Bennett Environmental Inc
Proposed Kirkland Lake Thermal Oxidizer Facility

Proposed Terms of Reference

Pursuant to the Environmental Assessment Act

Background Document 1
BEI Business Opportunity

November 2000

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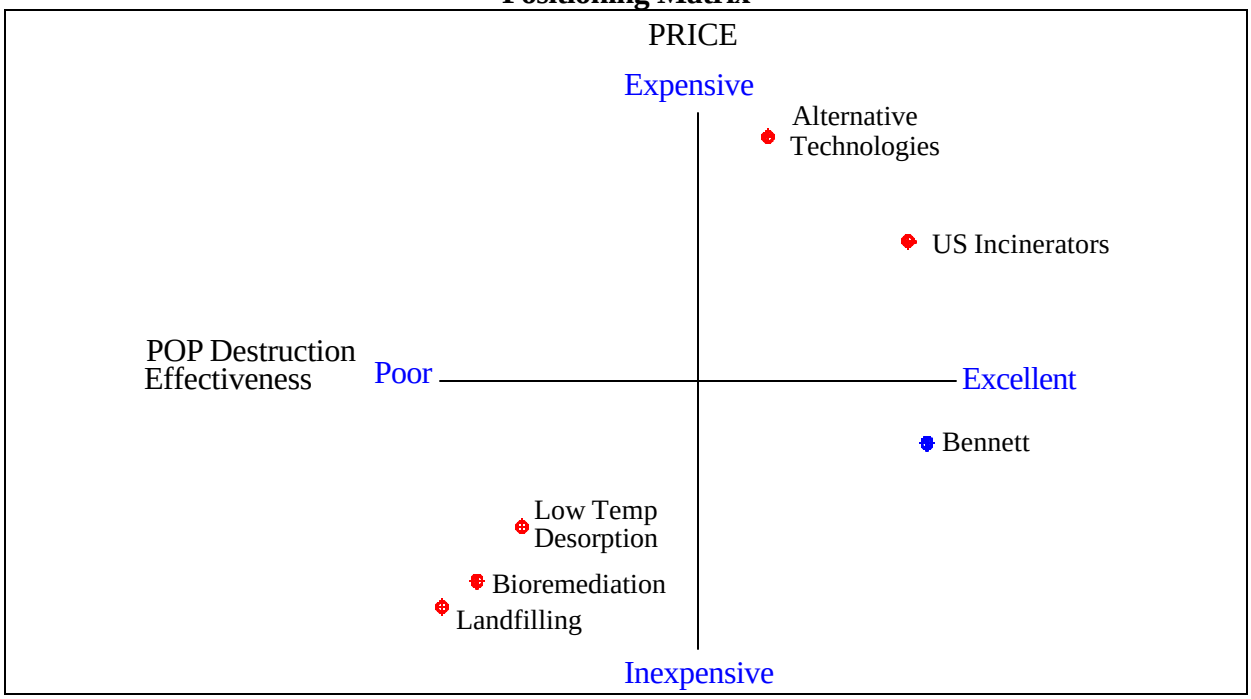
1 THE BUSINESS OPPORTUNITY

The potential market for Bennett Environmental Inc.'s (BEI) thermal treatment service is growing. The current and changing business and regulatory environments in North America in general and Canada and Ontario in particular, are factors that are contributing to the growth of the market. These factors are discussed in section 2. This section evaluates the specific business opportunity available to BEI.

1.1 MARKET POSITIONING

BEI is positioned to have the least expensive, yet most effective method to treat solids contaminated with a wide range of chlorinated and non-chlorinated organic compounds. This approach places BEI's thermal treatment process in the lower right quadrant of the positioning matrix:

Positioning Matrix



1.2 BENNETT ENVIRONMENTAL'S RECENT MARKET EXPERIENCE

Bennett Environmental Inc. has developed a rotary kiln technology called "Thermal Oxidizer" (TO) for the treatment of contaminated solids and soils. The first Thermal Oxidizer operation for the destruction of organic contaminants adsorbed onto solids was carried out in 1984.

Between 1984 and 1993, BEI designed, built and sold several Thermal Oxidizers for various clients. First and Second Generation units were used for major site cleanups at decommissioned oil refineries. In 1992, BEI added improved air pollution control equipment to a third generation TO. BEI completed a treatability demonstration test of this Third Generation TO under contract with the British Columbia Ministry of the Environment using impacted soil from the former Vancouver Expo 86 lands. These tests were successful and led to sales of Third Generation TO units to OIT in Alaska, and to CCS in Alberta.

In 1993 BEI changed focus from selling TO units to owning and operating the TO facilities as a treatment service provider and commenced permitting efforts. In 1994, BEI assisted Récupère Sol Inc. ("RSI"), an ex-situ bioremediation facility in Saint Ambroise, Quebec, to obtain a certificate of authorization to construct a TO facility. This certificate permitted the facility to treat hydrocarbon contaminated soil. RSI had accumulated a large stockpile of contaminated soil that could not be treated by biological means. BEI purchased RSI and installed a Fourth Generation Thermal Oxidizer.

In 1995 the Quebec Ministry of Environment and Fauna issued a permit to RSI after a successful trial-burn on hydrocarbon and Pentachlorophenol (PCP) impacted soil. In 1997 BEI performed a successful trial-burn on polychlorinated biphenyl ("PCB") soil, resulting in an upgrade of the RSI permit to include chlorinated organic compounds. Follow up annual trial-burns in 1998 and 1999 confirmed the efficacy of the process. Since 1997, the Récupère Sol facility has treated soils for numerous clients including Environment Canada, the US EPA, and several Fortune 500 companies. The proposed facility in Kirkland Lake will be a scaled up version of the RSI facility.

PCB contaminated soil from Ontario (Mattice, Klotz Lake, Smooth Rock Falls, Nipigon, Eagle Head, North Bay, Toronto, Saint Catherines, Peterborough, Orillia, and others) have been treated at RSI. To date, over 1/3 of the soil treated at RSI has been received from sites in Ontario. BEI anticipates that the increased demand for waste soil/solids treatment will soon surpass the capacity of the RSI facility. BEI has begun to plan for the expansion of the RSI facility as well as the proposed Kirkland Lake facility.

In 1999, BEI completed a large treatment contract with Desco, Inc., on behalf of the US EPA and the Army Corps of Engineers to treat PCP and dioxin contaminated soil from a site in Virginia. This job took place subsequent to the US EPA Landfill Disposal Restrictions (LDRs) instituted in May 1999[1]. This regulation banned PCP and eleven other Persistent Organic Pollutants (POPs) such as dioxins and furans from US landfills.

Over the past two years, BEI's market size has increased significantly. In 1998, total revenue from treated contracts was $5.4 million, and in 1999, it increased to $22.2 million. BEI has recently signed strategic alliance agreements with Onyx and with IT Corporation to increase market penetration and to guarantee base load soil.

1.3 BENNETT ENVIRONMENTAL'S PRESENT MARKET

1.3.1 RÉCUPÈRE SOL INC CAPACITY

The Récupère Sol Inc. (RSI) facility is licensed to treat up to 100,000 tonnes / year of contaminated soils. The present treatment capacity of the RSI facility is regulated to 10 tonnes per hour as this was achieved at a test burn. RSI successfully achieved a treatment rate of 12.5 tonnes per hour at the 1999 test burn and is awaiting regulatory approval to increase production rates. The available annual treatment time is projected to be 7,000 hours.

[1] United States Code of Federal Regulations 40CFR268 Available at: http://www.epa.gov/docs/epacfr40/chapt-I.info/subch-I/

1.3.2 BEI'S CURRENT CONTRACTS

BEI currently has a number of soil treatment contracts. These contracts commit a significant portion of RSI's treatment capacity over a number of years. Anticipated near-term contracts could easily overwhelm RSI's existing treatment capacity.

1.3.3 PRESENT MARKET STRUCTURE

The market is split into three major geographic regions with different environmental regulations: the US, Canada and Mexico. The Canadian and US market will be primary. The US Environmental Protection Agency (US EPA) estimates the cost of remediating impacted sites in the US to be in excess of US $187 billion, of which soil treatment is estimated at $100 billion. Identified sites that require immediate clean up under the Superfund Emergency Response Program and CERCLA (Comprehensive Environmental Response, Compensation, & Liability Act) are estimated to be in excess of US $7 billion.

1.3.4 THE PRESENT CANADIAN MARKET

The current Canadian market available to BEI is chlorinated and non-chlorinated contaminated solids.

At present, only one Canadian hazardous waste law exists which directly generates business for BEI: PCBs above 50ppm are prohibited from landfill disposal. Landfilling of all other solid hazardous wastes is permitted. BEI's Canadian market is therefore currently limited to the PCB impacted soils and solids market until further Canadian landfill disposal restrictions are enacted.

RSI is one of only two permitted PCB treatment fixed facilities in Canada. Of the two, BEI is usually the most cost effective, because the RSI treatment plant is engineered specifically for solids, and RSI has a more central location (the second facility is located in Northern Alberta.).

1.3.5 THE PRESENT US MARKET

The present US contaminated soil clean up market available to BEI is chlorinated and non-chlorinated contaminated soils with the exception of PCB contaminated soils. Under present US EPA regulations, the American border is closed to the import or export of PCB impacted material. In the US EPA, Technology Innovation Office Treatment Technologies Annual Status Report 1998, the analysis of the most frequently utilized treatment technologies is summarized as follows:

"Treatment technologies are alternatives to on-site containment and off-site land disposal. Established treatment technologies are those for which cost and performance information is readily available. The most frequently used established technologies are on- and off-site incineration, solidification/stabilization, soil vapor extraction (SVE), thermal desorption, and pump-and-treat technologies for groundwater."[2]

[2] Annual Status Report (Ninth Edition) Treatment Technologies Annual Status Report 1998, U.S. EPA, Technology Innovation Office http://www.clu-in.org/products/asr/index2.html

According to the US EPA report, "RCRA Hotline Training Modules, Introduction to Land Disposal Restrictions"[3], "*Structural barriers separating hazardous contaminants from groundwater can eventually break down or leak. In contrast, treatment that destroys harmful contaminants or reduces a waste's toxicity before it enters the environment is a permanent groundwater protection solution*."

For this reason, the US Environmental Protection Agency has banned the landfilling of POPs due to the severity of their long term health and environmental risks. Land disposal restrictions in 40CFR268 prohibit the disposal of certain POPs on land, on the basis that materials contaminated with them still have the potential to impact groundwater, even if they are disposed of at hazardous waste landfills.

These US landfill restrictions have created a new market for the treatment and disposal of soils and solids contaminated with these substances.

Wastes containing POPs from inside and outside the Province of Ontario are now being landfilled in Ontario without destruction of the POPs component. The BEI Thermal Oxidation process will destroy the POPs, ensuring a permanent groundwater protection solution. Currently, there are no permanent continuously operated waste disposal facilities in Ontario approved to destroy POPs mixed in a soil/solid matrix. The proposed BEI facility will serve the demand for this type of waste destruction.

Significant business opportunities have been presented to BEI as a direct result of public and political opposition to the landfilling of POPs. The treatment market is slow to develop, as the option of landfilling POPs is, as of September 2000, still allowed. The US has actively mandated time relevant cleanup orders, and also has required destruction of organic compounds rather than landfilling or capping of contaminated material.

BEI is competing with landfills in Canada for wastes headed north. POPs are presently legally accepted by Canadian landfills. US companies circumvent US landfill restrictions by sending their hazardous material to Canadian landfills as this is less expensive than treatment.

BEI is making inroads into the US market targeting liability conscious generators that prefer to destroy their waste for long-term liability elimination rather than landfill them for short-term gain. Short-term costs of landfills are lower than the costs of treatment technologies and are favored by cost driven generators. Long-term costs for landfills are less certain, and will most likely be borne by the Canadian taxpayer.

2 RECENT AND ANTICIPATED CHANGES TO HAZARDOUS WASTE LEGISLATION AND POLICY

2.1 FUTURE LEGISLATIVE AND POLICY CHANGES TO BE MADE WITHIN CANADA

Over the past year, the media and public have become aware of the ongoing practice of landfilling contaminated materials without the destruction of the organic contaminants, and have voiced their objections to both the federal and provincial governments. Politicians have responded to the public outcry by planning for legislative changes to rectify the situation.

Amendments to Canada's hazardous waste regulations will increase the size of the Canadian contaminated solid waste treatment market. BEI anticipates that in the near future, the landfilling of

[3] US EPA Office of Solid Waste http://www.epa.gov./epaoswer/hazwaste/ldr/guidance.html

domestically generated organic contaminated wastes will no longer be permitted. BEI's Canadian hazardous waste market will therefore include not only PCBs, but also other chlorinated and non-chlorinated organic contaminants.

BEI anticipates that US-style land disposal restrictions will appear over the next few years in Canadian jurisdictions, resulting in a growing market for the thermal treatment of domestic contaminated soil and solids. This anticipated growth will overwhelm the capacity of the RSI facility and is the reason for the proposed TO facility to be installed in Kirkland Lake. Anticipated contracts with one Fortune 100 company with sites in Ontario could take up a significant portion of the proposed Kirkland Lake facility capacity.

2.1.1 ONTARIO

The Ontario Ministry of the Environment has recently posted changes to the province's hazardous waste regulation that make Ontario's hazardous waste standards the toughest in its history, bringing them into line with US regulations. A copy of a Ministry of the Environment news release detailing these proposed changes is included in Appendix B.

Ontario has introduced changes to hazardous waste disposal legislation O.Reg. 558/00. "Regulatory Improvements for Hazardous Waste Management"[4]. The regulation includes a provision changing the leachate toxicity testing method to the US TCLP test which "is more capable of detecting organic contaminants". The provision makes it more onerous to dispose of organic contaminated solid wastes into Ontario landfills. Material not disposable in landfill will require alternative infrastructure to manage such waste streams. BEI's proposed facility will provide the disposal service infrastructure necessitated by this regulatory change.

On September 20, 2000 The Honorable Dan Newman, Ontario Minister of the Environment; The Honorable Tony Clement, Minister of Municipal Affairs and Housing; and The Honorable Al Palladini, Minister of Economic Development and Trade, announced the creation of an "*advisory panel to provide expert advice on the environmental clean up and rejuvenation of old industrial and commercial sites known as brownfields*."[5] The establishment of the proposed Kirkland Lake facility will support the brownfields program.

A major brownfield in Ontario is the Toronto Portlands. This area is central to the Toronto bid for the 2008 Olympics. BEI's proposed facility will facilitate the timely and economic remediation of these lands in time for the games.

The Ministry of Municipal Affairs and Housing has a "*Brownfields Showcase program available to all Ontario Municipalities. Its purpose is to assist municipalities to identify a range of potential finance, liability and approvals tools available to support planning and redevelopment activities and to highlight the benefits that can be achieved when brownfield sites are redeveloped*."[6]

[4] EBR Registry, No. RA00E0002
[5] Full text of the ministers initiative is included in Appendix B and at: http://www.mah.gov.on.ca/inthnews/releases/20000920-1e.asp
[6] http://www.mah.gov.on.ca/business/brownfld/index.asp

2.1.2 FEDERAL

The federal Environment Minister, David Anderson, is preparing a national strategy to remediate the country's most contaminated waste sites. As a part of his environmental agenda, his officials have been instructed to begin work on a reclamation schedule that would bring about a "*substantial cleanup of federal, provincial and orphaned sites over the next 20 years…*

Canada has an estimated 10,000 contaminated waste sites… as the country's largest landlord, the federal government is responsible for about half of those sites. But it has yet to develop a complete inventory of its contaminated holdings, has no overall plan for managing the properties and no accurate picture of how much it will cost to clean them. In an interview, Mr. Anderson confirmed he intends to tackle the problem, saying the federal government has to do better. The cost, he added, could run into the 'hundreds of millions of dollars.'"[7]

The amount of material that could be treated by BEI through the forthcoming federal cleanup program for abandoned sites cannot yet be determined. It is expected that once in place, the program will force the cleanup action of several thousand contaminated sites across the country. Coupled with the anticipated landfill disposal restrictions for POP impacted materials, a large volume of Canadian sourced contaminated material will become available for treatment at BEI's proposed Kirkland Lake facility.

In addition, the federal Environment Minister has called on his Ontario and Quebec counterparts on "an urgent basis" to discuss national standards for hazardous waste facilities in Canada.

A July 28, 2000, press release by federal Environment Minister David Anderson stated the following:

> " *The continuing rise in imports of hazardous waste is raising questions of safety and responsibility. Canada does not want to become a pollution haven…My mandate, and the mandate of all environment ministers in Canada, is to protect the health and environment of Canadians from the effects of toxic and hazardous materials… The 1999 statistics reveal that the rate of increase in imports is explained by the differences in standards for pre-treatment of waste within Canada, by differing environmental liabilities between Canada and the United States, and by the lower Canadian dollar...I want to see a Canadian solution that requires both domestically generated and imported hazardous waste to be pre-treated to render them safe, prior to final disposal. I will use the powers in the new Canadian Environmental Protection Act to ensure that national standards for transboundary movements of hazardous waste are in place."*[8]

A 1996 Auditor General's report estimates a "*$2 billion current estimate of the federal government's potential share of clean-up costs (excluding radioactive wastes) for contaminated sites on federal lands.*"[9]

2.1.3 QUEBEC

An example of the increasing policy momentum towards encouraging and enforcing hazardous solids cleanup is illustrated in a press release issued by the Quebec Government:

[7] The Ottawa Citizen Online: http://www.thecitizen.com/national/991012/2981114.html

[8] Environment Canada, News Releases: http://www.ec.gc.ca/press/000727-2_n_e.htm

[9] 1996 Report of the Auditor General of Canada: http://www.oag-bvg.gc.ca/domino/reports.nsf/html/9622ce.html

THE CABINET MINISTER FOR ENVIRONMENT IN QUEBEC LAUNCHES THE SOIL RESTORATION
(REVI-SOLS) PROGRAM
QUEBEC PROVIDES MUNICIPALITIES WITH A CONCRETE MEANS TO REMEDIATE CONTAMINATED SITES IN URBAN AREAS

SHAWINIGAN, 29TH MAY 2000

Currently in the province of Quebec, there are more than 700 municipalities that are battling with approximately 4,300 contaminated sites, which are almost impossible to develop. The new program, which is phase 2, has a capital budget of $50.0M, which will be used to restore some of these sites that have economical and development potentials.

In summer 1998, the Minister introduced Phase I of this program, with a budget of $10.0M to Québec City and $30.0M to Montréal. Using this budget, the Province will contribute part of the cost of clean up, and the developer, either private or municipal, will make up the rest. From the view of Minister Begin, such a partnership between the municipality, the government, and the private developer will create benefits to all. He expressed his satisfaction and optimism based on the remarkable success during the last 2 years under Phase I of the program that took place in Québec City and Montréal.

The figures speak for themselves from the environmental, economical, and real estate viewpoints: 56 projects have been accepted and funded to date. The total governmental grant of $14.7M has already generated $29.5M of restoration work. This has supported investment projects of $750.0M and has created and maintained more than 4,000 jobs.

In accordance with the policy of soil protection and the restoration of contaminated sites, Phase II will bring a substantial benefit to the program. The program favors treatment of the contaminated soil. Thus for solutions which offer treatment, the financial contribution by the government will increase to 70% instead of 50%.

2.1.4 MANITOBA

The Contaminated Sites Remediation and Consequential Amendments Act (CSRA) was proclaimed in 1997. This Act provides regulatory authority to designate and manage sites that have been exposed to environmental contaminants. Seven sites in five communities (Winnipeg, Brandon, Carberry, Fisher Branch and Lockport) were formally designated as "Contaminated Sites" during 1997. Management plans are in place to address the contamination on these seven sites. Details of the plans have been placed in the public registry maintained by the department. An additional 1,400 sites impacted by contamination above the applicable Canadian Council of Ministers of the Environment (CCME) 1997 Soil Quality Guidelines continue to be tracked by the department.[10]

2.2 FUTURE LEGISLATIVE CHANGES TO BE MADE WITHIN THE US

In the United States, *"Currently, about 23 million tons of hazardous waste are land disposed each year… The LDR [Land Disposal Restrictions] program ensures that land disposed hazardous waste does not pose a threat to human health and the environment. EPA accomplishes this by setting treatment standards for all hazardous waste bound for land disposal. These treatment standards ensure hazardous waste is properly treated to destroy or immobilize hazardous chemical components before it is land disposed…*

[10] Manitoba Environment Report 1997/98: http://www.gov.mb.ca/environ/pages/annrep98/annrep.html

The Disposal Prohibition states that before a hazardous waste can be land disposed, treatment standards specific to that waste material must be met."[11]

The US EPA is reviewing additional chemicals for possible addition to the Land Disposal Restrictions for Hazardous Waste (LDR). If additional chemicals are added to the LDR, the volume of solid material diverted from landfills to treatment facilities will increase accordingly.

3 COMPETITORS

BEI has four main competitors:

1. Canadian landfills
2. Multi-purpose incinerators throughout the United States of America and Canada
3. Alternative treatment methods
4. Do nothing

Each competitor is evaluated in the following section:

3.1 CANADIAN LANDFILLS

Currently, there are two Canadian hazardous waste landfills of significant capacity that are accepting US generated contaminated soil for land disposal in Canada.

The competitive advantage of landfills is their price. Landfilling costs are substantially less than thermal treatment. The cost structure of landfills attracts cost driven generators with short-term vision of their waste disposal options. Canada's environmental regulations allow North American generators of organic hazardous waste to dispose of their waste in Canada. The net result is that landfills currently enjoy the majority of the current Canadian hazardous waste market share.

Anticipated landfill disposal restrictions should divert a portion of this business to thermal treatment.

3.1.1 ONTARIO LANDFILLS

According to a Canadian Institute for Environmental Law and Policy (CIELAP) report,[12] one secure landfill in Sarnia, Ontario alone "*received 254,295 tonnes of hazardous waste in 1998, the primary waste type received being organic wastes.*"

BEI anticipates that expected landfill disposal restrictions, and changes to hazardous waste classification tests will cause a portion of this material to be diverted to treatment facilities such as RSI and the proposed Kirkland Lake facility.

If we make the assumption that 25% of the presently landfilled material consists of organic contaminated solids; and that this material is diverted to treatment facilities, then approximately 50,000 tonnes/year of organic contaminated solids from this Ontario landfill alone will require treatment. This amount could fill about 25% of the proposed Kirkland Lake facility treatment capacity.

[11] http://www.epa.gov/epaoswer/hazwaste/ldr/snapshot.pdf
[12] Canadian Institute for Environmental Law and Policy (www.cielap.org) June 2000
http://www.cielap.org/infocent/research/HAZARD.PDF

3.1.2 QUEBEC LANDFILLS

A Quebec landfill that is approved to take contaminated soils has received significant quantities of chlorinated organic containing soils. Exact volumes received are not known.

3.2 OTHER INCINERATORS

Eight other competing high temperature solids accepting thermal incinerators exist within the North American market. The names and location of each are as follow:

1. Bovar Waste Management- Swan Hills, Alberta
2. Clean Harbors Environmental Services Inc.- Kimball, Nebraska
3. Environmental Systems Co. (ENSCO)- El Dorado, Arkansas
4. LWD, Inc.- Calvert City, Kentucky
5. Onyx Environmental Group- Sauget, Illinois and Port Arthur, Texas
6. Ross Incineration Services, Inc- Baker, Montana / Colman, South Dakota
7. Safety-Kleen Corporation- Coffeyville, Kansas
8. Von Roll Waste Technology Industries- East Liverpool, Ohio

In addition, 136 private incinerators exist, which are owned and operated by the factory or facility that generates the waste, and are located on the generating site. The generators are permitted to treat only their own waste with their private incinerators. These are not considered to be competing incinerators of BEI.

The facilities listed above are permitted to treat multiple waste streams, including liquid waste streams. BEI's Récupère Sol Inc. facility has been engineered to treat only solids and achieves lower capital and operating costs than full service facilities. BEI therefore has a cost advantage and has created a niche market for itself based on high treatment effectiveness for soils at a low price.

Most of the competing incinerators are located in the US, and that is their major advantage. US TSD (transfer storage and disposal contractors), hazardous waste generators, and consultants often prefer to do business with US hazardous waste remediation facilities. This is slowly changing as they become familiar with BEI's pricing, service and treatment capabilities.

Bovar Inc.'s Swan Hills facility is BEI's only significant competitor in the Canadian thermal treatment market. Bovar and BEI have geographical advantages resulting from our respective locations.

A recently permitted facility, Material Resource Recovery Inc. in Cornwall Ontario, is approved but the capacity and range of treatable materials is limited. The facility is limited to 120 tonnes of soil and debris annually.

3.3 OTHER WASTE TREATMENT METHODS

For certain hydrocarbon contaminated solid waste streams, other treatment methods such as bio-remediation are much more cost effective than thermal treatment. As discussed in a separate background document, *Background Document 3: Rationale for the Chosen Technology*, these technologies are not as efficient, nor as reliable with respect to the remediation of POPs.

A number of alternative POP treatment technologies exist including enhanced bioremediation, chemical oxidation, low temperature thermal desorption and a host of others. The main advantage of these technologies is the public's perception of them being environmentally friendlier than the thermal treatment process. However, each technology's effectiveness is typically limited to its target organic waste compounds or matrices only. These treatment methods are ineffective at destroying the wide range of POP compounds found in contaminated solids in an economical manner. In addition, some of these methods are unpredictable with respect to the efficiency with which they can destroy certain contaminants. For these reasons, they are not expected to be a major threat to BEI in the near future.

IT Corporation (IT) is the largest remediation services provider in North America with operations in Canada and the US. IT has access to a large number of alternative treatment technologies, and has first hand experience utilizing a large number of these technologies. IT recently signed a five-year renewable agreement with BEI for a portion of RSI's thermal treatment capacity. This agreement confirms BEI's conclusion that the demand for thermal treatment services will continue for the foreseeable future.

Alternative waste treatment technologies are discussed in more detail in *Background Document 3: Rational for the Chosen Technology*.

3.4 DO NOTHING

The preferred option of most generators is the "Do Nothing" option. Except where land values can be increased by more that the cost of clean up, the clean up of contaminated sites impacts negatively on a generator's bottom line.

Where contaminated sites are publicly held, administrators must weigh the cost of cleanup versus other demands for those funds such as transit, health care, etc.

By providing an economical, effective and complete treatment solution, BEI's proposed facility will tilt the "to cleanup or not to cleanup" equation in favour of cleanup.

4 SERVICE AREA FOR THE PROPOSED FACILITY

4.1 GLOBAL IMPACT OF POP'S

Studies indicate that, regardless of the point of origin, persistent organic pollutants (POPs) have a tendency to accumulate in polar regions:

"*Chlorinated pesticides and PCB have sufficiently high vapour pressures that they readily volatilise when spread over a large surface area such as soil or water. Atmospheric residence time of PCB has been calculated to be in the order of a few months. Henry's Law constants of the above mentioned compounds are in the range of 0.1-50 Pa· m³/mol and thus, will allow that these substances will evaporise and cycle back and forth between land or surface waters and air. These processes lead to a global distribution. The "cold finger effect" will result in the fact that the Arctic and the Antarctic regions will become the sinks for organochlorines due to the distillation of these compounds from warmer to colder regions*." [13]

[13] http://www.chem.unep.ch/pops/stpeter/stpete2c.html

In particular, POPs originating from sources around the world are accumulating in concentration in Canada's arctic[14]. Any restriction on the movement of hazardous materials, particularly POPs, that mitigates against or interferes with these materials being effectively treated and disposed of, is therefore against the long-term interests of protecting Canada's environment and in particular, our arctic regions.

4.2 INTERNATIONAL COMMITMENTS

Rules on transboundary movement of waste within NAFTA signatory countries are well defined and understood. Building on existing bilateral and multilateral commitments related to the sound management of chemicals, the Council of the Commission for Environmental Cooperation (CEC) (established by the North American Agreement on Environmental Cooperation), on October 13th, 1995 approved Resolution #95-5 (Sound Management of Chemicals).BEI's proposed facility in Kirkland Lake will help Canada meet its obligations under Resolution #95-5 for the management of solid wastes containing POPs.

The resolution was developed to "*reduce and prevent adverse effects to human health and the environment*" and to *"develop a regulatory approach for the sound management of chemicals, particularly to reduce the risks posed by persistent toxic substances of mutual concern*". CEC decided to "*give priority to the management and control of substances of mutual concern that are persistent and toxic beginning with the development of a regional action plan for the management and control of polychlorinated biphenyls (PCBs) [PCBs are Persistent Organic Pollutants (POPs)]. "*

Development of additional thermal oxidation capacity by BEI will help Canada to meet its international commitments to reduce the risks posed by POPs. The thermal oxidation process reduces the inventory of soils and solids containing POPs in the North American environment and thereby contributes to the reduction of regional and global risks posed by these substances.

4.3 CANADIAN ENVIRONMENTAL INDUSTRY ASSOCIATION POLICY

BEI also supports the Canadian Environmental Industry Association (CEIA) *Policy Statement On Transboundary Movement Of Hazardous Waste Contaminated Soils & Hazardous Recyclable Materials* policy issued on August 31, 2000. The full text of this statement is appended.

An extract from the CEIA statement:

> "Key points from the new CEIA policy statement are:
>
> 1. CEIA supports waste treatment at licensed, approved facilities within the integrated economies of Canada and USA, recognizing that the most effective treatment often involves transboundary waste transport.
> 2. CEIA maintains that generators of hazardous waste have responsibility to ensure that these materials are treated and managed in an environmentally sound manner at least equivalent to regulations in the country of origin of the waste.
> 3. CEIA supports the Basel Convention and is willing to work actively with both provincial and federal government agencies to implement the Basel recommendations (provisions?).
> 4. Canada's legislative framework maintains responsible and effective control over transboundary movement of hazardous waste.

[14] Fiedler H., H. Hoff, J. Tolls, C. Mertens, A. Gruber, and O. Hutzinger (1994): Environmental Fate of Organochlorines in the Aquatic Environment. Organohalogen Compd. **15**, ECO-INFORMA Press, Bayreuth, 199 Pages, ISBN 3928379119

> CEIA is the national business association and voice of Canada's environment industry. CEIA, and the network of provincial environment industry associations, represent the interests of some 1,500 Canadian companies that are in the business of developing and supplying environmental products, technologies and services. CEIA's mission is to promote the interests and development of Canadian companies in this sector; its Vision is to make Canadian industry the world leader in the use and provision of environmental products, technologies and services.

4.4 OPERATIONAL RATIONALE FOR SERVICE AREA

BEI proposes to accept waste from NAFTA signatory countries. This will help to achieve Canadian federal commitments to deal with POP's, and recognizes the transboundary nature of the movement of these wastes, existing free trade agreements that Canada has with other countries, and current market conditions for soil availability for the Kirkland Lake facility.

The market for the treatment of contaminated soil and solids tends to be seasonal in nature for the Canadian market. The investment required to build and to maintain a facility that can destroy these materials in an environmentally sound manner requires consistent throughput. Foreign sources complement domestic ones and help smooth out the business cycle. A high throughput facility also reduces unit treatment cost for both domestic and foreign consumers of this service.

Importation of contaminated soil from NAFTA countries is essential to the sustainability of the proposed project. Sustainability of the proposed project means strength in Canada's waste management industry, and the maintenance of sufficient domestic capacity to ensure long-term, cost-effective and environmentally responsible management of contaminated soils and hazardous waste.

5 APPENDIX A: CEIA POLICY STATEMENT

CEIA Policy Statement On Transboundary Movement Of Hazardous Waste Contaminated Soils & Hazardous Recyclable Materials

For Immediate Release

Ottawa, August 31, 2000: The Canadian Environment Industry Association (CEIA) announces today the release of a new policy statement on Transboundary Movement of Hazardous Waste, Contaminated Soils and Hazardous Recyclable Materials. Increased public concern for environmentally sound management practices in Canada and US has lead to recent changes and a tightening of legislation. This in turn has resulted in increased action to address waste management practices as well as increased volumes of waste transport across the Canada - US border.

Key points from the new CEIA policy statement are:

1. CEIA supports waste treatment at licensed, approved facilities within the integrated economies of Canada and USA, recognizing that the most effective treatment often involves transboundary waste transport.

2. CEIA maintains that generators of hazardous waste have responsibility to ensure that these materials are treated and managed in an environmentally sound manner at least equivalent to regulations in the country of origin of the waste.

3. CEIA supports the Basel Convention and is willing to work actively with both provincial and federal government agencies to implement the Basel recommendations (provisions?).

4. Canada's legislative framework maintains responsible and effective control over transboundary movement of hazardous waste.

CEIA is the national business association and voice of Canada's environment industry. CEIA, and the network of provincial environment industry associations, represent the interests of some 1,500 Canadian companies that are in the business of developing and supplying environmental products, technologies and services. CEIA's mission is to promote the interests and development of Canadian companies in this sector; its Vision is to make Canadian industry the world leader in the use and provision of environmental products, technologies and services.

The environment industry is has been and continues to be a significant part of Canada's economy. Annual sales exceed $20 billion, or about 2.2% of GDP. Exports are approaching $1 billion. Statistics Canada reports that over 5,500 Canadian companies, located in every region of Canada, are engaged in the provision of environmental goods, services and technologies. According to a recent survey by the Canadian Council for Human resources in the Environment Industry, some 220,000 Canadians work in the environment sector, making it one of the largest industry sector employers.

CEIA has a comprehensive and well-defined policy development process. CEIA's National Policy Forum (NPF) meets monthly and identified transboundary movement of hazardous waste as a priority for its activities in 2000, especially in light of the new CEPA and its implementation. The NPF established a Technical Advisory Group (TAG) to address the issue, and it was chaired by John Bennett, CEO of Bennett Environmental. Over the past months, Canadian environment industry professionals from across Canada participated in drafting the CEIA policy statement on transboundary movement of hazardous

waste. The result of their deliberations was reviewed and approved by both CEIA's National Policy Forum and the CEIA Board of Directors.

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Copies of the policy statement are available from the CEIA National Office:
#208-350 Sparks Street
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POLICY STATEMENT ON
TRANSBOUNDARY MOVEMENT OF HAZARDOUS
WASTE, CONTAMINATED SOILS & HAZARDOUS RECYCLABLE MATERIALS

August 31, 2000

The Canadian Environment Industry Association (CEIA) promotes the protection of public health and the environment through the adoption of environmentally sound and economically cost effective procedures and technologies. CEIA's concern for public health and environmental protection extends to the management of industrial wastes and by-products including their transboundary movement to permitted facilities. CEIA fully appreciates that the movement and proper management of hazardous waste is of prime concern to the public, especially in light of the fact that the North American economies are increasingly integrated under Free Trade.

SCOPE:
This policy statement is intended to apply to interprovincial trade across Canada and to trade between Canada and all signatory nations of the Basel Convention, as well as to trade between Canada and non-Basel signatory countries where a bi-lateral agreement comparable to and consistent with Basel exists. In application however, this policy is most significant in addressing the transboundary movement of hazardous materials between Canada and the United States. This policy statement is not intended to be applied to the movement of high-level nuclear waste.

The broad definition of "waste" includes both recyclables and waste. Many "wastes" are a commodity for trade and should be tradable across international borders like any other commodity. Recycling, treatment and / or disposal of hazardous materials is a necessary service, and service delivery should not be thwarted by border restrictions. Allowing interprovincial and international movement of hazardous materials permits waste generators to select effective, environmentally sound management options.

CEIA's POSITION:

1. CEIA supports the maintenance of an integrated economy for the movement of hazardous waste, contaminated soils and hazardous recyclables so as to facilitate selection of effective, environmentally sound management options:

a. The selection of waste / recyclable management options should be made with full understanding of as well as vigilance and respect for the intent of regional, national and / or international treatment regulations (such as the Basel Agreement), standards or liabilities in the country of origin or destination; and

b. Management is undertaken by fully authorized service providers in facilities that are licensed and approved for operation in their respective jurisdictions.

2. CEIA believes that generators of hazardous waste and/or hazardous recyclable materials intended for export have responsibility to ensure that these materials are managed in an environmentally sound manner that:

a. provides at least an equivalent level of safety to that which is available in the country of origin, and

b. conforms with the authorizations delivered to the facility of destination.

3. In keeping with the Basel Convention, signatory nations have an obligation to develop national capacity to manage hazardous materials. However, within Canada-US, if hazardous materials management options are more available outside the jurisdiction of origin, then effective, environmentally sound management of hazardous materials should not be constrained by provincial or international borders.

4. For specific types of hazardous materials insufficient domestic capacity may make treatment in Canada impractical. Again, it makes sense for these materials to be transported to the closest facility that operates in an environmentally sound manner.

5. Canada's legal framework, (through CEPA '99, EIHWR, Canada/US Bilateral Agreement, provincial hazardous waste regulations, the OECD Decisions and Basel Convention), continues to provide effective control over the transboundary movement of hazardous materials and ensures safe transportation, tracking and environmentally sound treatment and disposal.

6. CEIA encourages the Government of Canada to support the Basel Convention work on liability issues.

7. CEIA supports government action to ensure effective administration and enforcement of hazardous waste and hazardous recyclable management regulations; and CEIA is willing to work with the government to review Canadian standards and liability provisions for that waste.

RATIONALE:
Responsible solutions require cost effective management practices in the best interest of the environment. Canada's legislative framework and international regulations such as the Canadian Environmental Protection Act (CEPA), the Export and Import of Hazardous Wastes Regulations (EIHWR), Canada-United States Bilateral Agreement, OECD Decisions and the Basel Convention, work to protect the environment by establishing both guidelines and liability for the effective disposal and treatment of hazardous materials, contaminated soil and hazardous recyclables. Liability rules implemented and enforced by provincial jurisdictions provide an additional measure of environmental protection. Canada has the expertise and capacity to deal with hazardous waste and recyclables. It is our responsibility to utilise those capabilities to manage these materials in an environmentally sound manner.

Recent studies indicate that, regardless of the point of origin, persistent organic pollutants (POPs) have a tendency to accumulate in polar regions. In particular, POPs originating from sources around the world are accumulating in concentration in Canada's arctic. Any restriction on the movement of hazardous materials, particularly POPs, that mitigates against or interferes with these materials being effectively treated and disposed of, is therefore against the long-term interests of protecting Canada's environment and in particular, our arctic regions.

Canadian hazardous waste management and hazardous materials recycling companies have the expertise and facilities required to manage, recycle and / or dispose of hazardous materials. Although they provide an essential service domestically, some Canadian companies derive more than 50% of their business in hazardous materials management from imports. The market for hazardous materials also tends to be cyclical in nature. The capital investment required to build and maintain facilities that can manage these materials in an environmentally sound manner requires consistent throughput; foreign sources complement domestic ones and help smooth the business cycle. Therefore regulated movement for the import and export of hazardous waste and hazardous recyclable materials is essential to the sustainability of sectors of Canada's waste management industry, and the maintenance of sufficient domestic capacity to ensure long term, cost-effective and environmentally responsible management of contaminated soils and hazardous waste.

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6 APPENDIX B: ONTARIO MOE PRESS RELEASE (FEB 3, 2000)

New hazardous waste regulations to be toughest in Ontario's history

TORONTO, Feb. 3 /CNW/ - The Ministry of the Environment has posted changes to the province's hazardous waste regulation that would make Ontario's hazardous waste standards the toughest in its history.

In September, I committed this government to develop tough new hazardous waste standards," said Environment Minister Tony Clement. "That's what these new rules would do. They will be a strong weapon we will use to control toxic waste. They will be compatible with U.S. regulations, and they will make our standards far tougher than anything we've had in the past."

On Sept. 17 Clement announced a six-point action plan to strengthen the way Ontario handles hazardous waste. One of the actions he announced was to strengthen the hazardous waste regulation and harmonize it with U.S. rules.

The proposed changes to the regulation include:

- Adding a "derived from" rule similar to that of the U.S.Environmental Protection Agency (USEPA). Hazardous wastes can be treated chemically or in other ways. This rule states that any materials left after treatment are still listed as hazardous waste. This means that companies that treat wastes must still manage the treated material as hazardous waste.

- This change is in addition to Ontario's recently-implemented "mixture rule," which states that hazardous waste mixed with any other material is still hazardous waste. For example, wastes are sometimes mixed with cement to solidify them, or with other materials to dilute contaminant levels.

- Implementing the next generation leaching procedure. This USEPA testing procedure predicts whether a waste is likely to leach contaminants into groundwater at levels of concern. The new procedure is better at detecting organic contaminants and is a more effective test for identifying compounds that can pollute the air.

- Updating Ontario's lists of hazardous waste to be compatible with the U.S. lists.

"I am determined to ensure that hazardous waste is handled safely and effectively in this province," Clement said. The changes have been placed on the Environmental Bill of Rights electronic registry (www.ene.gov.on.ca/envision/ebr/welcome.htm) for a public comment period of 90 days.

Il existe une version française de ce document

7 APPENDIX C: ONTARIO GOVERNMENT PRESS RELEASE (SEPT. 20, 2000)[15]

Release: September 20, 2000

Ontario takes action to build cleaner, more prosperous communities

TORONTO, ONTARIO - Today the ministers of Municipal Affairs and Housing, the Environment and Economic Development and Trade appointed an advisory panel to provide expert advice on the environmental clean up and rejuvenation of old industrial and commercial sites known as brownfields.

This new advisory panel emphasizes the government's commitment to building cleaner, more prosperous communities for future generations. "The clean-up and redevelopment of brownfields is a win-win proposition. Not only is it good for the environment and human health, it provides an alternative to urban sprawl, encourages local economic development and revitalizes our communities," said Tony Clement, Minister of Municipal Affairs and Housing. "This government is committed to making brownfields redevelopment more accessible and achievable for municipalities, developers and lenders."

The Harris government was the first to introduce a process and set of environmental standards for site clean up in Ontario with the implementation of the Guideline for Use at Contaminated Sites (1996). Ontario's tough clean up standards, the principle of "polluter pays," and the Ministry of the Environment's ability to take action to address significant contamination, will be maintained and further enhanced through this process.

"There are real environmental benefits such as improving and maintaining water quality and protecting human health to be gained from the clean up of brownfield sites," said Dan Newman, Minister of the Environment. "These sites represent a unique opportunity to work together to improve our environment and our communities."

"I encourage businesses and municipalities to take advantage of the opportunities that brownfields offer," said Al Palladini, Minister of Economic Development and Trade. "Brownfields redevelopment can be a catalyst for revitalization, jobs and economic development as well as protecting the environment."

The panel will advise the government on policy improvements to encourage and facilitate voluntary clean up. Issues being considered by the panel will range from clarifying liability to increasing financial incentives and streamlining the planning process.

Blake Hutcheson, who will lead the panel, said "I am excited about the prospect of bringing together some of Ontario's leading experts and most experienced practitioners on brownfield issues. We look forward to helping the government find solutions to facilitate brownfields redevelopment."

Located in virtually every community in Ontario, brownfields are vacant, underused or abandoned lands. Brownfields can be any site from an abandoned factory to gas station. Unless

[15] http://www.mah.gov.on.ca/inthnews/releases/20000920-1e.asp

barriers which discourage voluntary clean up are removed many sites will remain contaminated and continue to pose a potential risk to the environment and human health.

- Backgrounder: Brownfields Policy Review and Advisory Panel
- Brownfields web site

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