Packaged Incinerator Quotation

For Sabina Silver – Hackett River Camp

Submitted by:
Eco Waste Solutions ("EWS")

Quotation No: CA 50 02022007

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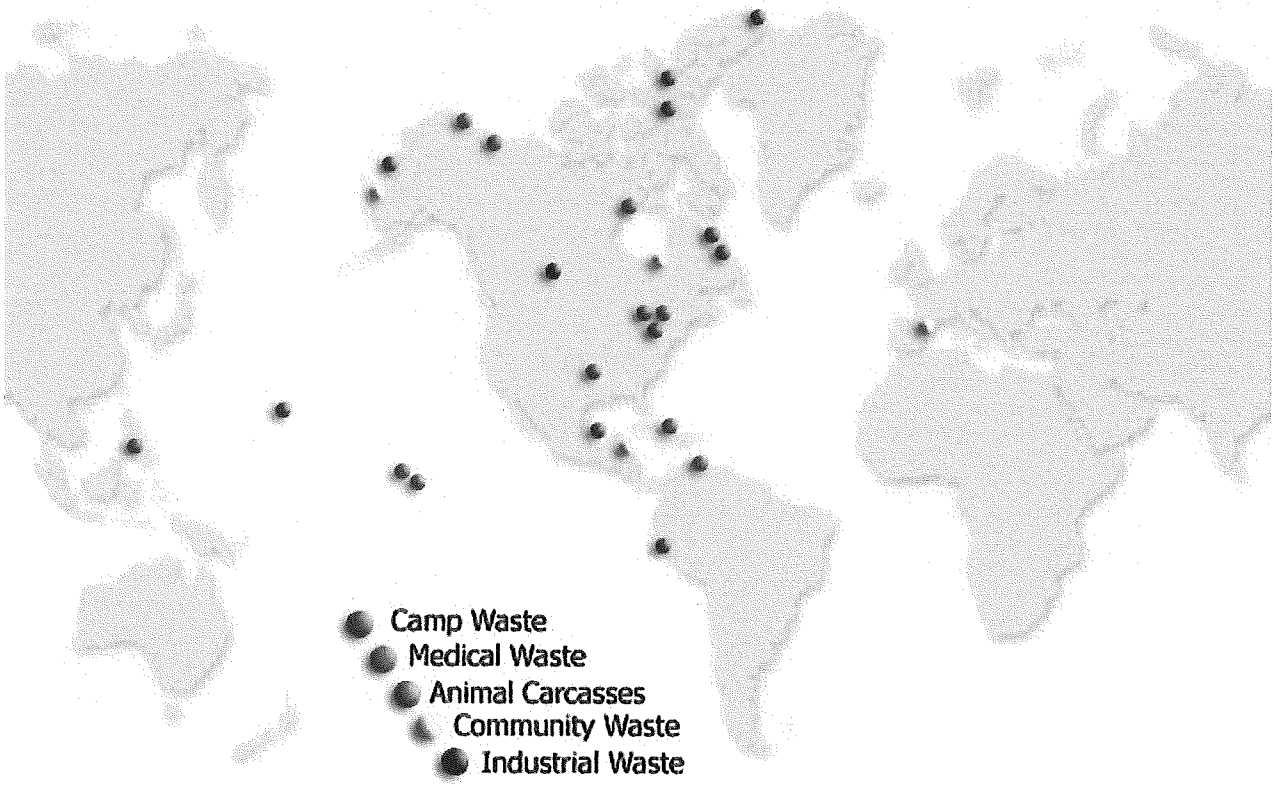
INTRODUCTION

ECO Waste Solutions (EWS) has developed an innovative, world-leading technology to eliminate hazardous and problematic waste streams in a cost efficient manner through a patented process without generating harmful emissions.

EWS has deployed Waste Oxidizers in ten countries. **EWS** customers include the U.S. and Canadian Governments, U.S. and Canadian Communities, as well as mining companies, remote hospitals, the oil and gas industry and other private companies.



EWS provides safe alternative solutions for the destruction of various types of solid and liquid wastes including residential or camp waste, medical waste and industrial waste. **EWS**' leading edge technology is cost-effective environmentally responsible. The **Eco Waste Oxidizer** is available in a range of formats and is especially effective for smaller on-site destruction of waste.

COMPETITIVE STRENGTHS

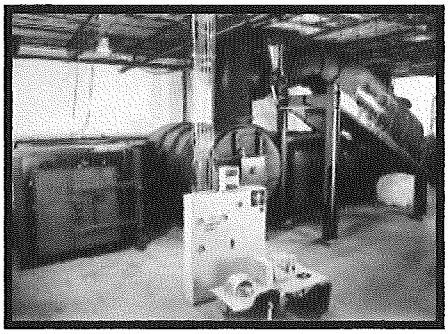
Eco Company Experience

- ISO 9001:2000 Registered
- Over 30 Installations
- Significant R&D Investment
- Proven Track Record
- Service & Quality

Eco Advanced Technology

- Automated Control System
- Proven Technology
- Environment Canada Verified
- Environmentally Compliant
- Patented in US, Canada and Europe
- 90% Waste Reduction by Volume and Weight
- Assured Destruction of Infectious Matter
- Sterilization of Metals and Glass
- Real-time Trouble Shooting
- On-line Diagnostics

Performance Claim Verified by the ETV Program



Burlington, Ontario Demonstration Unit

COMPETITIVE STRENGTHS

Minimal Maintenance The **Eco Waste Oxidizer** has few moving parts and uses "off-the-shelf" parts that are generally available throughout the world, making it easy to maintain systems, even in remote locations.

Minimal Labor The **Eco Waste Oxidizer** operates on a "batch" basis and uses a computerized process control system, requiring only a part-time operator. Competitive incinerators that use a continuous feed process typically require full-time operators. The **Eco Waste Oxidizer** does not require highly technical or previously skilled personnel. By contrast, competitive systems often require highly skilled operators who have undergone intensive training.

No Pre-Sorting The **Eco Waste Oxidizer** is highly computerized, which is designed to process several types of solid materials with very low environmental impact. Tires, sewage sludge and municipal waste may be mixed together in a single load. By contrast, competitive systems often require pre-sorting of waste materials.

PLC Patented Programmable Logic Control (PLC) driven control panel fully automates the operation of the system. By automatically ensuring optimal parameters for combustion, the need for constant operator input is eliminated. In fact, the combustion goes to completion regardless of waste stream characteristics. The control panel is equipped with a modem to allow for downloading updates. In addition, the modem permits on-line and off-site diagnostics and trouble-shooting.

Safety Features Safety features are also incorporated into the **Eco Waste Oxidizer**. For instance, if any of the doors are opened during the operation of the unit, the Control Panel will turn off all burners and blowers. The unit cannot be re-started until all doors are sealed. The Automatic Control System will shut down the system (shut off all burners) if the thermocouple on either the exhaust Stack or if the Primary Chamber reaches 2000°F. All air intake openings into the blower will also be shut down to stop the burning process. The unit will not re-start until the temperature falls below its set point operating parameters. Prior to ignition of the burners, both chambers are automatically evacuated (purged) of all gases. This safeguards against a build up of gases in the chambers. The Oxidizer system will not operate until all doors are sealed closed.

ENVIRONMENTAL PERFORMANCE

Advanced Control Eco Waste Solutions' patented proprietary programmable logic control system ensures a consistent and clean burn via strict control of temperature, combustion oxygen and burner output. By carefully maintaining the temperature of the Primary Chamber below the melting point of glass and metals, the release of heavy metals into the atmosphere is minimal. Strict control of the Secondary Chamber temperature ensures that noxious emissions from the Primary Chamber are destroyed. Most importantly, control of these combustion parameters minimizes dioxins.

Retention Time One of the single most important combustion variables in achieving clean emissions is the Secondary Chamber Residence (or Retention) Time. The highly turbulent, high temperature and oxygenated conditions of the Secondary Chamber break down the gases emitted from the Primary Chamber into carbon dioxide, water vapor and trace elements. However, if the residence time is insufficient for complete combustion of organics and combustible particulates, they will be emitted directly into the atmosphere. To ensure complete combustion, the minimum residence time of an **Eco Waste Oxidizer** is 2 seconds.

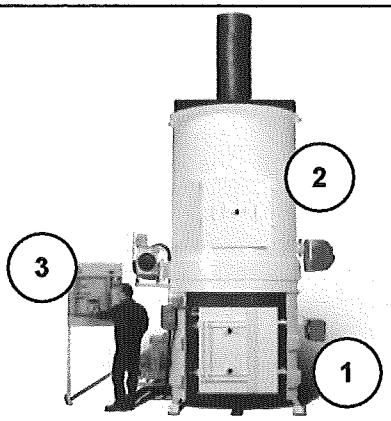
Greenhouse Gas Friendly An Eco Waste Oxidizer emits significantly less air emissions than a landfill. Landfills emit methane gas and other toxic compounds that are harmful to the surroundings. According to Hans Tammemagi in The Waste Crisis - Landfills, Incinerators, And The Search For A Sustainable Future (1999), "incinerating one million tonnes of municipal garbage produces net emissions of 15,000 tonnes of carbon in the form of carbon dioxide, whereas landfilling it with energy recovery produces emissions of greenhouse gases equivalent to 50,000 tonnes of carbon as carbon dioxide."

Proven Performance **Eco Waste Solutions** has currently installed over 30 systems in Canada, the United States, and abroad. Each of our customers have applied for and received all necessary environmental permits, including those of Canada's Ministry of the Environment and the United States EPA.

THE ECO WASTE OXIDIZER

The Eco Waste Oxidizer System is based on the principles of pyrolysis (starved-air burning conditions). The technologically advanced but simple to use system has proven to operate significantly cleaner than traditional incineration. The process is explained below.

The Eco Waste Oxidizer
Model CA 50:



The CA Model

1

Primary Chamber

The Waste Oxidizer System is a two-stage batch process. In the first stage, waste is converted to gas in the *Primary Chamber* at 650-850°C. At this temperature, any infectious material is completely destroyed. Once started, the process is self-fuelling until the volume is reduced by over 90%. Independent tests have shown that the residual ash is non-hazardous, non-leaching and essentially inert. After enduring the combustion process, metals and glass remain intact but are considered sterilized and safe to handle. Preservation of metals and glass not only protects the refractory lining, but also allows for post-combustion recycling.

2

Secondary Chamber

Gases from the Primary Chamber enter the high temperature 1000°C, oxygenated and turbulent conditions of the *Secondary Chamber (Afterburner)* for cleansing. Critical process parameters such as temperature, combustion airflow and burner output are computer controlled to maintain optimal combustion conditions. The combustion is complete after a minimum retention time of two seconds. Our proprietary system ensures a consistent and the cleanest possible burn, ensuring compliance with environmental standards.

3

Controls

Critical process parameters such as temperature, combustion airflow and burner output are computer-controlled to maintain optimal combustion conditions. Our proprietary programmable logic controlled (PLC) system ensures a consistent and the cleanest possible burn.

WASTE OXIDIZER OPERATING PHILOSOPHY

For reliable long term operation of the Solid Waste Oxidizer (or "Incinerator") the machine will be located inside a heated building or within the optional specially modified shipping container. This container will serve the dual purpose of containerization for shipping, and once on-site it will shelter the packaged waste oxidizer system.

There is no need for pre-sorting of the waste if source separation is practiced to keep inappropriate materials out of the waste feed. These inappropriate materials include but are not limited to hazardous materials such as batteries. The system operates in a batch style. First the Primary Chamber is loaded to capacity (when cold). The doors are sealed shut and the Secondary Chamber (Afterburner) is fired. The system is interlocked so that the waste is not allowed to combust until the Afterburner is at operating temperature 1000°C (1832°F). The process is automated and does not require operator input during operation. The Primary Chamber is connected to the Afterburner where gasses are burned off in a highly oxygenated, turbulent environment.

At a minimum the Primary Chamber should be loaded to half capacity. If waste quantities are not sufficient to operate the machine daily, it can be used to store the waste until requirement is met. The use of a weigh scale to confirm daily throughput and for record keeping is recommended.

It is not necessary to constantly monitor the process. However, the system has the capability to be monitored remotely (i.e. via modem). A reliable telephone line connection is required for such remote monitoring. Ethernet connectivity is also available. Monitoring and recordkeeping abilities can be maximized with an optional PC Operator Workstation packages if desired.

The system will be fired by diesel fuel. It is possible to utilize used oil as an auxiliary fuel (see options).

CA MODEL WASTE OXIDIZER SPECIFICATIONS

Quality Assurance	• **Eco Waste Solutions** - ISO 9001:2000
General	• Two-stage batch burning process (Primary and Afterburner/Secondary Chamber) • Factory assembled as packaged unit
Front Load Design	• Large front door on chamber allows for manual loading • Convenient ash removal access (manual)
Oxidizer Casing	• ¼" mild steel • Painted with rust-inhibiting and heat-resistant paint
Refractory Lining	• Combination of hardened ceramic module and cast refractory, 6" thick
Diesel Fuel Burners	• UL approved • General: Forced draft, pressure-mechanical atomizing, with built-in blower to supply combustion air, complete with silencer and damper, oil pump driven by blower motor, complete with integral relief valve and filter, pressure gauge, high voltage ignition transformer. • Control: electronic combustion control relay with scanner to control combustion and to supervise flame. Control to shut off fuel within 5 seconds upon flame failure or upon signal of a safety interlock and to ensure, when restarted, in sequence, ignition and supervision of burner operation. Main burner in the Afterburner is fully modulating.
Used oil burner (optional)	• UL approved • Pre-packaged burner for simplicity, has own pump and combustion air blower. • Fully integrated to incinerator system. PLC will control to give priority to this burner when on-line, to maximize used oil consumption • Specially designed to fire on used oils: crankcase, ATF, hydraulic and No.2 fuel oil • Rated at 3.6 gallons per hour
Blowers	Two supplied as part of Oxidizer: (1) in Primary Chamber for cooling, and (1) in Afterburner for Oxidation • All TEFC • Afterburner Blower is VFD controlled
Controls	PLC programmable controller managing the following functions: • Air/fuel modulation for temperature and process control • Primary-secondary burner interlock • Override protection • Automatic cooldown and shutdown cycles PLC Features include: • Full read out at PLC of operating parameters • Single point electrical connection • Key lock power on • Emergency stop switch • Pushbutton start • Burners and blowers interlocked to charging and Afterburner access door • Full indicator and status lamps
Exhaust Stacks	• Four mild steel refractory-lined stack sections of 5' each total exhaust stack length (20')

MODIFIED SHIPPING CONTAINER SPECIFICATIONS

General	• General Purpose Container (not new) with modifications
Outside Dimensions	• Length: 20', Width: 8', Height: 8'
Construction	• Corrugated steel

Modifications and additions to convert container to be used as equipment enclosure:

Roof modification	• Roof opening and flashing for weather-tight seal
Floor	• Complete floor deck constructed of steel check-plate (1/4") • Strong, non-combustible, slip resistant, easy to clean
Doors	• Shipping container double doors at one end of container (non-modified) • Man door (for regular access to equipment): double door complete c/w frame and hardware - located in front of incinerator
Lighting	• Outdoor lighting above man-door with photocell • Indoor lighting: 2 sodium halide fixtures c/w 1 wall switch
Heating & Ventilation	• Electric heater c/w built in thermostat • Motor driven ventilation louvers controlled by incinerator control panel to open and provide combustion air during operation • Exhaust fan c/w switch for manual operation when required
Electrical Panel	• Breaker panel for all above named electrical devices c/w 2 spare breakers