ENVIRONMENT
Technological Innovation

ABSTRACT

Service Internet Gedden (SIG™) is a state-of-the-art tool that can be used to track a wide range of environmental data. This web application is specifically designed to enable companies, institutions and organizations to track hazardous and non-hazardous wastes and pollutants electronically.

SIG™ allows users to manage all the associated environmental data online, to prepare and print regulatory reports and to transmit data electronically to government authorities in the requisite format.

SIG™ is an innovative tool that links all the stakeholders involved in the waste management cycle electronically: waste producers (generators), carriers and receivers as well as all levels of government in one or more countries.

INNOVATIVE TOOLS AND PROCESSES

SERVICE INTERNET GEDDEN (SIG™), A TOOL FOR ENVIRONMENTAL DATA TRACKING

HIGHLIGHTS

Technology
- Universal electronic window requiring only Internet access;
- Simple, user-friendly and secure application;
- Unlimited worldwide access with a secured password;
- Simplified exchange of information between stakeholders and governments;
- Possible interface with other internal or external management software;
- Available in ASP (Application Service Provider) mode.

Environment
- Tracking of hazardous wastes, non-hazardous wastes and raw materials;
- Accurate and up-to-date picture of hazardous and non-hazardous wastes and reporting of associated waste-management costs;
- Production of regulatory reports and shipping documents (manifests) for hazardous waste.

Cost
- Fixed fees based on transaction volume;
- No software purchase, no installation fee and no maintenance or technical support required;
- Centralization of all information, thereby reducing management costs considerably.

Canada

gedden.com

Développement économique, Innovation et Exportation
Québec

Gedden deployed its first web-based version of this SIG™ application for tracking wastes in 1999. This early version satisfied most of the legal requirements governing hazardous waste management, including the collection, processing, organization, storage and transmission of environmental data. In January 2003, Gedden launched the 4th version of the SIG™ tool, which is based on more advanced technology and can run as an ASP (Application Service Provider).

Since this version came on stream, numerous features have been added, including:

- **users can electronically transmit regulatory data to government authorities;**
- **users can navigate electronically between stakeholders;**
- **users can produce hazardous waste shipping documents (print and electronic);**
- **users benefit from the regular and complete updating of all information ensuring regulatory compliance.**

Gedden has also adapted his application for the U.S. and Mexican operating environments (regulations, language, transboundary movements, etc.).

BACKGROUND

Waste generation is increasing and this trend is expected to continue, a situation that calls for solutions to ensure effective management and transport of the growing volumes of waste.

In Canada, the management of hazardous waste is a responsibility that is shared by the federal and provincial/territorial governments. The federal government regulates international and interprovincial movements of hazardous wastes, while the provincial governments control generators, carriers and hazardous waste management facilities operating within their respective territories.

This dual jurisdiction poses special challenges for waste management stakeholders, especially companies with operations (multi-site) that span different regulatory jurisdictions.

Nowadays industries are required to meet cleaner production standards that are designed to protect ecosystems. SIG™ offers a logical, cost-effective solution for companies that need to manage local, national and international movements of hazardous waste.
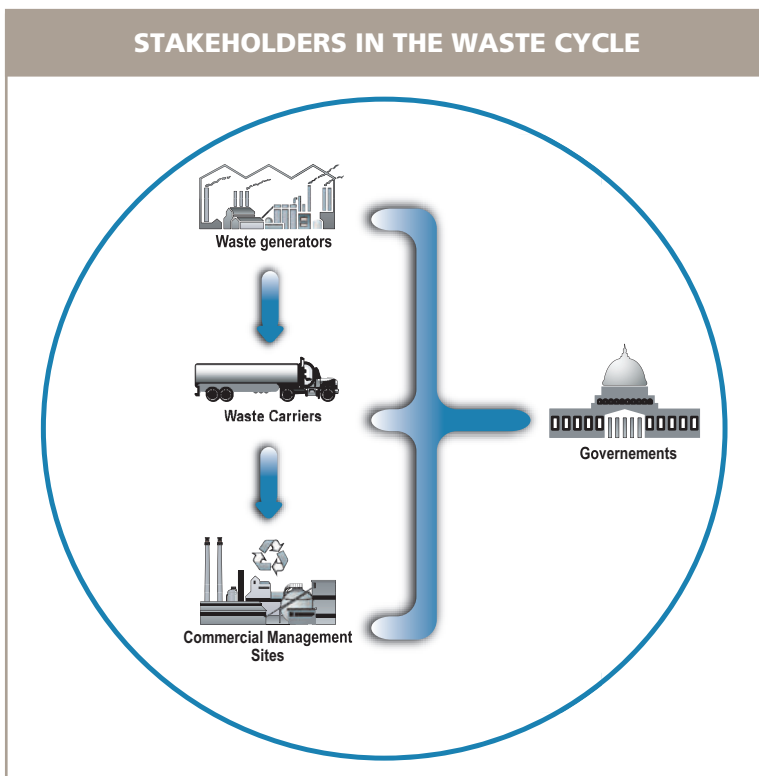
TECHNOLOGY

SIG™ can be used to electronically track the full range of environmental data related to hazardous waste, non-hazardous waste and pollutants. This application monitors and ensures control of all inventory movements, whether internal (on-site) or external (off-site). Moreover, inventory movements can be automatically reported in the accounts of the waste management stakeholders (generators, carriers and receivers) involved.

SIG™ is based on and incorporates all of the legal requirements set out by the different levels of government. It has been designed to take all applicable legislation into account and ensure compatibility with waste classification and standardization systems.

User-friendly and secure, this interactive application features customized scrolling menus with multiple choices. It is compatible with the environmental management systems (ISO-14001 and others) that are used by many companies.

At present, SIG™ is offered in French, English and Spanish and covers Canada, the United States and Mexico. Other countries will be added upon request and will be accessible to all SIG™ users.

STAKEHOLDERS IN THE WASTE CYCLE

Waste generators

Waste Carriers

Commercial Management Sites

Governements

RESULTS

This application records and compiles data on the quantities and characteristics (physicochemical, regulatory, toxicology, etc.) of waste that is produced, stored, recycled and treated on-site; the quantities of waste received and shipped; and the quantities of toxic substances and pollutants that are released into the environment.

The tracking device allows the user to perform the following operations:

- identify the material stream;
- identify all participants involved in management of the material (generators, carriers and receivers);
- manage the quantities produced, received, handled on-site and shipped;
- manage containers;
- prepare regulatory and other customized reports;
- prepare shipping document;

- electronically transmit regulatory reports.

Since the application takes into account the specific requirements of all the territories covered by SIG™, the manager or user can track the movement of wastes generated, shipped or received from sites located outside a given territory (multi-site operations). Reports and shipping documents are tailored to regional and local characteristics.

The environmental benefits associated with the use of SIG™ are numerous. Not only does this tool allow users to track each material from production through disposal, it provides quantitative data that companies can use to implement waste reduction measures. Furthermore, government authorities can obtain updated data more rapidly with this tool.

The application designed by Gedden is a cost-effective way to reduce paper use, maximize electronic management of information and reduce problems related to data entry errors.

SIG™ users consist of small and medium-sized enterprises along with large companies operating in various sectors.

REGISTER PRODUCED BY THE SIG™

QUATERLY REGISTER

YEAR: 2005
QUARTER: 1
(WITHOUT FILTER)

Site:	Gedden inc.
Address:	116, Desjardins
City:	BELOEIL
Region:	Montérégie
Province/State:	Quebec
Postal Code:	J3G 5Z5
P.O. box:	
SIG account no.:	QC100001-00043
Industrial sector:	Steel Wire Drawing

For each category of hazardous materials aimed by *Regulation respecting hazardous materials and amending various regulatory provision, Q-2,r.15.2,* the quartely register indicates the hazard class, the physical state as well as the quantity of hazardous material managed in situ and stored at the last day of the selected quarter.

#	Regulatory code (material)	Hazard classification (material)	Physical state (material)	On-site management (kg)	Stock-last day (kg)	Total
1	A03	0.0	L	0.00	3,500.00	3,500.00
2	B09	1.5	P	0.00	0.00	0.00
3	C02	3.0	L	0.00	418.00	418.00
4	C03	8.0	L	0.00	1,579.00	1,579.00
Total				0.00	5,497.00	5,497.00

POTENTIAL AND LIMITATIONS

Potential

- Ability to track all types of environmental data (discharges to water, air emissions and solid waste);
- Adaptable for other uses such as operating a universal electronic window dedicated to tracking municipal solid waste;
- The electronic manifest production module allows navigation between stakeholders;
- Universal access;
- Can be used by companies that need to manage information encompassing several sites;
- Real time actualization of the data
- XML data protocol and web services for information exchange between stakeholders;

- Application available in Intranet mode hosted on the company's own server, or in ASP mode from Gedden's servers;
- A pollutant tracking module for air emissions and discharges to water is currently under development (e.g. NPRI, TRI, etc.).

Limitations

- Availability of the application in compatible Intranet mode only with Microsoft operating systems;
- Data export to companies' systems requires an adapted communication interface.

Awards

Gedden was a finalist in the Research & Development category of the 2005 Prix Phénix de l'Environnement (environmental phoenix) awards.

In 2002, Gedden was honoured at the "Gala des Affaires électroniques," an event marking electronic business achievements. Its SIG™ application won an award in the lesaffaires.com category and it was a nominee in the *B2B* (business-to-business) and *SME* categories.

INFORMATION

Gedden has received support from numerous partners during all stages of development and marketing of its SIG™ tool. Federal support has been provided by Environment Canada, Transport Canada, Canada Economic Development and the National Research Council of Canada (NRC). At the provincial level, support has been received from the Ministère du Développement Durable de l'Environnement et des Parcs and the Ministère du Développement économique, de l'Innovation et de l'Exportation. Lastly, international support has been provided by the Secretariat of the Basel Convention and Semarnat in Mexico.

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