioactive levels. Provide scientific justification that no further evaluation is necessary.

### **32. Effluent Discharged to the Municipal Sewer**

Volume 1, page 2-7, 2.1.6, par.1. “Effluent discharged to the municipal sewer will need to meet the standards defined by the CBRM sewer bylaw.” CBRM has no sewer bylaw in place. EIS Guidelines 4.1 direct the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation. A proper evaluation has not been done.

### **Intervenor Request**

**32.1** Please provide rationale and a summary of all discussions with CBRM about discharge of surface water and MAID site leachate into CBRM sewers.

### **33. Sediment Dewatering Systems**

Volume 1, 2.2.1.3 p.2-18 There are no specific plans for the sediment dewatering systems. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation. No specific plans for sediment dewatering is a deficiency of EIS Guideline 7.2.

#### **Intervenor Request**

**33.1** Please provide costed design details for the passive dewatering scenarios outlined, including surface and subsurface drainage systems, consolidation and evaporation including a RA of the options including inhalation as well as dermal and ingestion risks for various scenarios. Provide details of sizing and design of onsite water treatment plant.

### **34. Solidification and Stabilization of Contaminated Sediments in Place**

The remediation project presented by the proponent for review involves removal of selected polychlorinated biphenyl (PCB) and polycyclic aromatic hydrocarbon (PAH) contaminated sediments from the Tar Ponds and Coke Ovens Sites, and destruction in a temporary incinerator located within CBRM. Sediments that remain in the Tar Ponds would be solidified and stabilized in-place. Water course diversion channels would redirect surface water flowing through the Tar Ponds site. A containment system of barrier walls and an engineered cap would be constructed to reduce exposure and to prevent the movement of contaminants away from the Tar Ponds site. The Tar Ponds site surface would be restored and landscaped in a manner compatible with the natural surroundings of the area and future site uses.

## **Intervenor Request**

The concern is relative to the fact that “Sediments that remain in the Tar Ponds would be solidified and stabilized in-place.” The EIA has not identified the potential technical problems that most likely will occur through this process. The bottom material is highly organic, and heavily contaminated with chlorinated organics such as PAH’s and heavy metals. The simple process of drilling into this highly variable, material which may in some cases exhibit fluid like properties, will no doubt release contaminants to the aquatic environment during the process of solidification. The continued process to solidify the bottom will by its nature also force contaminants, from their existing state (that of being bound with the organic matter of the bottom), into the aquatic environment.

**34.1** What is the planned bore hole spacing? How is the operator going to control preferential flow path of grout material? Is this proven technology? Will this procedure hold for the long term (long term performance)? How will STPA ensure that the entire area is solidified? How is the shoreline interface going to be handled? Have there been leachability tests carried out on the final product to determine whether the contaminants would get into the receiving environment (ground water or surface water)?

The planned coffer dams at the entrance to the contaminated area are not envisaged to be water tight. How will the operation ensure that the contaminated water does not find itself entering uncontaminated marine waters?

The EIS should explain and detail information on the leacheability of the contaminatants from this grout mixture over time.

Volume 1, 2.2.1.3, page 2-19, Dewatered PCB materials will be conditioned with inert materials at a 1.1 ratio (page 2-19, par 4). “The blend material will be flyash, lime or quicklime... as the incinerator produces a clean soil product, it will be recycled to become the inert dry blend material.

EIS Guidelines 6.5 states attention should also be given to all applicable policies, guidelines, codes, standards, and best management practices that would contribute to avoidance or reduction of adverse impacts if followed. Declaring flyash an inert material is hardly a best management practice.

### **Intervenor Request**

**34.2** Provide details and cost of the onsite conditioning area to control odors/vapors. Spillage, run off/drainage, additives and residuals. Provide scientific justification that flyash is an inert material in light of the fact that it is toxic waste. Provide scientific justification that the incinerator produces a clean soil product that is appropriate for use as a conditioning material for dewatered PCB. Has HRA and ERA included risk from heavy metals in these conditioning materials. Please provide data.

### **35. Long Term Monitoring**

EIS Volume 1. 2.2.2.1, Page 2-26 Long term monitoring of S/S waste are not included in the EIS. This does not meet the requirement of EIS Guidelines (8).

Both cost estimates and risk analysis of the long term monitoring plan is meaningless without a fully developed plan.

### **Intervenor Request**

**35.1** Please provide the plan and cost and risk analysis water and air emissions.

### **36. Control of Groundwater at Coke Ovens**

Volume 1, 2.3.1.2 The groundwater collection system is not described. The Guidelines at section 7.2, p. 14, set out a requirement for the proponent to “describe the project as it is planned to progress through the construction, operation, and decommissioning phases of its life.”

### **Intervenor Request**

**36.1** Their effectiveness and risk cannot be determined without detailed engineering plans. Please provide engineering details, cost and risk analysis.

**37. Marine Water and Sediment Quality**

Volume 1, 12-5 Table 12.1-1 assumes that the marine water and sediment quality in the South Arm will be monitored by existing monitoring programs. These are periodic and are inadequate to gauge impacts during remediation of the marine water and sediment quality. EIS Guidelines 4.1 direct the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation

**Intervenor Request**

**37.1** Please provide a monitoring program outline during remediation to provide meaningful, timely data on marine impacts during remediation activities.

**38. Residual Effects Evaluation (REE)**

Volume 1 Table 7.11-1 page 7-89 The REE summary offers no proposed mitigation to the physical environment from the proposed incinerator on human health and drinking water supplies. EIS Guidelines (8) requirement for a strategy to predict and evaluate effects, mitigation, remediation and compensation have not been met.

**Intervenor Request**

**38.1** Please address this deficiency and the determination that impacts on the physical environment are insignificant.

**39. Residual Environmental Effect Summary for Groundwater**

EIS Vol 1. 6.3.5.2, p. 6-52 Table 6.3-2, Proposed incinerator site REES for ground water did not identify any interaction. This is deficient because EIS Guidelines 4.1 directs the proponent to

provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation.

### **Intervenor Request**

**39.1** Please consider impacts on drinking water supplies (Killkenny Lake, domestic wells, water supply for dairy operations etc.) from airborne COCs.

### **40. Effects on Groundwater from Incineration**

Volume 1, 9.1.3 Effects on groundwater from incineration are not described contrary to EIS Guideline 7.2.4.

### **Intervenor Request**

**40.1** Given the impact of residual POPs from fugitive emissions, provide scientific justification that in the long term, effects on groundwater, surface water and soil are expected to be positive.

### **41. Contaminated Sediments From Channel Construction**

EIS Vol.1 6.4.5.1. p.6-57 There are no specified action levels for sediment to be considered for remediation. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation.

### **Intervenor Request**

**41.1** Please provide the criteria, testing protocol, removal, treatment and disposal details for these sediments.

#### **42. Coke Ovens Groundwater Collection and Treatment System**

Vol. 1, 6.4.5.1 p6-60, the cost and capacity requirements of ground water collection systems to deal with peak flow volumes and remediation of PCB conditioning water effluent are not specified. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation.

##### **Intervenor Request**

**42.1** Specific design criteria and discharge targets for COC are required. Please provide these details.

#### **43. Liquid effluent Discharges From Coke Ovens Brook Excavation**

Vol. 1 6.9.5.1 p.6-97. Assumes that liquid effluent discharges from the remediation into Coke Ovens Brook will meet pollution prevention provisions. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation. This assumption is not supported.

##### **Intervenor Request**

**43.1** Please describe testing protocols, action levels for various contaminants, remediation strategies for these effluent discharges.

#### **44. Tar Cell Remediation**

The Guidelines at section 7.2, p.14, set out a requirement for the proponent to “describe the project as it is planned to progress through the construction, operation, and decommissioning phases of its life.”

##### **Intervenor Request**

**44.1** As in many aspects of the proposed project, inadequate detail is provided on the remediation of the tar cell contrary to 4.1 in the EIS guidelines.

In the EIS, Volume 1, at figure 2.3-3, the cross section of the coal tar areas show that only approximately one-third of the Tar Cell (25,000 T) will be excavated and treated. Volume 1, 2.3.1.3 indicates that the tar will be excavated to a maximum depth of 2 meters.

### **Intervenor Request**

**44.2** Please provide details and risk assessment for tar cell removal plan. Provide rationale for not removing all of the tar and the efficacy of a plan to leave most of the tar in-situ.

At Volume 3, section 1.2.3, (p.1-4), the EIS states: “The Human Health Risk Assessment assumes that the excavation of the tar cell will be performed in an enclosure with an air pollution control system capable of removing at least 90% of the volatile constituents in the air.”

**44.3** Nowhere in the EIS is it stated that such an enclosure will be part of the remediation. The proponent should clarify that the enclosure capable of removing at least 90% of the volatile constituents in the air will be part of the project, otherwise the proponent should re-do the health risk assessment without this assumption.

**44.4** Vol.1, 6.1.4 p6-7 and p6-44. There is no consideration of potential airborne emissions from the excavation of the tar cell. Potential impacts on surface and groundwater that may migrate offsite are not addressed. Please estimate and model these impacts.

### **45. Coke Ovens Bioremediation**

Volume 1, 2.3.1.4, page 2-37 does not adequately describe landfarming. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation.

## **Intervenor Request**

**45.1** Using wind rose data, provide scientific justification that soil erosion from wind and water will be an effectively controlled. What atmospheric discharges will be monitored? What are the possible vapor treatment and collection technologies? What are the costs of these systems? Provide a detailed risk assessment of the potential impacts.

Volume 1, 2.3.1.4 page 2-36. RAER (2002 Technical Demonstration Final Report, page 11) determined that bioremediation had little or no effect on reducing PAH and PCB above control (no treatment).

**45.2** Provide the rationale and detailed plans to determine that it will be an effective method for remediating PAH and PCB contamination.

**45.3** Provide a scientific distinction between the nuisance odors that could be a site wide concern (page 2-37, par. 2) and chemical air emissions. Given that benzene is very mobile in groundwater, provide the scientific justification that despite high concentrations of benzene in soils around the By-products building and Domtar facility, that low levels of volatiles are expected to be found in coke ovens soils.

**45.4** Outline how the landfarming approach will be altered to reduce the movement of soil if volatiles are a concern. What is the trigger level of concern for volatiles? How will they be monitored? Will be public have real time access to the data on site volatiles? Will they be monitored continuously or on baseline monitoring system that only operates at most one day in six. How will this allow effective action to protect human health? What effect will not moving soils to reduce vapors have on the efficacy of landfarming?

**45.5** Volume 1. 6.1.5.1 page 6-10. Please provide air modeling and RA for the range of emissions from landfarming and excavation of tar ponds for the various outlined scenarios, e.g. slowed production, foam covering of ponds, dust suppression during landfarming, etc. Provide a detailed technical description of how odor control of

landfarming would be accomplished with in-situ landfarming carbon absorption, biofiltration, etc.

Volume 1. Page 6-10 paragraph 3. Residents will be 150 m from S/S, 300 m from PCB dewatering site.

**45.6** How was the determination of a “substantial buffer zone” arrived at? Provide scientific rationale for buffer zones.

**46. Criteria for Air Quality Criteria at the Fence Line.**

Volume 1, 2.1.6, Page 2-6, Outlines that short term criteria have been developed. These criteria have not been specified. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation. There is insufficient data to determine potential effects.

**Intervenor Request**

**46.1** Please provide criteria for air quality that have been established for short term criteria during remediation (AMEC in consultation with NSDEL and STPA). Will all COC's be monitored? If not, why will they not all be monitored?

**47. Ambient Environmental Monitoring**

Volume 1, 2.4.3.5, page 2-52. It is deficient that there are no specified parameters or action levels for ambient environmental monitoring. EIS Guidelines 11.4 directs the proponent to describe actions that will be taken to mitigate adverse effects on human health.

**Intervenor Request**

**47.1** Provide details of Ambient Environmental monitoring including action levels for environmental changes. In particular, will background soil dioxin levels be assessed

prior to incinerator startup? Describe the frequency and protocols of soil tests after incineration begins and action protocols if levels rise.

**48. Environmental Management Plan for the Construction and Operational Phases**

Volume 1, 8.2.1.3, Page 8-5. States "...an EMP for the construction and operational phases of the project will be developed." EIS Guidelines 11.4 directs the proponent to describe actions that will be taken to mitigate adverse effects on human health. It is a deficiency that this plan is not developed.

**Intervenor Request**

**48.1** To meaningfully assess the potential impacts, the EMP must be in place prior to panel deliberations. Please provide the completed EMP for all parts of the project

**49. Cumulative Effects Modeling**

Volume 2, 8.0, page 26. Outlines that no cumulative effects modeling was conducted. EIS Guidelines 4.1 directs the proponent to provide sufficient data and analysis on any potential environmental effects to permit a proper evaluation. This is a deficiency that needs to be addressed.

**Intervenor Request**

**49.1** Provide cumulative modeling results.

Vol. 1 p. 11-4 Volume 1, page 11-4 The cumulative effects, table 11.2-2 is inadequate.

**49.2** Please provide how these cumulative effects are addressed in the direct effects assessment and how the cumulative impacts are considered.

## **50. Summary of Public Comments**

### **Intervenor Request**

**50.1** Vol.1, Table 3.3-1, p 3-6. Respecting Scope of Project are not adequately addressed in EIS. Materials handling protocols have not been identified and addressed. Please address this deficiency.

## **51. Environmental Management Plan (EMP)**

Volume 1, 8.2.1.3, Page 8-5. An EMP for the construction and operational phase of the incinerator are not included in the EIS. EIS Guidelines 6.5 states attention should also be given to all applicable policies, guidelines, codes, standards, and best management practices that would contribute to avoidance or reduction of adverse impacts if followed. It is serious deficiency than an EMP for the construction and operational phase of the incinerator are not included in the EIS.

### **Intervenor Request**

**51.1** Please provide a detailed EMP for the listed parameters.