

## **Canadian Chemical Producers' Association**



## **Responsible Care®-in-Place Verification**

**for**

**MEGlobal Canada**

**June 18 – 21, 2007**

Responsible Care is a registered trademark of  
Canadian Chemical Producers' Association

### **DISCLAIMER**

This document has been produced by a team convened by the Canadian Chemical Producers' Association (CCPA) to provide guidance to the above company, as a member of the association, in meeting its obligations under Responsible Care. The material in it reflects the team's best judgement in light of the information available to it at the time of preparation. It is the responsibility of the CCPA member company which is the subject of this report to interpret and act on the findings and recommendations in this guidance document as it sees fit. Any use which a third party makes of this document, or any reliance on the document or decisions made based upon it, are the responsibility of such third parties. Although CCPA members are expected to share the results of this guidance document with interested parties, the association, its member companies, their employees, consultants and other participants involved in preparing the document accept no responsibility whatsoever for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

## EXECUTIVE SUMMARY

This Responsible Care-in-Place verification was conducted on June 18 – 21, 2007. The verification was based on visits to company facilities at Prentiss and Fort Saskatchewan, Alberta. Information was compiled through interviews and inspections at the sites, and supplemented by telephone interviews with personnel at other locations. The in-place verification was conducted by a three person team appointed by the Canadian Chemical Producers Association (CCPA) and observed by two local community representatives, one from each facility. Of note is the company's willingness and openness by inviting both community representatives to attend the site visits to both locations.

The team used the top-down questioning approach described in the "Responsible Care-in-Place Protocol". The questions focused on the management processes present rather than detail, and tested for the existence of effective management systems to ensure understanding of the Responsible Care codes and ethic. The verification also focused on continuous improvement performance objectives and that adequate levels of resources were available for the Responsible Care commitment.

Based upon this verification the team considers that MEGlobal Canada has achieved the required standard for Responsible Care In-Place certification, and that the CCPA officially recognize this verification with an award at the next suitable occasion.

As well as in the body of the report, a listing of Improvement Opportunities and Best Practices is included in Section 3.

Dave Mack  
Verification Team Leader

August 20, 2007

## 1. INTRODUCTION

In this report, comments and recommendations of the verification team are shown in italics. Any comments on improvements the team considers as value-adding to the company's continuous improvement of their management systems are defined as "*Improvement Opportunities*".

Positive comments on performance which may be considered as being indicative of leading industry practice are defined as "*Best Practices*".

### 1.1 Objective

Each member company of the CCPA must commit to the guiding principles and codes of practice of Responsible Care as a condition of membership in the association.

The Responsible Care-in-Place protocol was developed by the association's members and others to confirm, for the CCPA and the public, the existence of a satisfactory system or process which ensures that the guiding principles and codes of practice of Responsible Care are in place and practised within the organization.

Each member company must therefore undergo Responsible Care-in-Place verification before its commitment can be formally recognized as complete.

It should be noted here that "completion" in this sense does not indicate that nothing further needs to be done, but rather that a key milestone has been reached in a process of continuous improvement.

### 1.2 Verification Criteria

The six codes of practice of Responsible Care contain altogether 151 individual requirements which member companies must meet for Responsible Care to be in place. More information on what is expected is given in the documents *Guidelines for Completion of Responsible Care Implementation* issued on February 20, 1992 and *Community Awareness Code Guidelines for Completion* issued on February 25, 1994.

The verification principles are set out in the *Responsible Care-in-Place Protocol* approved by the association's board of directors on February 9, 1994. For the purposes of examination, a portion of the 151 code requirements are sampled in depth. These items are grouped into seventeen management systems, each of which is examined using a series of questions. Some of the questions are sent to the company in advance of the verification visit, so that supporting documentation, etc. can be available for prompt examination if desired. Additional questions are asked at the discretion of the team during the visit.

Questions are generally of the following nature:

- does the organization have an effective management system in place to ensure understanding of Responsible Care?
- what is the process to determine and communicate the acceptable level of performance?
- what is the process for assessing the performance of the system and effecting follow-up to meet or exceed the acceptable level of performance?

- what is the process for ensuring up-to-date documentation?
- do sufficient resources appear to be, or are thought by employees to be, in place?

The findings for each of the seventeen management systems are described in section 2 of this report, and include comments derived from the supplementary questions where appropriate.

### 1.3 The Verification Team

The verification team for MEGlobal Canada consisted of the following persons:

<b>Name</b>	<b>Affiliation</b>	<b>Representing</b>
Dave Mack	Consultant	Industry (Team Leader)
Orest Sackney	Consultant	Industry
Jeff Perkins	External Member	Public & Community at Large
Shirley Ramsay	Community Representative	Prentiss Community
Jim Nelson	Community Representative	Fort Saskatchewan Community

### 1.4 Process

The verification was conducted by a pre-meeting at the Prentiss facility on May 3, 2007, followed by verification Team visits on June 18 – 21, 2007.

Key company contacts during the process were as follows:

<b>Name</b>	<b>Function / Location</b>	<b>Title</b>
Andrew Maile	MEGlobal Manufacturing – Fort Sask	Run Plant Engineer
Ben Poon	MEGlobal Commercial – Hong Kong	V.P. Global Commercial
Bill Baker	MEGlobal Manufacturing – Prentiss	Operator
Colin Allison	MEGlobal Manufacturing – Prentiss	EH&S Delivery Technician
Dale Moverley	MEGlobal Manufacturing – Prentiss	Technology and Improvement Leader
Darren Berg	MEGlobal Manufacturing – Prentiss	P EOB/ES Production Leader
Dave Butler	Dow Site Logistics – Fort Sask	Western Canada Site Logistics Leader
David Miller	MEGlobal Manufacturing – Prentiss	Maintenance and Work Process Leader
Ed Van Delden	Dow Emergency Services & Security – Fort Sask	Emergency Services & Security Leader
Henry Roth	MEGlobal - Dubai	President & CEO
James Brown	Dow EH&S - Prentiss	Environmental Specialist
Jerry Pawlyna	MEGlobal Manufacturing – Fort Sask	Six Sigma Master Black Belt
Jim Lampe	MEGlobal Supply Chain - Midland	Supply Chain Manager - Americas
Joe Schariter	MEGlobal Commercial – Midland	Commercial Director - Americas
John Gillespie	MEGlobal Manufacturing – Fort Sask	EH&S Technician
Jonathan Moser	Dow Public Relations - Calgary	Public Affairs & Government Affairs Leader
Larry Bradford	Dow Technology Center - Plaquemine	Product Steward - Glycols
Lisa Woods	MEGlobal Commercial - Midland	Customer Service Representative
Mitch Colwell	MEGlobal Manufacturing – Fort Sask	Production Leader – FS1 EOB , Global Process Safety Leader
Murray Gommerud	Dow Maintenance Services – Prentiss	Maintenance Leader

<b>Name</b>	<b>Function / Location</b>	<b>Title</b>
Peter Ott	MEGlobal Manufacturing - Prentiss	V.P. of Manufacturing, Production Leader – P2 EOEG
Pravind Ramdial	MEGlobal Manufacturing – Fort Sask	Production Leader – FS1 EOEG
Ralph Smeding	Dow EH&S	Process Safety Leader
Rejeanne Cool	MEGlobal Manufacturing – Fort Sask	Global EH&S / Quality Leader
Rob Jost	MEGlobal Manufacturing - Prentiss	EH&S Delivery Technician
Rocco Schurink	MEGlobal Manufacturing - Prentiss	Production Leader – P1 EOEG
Rod Boshnick	Dow EH&S - Prentiss	EH&S Responsible Care / Delivery Leader
Shane Brooks	MEGlobal Manufacturing - Prentiss	Training Coordinator
Tareq Jafar	MEGlobal Supply Chain - Dubai	Deputy CEO and VP Global Supply Chain & Purchasing
Tom Fisher	Dow Emergency Services & Security - Prentiss	Emergency Service & Security Leader
Trish Ritthaler	Dow Public Relations – Freeport Texas	Public Affairs Leader
John Skilnick	MEGlobal Manufacturing – Prentiss	Operator
Tom Fredine	MEGlobal Manufacturing - Prentiss	Operator
Kim Ng	MEGlobal Manufacturing - Prentiss	Engineer
Sholina Somji-Healing	MEGlobal Manufacturing – Prentiss	Industrial Hygiene Coordinator
Chris Mittelstadt	MEGlobal Manufacturing – Fort Sask	Operator
George Cholin	MEGlobal Manufacturing – Fort Sask	Operator
Doug Whitesell	MEGlobal Manufacturing – Prentiss	P1 EOEG Technical Advisor
Virginia Diploudis	MEGlobal Public Relations – Horgen Switzerland	Global Public Affairs Manager
Zane Baxter	MEGlobal Manufacturing - Prentiss	P EOB/ES Technical Advisor

## **1.5 ME Global Canada Background Information**

MEGlobal Canada is a world leader in the manufacture and marketing of ethylene glycol. Established in July 2004, the company is a joint venture between The Dow Chemical Company and Petrochemical Industries Company of Kuwait (PIC), and is headquartered in Dubai, United Arab Emirates.

The company produces about 1.0 million metric tons per year of ethylene glycol, and markets in the order of 3.5 million metric tons per year. This includes its own production plus that of The Dow Chemical Company and other joint venture operations in Kuwait and Malaysia.

With approximately 200 employees worldwide, the company serves customers around the world, and has production facilities in Fort Saskatchewan and Prentiss, Alberta, Canada.

More than 90% of the product that is manufactured in Alberta is transported by rail to two contracted terminals in Vancouver, British Columbia. Most of the material is then loaded on ships and sent to customers in the Pacific Rim. Some of the material is sent to other contract terminals. MEGlobal Canada also sells some of its carbon dioxide by-product stream to two local customers (i.e., Praxair in Fort Saskatchewan and Glencoe in Prentiss).

## **2. FINDINGS**

The headings which appear below are brief summaries of each topic item rather than the detailed questions actually used during the verification. For more information on the actual questions and the verification protocol please contact the CCPA's Responsible Care office at (613) 237 6215, fax (613) 237 4061

### **2.1 Set Organization and Responsibilities**

#### **2.1.1 Organization and personal involvement - CCPA Executive Contact**

The CCPA Executive Contact (VP Manufacturing) actively participates in an annual Management System Review of the company's Operating Discipline Management System (ref. section 2.8 – "Documentation of Standards and Procedures" for further information on this system) and utilizes the results, together with Environment, Health and Safety audit results and metrics as a measure of the company's compliance with Responsible Care principles. This Management System Review is used as the basis for the company's annual recommitment to the CCPA with respect to Responsible Care.

Every quarter there is a series of information meetings to which all employees at all locations are invited. The Executive Contact attends many of those sessions.

There is an Environment, Health and Safety committee of the Board of Directors in place which receives quarterly reports on matters relating to Responsible Care.

Through discussion with the Chief Executive Officer it was established that Responsible Care is recognized by the company executive as being the prime structure that drives Environment, Health and Safety performance.

The Chief Executive Officer has signed on to a Declaration of Support for the Responsible Care Global Charter issued by the International Council of Chemical Associations.

A comprehensive Code of Business Conduct has been developed and is currently undergoing implementation, and a Social Responsibility Protocol is under development.

#### *Improvement Opportunities:*

- a) *Consider renaming the Board of Directors Environment, Health and Safety committee to be the "Responsible Care" committee.*

#### Best Practices:

- a) Level of commitment to Responsible Care
- b) All members of the company's management team have signed the Code of Business Conduct.

#### **2.1.2 Application outside Canada**

Activities managed outside of Canada are primarily Corporate Leadership, Supply Chain Management and Commercial Operations

For the purposes of this verification the focus is on the Canadian manufacturing facilities plus associated logistics, distribution and sales and marketing activities from wherever they are managed.

#### **2.1.3 Distribution Code application in all jurisdictions**

As a global marketer of ethylene glycol products, the company applies the requirements of the Responsible Care Distribution Code to its domestic, United States, European and Asian distribution operations. This is part of the company's documented product Stewardship Plan.

#### **2.1.4 Staff responsibilities and performance**

Environment, Health and Safety expectations have been documented and are reviewed with employees by leaders on an annual basis.

Expectations include the following:

- positively intervene to correct and reinforce safe behaviors;
- welcome intervention from colleagues;
- report all incidents and participate in the investigations; and
- pro-actively identify all issues and commit to ensuring their resolution.

Recognition programs are in place for identifying and correcting potential issues (i.e. Keen-Eye Award).

Individual performance objectives are based upon the company's Managing Implementation Process which defines key objectives and targets. Each function has a Managing Implementation Plan, the elements of which cascade into individual performance objectives.

There is an incentive compensation program in place for all MEGlobal employees.

#### **2.1.5 Organization and personal involvement - Site Managers**

With reference to the company's Operating Discipline Management System described above in section 2.1.1, Production Leaders (i.e. Site Managers) "own" the relevant system elements for their facility and actively participate in an annual Management System Review of requirements.

The results of this review of the Operating Discipline Management System, together with Environment, Health and Safety audit results and metrics are used by the Production Leaders as a measure of the site's compliance with Responsible Care principles.

#### **2.1.6 Employee understanding of Responsible Care**

Responsible Care is included in new employee orientation and an overview is completed on a recurring basis.

Employees at all levels of the organization, who were contacted by the verification team, were aware of Responsible Care and how the principles applied to their individual job functions. A recent employee survey confirmed this to be the case for the majority of employees.

### **2.2 Meet and Exceed Laws and Regulations**

#### **2.2.1 Company**

The primary means to ensure compliance with all applicable laws and regulations is effective implementation of company work processes and the Operating Discipline Management System. Annual audits, self-assessments and Management System Reviews are completed to ensure compliance with both internal and external requirements.

#### **2.2.2 Sites**

Same as item 2.2.1 (Company) above.

### **2.3 Inform Public, Understand and Respond to Their Concerns**

### **2.3.1 Outstanding charges etc.**

There are no outstanding charges etc. for non-compliance with Environment, Health and Safety acts and regulations etc.

### **2.3.2 Identification of community interests and representatives**

To identify community interests, the company selects those stakeholder groups that are essential to its license to operate.

Stakeholder lists are updated bi-annually or as the company is notified of changes.

Fort Saskatchewan stakeholders have been identified as:

- Near neighbours (identified as communities of Riverside, Hu Haven, Fort Augustus and nearby acreages);
- Fort Saskatchewan community;
- Fort Community Advisory Panel;
- Municipalities and elected officials (City of Fort Saskatchewan);
- Local industry and industry-related associations (Northeast Capital Industrial Association, NR CAER, Fort Air Partnership, AIHA);
- Local media – primary focus in Fort Saskatchewan; and
- Employees

Prentiss stakeholders have been identified as:

- Near neighbours (within 3 km);
- Employees;
- Municipal government (Lacombe County, Town of Blackfalds, Town of Lacombe);
- Community members;
- Local media; and
- Local industry

### **2.3.3 Provision of risk information to the community**

Providing risk information to the community has taken form in various formats, such as through open houses, Community Advisory Panel meetings, near neighbour letters, news releases, and presentation to local industry /community organizations.

*Improvement Opportunities:*

- a) At the Prentiss facility, through direct personal contact, reconfirm and ensure, as a minimum, that all neighbours who could be affected by a site emergency, are aware of the following:*
  - *Potential emergency scenarios;*
  - *How they will be informed of an emergency situation;*
  - *What to do in an emergency situation;*
  - *How their personal safety will be assured; and*
  - *How their children at school or in transit to/from school will be looked after.*
- b) At both the Prentiss and Fort Saskatchewan facilities establish a formally documented procedure and record system to ensure that worst case scenario, risk and emergency response information is made available to local neighbours on a regular frequency (e.g., at least every 3 years).*

### **2.3.4 Process for community dialogue**

The primary process for dialogue is through the company's Community Advisory Panels at Prentiss and Fort Saskatchewan, which are led by a neutral facilitator.

Panel members can include teachers, students, clergy, business owners, environmentalists, government employees or directors of charities, labor leaders and retirees.

These can be determined using any one or combination of the following criteria:

- Geographic—based on the area or “region” of impact of the operation (e.g. trading or area of economic impact, area, environmental impact);
- Interests representative of the community (sometimes referred to as “constituencies,” for example—but not limited to—education, youth, health, environmental, near neighbours, agriculture, business, older/retired persons, religious, community-at-large, emergency response, cultural and ethnic representation);
- Gender (a balance of male and female); and
- Age (both youth and older people represented).

Beyond Community Advisory Panel meetings, open houses, field trips, “take your kids to work day”, social events, Board visits, Minister's visits, etc. are used as a means to dialogue with communities and other stakeholders.

### **2.3.5 Response to community concerns**

Based upon meetings with the Prentiss and Fort Saskatchewan Community Advisory Panels, concerns are being effectively addressed through the company's process for community dialogue described in section 2.3.4 above. There is also a 1-800 community information call line available.

One example of a community concern and how it was addressed is the noise issues raised by some near neighbours in Prentiss. In response to the concern, noise monitoring was conducted in 2003/2004, and some neighbours were relocated. In addition, significant expenditure was invested in noise reduction projects.

Another example is how MEGlobal and other members of the Northeast Capital Industrial Association is addressing the concerns expressed by the Fort Saskatchewan community with respect to the growth of industry and its impact on air quality in Fort Saskatchewan. A Regional Air Dispersion Model & Emissions Inventory Project has been undertaken in collaboration with Alberta Environment to address this issue.

*Improvement Opportunities:*

- a) At Fort Saskatchewan ensure that the 1-800 community information call line number is known and readily available to all local neighbours. The verification team was advised by community members of some issues in this regard.*
- b) At both the Prentiss and Fort Saskatchewan sites, promote with neighbours the proactive use of the call-in line for information on events that do not impact them but result in visible / audible plant upset condition that do not present an off-site threat.*

### **2.3.6 Information sharing and dialogue for new or modified facilities**

This is achieved through the same process as described section 2.3.4 (Process for community dialogue) above.

One example of information sharing and dialogue with the community with respect to planning of new or modified facility is the communication package that was put together for the Glencoe Resources carbon dioxide project. On March 1, 2005 MEGlobal Canada entered into an agreement with Glencoe Resources for the sale of a carbon dioxide byproduct stream from the Prentiss site. Through this agreement, Glencoe constructed a treatment and compression facility adjacent to the Prentiss site to liquefy the CO<sub>2</sub> and transport it via pipeline to their nearby oilfield operations, where it is being used for enhanced oil

recovery. A package of information was put together to address employee and community questions and concerns.

### **2.3.7 Community interests and concerns – Site Manager**

Site managers participate in all of the above community processes and provide leadership to the resolution of issues.

### **2.3.8 Community awareness along transportation routes**

The company has recently assigned an individual to the Prairie Region TransCAER Committee with an objective to participate and contribute to related community outreach activities along transportation routes through which CCPA member company products are shipped.

## **2.4 Hire, Train, Assess and Communicate to Employees**

### **2.4.1 Employee training and performance**

A formal training program exists for all manufacturing employees, including new employee orientation. Training grids have been established by job type. A significant amount of Health Safety and Environment training, including an overview of Responsible Care, is completed on a recurring basis. The status of training is actively and visibly monitored and the tolerance for overdue training is low. Special attention is paid to new employees. As part of their orientation, new employees spend time with both their Leader and Environment, Health and Safety practitioners, to ensure that expectations are clear.

### **2.4.2 Communication of hazard and risk information to employees**

There is a Health and Safety program in place which is intended to identify and assess hazards, prevent unsafe acts and conditions, maintain and improve the health of personnel and foster communication on health and safety issues. As part of the health and safety hazard identification, the following programs are used:

- Job safety analysis;
- Exposure assessments;
- Health assessments;
- Workplace Hazardous Materials Information System and Material Safety Data Sheets;
- Indoctrination, turnaround Health Safety and Environment Strategy; and
- Safety Training

Safety meetings take place at start of shift, monthly and quarterly frequencies.

New health risks recently discovered by medical sciences and/or result of studies conducted by medical sciences are communicated to employees as they become known.

#### *Improvement Opportunities:*

- a) *Establish a policy for follow-up monitoring of retirees health, regarding previous workplace exposures.*

#### *Best Practices:*

- a) *The comprehensive Pre-task Hazard Analysis process and documentation system that is rigorously applied to process, maintenance and office work as well as business travel.*
- b) *The “Safety Moment” initiative that focuses on a defined safety topic at the start of all meetings.*

### **2.4.3 Health monitoring and communication**

There is a Health Assessment Program in place to plan for, schedule and complete health assessment testing. The program defines for employees, based on their potential for chemical, physical or biological assessment exposure and their age, the baseline medical assessment and the health surveillance and screening examinations required, and to also ensure compliance with government regulations. Employees are made aware of the results of all personal assessments.

#### **2.4.4 New employee orientation**

This is included in the above section 2.4.5 (Employee training and performance).

### **2.5 Collect Hazard Information and Assess and Minimize Risks**

#### **2.5.1 Analysis of worst case scenarios and informing the community**

Worst Case Scenarios for both the Prentiss and Fort Saskatchewan facilities have been established using methodologies which are recognized as appropriate within the industry.

These Worst Case Scenarios have been communicated to those members of the local community who may be affected.

*Improvement Opportunities:*

- a) *Establish a formalized schedule to re-evaluate worst case scenarios on a three year frequency.*

#### **2.5.2 Hazard data/communication for new products, processes and procedures**

To address hazard data and communications regarding new products, processes and procedures, the company maintains a documented Product Stewardship Plan which addresses the Environment, Health and Safety aspects of designing, manufacturing, marketing, distributing, using, recycling, and disposing of its products.

Data on current and emerging science is available through the company's participation in the CCPA, and its access to the American Chemistry Council and the European Chemical Industry Council.

Data is also available to the company through the international High Production Volume chemical initiative and the Screening Information Data System.

#### **2.5.3 Hazard and risk assessments for existing facilities**

There is a Process Risk Management standard in place which is designed to meet the Process Hazard Analysis requirements of various internationally recognized standards and process safety regulations. The system details a tiered risk assessment system that will specify requirements and risk assessment tools application based on risk level.

#### **2.5.4 Potential impact of process incidents**

Modeling tools (e.g. plume dispersion) are used to determine off site potential for worst case and emergency preparedness scenarios. A Process Risk Management tool (i.e., Layer of Protection Analysis) is used to determine the magnitude of potential impact within and beyond the site from process and other incidents.

#### **2.5.5 Minimization of process risk**

There is a documented Process Safety Management System in place which is designed to provide control measures to address process safety risks.

The company's most recent self assessment of its Process Safety Management System, using defined CCPA criteria, shows the system to be at the "enhanced" level. This is the second from the top level in a four tier assessment regime.

*Improvement Opportunities:*

- a) *Carry out an assessment of CCPA Process Safety Management System Site Self-assessment Tool criteria for the "Excellent Level" and evaluate whether the company should move forward to achieve this level.*

## **2.5.6 Minimization of risk for transportation modes and routes**

The company maintains a documented Distribution Risk Review program designed to evaluate and address the risks associated with the transportation of chemicals including modes, routes, carrier selection, security, etc. These risk reviews are conducted for chemicals commensurate with risk. It should be noted that in Canada and all other geographies ethylene glycol is considered as non-hazardous. In the United States, however, it is classified as hazardous based upon its regulated reportable quantity. Personnel from the sites where company products are manufactured, loaded or unloaded participate in these transportation risk reviews.

## **2.6 Identify, Manage and Minimize Emissions and Wastes**

### **2.6.1 Emission and waste reduction objectives**

Both priority and chemicals emissions, waste and waste-water have been tracked. Goals related to these have been monitored, reported and updated annually. Currently, the company is in the final stages of setting 2012 goals which target a 70% reduction in priority emissions, 80% reductions in chemical emissions, and 40% reduction in CO2 emissions intensities. A 2012 goal associated with reduction in fresh water usage is currently being defined.

In addition, in 2003, Environment Canada, seeking public comments, published the Risk Management Strategy for Ethylene Oxide. The Risk Management Strategy challenged the industrial chemical sector to reduce emissions and suggested a CCPA – Government Memorandum of Understanding as the measure for recording and reporting improved emissions performance. The company has supported this approach and agreed that the Memorandum of Understanding is an appropriate mechanism for tracking Ethylene Oxide improvements. Progress in Ethylene Oxide emissions reduction is reported annually.

### **2.6.2 Health and environmental impact of emissions and wastes**

At Prentiss, air modeling to determine the impact of site operations on fence-line ambient ethylene and ethylene oxide concentrations has been conducted. Based on these models, the operation of the Prentiss Plant is consistent with the Alberta Ambient Air Quality Objective for Ethylene, as defined by Alberta Environment.

As part of a regional strategy to streamline the management of air quality issues in the Fort Saskatchewan area, the company participates in a Regional Air Dispersion Model initiative that has been developed with the input from the Northeast Capital Industrial Association and its member companies, the Fort Air Partnership and Alberta Environment. The main purpose of the exercise is to create a tool that can be used to assess overall/cumulative impacts and concentration levels within the region. Over the past decade millions of dollars have been spent modeling various (and potentially conflicting) operational scenarios within the region (expansions, new plants, approval renewals etc.). This initiative hopes to replace any "localized" air quality studies with more comprehensive regional assessments. The first

objective of the regional air model initiative is to compile a comprehensive database of emissions and facility information from all industrial and non-industrial emitters located in the Fort Air Partnership air shed.

At both manufacturing facilities, monthly fish bio-assay tests are conducted to ensure water effluents meet water discharge requirements.

In addition, as required by the approval in Prentiss for example, a number of additional testing is conducted such as: ground water monitoring, soil analyses, pollution minimization study, and environmental effects monitoring. Any issue identified is managed through a management plan with Alberta Environment.

*Improvement Opportunities:*

- a) *As well as participating, provide active and visible leadership to the Regional Air Dispersion Model initiative, by encouraging new and existing industry to participate in studies regarding cumulative environmental effects in and around Fort Saskatchewan.*

### **2.6.3 Waste minimization for new products and processes**

For medium to large project work, installing new facilities or modifying existing facilities the company follows a defined process. Early on in the project planning process the project team completes an evaluation which includes a set of screening questions that identify what project reviews need to be conducted during the life of the project. There is a section on waste minimization.

For modifications to existing facilities or small projects, a management of change process is used. This includes an assessment of change impacts which addresses waste minimization issues..

### **2.6.4 Application of Hazardous Waste Management code to co-disposal sites**

The company utilizes a defined external waste management standard which addresses the requirements of the CCPA Hazardous Waste Management Code of Practice. All external waste contractors handling hazardous and non-hazardous wastes are audited by qualified individuals and approved prior to being used the first time.

Compliance with these requirements is assessed on an annual basis through self-assessments, audits and Management System Reviews.

## **2.7 Incorporate Environment, Health and Safety into Design Stages**

### **2.7.1 Environmental impact of new facilities**

Environmental impact of new facilities is addressed through the same process as described in the above section 2.6.3 (Waste minimization for new products and processes). The evaluations and assessments included in project planning also address potential environmental impacts.

### **2.7.2 Buffer Zones**

The company follows a defined Buffer Zone Policy which addresses the establishment and maintenance of adequate buffers zones around its facilities. This has included buy-out of local landowners to maintain an effective buffer zone.

All changes which impact the quantity, type, or conditions of material in the process are reviewed through a management of change process. As part of the process safety review the potential for offsite impact due to a toxic release or fire / explosion is assessed. If this process indicates a potentially off-site concentration, then advanced assessments are required to quantify and if necessary reduce the impact to acceptable levels and provide adequate protective systems in order to maintain an acceptable buffer.

### **2.7.3 R&D project reviews**

The company does not carry out any research and development activity, therefore requirements for such project reviews are not applicable to its operations.

## **2.8 Documentation of Standards and Procedures**

The company has implemented a comprehensively defined Operating Discipline Management System. The Operating Discipline Management System contains policies, requirements, processes, best practices and procedures associated with Environment, Health and Safety, Quality, Operations and related external standards. Use of this system is intended to ensure compliance, achievement of objectives and targets and improvement in performance results.

Work has been completed to ensure that the requirements of the Responsible Care Codes of Practice are reflected in the company's Operating Discipline Management System implementation.

To prevent and control health and safety hazards at the job/task level, written operational controls and task procedures are implemented for activities such as confined space entry, electrical work, hot work, hydroblasting and pressure washing, lock-out and red tag / isolation of energy sources, to name a few.

### Best Practices:

- a) The entire Operating Discipline Management System.

## **2.9 Provide Information to Second Parties**

### **2.9.1 Supply of Environment, Health and Safety information to customers**

Material Safety Data Sheets are sent with the first shipment to new customers and sent annually to existing customers upon first shipment of the year. If any changes are made the update is sent to all current customers.

A company web site is available with product specifications, Material Safety Data Sheets, and technical information as well as approved and unapproved product uses.

All contract customers have Responsible Care as a part of their contract.

Customers are also encouraged to audit and tour the company's production facilities and terminals.

### Improvement Opportunities:

- a) *Include "Responsible Care" by name into sales contracts with respect to the company's commitment and expectations in this regard.*
- b) *Expedite current plans to formalize Product Stewardship training for sales and marketing, customer service and supply chain employees, plus others as appropriate.*
- c) *Benchmark the company's Product Stewardship program against the CCPA Product Stewardship Guide.*

### Best Practices:

- a) The comprehensive "Responsibility-Accountability-Communicate-Inform" matrix for product stewardship activity.

### **2.9.2 Receipt of Environment, Health and Safety information by customers**

Confirmation that customers are in receipt of Environment, Health and Safety information includes a year end business risk review which is carried out to determine if customers are in compliance with the company's Responsible Care expectations.

There is also a Corrective Action Management Process in place to address compliance issues.

## **2.10 Assessing Second Parties**

### **2.10.1 Selection of site contractors**

There is an approved Suppliers List maintained. To be included on the list, contractors require qualification and performance feedback, including Environment, Health and Safety performance.

The company will only use contracted service providers which have established and implemented appropriate Environment, Health and Safety programs.

Provision of these services is governed by Service Agreements which specify the requirements to be followed.

### **2.10.2 Contractor understanding and compliance with Environment, Health and Safety instructions**

Prior to the initiation of the service, the company again communicates to the selected contractor its Environment, Health and Safety expectations and relevant information to facilitate the achievement of those expectations.

Verification is carried out to confirm that the contractor leadership has in place a program to regularly observe and measure their Environment, Health and Safety practices.

An Environment, Health and Safety orientation is required for all contractors and visitors, which includes communication of Environment, Health and Safety expectations and programs. Company leadership participates in these orientations for major turnarounds and for contractors working on site outside of turnarounds, leaders conduct a face-to-face meeting to communicate expectations.

### **2.10.3 Selection and assessment of distributors**

The distributors that are presently used were selected through a previously defined prescreening process. Change in distributors is rare and business relationships have been in place since the creation of the company.

The company's Product Stewardship Plan drives the distributor selection and assessment process.

#### *Improvement Opportunities:*

- a) *Enhance current practice by establishing a formally documented procedure and record system for the selection of new distributors and performance monitoring of new and existing distributors, with respect to the company's Responsible Care expectations of them.*
- b) *Consider use of the CCPA Distributor-Reseller Policy Self-Assessment Tool as an assist in executing distributor selection and performance monitoring.*
- c) *Request copies of the Canadian Association of Chemical Distributors audit reports and related follow-up action plans from those distributors who are members of this association.*
- d) *Address with distributors how they have established worst case incident scenarios for company products on their premises and how this has been communicated to the potentially affected neighbours, including what to do in an emergency situation.*

### **2.10.4 Evaluation of hazardous waste contractors**

A defined external waste management standard is applied, such that only approved hazardous waste contractors are used. Contractors are approved through external third party verifications on a four year interval. An approved list is maintained.

*Improvement Opportunities:*

- a) *Benchmark the company's waste facility verification audit protocol against the CCPA Hazardous Waste Contractors' Evaluation Guide.*

### **2.10.5 Selection and assessment of suppliers**

As part of its participation in the MEGlobal Canada joint venture, The Dow Chemical Company has been contracted to provide a wide range of services to the company. This includes such things as logistics; maintenance; loss prevention; medical; and process safety.

The process for selection and assessment of direct suppliers is as documented in the company's Product Stewardship Plan, which includes consideration of supplier Environment, Health and Safety practices. Supplier contracts include supplier requirements and responsibilities in this regard, and consideration is given to suppliers who are committed to, or willing to work toward achieving the principles of Responsible Care.

Prior to the first delivery of a product, the supplier's Material Safety Data Sheets and product quality are evaluated, or whenever the business deems it necessary.

Reviews of supplier Environment, Health and Safety practices are conducted whenever their activities have the potential to adversely impact the environment, human health, the company, the industry, or whenever deemed it necessary.

*Improvement Opportunities:*

- a) *Given the wide range of services supplied by The Dow Chemical Company, move towards a process of routinely monitoring those Dow service providers for conformance with MEGlobal's Responsible Care expectations, similar to that applied to other service providers.*
- b) *Upgrade of the company's contract laboratory audit checklist to include elements specifically related to Responsible Care.*

### **2.10.6 Customer assessment**

The company's defined Product Stewardship Plan addresses the requirements for assessment of customers.

A list of non-supported applications for company products is maintained which includes market segments in which the company has decided not to participate for reasons which include minimizing unnecessary risk.

*Improvement Opportunities:*

- a) *Enhance current practice by establishing a formally documented procedure and record system for the selection of new customers and performance monitoring of new and existing customers, with respect to the company's Responsible Care expectations of them.*
- b) *Consider use of the CCPA Responsible Care Customer Policy Self-Assessment Tool as an assist in executing customer selection and performance monitoring.*
- c) *Establish a formally documented procedure and records system to routinely review, with customers and those customers supplied by distributors, the company's policy with respect to non-supported applications of company products.*

### **2.10.7 Selection and assessment of carriers**

There is a defined process in place to select, procure, evaluate and manage carrier service.

## **Section 2.11 Manage Changes**

Changes to equipment, control systems, procedures, etc are managed through a defined Management of Change Process. A Change Impact Matrix is used to determine what reviews are necessary. Each plant location has a list of approvers that have the right knowledge, skills and experience to perform the required review. Ultimately the Production Leader approves the change which includes ensuring that the right reviewers have been involved.

## **2.12 Provide Security**

Both Prentiss and Fort Saskatchewan sites have specific security plans in place. The sites have perimeter fencing, and access controls are in place. Vehicle access is limited to specific gates at each site, and inspections are done at random and tracked. Security Vulnerability Assessments have been carried out at both sites and all resulting action items have been addressed.

*Improvement Opportunities:*

- a) *Through The Dow Chemical Company, MEGlobal's security service provider, establish a formally documented procedure and record system to check the "certifications" of contract security staff.*
- b) *Consider participating in the CCPA Security Task Force.*

## **2.13 Manage Previous Waste Sites**

As a new company recently formed, there are no inherited historical waste sites, nor are there any sites that require active remediation.

## **2.14 Measure and Improve Performance**

### **2.14.1 Continuous improvement**

Environmental impact of emissions; resource productivity measures such as production energy intensity; and injuries and incidents have historically been tracked as key performance indicators for continuous improvement objectives.

The company is in the process of finalizing its 2012 Environment, Health and Safety Goals which include personal safety; loss of primary containment; process safety; motor vehicle accidents; agency reportable emissions; priority emissions; chemical emissions; CO2 emissions; and fresh water use reduction.

*Best Practices:*

- a) *The slate of measures to be addressed in the 2012 goals*
- b) *The "Event and Action Tool" that is used to follow-up on actions arising from audits and incident investigations.*

### **2.14.2 Benchmarking**

Benchmarking of performance measures is achieved through comparison to parent companies, local industries, and from data available through the company's participation in the CCPA, and its access to the American Chemistry Council and the European Chemical Industry Council.

### **2.14.3 Termination or restriction of non-complying activities**

Any non-complying activities are identified through such activities site inspections, audits and from the results of incident investigations. Action items are defined and tracked to ensure that they are complete and all non-complying issues are addressed.

### **2.14.4 Measurement and communication of site safety performance**

The safety related performance measures listed above in section 2.14.1 (Continuous improvement) are measured and communicated to stakeholders as appropriate.

### **2.14.5 Contractor performance**

There is program in place to regularly review contractor performance and communicate those findings to the appropriate people and organizations for the purpose of selecting future service providers. There is a Quality, Service and Product Performance system in place that is used to communicate to Purchasing any concerns or comments regarding contractors and their performance. This input is used to manage contractor performance and as an input to the selection of qualified providers.

### **2.14.6 Measurement and communication of Environment, Health and Safety performance in transportation**

There is a process in place to measure, report and make improvements for transportation services. Meetings are held on regular basis to review expectations and performance.

The company also participates in providing data on transportation incidents to the CCPA through the association's established reporting process.

In 2007, The Dow Chemical Company, MEGlobal's transportation service provider, received an award from the Canadian Pacific Railway for having reached seven consecutive years with no "Non-accident Release" incidents to its product while in rail transit.

### **2.14.7 Incident investigation**

There is a defined incident reporting and investigation process in place which includes requirements for root cause analysis; identification of corrective and preventive actions; learning experience reporting; and follow-up to ensure that all actions intended to prevent future recurrence have been taken. There is a significant number of employees specifically trained in root cause analysis techniques.

#### Best Practices:

- a) The overall incident management and follow-up process.

## **2.15 Manage Emergencies**

### **2.15.1 Ability to respond**

Both the Prentiss and Fort Saskatchewan sites have established emergency response plans which include all of the activities necessary to resource, prepare, plan and respond to anticipated potential site emergencies.

This includes on and off site training for emergency responders and regular reviews of procedures etc. There is also a corporate Crisis Management Plan in place.

*Improvement Opportunities:*

- a) *Benchmark emergency response plans against the Canadian Standards Association, Standard CAN/CSA-Z731-03, Emergency Preparedness and Response.*
- b) *Carry out an annual exercise to test the company's Crisis Management Plan.*

### **2.15.2 Integration of site and community emergency plans**

A Mutual Aid agreement, which includes local emergency services, is in place for both the Prentiss and Fort Saskatchewan sites. Mutual Aid dry runs are conducted annually, and partners meet quarterly to review mutual aid plans.

### **2.15.3 Dislocated persons**

The Alberta Disaster Services Act makes the local authority responsible to address the needs of citizens impacted by any emergency. Both the Alberta Disaster Services Act and the Federal Canadian Environmental Protection Act are clear in specifying that it is the party responsible for an emergency who will carry the burden of cost. Company emergency response plans therefore specify initial roles and responsibilities of the company in event of an emergency as it relates to dislocation of the public.

*Improvement Opportunities:*

- a) *Establish a Dislocation Policy to address specifically what will be done and how the company will immediately support persons dislocated from their premises in case of an emergency situation.*

### **2.15.4 Evaluation and correction of emergency systems**

A protocol for debriefing an emergency incident with a critique form is used on both the Prentiss and Fort Saskatchewan sites. This includes a follow-up process to ensure that all actions items have been addressed.

### **2.15.5 Transportation emergency response**

There is defined transportation emergency preparedness and response plan in place.

## **2.16 Assisting in Public Policy Development**

The CCPA Executive Contact is actively involved with the CCPA as a member of the Board of Directors and chair of Leadership Group #5, and is also involved with the CCPA Alberta Regional Committee and Business and Economics Committee.

The company's Responsible Care Leader is involved with the CCPA Safety and Health Analysis, Recognition and Exchange Committee, Technical Management Committee, Alberta Environmental Quality Committee, Product Stewardship Work Group and Climate Change Task Force. This leader also participates in the Alberta Clean Air Strategic Alliance as a CCPA Representative.

The company's Process Safety Leader is a member of the CCPA Process Safety Committee. The Chief Executive Officer actively participates in the Gulf Petrochemical and Chemical Association in the Middle East region.

*Improvement Opportunities:*

- a) *Take an active leadership role in promoting Responsible Care within the Gulf Petrochemical and Chemical Association.*

*Best Practices:*

- a) *Extent of participation in CCPA and other associations' committee work, given the size of the company.*

## **2.17 Audit and Follow-up**

Each element of the company's Operating Discipline Management System is internally assessed annually in addition to an overall management system review, both intended to assess the on-going effectiveness of the system.

A consolidated external Environment, Health and Safety audit is conducted every three years.

Other audits to be completed on pre-described frequencies include Reactive Chemical and Process Hazard Analysis; Technology Center Audits; Burner Management Audit; Consolidated Environment, Health and Safety Audits; and Insurance Audit. The audit teams consist of persons not involved with the day to day unit operation.

Follow up action items for all of the above are documented and tracked to completion, and the effectiveness of completed action items are validated by the appropriate leader.

## **3. CONCLUSIONS and RECOMMENDATIONS**

Based upon this verification the team considers that MEGlobal Canada has achieved the required standard for Responsible Care In-Place certification, and that the CCPA officially recognize this verification with an award at the next suitable occasion.

*Improvement Opportunities* and *Best Practices* as identified in the body of the report are listed below:

*Improvement Opportunities:*

- 1) *Consider renaming the Board of Directors Environment, Health and Safety committee to be the "Responsible Care" committee.*
- 2) *At the Prentiss facility, through direct personal contact, reconfirm and ensure, as a minimum, that all neighbours who could be affected by a site emergency, are aware of the following:*
  - *Potential emergency scenarios;*
  - *How they will be informed of an emergency situation;*
  - *What to do in an emergency situation;*
  - *How their personal safety will be assured; and*
  - *How their children at school or in transit to/from school will be looked after.*
- 3) *At both the Prentiss and Fort Saskatchewan facilities establish a formally documented procedure and record system to ensure that worst case scenario, risk and emergency response information is made available to local neighbours on a regular frequency (e.g., at least every 3 years).*
- 4) *At Fort Saskatchewan ensure that the 1-800 community information call line number is known and readily available to all local neighbours. The verification team was advised by community members of some issues in this regard.*

- 5) *At both the Prentiss and Fort Saskatchewan sites, promote with neighbours the proactive use of the call-in line for information on events that do not impact them but result in visible / audible plant upset condition that do not present an off-site threat.*
- 6) *Establish a policy for follow-up monitoring of retirees health, regarding previous workplace exposures.*
- 7) *Establish a formalized schedule to re-evaluate worst case scenarios on a three year frequency.*
- 8) *Carry out an assessment of CCPA Process Safety Management System Site Self-assessment Tool criteria for the "Excellent Level" and evaluate whether the company should move forward to achieve this level.*
- 9) *As well as participating, provide active and visible leadership to the Regional Air Dispersion Model initiative, by encouraging new and existing industry to participate in studies regarding cumulative environmental effects in and around Fort Saskatchewan.*
- 10) *Include "Responsible Care" by name into sales contracts with respect to the company's commitment and expectations in this regard.*
- 11) *Expedite current plans to formalize Product Stewardship training for sales and marketing, customer service and supply chain employees, plus others as appropriate.*
- 12) *Benchmark the company's Product Stewardship program against the CCPA Product Stewardship Guide.*
- 13) *Enhance current practice by establishing a formally documented procedure and record system for the selection of new distributors and performance monitoring of new and existing distributors, with respect to the company's Responsible Care expectations of them.*
- 14) *Consider use of the CCPA Distributor-Reseller Policy Self-Assessment Tool as an assist in executing distributor selection and performance monitoring.*
- 15) *Request copies of the Canadian Association of Chemical Distributors audit reports and related follow-up action plans from those distributors who are members of this association.*
- 16) *Address with distributors how they have established worst case incident scenarios for company products on their premises and how this has been communicated to the potentially affected neighbours, including what to do in an emergency situation.*
- 17) *Benchmark emergency response plans against the Canadian Standards Association, Standard CAN/CSA-Z731-03, Emergency Preparedness and Response.*
- 18) *Carry out an annual exercise to test the company's Crisis Management Plan.*
- 19) *Establish a Dislocation Policy to address specifically what will be done and how the company will immediately support persons dislocated from their premises in case of an emergency situation.*
- 20) *Benchmark the company's waste facility verification audit protocol against the CCPA Hazardous Waste Contractors' Evaluation Guide.*
- 21) *Given the wide range of services supplied by The Dow Chemical Company, move towards a process of routinely monitoring those Dow service providers for conformance with MEGlobal's Responsible Care expectations, similar to that applied to other service providers.*
- 22) *Upgrade of the company's contract laboratory audit checklist to include elements specifically related to Responsible Care.*
- 23) *Enhance current practice by establishing a formally documented procedure and record system for the selection of new customers and performance monitoring of new and existing customers, with respect to the company's Responsible Care expectations of them.*
- 24) *Consider use of the CCPA Responsible Care Customer Policy Self-Assessment Tool as an assist in executing customer selection and performance monitoring.*
- 25) *Establish a formally documented procedure and records system to routinely review, with customers and those customers supplied by distributors, the company's policy with respect to non-supported applications of company products.*

- 26) *Through The Dow Chemical Company, MEGlobal's security service provider, establish a formally documented procedure and record system to check the "certifications" of contract security staff.*
- 27) *Consider participating in the CCPA Security Task Force.*
- 28) *Take an active leadership role in promoting Responsible Care within the Gulf Petrochemical and Chemical Association.*

Best Practices:

- 1) *Level of commitment to Responsible Care*
- 2) *All members of the company's management team have signed the Code of Business Conduct.*
- 3) *The comprehensive Pre-task Hazard Analysis process and documentation system that is rigorously applied to process, maintenance and office work as well as business travel.*
- 4) *The "Safety Moment" initiative that focuses on a defined safety topic at the start of all meetings.*
- 5) *The entire Operating Discipline Management System.*
- 6) *The comprehensive "Responsibility-Accountability-Communicate-Inform" matrix for product stewardship activity.*
- 7) *The slate of measures to be addressed in the 2012 goals*
- 8) *The "Event and Action Tool" that is used to follow-up on actions arising from audits and incident investigations.*
- 9) *The overall incident management and follow-up process.*
- 10) *Extent of participation in CCPA and other associations' committee work, given the size of the company.*

#### **4. OBSERVATIONS FROM THE COMPANY**

"While we do many internal audits, the CCPA Responsible Care verification process provides a different and helpful perspective. The observations and recommendations provided by the Verification Team will no doubt contribute as we seek to continuously improve our practice of Responsible Care". (Peter Ott, VP of Manufacturing)

"The verification process from the initial contact with the Lead Verifier to the actual verification went very well. During the verification, the verifiers were challenging but not threatening and the questions were relevant to our operations. It was obvious that the members of the Verification Team had well prepared for the verification and was well versed in the content of the advance information package". (Rejeanne Cool, Global EH&S / Quality Leader)

"The verification process was indeed challenging, but never threatening. Clearly the verifiers probed to find out about our underlying philosophy toward open and transparent communications with the local communities. I found the experience a good learning, both in terms of my preparations to better understand the Responsible Care codes and ethics and our own Operating Discipline Management System. Certainly, we will consider implementation of the ODMS more widely in our Public Affairs function". (Virginia Diploudis, Global Public Affairs Manager)

"I found it was evident from the level of knowledge and questions from the verifier's that there was a fair amount of pre-work completed. This made the process go a lot quicker and smoother". (John Gillespie, EH&S Delivery Technician)

"From my perspective I thought they asked several probing and thought provoking questions and carried their review out professionally and constructively. It was pleasing to see we had no non conformances

and like all good audits and reviews they identified areas that we can build upon to improve our systems”.

(Dale Moverley, Technology Improvement Leader)