



RESPONSIBLE CARE[®] Verification Report

Shell Chemicals Canada Ltd.

January 27 - 31, 2014



Chemistry Industry
Association of Canada



Responsible Care[®]
Our commitment to sustainability.

Disclaimer

This report has been produced by a team, convened by the Chemistry Industry Association of Canada (CIAC), to provide advice to the member-company and assist it in meeting its Responsible Care[®] commitments. The material in this report reflects the team's best judgment in light of the information available to it at the time of preparation. It is the responsibility of the CIAC member-company that is the subject of this report to interpret and act on the report's findings and recommendations 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 CIAC 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.

Responsible Care[®] is a registered trademark of the Chemistry Industry Association of Canada.

EXECUTIVE SUMMARY

This report documents the observations and conclusions of the independent verification team tasked with conducting a Responsible Care Verification of Shell Chemicals Canada Ltd. (Shell Chemicals). The verification was undertaken on Jan 27 to Jan 31, 2014 and included team visits to Scotford, AB and Corunna, ON. This was the sixth Responsible Care verification completed for Shell Chemicals. The last verification was completed on Jan 10-17, 2011

While considering all aspects of the Responsible Care Commitments during this verification the team placed an emphasis on conducting an in-depth examination of company aspects related to:

- The company's chemical operations being a part of a larger organization (refinery) that is not a signatory to Responsible Care and
- Determining the impact (if any) of significant operational and personnel changes since the last verification.

As a result of the examination conducted, the verification team is of the opinion that the Responsible Care Ethic and Principles for Sustainability are guiding company decisions and actions, and that a self-healing management system is in place to drive continual improvement. The team believes that the company is capable of responding to the Finding Requiring Action identified during the verification - summarized below and discussed in detail in the report. The verification is complete and no further involvement is required by the verification team.

Signed: _____

Date: March 31, 2014

Gerry Whitcombe

Verification Team Leader

For more information on this or a previous Responsible Care Verification Report, please contact your local company site or the company's overall Responsible Care coordinator:

Mike Drumm
HSSE Country Lead, Canada
403-691-4191
mike.drumm@shell.com

Summary of Verification Team Observations

Findings Requiring Action

It is a finding requiring action that the company has not communicated "all hazards and associated risks, up to and including worst case scenarios" to its community (AC133). Guidance is available from the CIAC in its "Guidelines for Site Acute Risk Communication" document. _____ 16

There is a finding requiring action that the company does not sufficiently promote Responsible Care by name to meet code implementation expectations. _____ 19

Work in Progress

The company's initiative to make presentations to Kettle & Stony Point, Walpole and Aamjiwnaang First Nations to review criteria for employment within the company is a work in progress. This is encouraging and consideration should be given to expand to colleges and the Sarnia Industry Education Co-operative which issues certification of contractors. _____ 17

Opportunities for Improvement

There is an improvement opportunity, based on the success of the program in the Sarnia area, to continue efforts with other Alberta industries in the development of common contractor training in the Fort Saskatchewan area. _____ 11

There is an improvement opportunity to understand and maintain the company's process safety status as outlined in the CIAC PSM PS Site Assessment Tool. _____ 11

There is an improvement opportunity to work with CIAC membership in the Rail Committee of the National TransCAER Committee to work through the issue of short haul carrier assessments (and to act on any recommendations). _____ 15

There is an improvement opportunity to enhance the Community Dialogue management system to better reflect the intention of the codes of practice for this area. In Fort Saskatchewan, it would be advantageous for the company to observe the processes used by peer companies to contrast and compare the systems they use and perhaps work together towards implementation of a joint effort (similar to Sarnia). _____ 16

There is an improvement opportunity to revamp the Responsible Care Steering Team from the perspective of creating a more self-directed team able to deal with issues such as those identified in the verification (selection of the local community representative, loss of corporate memory related to Responsible Care topics and required understanding of code detail by responsible personnel) _____ 19

There is an improvement opportunity to empower the Steering Team with responsibility for overall management and performance for certain code areas (Promotion of Responsible Care by Name and Resource Conservation as two examples). _____ 20

There is an improvement opportunity to formalize the accountability for Responsible Care into the Scotford and Corunna General Managers 'job description'. _____ 20

There is an improvement opportunity to include references to the underlying applicable Responsible Care code or code section in the 'References' or 'Requirement' portion of the document management system. _____ 20

There is an improvement opportunity in Corunna to verify the efficacy of the CAER/CVECO system to determine the community's knowledge of risk and understanding of emergency preparedness. ____ 21

Successful Practices

The Chemicals Lab waste management and handling activities and practices are a successful practice. _____	10
The tripartite (contractor, trade union and company) group set up by the company is a successful practice. _____	11
In Corunna the creation of a full time wage JH&SC position is a successful practice. _____	11
The Corunna site has a successful practice by which potential waste material is always determined to be of no other use on site before being declared a waste and sent off site for disposal. _____	13
The team views as a successful practice the project In Corunna where employees questioning the use of adding propane in the production of isopropyl alcohol led to its removal clearly demonstrating how individual employees can contribute to resource conservation. _____	14
Management of Change (MOC) is typically applied in a manufacturing environment. The company in Canada has successfully migrated the requirement and enabling tools to the commercial area which, in the team's opinion, is a successful practice. _____	14
Shell's initiatives to work with Aamjiwnaang First Nations is a successful practice. _____	17
The use of the company's Hazards and Effects Management Process (HEMP) to conduct risk assessments for all transported chemicals and transportation corridors is a successful practice. _____	17
The company's involvement in getting the Canadian Association of Petroleum Producers (CAPP) to participate in TransCAER and in getting the Canadian Fuels Association to take a look at TransCAER is a successful practice. _____	17
The visible leadership walks resulting in greater worker- management contact and support for company directions in health and safety is a successful practice. _____	20
The company's plain language visual for the community (Can't see us, hear us, smell us) is a successful practice. _____	20
The company's management approach (T-Team) to reducing silos is a successful practice. _____	20
The company's simplified management approach to handling abnormal process conditions (3S – stabilize, slowdown, shutdown) is a successful practice. _____	20

1. Introduction

1.1 About Responsible Care Verification

As a member of the Chemistry Industry Association of Canada (CIAC), the most senior executive responsible for Shell Chemicals' operations in Canada attests annually to CIAC and its peers that the company's operations conform to the expectations contained in the Responsible Care Commitments and are guided by Responsible Care Ethic and Principles for Sustainability.

The Responsible Care® Ethic and Principles for Sustainability

We dedicate ourselves, our technology and our business practices to sustainability - the betterment of society, the environment and the economy. The principles of Responsible Care® are key to our business success, and compel us to:

- work for the improvement of people's lives and the environment, while striving to do no harm;
- be accountable and responsive to the public, especially our local communities, who have the right to understand the risks and benefits of what we do;
- take preventative action to protect health and the environment;
- innovate for safer products and processes that conserve resources and provide enhanced value;
- engage with our business partners to ensure the stewardship and security of our products, services and raw materials throughout their life-cycles;
- understand and meet expectations for social responsibility;
- work with all stakeholders for public policy and standards that enhance sustainability, act to advance legal requirements and meet or exceed their letter and spirit;
- promote awareness of Responsible Care, and inspire others to commit to these principles.

As an element of this commitment to Responsible Care, Shell Chemicals must, every three years, participate in an external verification intended to:

- Provide the Executive Contact with an external perspective when assessing if the company is indeed meeting the intent of the Responsible Care Commitments, along with advice on areas that may require attention;
- Identify opportunities for assisting the company when benchmarking its own practices and performance against those of its peers, thus supporting continual improvement;
- Contribute to the credibility of Responsible Care amongst company personnel and stakeholders, as well as the stakeholders of the broader industry;
- Identify successful company practices that can be promoted to peers in the CIAC membership; and
- Support the identification of areas of common weakness so that collective tools and guidance can be developed to improve performance in those areas across the CIAC membership.

Verification is conducted according to a common protocol, developed by the association's members and others, including several critics of the chemical industry. The verification is conducted by a team consisting of:

- Knowledgeable industry experts with experience in Responsible Care
- A representative of the public at large (usually with a public interest background and with experience in Responsible Care gained from serving on the CIAC's National Advisory Panel) and
- One or more representatives of the local communities where the company's facilities are located.

Once completed, the Verification Report is made publicly available through the CIAC website (www.canadianchemistry.ca). Shell Chemicals is also expected to share the report with interested persons in its communities and other stakeholders as part of its ongoing dialogue processes.

Additional information on Responsible Care and/or the verification process can be found at the CIAC website www.canadianchemistry.ca, or by contacting the Responsible Care staff at CIAC at glaurin@canadianchemistry.ca or (613) 237-6215 extension 233.

1.2 About Shell Chemicals

Shell Chemicals Canada Ltd. (SCCL) has been in existence since Shell acquired the minority shareholding in the Chemicals segment of Shell Canada Ltd at the end of 1996. Since that time, SCCL has operated as the corporate entity for Shell's chemicals business in Canada.

Shell Chemicals currently exists in Canada under two different Classes of Business (CoBs). For the purposes of Shell Chemicals governance in Canada, the President and LSCR (Local Senior Chemicals Representative) have responsibilities to ensure all Shell chemicals businesses i.e. both SCCL Commercial/Marketing and SCCL Manufacturing, are meeting legal and externally driven requirements in Canada (i.e. ensure regulatory compliance, Responsible Care and other external commitments, business ethics and principles, corporate financial reporting and tax requirements etc. are being discharged appropriately).

With their Headquarters in Calgary, SCCL produces styrene, ethylene glycol and isopropyl alcohol at manufacturing sites in Scotford (near Fort Saskatchewan), Alberta and Corunna (near Sarnia) Ontario. In August 2008, SCCL repurchased assets located in Corunna which had been sold several years previously to Basell Canada. These included a polypropylene plant, which was subsequently shut down, along with an isopropyl alcohol (IPA) plant, and a feed process unit and associated utilities that continue operating. Both chemical plants are located adjacent to SCCL's affiliate's (Shell Canada Products) oil refineries and, at both locations, the chemical plant and oil refinery are operated by a common team.

SCCL is the marketing company for all Canadian domestic sales of chemical products, and all exports of Canadian made chemical products.

Since the previous re-verification in 2010, there have been continuing personnel and role changes related to chemicals operations at SCCL's Corporate Headquarters in Calgary as well as at the Scotford and Corunna manufacturing sites. These changes continue to impact how Responsible Care is implemented within SCCL as discussed in more detail in the body of this report.

1.3 About This Verification

The verification of Shell Chemicals Canada Ltd. (Shell Chemicals) was conducted on Jan 27 to Jan 31, 2014 and included team visits to Scotford, AB and Corunna, ON. During the course of the verification, the team had the opportunity to interact with a wide range of company personnel, as well as stakeholders external to the company. Attachment 2 contains a list of those individuals interviewed and their affiliations.

This was the sixth Responsible Care verification completed for Shell Chemicals. The last verification was completed on Jan 10-17, 2011

The verification team was comprised of the following individuals.

Name	Affiliation	Representing
Gerry Whitcombe	CIAC Verifier	Industry (team leader)
Rejeanne Cool	CIAC Verifier	Industry
Kris Lee	CIAC Verifier	Public-At-Large
Mary Chartrand	Local Community Rep	Scotford
Kimberly Gledhill	Local Community Rep	Corunna

2. Team Observations Concerning the Responsible Care Commitments (Codes and benchmark and Collective Expectations)

During the verification of Shell Chemicals, the verification team looked for evidence that the company was addressing the expectations documented in the Responsible Care Commitments (152 code elements plus 28 benchmark and collective expectations). While considering all aspects of the Responsible Care Commitments during the verification, the team placed an emphasis on conducting a more in-depth examination of certain company aspects identified by the company or the team. These were related to:

- Operating as a branch of a larger organization that is not a signatory to Responsible Care and
- Determining the impact (if any) of significant operational and personnel changes since the last verification.

In communicating its observations, the verification team will make repeated reference to the following categories of observations:

Findings Requiring Action document instances where the verification team observes specific company actions (or the absence of company actions) which are inconsistent with the detailed codes and benchmark and collective expectations contained in the Responsible Care Commitments. Where possible, the verification team will communicate, based on their experience and judgment, why it is inconsistent and how the observation relates back to a possible gap in the expected management system and / or the ethic and principles underpinning company actions. The team may also provide advice on how the situation might be responded to.

Works in Progress document instances where the verification team has observed the company self-initiating actions in response to identified gaps and deficiency arising from other internal or external audit and review activities, or where the company has self-initiated important improvement opportunities.

Successful Practices document instances where the team believes the company has taken actions that strongly support sustained excellence in performance, and which should be communicated throughout the CIAC membership.

Improvement opportunities identify instances where the verification team has observed company actions and decision making as being largely consistent with the expectations detailed in the Responsible Care Commitments, but for which the team is of the opinion that the company could support further improvement by considering alternate or additional benchmarks when undertaking its planning and decision making.

The verification team's observations of how the company has addressed the Responsible Care Commitments are as follows:

2.1 Team Observations Concerning Operations Code

2.1.1 Design and Construction of Facilities and Equipment

In the parent company's MMS (Manufacturing Management System) is an area titled "Add & Modify Asset Capability". Within this area large capital projects are subject to the Opportunity Realization Manual (ORM) process managed from Houston. The process consists of five phases:

- Select (high level issues dealing with risk assessments, the community, the environment are considered through the use of a checklist),
- Define (more detailed analysis including perhaps hazard analysis - after this phase there is enough detail to seek funding),
- Design (normally outside firms are used and required to follow DaPS protocols (Design and Engineering Practices)),
- Plan and
- Construct (where constructability input is sought, permits are obtained and the construction work package is prepared, bids tendered, the principal contractor is selected and construction plans are developed).

Within the same corporate framework smaller projects are governed by the "Develop & Implement Projects" section where a Downstream Manufacturing standard (DSM) "Capital Project Development and Implementation (DSM-1015001-ST) sets requirements. These small projects are initiated by the Management of Change (MOC) process.

Company processes sufficiently meet Responsible Care code implementation expectations.

2.1.2 Operations Activities

a. General Considerations

The company's MMS operations activities are covered in section 5.5 ("Make Product"). Section 5.5.4 ("Ensure Safe Production") contains a Downstream Manufacturing standard (DSM-2015050-ST) of the same name. From this standard operating procedures covering all aspects of its operation have been developed. The company makes use of a computer tool (Livelihood) to manage these documents and is currently migrating to a new document management system (AIM). The new system is an improvement aimed at total document management.

Currently emergency procedures are reviewed regularly and quickly and a group of standard operating procedures (SOPs) are reviewed yearly (the protocol calls for a maximum of five years between reviews). SOPs typically involve critical operator involvement. Manufacturing and technical procedures and controls are currently the subject of a team of company employees striving to make the review process more effective.

The Codes of Practice for this area sufficiently meet Responsible Care code implementation expectations.

b. Laboratory Practice

In Scotford the team visited the Chemicals Lab which was very well kept and exhibited excellent housekeeping practices. The lab is certified under ISO 17025 which is a standard "for use by laboratories in developing management system for quality, administrative and technical operations" (http://www.iso.org/iso/catalogue_detail.htm?csnumber=39883) and which "specifies the general requirements for the competence to carry out tests and/or calibrations, including sampling".

Lab wastes are collected, stored and picked up by a third party (Clean Harbors) in an attached area external to the lab. This waste handling area was clean and well organized and waste handling practices were very effective.

The Chemicals Lab waste management and handling activities and practices are a successful practice.

There is an on-site laboratory contractor who has not been communicated to about Responsible Care. There is an improvement opportunity in the management system section of this report to include this contractor in the company's Promotion of Responsible Care by Name activities. The team concludes that this area sufficiently meets Responsible Care code implementation expectations.

c. Transportation and Physical Distribution

At Scotford the company ships styrene and mono-ethylene glycol (MEG) via truck and rail with most shipments being by truck (nearby delivery). Loading is performed by contract loaders under company supervision. There are on-site contract repair technicians responsible for the railcar fleet. Both these groups could be targets for Promotion of Responsible Care by Name activities.

Responsible Care code implementation expectations are being met in this area.

d. Maintenance

The maintenance area was not specifically covered in the verification.

2.1.3 Safety and Security

a. Occupational Health and Safety

The company's requirements for occupational health and safety are documented and comprehensive. In manufacturing the MMS (§ 2.4) specifies that health, safety, security, environment and social performance requirements contained in the "Shell HSSE & SP Control Framework -Commitment & Policy, Standards and Manuals" will apply. These areas are:

- "HSSE &SP Management System Manual",
- "Health Manual",
- "Personal Safety Manual" and the
- "Contractor HSSE Management Manual".

The team is of the opinion that these requirements sufficiently meet Responsible Care code implementation expectations for this area.

In Scotford the company is working to get common training in place for all contract workers (Fort Saskatchewan area) but has not been as successful as they would like. Currently the incident rate is higher than targeted and remains stubborn despite the formation of a tripartite group involving the company, contractors and building trade representatives. Amongst other things this group serves as a vehicle for incident communications.

There is an improvement opportunity, based on the success of the program in the Sarnia area, to continue efforts with other Alberta industries in the development of common contractor training in the Fort Saskatchewan area.

There is no Joint Health and Safety Team (JH&SC) in Scotford as the regulations allow for it to be replaced by equivalent teams. The Interface Groups, Results Delivery Team and the aforementioned Tripartite Group satisfy this requirement.

The tripartite (contractor, trade union and company) group set up by the company is a successful practice.

The team met with company wage employees at both Scotford and Corunna (which does have a mandated JH&SC) and found that safety issues are handled appropriately with supervision easily available to address issues.

In Corunna the creation of a full time wage JH&SC position is a successful practice.

b. Process Safety Management

The company sets its requirements for process safety management in its MMS, §4. Risk Management. In this area §4.2 deals with Managing Risk and §4.3 with HEMP (Hazards and Effects Management Process) and §4.6 (Chemicals Product Specific Risks) deals with the specific and unique risks posed by manufacturing chemicals as compared with refining crude oil. These MMS areas in conjunction with supporting HSSE processes (contained in the HSSE & SP Control Framework document) sufficiently meet Responsible Care code implementation expectations.

However, although the company has met its commitment for analyzing and documenting its process safety status using CIAC's "PSM PS Site Assessment Tool" changes in personnel since the last verification required revisiting the previous report to determine this status.

There is an improvement opportunity to understand and maintain the company's process safety status as outlined in the CIAC PSM PS Site Assessment Tool.

c. Emergency Management

The company's MMS (§ 6.6 Contingency and Emergency Planning) sets out requirements for manufacturing emergency response planning and the HSSE&SP Control Framework's HSSE&SP Management System Manual, §5 Emergency Response, provides the detail for developing, implementing, integrating with local agencies and testing emergency response plans.

The programs and practices resulting from the requirements under the MMS and HSSE&SP Control Framework meet Responsible Care code implementation expectations for emergency management.

In Scotford the company is part of NRCAER and in Corunna part of the Sarnia CAER organization (including the emergency response arm, CVECO). Both organizations provide community mutual aid and communication services.

In Scotford the site maintains a crew of dedicated emergency responders, four are full time and 16 are on shift. They are trained to NFPA 1081 (Standard For Industrial Fire Brigade Member Professional Qualifications and NFPA 472 (Standard For Competence Of Responders To Hazardous Materials/Weapons Of Mass Destruction Incidents). The full time members of the group roll through the incident commander role and some are trained as a paramedic. There are also 160 ERT members trained on site, whose primary roles reside in operations, but are available to assist as required.

They conduct eight live drills per year with four being emergency operations center drills and every two years they conduct a live field exercise with NRCAER.

The company has a Crisis Management Plan as well as Business Continuity plans which are integrated with the site Emergency Management plans.

For rail and road the company maintains a Response Action Team (RAT). The core group consists of five members all trained to NFPA 472 and incident command. Additional team members are located in Corunna (2), Vancouver (2), Scotford (5), Montreal (2) and Toronto (1).

d. Malicious Intent

Not specifically covered.

e. Critical Infrastructure/Business Continuity

The company's MMS calls for contingency and emergency response procedures covering business continuity planning (§6.6 Contingency and Emergency Planning, DSM-0520001-ST Business Continuity Plans). The team learned that these were comprehensive and integrated with emergency response plans but was not able to investigate further.

f. Incident Reporting and Investigation

The company's MMS sets out specific requirements for these codes in §7.2 Incident Reporting and Review and in a separate standard DSM-0525001-ST Incident Reporting and Review.

Implementing these requirements sufficiently meets Responsible Care code expectations.

2.1.4 Environmental Protection

The company has a well defined environmental footprint that is monitored and publically reported globally on a regular basis. Its HSSE&SP Control Framework specifies that:

- greenhouse gas emissions will be managed for continuous improvement,
- measures to reduce ozone depleting substances will be in place,
- flaring will be reduced,
- soil and groundwater management plans will be in place,
- volatile organic compound (VOC) emissions will be reduced,
- SOx and NOx emissions will be monitored and controlled to satisfy internationally recognized standards,
- waste will continually be recycled, reused or reduced and
- water use will be reduced to as low as reasonably practicable.

In addition, it is also specified that major installations will certify to environmental management standards and as a result in Scotford and Corunna ISO 14001 is in place.

a. Emissions and Waste Reduction

In Scotford the team was shown a loss of primary containment (LOPC) process that demonstrated good fundamentals in reporting, internal accountability and analysis to root cause if necessary. Similarly, in Corunna, a comprehensive LOPC management is in place and was reviewed by the team.

b. Handling, Treatment and Disposal of Wastes

In Corunna the team was made aware that there are historical wastes from previous site owners and that there are some disposal wells last used roughly 30 years ago. The site has recently upgraded the frequency of monitoring done by a contractor from biannual to annual.

The Corunna site has a successful practice by which potential waste material is always determined to be of no other use on site before being declared a waste and sent off site for disposal.

Hazardous waste disposal contractors are approved every five years and are used in those cases where materials are declared a waste if they cannot be handled on-site within one year of being collected.

As part of housekeeping and visible leadership efforts, there are also routine “waste walk” providing a focussed look at what waste is being collected on site.

2.1.5 Resource Conservation

The company is in the energy business and for the past 80 years has had a chemicals division to produce and market chemicals derived from the products of the refinery process. This area is strongly directed by the parent company and local programs related directly to these codes of practice are minimal

Nevertheless, the refinery and extraction side of the company is responding to the ever increasing demand for energy by:

- producing cleaner energy (the mix of natural gas to oil is almost equal and it is actively pursuing the development of biofuels),
- removing carbon dioxide from production (the Quest carbon capture and storage (CCS) project in Alberta will potentially remove one million tonnes of CO₂ a year and projects related to reducing flaring and improving energy efficiency at production facilities will also reduce CO₂),
- being actively involved with partners to better understand the interlink between energy, water and food.

Three areas where the chemicals business is contributing are:

- reducing the energy intensity of manufacture (globally at its third lowest level, but recently rising),
- reducing fresh water withdrawal and
- reducing operational spills.

There are global metrics in place for these parameters and contributions are expected from all operations.

This being said the team is of the opinion that the codes in this area should be actively managed by the Responsible Care Steering Team. There is an improvement opportunity in the Management System section of this report where this is used as a supportive example.

The team was shown one small project where employee involvement significantly contributed to resource conservation.

The team views as a successful practice the project In Corunna where employees questioning the use of adding propane in the production of isopropyl alcohol led to its removal clearly demonstrating how individual employees can contribute to resource conservation.

2.1.6 Promotion of Responsible Care by Name

Refer to the Plan section of this report for comments and suggestions on this area.

2.2 Team Observations Concerning Stewardship Code

2.2.1 Expectations of Companies

a. Research and Development (R&D) Expectations (85-92)

The R&D area was not specifically covered in the verification.

b. Expectations Beyond R&D (93-114)

The company participated in the development of CIAC's Product Stewardship guide and has completed their self-assessment using the tool created by the team. With CIAC, they are working on a guidance document for auditing Product Stewardship compliance

The company's HSSE&SP Control Framework's Product Stewardship Manual is the primary reference document for the codes in this area.

Management of Change (MOC) is typically applied in a manufacturing environment. The company in Canada has successfully migrated the requirement and enabling tools to the commercial area which, in the team's opinion, is a successful practice.

c. Raw materials, Products and Services Characterization and Evaluation (93-99)

The company's Product Stewardship manual specifies that required activities apply to finished products, intermediate products and raw materials. Functional support for most activities in this area is out of Houston and within the HSE, logistics and customer support area.

The company has an effective management of change process for new raw materials. It also has a process in place to evaluate new product EH&S information and data, resulting recently in the substitution of a raw material for a less hazardous one.

Shell is active on ACC and CEFIC product specific panels which conduct product environmental and health studies and product advocacy.

d. Promotion of Responsible Care by Name (100-102)

Promotion of Responsible Care by Name related to 'Expectations of Companies Beyond R&D' was not specifically covered in the verification.

e. Security (103)

The Professional Driver Safety manual of the HSSE&SP Control Framework requires a Journey Management Plan (JMP) where a security assessment of local risk assessment identifies a need. In addition, security components are present in carrier requirements and through routine rail car inspections as well as working with rail carriers. The company's sales/marketing HSSE focal point is tied into the global security network and is the point person for joint venture and contracted sites.

f. Communication Through Value Chain (104-110)

The company utilizes the expected range of processes to communicate to the various entities along the value chain. MSDS (Material Safety Data Sheets) are available on-line as well as is an excellent document summarizing the information contained in a MSDS. These Product Stewardship Summaries are available for all of the company's products.

The parent company's web site is an excellent example of spanning the breath of information from that of a global perspective down to local manufacturing specific information (e.g. approved motor carriers for Canada).

g. Historical Hazardous Waste Practices (111-114)

There are no legacy sites in Canada.

2.2.2 Expectations with Respect to Other Parties

Code requirements for this section are fulfilled via the company's "Category Management and Contracting Process" and the "Contractor HSSE Management" section of the HSSE&SP Control Framework. The former deals with defining and justifying the need and subsequent contractor selection and the latter with HSSE requirements after the contract has been awarded. These two processes cover most contracted services.

CIAC has recognized the importance of being able to interact with short haul rail carriers and has established a focus area for the Rail Committee of the National TransCAER committee. The team encourages the company to participate.

There is an improvement opportunity to work with CIAC membership in the Rail Committee of the National TransCAER Committee to work through the issue of short haul carrier assessments (and to act on any recommendations).

2.3 Team Observations Concerning Accountability Code

2.3.1 Operating Site Communities

The company has a Social Performance Manual as part of its HSSE&SP Control Framework. Much of what the team expected (relating to the codes) in the Operating Site Communities section is contained in the manual but the team is of the opinion that the various parts fall short when related to the overall intent of the codes as shown in the examples below:

- up front communication to the community, Responsible Care visibility and transparency is weak
- there are excellent data gathering tools and excellent programs, but they seem to miss the mark and a revisit of the definition of community might help
- near neighbours do not all know what shelter in place is and it is the company's responsibility to ensure that they know
- management system for operating site communities related to Canadian Responsible Care is not well known and the selection process for the verifications local community rep was not handled well

There is an improvement opportunity to enhance the Community Dialogue management system to better reflect the intention of the codes of practice for this area. In Fort Saskatchewan, it would be advantageous for the company to observe the processes used by peer companies to contrast and compare the systems they use and perhaps work together towards implementation of a joint effort (similar to Sarnia).

The company's goal of "Can't hear us, see us or smell us" encompasses both chemical and refinery processes in terms of information disseminated to the community.

In Corunna, the company relies on the SLEA (Sarnia Lambton Environmental Association) stakeholder list for notification of incidents. As well, they maintain a media and elected officials list, some of which overlap the SLEA list. Reviews and updates are maintained by SLEA. Aamjiwnaang Facebook page is used to give more specific information about the nature of any chemical releases to the local first nation's community. My Community Notification Network (MyCNN) is a new tool which allows the company to record a message that can be accessed by the community.

The communication plan is well understood by the communication function. However, there is a gap between the Process Safety "Safeguarding Department" which owns and maintains the worst case scenarios and the communication department. The company was unable to produce the impingement circles for either the chemicals or refinery plants. The team was shown the community stakeholder map; however, the target areas are based on feedback and past interest and not on scientific information from worst case scenario impact areas.

It is a finding requiring action that the company has not communicated "all hazards and associated risks, up to and including worst case scenarios" to its community (AC133). Guidance is available from the CIAC in its "Guidelines for Site Acute Risk Communication" document.

The Social Performance Manual requires that the company establish an "Indigenous People Plan" in locations where First Nations people may be impacted and in the Sarnia area Aamjiwnaang First Nations is located adjacent to Shell property.

During the team's discussion with a group of neighbours, issues related to a lack of prompt notification of emergency incidents, noise from audible alarms, road closures by the OPP and increases in local traffic during shift changes were identified as local community concerns

To address these concerns within a cultural context and unique needs, Shell hosted a Cultural Awareness Workshop with Shell workers and Aamjiwnaang First Nations staff. This approach was well

received by the both the company and the community. Building on current initiatives the company has recently created a Senior Aboriginal Consultation Specialist position.

Shell's initiatives to work with Aamjiwnaang First Nations is a successful practice. One issue being actively pursued is that there needs to be a more proactive approach to employment opportunities for qualified First Nations residents.

The company's initiative to make presentations to Kettle & Stony Point, Walpole and Aamjiwnaang First Nations to review criteria for employment within the company is a work in progress. This is encouraging and consideration should be given to expand to colleges and the Sarnia Industry Education Co-operative which issues certification of contractors.

2.3.2 Other Stakeholders

1. Public Policy

The company's executive contact is on the CIAC board as well as the executive committee and the company is very active in Alberta where feedstock and worker availability are issues of concern.

2. Finance

This area was not specifically covered during the verification.

3. Consumers

The parent company uses an innovative approach to get feedback from filling station customers wherein the company provides the opportunity for customers to fill out a ballot to vote on various initiatives while filling up.

4. Transportation Corridor

The company is very active in TransCAER activities and endeavours to host one transportation event a year. Two activities in this area warrant special notice:

- The use of the company's Hazards and Effects Management Process (HEMP) to conduct risk assessments for all transported chemicals and transportation corridors is a successful practice.
- The company's involvement in getting the Canadian Association of Petroleum Producers (CAPP) to participate in TransCAER and in getting the Canadian Fuels Association to take a look at TransCAER is a successful practice.

5. General Public

This area was not specifically covered during the verification.

6. Non-governmental Organizations

This area was not specifically covered during the verification.

7. Business

This area was not specifically covered during the verification.

3. Team Observations on the Company Management System

It is a requirement of Responsible Care that companies have a documented, self-healing management system or systems capable of identifying and responding to deficiencies and otherwise supporting continual improvement across all company business units, functions, and sites and as a framework for implementing the Responsible Care Commitments.

The verification team studied Shell Chemicals' management system(s) and compared and contrasted the attributes of that system(s) to those of a self-healing overall management system as discussed in the CIAC Management System Guide. The verification team's related observations to the company management system(s) are as follows:

The company's manufacturing operations are directed by the "Shell Downstream Manufacturing" (DSM) "Manufacturing Management System" (MMS). It sets out the required system components including the requirements contained within the DSM Health, Safety, Security, Environment and Social Performance (HSSE&SP) control framework. All components of the CIAC template management system are, to the limit of the team's investigation, present and functioning quite well and clearly meet the team's expectations for a documented management system. Opportunities related to improving the systems incorporation of Responsible Care are given below.

3.1 Observations on the PLAN Step

During the PLAN Step of the management system, the company decides what the goals of the company are and how they will be met. In determining those goals, it is expected the company will look inward, across its operations, but will also look outward, considering the expectations of: stakeholders; regulatory requirements; relevant CIAC Responsible Care Commitments and supporting tools; and other industry benchmarks.

In considering the PLAN Step of Shell Chemicals' management system, the verification team observed the following:

This management system has been under revision and is quite new to the company with organizational restructuring being an on-going activity for the past several years. One consequence of this has been new people with new roles and a particularly steep learning curve for employees given additional responsibilities for Responsible Care. The team observed that some site Responsible Care code owners do not have, or are losing their understanding of the codes and their requirements. For example:

- the sites are responsible for the selection of the local community representative for the verification and this did not go smoothly in both Scotford and Corunna,
- the team referred to past verification reports (rather than responsible personnel) to determine that the PSM site self-assessments had been done and were up to date and
- Interviews with some code owners revealed little understanding of the underlying code 'drivers'.

The company's MMS requirement that "The Chemicals Manufacturing location within DSM shall comply with the requirements of Responsible Care" requires a level of understanding about the codes that, in this team's opinion, is weakening.

Taking this into consideration the team suggests the company shore up its Responsible Care structure to address the company's current organizational structure and resource realities. This is especially important given that the bulk of the Responsible Care codes fall within the manufacturing organization (managed by the refinery side) and the remaining codes (Product Stewardship) are the responsibility of the Responsible Care coordinator, resident in the commercial side. It is the team's opinion that a much stronger Steering Team would provide the direction and overlap to achieve all implementation expectations.

There is an improvement opportunity to revamp the Responsible Care Steering Team from the perspective of creating a more self-directed team able to deal with issues such as those identified in the verification (selection of the local community representative, loss of corporate memory related to Responsible Care topics and required understanding of code detail by responsible personnel).

The Steering Team should clearly understand its scope, responsibilities and accountabilities and such direction should be contained within a 'Terms of Reference' or 'Team Charter' document. The team believes the current team membership is good but responsibility (and accountability) for implementation of code requirements should be distributed. The team also recommends a senior-level team comprised of the signing executive and both plant general managers to which the Steering Team would report.

The Steering Team is ideally suited to set direction and manage code areas where there are possible synergies resulting from a team approach. One example is the Promotion of Responsible Care by Name which the team observes is not well managed by the company and has resulted in the finding presented below. The team has acknowledged the outstanding effort in getting the Canadian Association of Petroleum Producers involved in TransCAER as well as other efforts to interest the Canadian Fuels Association as a successful practice. However, this appears to be a one-off effort and in our short visit we observed several opportunities that were not being utilized. These related to on-site contractors in Scotford (laboratory, contract loaders and railcar repair technicians) where Responsible Care could easily be integrated into contracts, training and performance reviews. Also, the team discussed opportunities to use the Canadian Web presence for Responsible Care messaging.

In addition CIAC has prepared guidance for this area against which the Steering Team should assess the company.

These opportunities, along with other brain storming ideas, should stimulate discussion leading to goals and targets for a company directed approach to this area.

There is a finding requiring action that the company does not sufficiently promote Responsible Care by name to meet code implementation expectations.

Another example would be Resource Conservation where, even though there is parent company direction, a team approach could possibly identify local opportunities in line with CIAC direction in this area. At a minimum the team would be able to respond to future verifications about progress in this area.

There is an improvement opportunity to empower the Steering Team with responsibility for overall management and performance for certain code areas (Promotion of Responsible Care by Name and Resource Conservation as two examples).

The company's MMS clearly indicates that senior refinery management is responsible for implementing Responsible Care whenever a chemical manufacturing facility is associated with a refinery. Currently there are no direct references to Responsible Care in the Canadian facilities General Managers 'job descriptions'.

There is an improvement opportunity to formalize the accountability for Responsible Care into the Scotford and Corunna General Managers 'job description'.

The team feels this is important because not all future General Managers will necessarily be as well versed about Responsible Care as would be the case for employees currently at Scotford and Corunna who are potential candidates for senior management positions. Including Responsible Care in a job description helps to level set the requirement.

The team observed four outcomes from the planning step which deserve special mention:

- The visible leadership walks resulting in greater worker- management contact and support for company directions in health and safety is a successful practice.
- The company's plain language visual for the community (Can't see us, hear us, smell us) is a successful practice.
- The company's management approach (T-Team) to reducing silos is a successful practice.
- The company's simplified management approach to handling abnormal process conditions (3S – stabilize, slowdown, shutdown) is a successful practice.

3.2 Observations on the DO Step

During the Do Step in the management system, the company converts the decisions of the PLAN Step into action and ensures awareness and understanding by all involved. It is expected that the company will implement an organizational structure, assign responsibilities to appropriate personnel, supply sufficient training and resources to execute planned actions and develop and document standards, procedures and programs, as applicable.

In considering the DO Step of Shell Chemicals' management system, the verification team observed the following:

The company has broad and comprehensive requirements for all aspects of this step and meet Responsible Care implementation expectations. It is implementing a new document management system and the team suggests the following:

There is an improvement opportunity to include references to the underlying applicable Responsible Care code or code section in the 'References' or 'Requirement' portion of the document management system.

3.3 Observations on the CHECK Step

During the CHECK Step in the management system, actions carried out in the DO Step are assessed to determine if they are actually being carried out according to plan, and whether they are achieving the desired outcomes and delivering continual improvement. Here, the overall management system and components will be reviewed along with employee competences for assigned responsibilities, internal and external audits will be undertaken, incidents will be assessed to identify root causes, and performance measurement will be conducted and reviewed.

In considering the Check Step of Shell Chemicals' management system, the verification team observed the following:

The applied programs and processes clearly meet Responsible Care implementation expectations. However, in Corunna, the company relies on CAER and CVECO to verify the community's knowledge of risks and understanding of emergency preparedness. It is the team's opinion that this can lead to a sense of false security.

There is an improvement opportunity in Corunna to verify the efficacy of the CAER/CVECO system to determine the community's knowledge of risk and understanding of emergency preparedness.

3.4 Observations on the ACT Step

During the ACT Step in the management system, the company translates the results of the CHECK Step into corrective actions for improvement. This includes revisiting the PLAN Step to decide whether changes are needed to the company's stated goals or action plans, policies and procedures for achieving those goals. Considerations when examining the Act Step include whether and how: audit and review findings are responded to; performance is communicated internally and externally; employee and contractor performance is rewarded and corrected, etc.

In considering the Act Step of Shell Chemicals' management system, the verification team observed the following:

The applied programs and processes clearly meet Responsible Care implementation expectations.

4. Team Observations on the Responsible Care Ethic and Principles for Sustainability

Each CIAC member company is formally committed to the ethic of *“Doing the right thing, and being seen to do the right thing.”* This ethic, along with the principles for sustainability are expected to guide the company’s decision making and practices. In conducting the verification, the team is looking to understand how well the ethic is understood and adopted within the company, and the degree to which the principles inform the manner in which the company does its business.

The verification team carefully observed Shell Chemicals' decision making processes and actions and compared and contrasted the attributes of those with the attributes of a company guided by the Responsible care Ethic and Principles For Sustainability as discussed in the Responsible Care Commitments (Appendix E). The verification team’s related observations on the company’s application of the Responsible Care Ethic and Principles for Sustainability are as follows:

- *work for the improvement of people’s lives and the environment, while striving to do no harm;*
 - The company involves emergency response people from the community and includes them in its training.
 - Has a competent and available workforce
 - Has developed the True North forest – where 740 Ha have been put aside for natural reserve in Alberta
 - Has an on-going effort to reduce its environmental footprint
- *be accountable and responsive to the public, especially our local communities, who have the right to understand the risks and benefits of what we do;*
 - The company has significant involvement in TRANSCAER / TEAP III
 - Has met with the community in Sarnia in response to an incident – as a result developed a “Can’t see us, hear us or smell us” public commitment
 - Has a comprehensive emergency response capability
- *take preventative action to protect health and the environment ;*
 - Management system review,
 - TRANCAER,
 - HEMP,
 - learning from incidents,
 - audits blitz,
 - capital spending,
 - footprint reduction
- *innovate for safer products and processes that conserve resources and provide enhanced value;*
 - MOC for new raw materials, HSSE product matrix evaluation
 - 4D process for deliver technology work process
 - Process in place for on-going evaluation of raw material and substitute for safer ones (e.g. Dinitrophenyl butol – moved to a new less hazardous additive)
 - Work with ACC and CEFIC on product specific issues
 - LEAN project – removal of propane as an additive in the IPA process

- HEMP for process, transportation
- *engage with our business partners to ensure the stewardship and security of our products, services and raw materials throughout their life-cycles;*
 - CIAC,
 - ACC,
 - CEFIC,
 - TransCAER,
 - NRCAER,
 - Sarnia CAER, Bluewater CAP
 - Encouraging participation of CAPP and Canadian Fuels in TransCAER efforts by inviting them to meetings and events.
- *understand and meet expectations for social responsibility;*
 - local community philanthropic support
 - local aboriginal programs
 - Donate to the toxicological society of Canada
 - Participate and sponsor Chemistry day
 - Involved in post-secondary programs
 - Energy diet challenge with schools
 - Supporter of the Banff Center, aboriginal program.
- *work with all stakeholders for public policy and standards that enhance sustainability, act to advance legal requirements and meet or exceed their letter and spirit;*
 - involvement in BEGAT (CIAC),
 - NCIA (Fort Saskatchewan)
- *promote awareness of Responsible Care, and inspire others to commit to these principles.*
 - TransCAER,
 - inviting CAP and Canadian Fuels to events and meetings

5. Verification Team Conclusion

As a result of the examination conducted, and in consideration of the observations communicated within this report, the verification team is of the opinion that the Responsible Care Ethic and Principles for Sustainability are guiding company decisions and actions, and that a self-healing management system is in place to drive continual improvement. The team believes that the company is capable of responding to the Finding Requiring Actions identified during the verification.

The verification is complete and no further involvement is required by the verification team.

Company Response to Verification Team Report

On behalf of Shell Chemicals Canada Limited (SCCL) I have reviewed this verification report. The observations and conclusions contained in the report have been discussed with the verification team.

Shell Chemicals Canada Limited wishes to express its appreciation for the time, energy and commitment of the Responsible Care® Re-verification Team and for their review of our management systems and our performance in support of the RC ethic.

We welcome the observations that have been made as “Findings Requiring Action” and “Opportunities for Improvements”. We also appreciate the many positive comments the Re-verification Team shared with Shell Chemicals personnel while visiting each of the facilities and highlighted in the report as “Best Practices/Extra Miles”. We are grateful for the recognition provided to many of our employees. This positive approach will help reinforce our commitment to the Responsible Care® Ethic and Principles.

Shell Chemicals Canada Limited will communicate the results of the verification exercise with its CIAC peers at their next meeting, and will discuss the verification results with our international and national stakeholders, including those representing communities near our operating sites.

We will give consideration to the Improvement Opportunities identified by verification team and will assist the CIAC in communicating and sharing the identified Successful Practices to other CIAC members. Plans will be developed and implemented to respond to the Findings Requiring Action identified by the verification team. Our progress in implementing those plans will be discussed when preparing our Annual Statement of Re-Commitment to Responsible Care, and communicated to the verification team at the time of our next verification.

Scott Desilets
Vice President
Shell Chemicals Canada Limited
June 18, 2014

Interview Lists

A: Company Personnel Contacted During Verification Process

Name	Position	Location
Scott Desilets	Executive Contact- SCCL	Calgary
Mike Drumm	HSSE Lead – Canada	Calgary
Pierrette Kondas	RC Site Focal Point (past)	Scotford
Kelly Farfan	Product Stewardship Manager	Houston
Elizabeth Williams	Issues & Advocacy Manager – Product Stewardship	Calgary
Stephen Lloyd	Waste Supervisor	Scotford
Dominic Mammoliti	Senior Marketing Executive – SM NA	Toronto
John Allen	Rail Contracts Mgr. – NA	Houston
Frank Perez	Road Contracts Mgr. - NA	Houston
Achim Schempp	Scotford Manufacturing General Manager	Scotford
Bill McNally	Projects and Turnaround Manager	Scotford
Jean Albert	Projects and Construction Manager	Scotford
Peter Sundin	Construction Manager	Scotford
Moe Ouellet	Environment Excellence Focus	Scotford
Jill Sayers	Production Manager	Scotford
Yannis Faitakis	East Production Unit Manager	Scotford
Wayne Munsterman	Technology Manager	Scotford
Michael Sprague	Qualitay Assurance Manager	Scotford
Agnieszka Lis	QA Team Leader	Scotford
Christina Koning	South Production Unit Manager	Scotford
Gary Burkholder	Distribution Coordinator	Scotford
Tanya Gray	HSSE Manager	Scotford
Jeff Brock	Safety and Emergency Response Advisor	Scotford
Sandra Pollard	Process Safety Manager	Scotford
Bob Smith	Emergency Services	Scotford
Craig McCaskey	Safety Specialist Minor Projects	Scotford
Stephen Velthuizen	Communication Business Advisor	Scotford
Jessica Blackmore	Community Liaison Officer	Scotford
John Millholland	Safety Advisor/JH&SC Employee Rep/ former JH&SC Co-Chair	Corunna
Cody Bruin	Operator/JH&SC Employee Rep	Corunna
Bill Picard	Trainer/JH&SC Employee Co-Chair	Corunna
Trisha Hill	Corunna Production Unit Manager	Corunna
Brian Ysebaert	HSSE Manager	Corunna
Mike Wedemire	Production Specialist – Wastewater Treatment	Corunna
Mike Gardner	Environmental Specialist	Corunna
Ghulam Malik	Operations Support Engineer	Corunna
Geoff Clarke	ER Specialist	Corunna
Lee Simpson	Production Specialist	Corunna
Michele Harradence	General Manager	Corunna
Kristina Zimmer	Sr. Aboriginal Consultation Specialist	Corunna

B: External Stakeholders Contacted During Verification Process

Name	Company/ Organization/ Affiliation	Position	Location
Keith Purves	NRCAER	Member	Fort Saskatchewan
Wendy Marler	Local Neighbour		Fort Saskatchewan
Mel Marler	Local Neighbour		Fort Saskatchewan
Bonnie Plain	Aamjiwnaang First Nations	Resident	Sarnia
Marina Plain	Aamjiwnaang First Nations	Administration	Sarnia
Ada Lockridge	Aamjiwnaang First Nations	Resident	Sarnia
Elizabeth Plain	Aamjiwnaang First Nations	Resident	Sarnia
Sharilyn Johnston	Aamjiwnaang Environmental Committee	Chair	Sarnia
Ralph Butt	Bluewater CAP	Member	Sarnia
Liz McLaughlan	Bluewater CAP	Member	Sarnia



CHEMISTRY INDUSTRY ASSOCIATION OF CANADA

Suite 805, 350 Sparks Street

Ottawa (ON) K1R 7S8

T: 613 237-6215 F: 613 237-4061

www.canadianchemistry.ca