



RESPONSIBLE CARE[®] Verification Report

Canexus Corporation

November 18 - 20, 2014



Chemistry Industry
Association of Canada



Responsible Care[®]
Our commitment to sustainability.

Disclaimer

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EXECUTIVE SUMMARY

This report documents the observations and conclusions of the independent verification team tasked with conducting a Responsible Care Verification of Canexus Corporation (Canexus). The verification was undertaken on November 18th, 19th and 20th, 2014 during a team visit to the company's North Vancouver Chlor-Alkali production facility. The verification team also conducted interviews through tele/internet conferencing with company personnel at various with other company personnel at Canadian locations the team was unable to visit. This was the seventh Responsible Care verification completed for Canexus. The last verification was completed on February 9th, 2012.

While considering all aspects of the Responsible Care Commitments, the verification team conducted an in-depth examination of company aspects related to:

- Senior management change and evolution – How Canexus is protecting the RC system as corporate senior management changes and evolves;
- Learning experiences that Canexus has gone through from an RC point of view;
- Safety incidents

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. While no Findings Requiring Action were recorded during this verification, the team believes that the company is capable of responding to the identified Opportunities For Improvement - summarized below and discussed in detail in the report. The verification is complete and no further involvement is required by the verification team.

Signed: 

A.M. (Alec) Robertson
Verification Team Leader

Date: February 7th, 2015

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:

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SUMMARY OF VERIFICATION TEAM OBSERVATIONS

Findings Requiring Action

There were no Findings Requiring Action identified during this verification.

Works in Progress

1. Canexus is encouraged to fully implement the Layers of Protection Analysis (LOPA) process into their overall risk assessment process during 2015 as currently planned.
2. Continue through full implementation the development of a risk based assessment process for shortline railways while also considering barge movement routes.(Ref OP's 13 &14).
3. Canexus is encouraged to finalize and fully implement their plant performance management standard (PPM) and enhanced leading indicator process in 2015 as currently planned.
4. The verification team encourages Canexus to pursue through full implementation the Engineering Scorecard process across all engineering and technology functions at all sites.
5. The Nanaimo site's plan to, with their adjacent customer site, evaluate opportunities for projects which will potentially result in efficiency, safety and environmental improvements.
6. A project to replace the previous diaphragm cell caustic feed system at the North Vancouver site is in the implementation stage. The new membrane unit will reduce energy usage for this operation by approximately two thirds which equates to reducing the site's greenhouse gas emissions between 50 and 60%.
7. Canexus is encouraged to complete the internal assessment of their Responsible Care Audit process with the objective of having each audit involving "deep dives" of specific areas based on the prior identification of areas where the greatest continuous improvement opportunities exist.

Improvement Opportunities

1. Develop and implement a formal management process for contract laboratories, including a blind testing process, with the objective of ensuring that test results are scientifically accurate and that health and safety aspects are being appropriately addressed in work being performed (Ref OP 8-11).
2. Canexus is encouraged to continuously improve their emergency response exercise processes for scenarios extending beyond plant boundaries including traffic management exercises to isolate and protect potential impact areas during adverse environmental conditions at peak usage times of day.
3. While acknowledging the thoroughness of their contractor qualification process where contractors are assessed by their level of risk, Canexus is encouraged to continue to focus on improving contractor safety performance to achieve results consistent with that for company employees. For this company identified area of focus, the verification team also provided contact information for a CIAC member company with "successful practices" in contractor safety for consideration by Canexus.
4. There is an opportunity for improvement in the Occupational Health and Safety program by:
 - Addressing the causes for inconsistent worker representative participation in North Vancouver site JHSC meetings. This was also identified as an opportunity for improvement during the 2009 verification with subsequent corrective actions apparently not having successfully identified and/or resolved the root cause(s). The team suggests that the Health and Safety Committee continue to work together to clearly define representative roles and responsibilities. Periodic reviewing of roles and responsibilities and performance versus these would also be of value.
 - The development of a structured accident scene information gathering process with the objective of improving the quality of information input to the Taproot Incident Analysis system.
5. Continue to improve communications with local communities and encourage community representatives on Community Advisory Panels to be more proactive in defining, understanding and enacting both their collective and individual committee roles and responsibilities.

6. An opportunity for improvement exists by updating the “check” process for the updating of policies and procedures by establishing more frequent updates for critical policies and procedures, less frequent updates for less critical policies and procedures and with time “windows” being established and monitored for completing specific reviews.

Successful Practices

1. The overall stewardship of company products from production sites to customer locations as evidenced by-
 - Being ahead of regulatory requirements regarding rail car design and applications.
 - The comprehensiveness of the Canexus route risk, motor carrier and customer assessment processes.
 - The quality of the company’s product handling training program.
 - The company’s commitment and ability to respond to chlorine and chlorate incidents involving non company products.
 - Ongoing excellent support to the Chlorine Institute and CIAC’s TransCaer initiatives.
 - The management system in place for swap transactions made to ensure continuity of product supply to customers includes specific Responsible Care considerations.
2. The company’s leading edge cyber security management process.
3. Canexus Corporation’s continued commitment towards excellence in all Operations Code areas as evidenced by the examples detailed in the various sub sections of the Operations Code (section 2.1) of this report.
4. The application of Responsible Care principles and codes in the design and construction of the new Bruderheim Trans-loading project and the expectation that the Responsible Care ethic, principles and expectations continue to be applied at this site.
5. Effectively working with outside resources to achieve common Responsible Care objectives. Examples include:
 - Working with a local roadwork contractor to develop and implement a means of recovering and reusing waste asphalt and related materials resulting from projects completed at the Canexus North Vancouver site.
 - Working collaboratively with another leading chemical shipper to develop and implement an assessment process for USA shortline railways.
 - Working with various TCP technology providers to define and implement state of the art TCP technology at Canexus facilities.
6. The company’s commitment to the sustainability of facilities and Responsible Care principles by the allocation of funds in their annual budgeting process to specific projects in each of the following areas:
 - Maintaining facilities
 - Business development
 - Continuous Improvement
 - Responsible Care/Social Responsibility

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 Canexus Corporation's 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 are committed to do the right thing, and be seen to do the right thing.

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, Canexus must, every three years, participate in an external verification intended to:

1. 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;
2. Identify opportunities for assisting the company when benchmarking its own practices and performance against those of its peers, thus supporting continual improvement;
3. Contribute to the credibility of Responsible Care amongst company personnel and stakeholders, as well as the stakeholders of the broader industry;
4. Identify successful company practices that can be promoted to peers in the CIAC membership; and
5. 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.canadianchemsitry.ca). Canexus 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 CIAC at glaurin@canadianchemistry.ca or (613)237-6215 extension 233.

1.2 About Canexus

Canexus Corporation is a Canadian company with corporate head offices located in Calgary, Alberta. With manufacturing facilities in Brandon Manitoba, North Vancouver British Columbia, Nanaimo British Columbia, Beauharnois Quebec and Espirito Santo Brazil, Canexus manufactures sodium chlorate and chlor-alkali products, primarily for the pulp and paper and water treatment industries. The company also performs crude-by-rail hydrocarbon trans-loading on a fee-for-service basis to the oil industry via their North American Transloading Operations (“NATO”) facility in Bruderheim, Alberta. This recently constructed and commissioned facility has been placed in operation in stages during the past year and was in the disposition process at the time of this verification. Canexus employs approximately 500 people worldwide, 75% of whom are based in Canada.

In addition to this verification as a CIAC member company, Canexus is also a member of the American Chemistry Council (ACC) and the Associacao-Brasileira-da-Industria-Quimic (ABIQUIM) which require Responsible Care® certification. For additional information on Canexus, visit their website at <http://canexus.ca>.

1.3 About This Verification

The verification of Canexus was conducted on November 18th, 19th and 20th, 2014 during a team visit to the company’s North Vancouver Chlor-Alkali production facility. The verification team also conducted interviews with other company personnel through tele/internet conferencing at Canadian locations the team was unable to visit and with external stakeholders in the North Vancouver area. During the course of the verification, the team had the opportunity to interact with a wide range of company personnel. Attachment 2 contains a list of those individuals interviewed and their affiliations.

This is the seventh verification exercise completed for Canexus. The last verification was completed on February 9th, 2012.

The verification team was comprised of the following individuals.

| Name | Affiliation | Representing |
|-----------------|---------------------------------------|--------------------------|
| Alec Robertson | CIAC Consultant | Team Leader |
| Rejeanne Cool | CIAC Consultant | Industry verifier |
| Brenda Lorenz | Public Representative/CIAC Consultant | Public-At-Large Verifier |
| Lisa Richardson | North Vancouver CAP | Community Representative |

2. TEAM OBSERVATIONS CONCERNING THE RESPONSIBLE CARE COMMITMENTS (CODES AND BENCHMARK AND COLLECTIVE EXPECTATIONS)

During the verification of Canexus Corporation, 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, the team placed an emphasis on conducting a more in-depth examination of certain company aspects identified by the company or the team related to:

- The impact on Responsible Care at Canexus from significant leadership changes since the previous verification.
- Learning experiences that Canexus has gone through from an RC point of view.
- Safety incidents.

Comments on these focus areas are contained in relevant code area element sections in this report.

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 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 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 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

Corporate project management processes at the time of the previous verification were recognized by the verification team as a "Successful Practice". The current verification team found that these processes continued to be effectively applied and enhanced in various aspects. Examples include:

- Formal training of identified production site personnel in areas relevant to their areas of involvement/responsibility.
- Governance process established for large projects.
- Improvements to project information and records systems.
- Engineering services supplier selection standard established.
- In house technical competencies strengthened through the hiring of technical expertise in defined areas.
- Engineering scorecard established to assess performance vs a comprehensive listing of metrics to identify areas for further improvement.

2.1.2 Operations Activities

During the 2012 verification, the comprehensive Management of Change (MOC) process, Transportation Management System and Independent Audit System were also recognized as being “Successful Practices.” As for section 2.1.1 of this report above, the 2014 team’s review verified that the effective systems for these areas remain in place. Various continuous improvements were noted in these and other code areas within this category. Examples include the establishment or upgrading of:

- Process control and electrical safety standards and procedures.
- Hazard Assessment (HAZOP) and Layers of Protection Analysis (LOPA) tools.
- Cell control and transformer asset management systems to proactively identify pending failures and decreasing system efficiencies.
- A formal Plant Performance Management standard with performance criteria to facilitate the identification of corrective actions to ensure safe, reliable and efficient operations.

Canexus assesses Canadian shortline railways using CIAC’s Canadian evaluation tool and, in concert with another leading chemical shipper, are in the process of modifying the Canadian tool for application in the **USA**.

Works in Progress:

- Canexus is encouraged to fully implement the Layers of Protection Analysis (LOPA) process into their overall risk assessment process during 2015 as currently planned.
- Continue through full implementation the development of a risk based assessment process for shortline railways while also considering barge movement routes.(Ref OP’s 13 &14)

Improvement Opportunity:

- Develop and implement a formal management process for contract laboratories, including a blind testing process, with the objective of ensuring that test results are scientifically accurate and that health and safety aspects are being appropriately addressed in work being performed (Ref OP 8-11)

Successful Practice:

The overall stewardship of company products from production sites to customer locations as evidenced by-

- Being ahead of regulatory requirements regarding rail car design and applications.
- The comprehensiveness of the Canexus route risk, motor carrier and customer assessment processes.
- The quality of the company’s product handling training program.
- The company’s commitment and ability to respond to chlorine and chlorate incidents involving non company products.
- Ongoing excellent support to the Chlorine Institute and CIAC’s TransCaer initiatives.
- The management system in place for swap transactions, made to ensure continuity of product supply to customers, includes specific Responsible Care considerations.

2.1.3 Safety and Security

Canexus has a comprehensive Health and Safety management program in place to provide employees, contract workers and other personnel with the necessary knowledge and tools to recognize potential safety, health and environmental hazards. A Mission Zero team has been in place since 2007 to support the Responsible Care Process. In 2014, using the past three years of safety incident data and the results of a 2012 internal Perception Survey, a benchmarking process was performed versus both the Dupont Safety Culture Survey and the Ontario Leading Indicator survey processes. Benchmarking results have been used to identify specific areas for improvement and to develop a comprehensive listing of leading indicators for 2015.

Occupational Health and Safety/Incident Reporting and Investigation:

Employee recordable injury (RI) rates have been reduced by approximately 60% over the past five years with Canexus employee RI rates for 2013 being approximately 25% below their CIAC Industry group average. Contractor injuries have presented a significant management challenge during major construction projects commissioned and started up during the past five years, primarily in North Vancouver and Bruderheim. While Canexus contractor RI rates were approximately 375% above their CIAC Industry Group average in 2013, this rate was 60% below their previous two year average. Specific areas for continuous improvement have been identified using the benchmarking process detailed above.

Process Safety:

During the 2012 verification, the newly revised Process Safety Management (PSM) system was recognized as a "Successful Practice". Subsequent continuous improvement examples in this area include:

- Process Safety Audit Program upgraded.
- Process alarm system improvements implemented at production sites which has reduced alarm frequencies and their contribution to process safety incidents.
- Established and filled a new Corporate Process Control Engineer position to provide centralized support to all sites and lead a newly established Process Safety Workgroup which includes representation from across Canexus.
- Cyber Security management system enhancements and upgrades included relevant Engineering Standards, external benchmarking processes, network management and logging systems and the system intrusion testing process.
- The North Vancouver site's emergency management process was enhanced by the addition of a real-time chlorine monitoring & plume dispersion modeling system.

Emergency Management:

Specific Emergency Response Plans are in place for all sites and exercises are carried out frequently. Site emergency preparedness activities are integrated with those of host communities and with other industrial neighbours where appropriate. As a follow up to an opportunity for improvement noted during the 2012 verification, all sites have evaluated the potential impact of external risks, have updated emergency response plans as appropriate and communicated this information to employees. Canexus continues to be a proactive participant in CIAC's Regional TransCAER Groups and play a leading role in having local TransCAER exercises carried out.

Canexus uses the CIAC Carrier Evaluation Tool to assess Canadian shortline rail carriers' emergency and safety management systems and processes.

The verification team noted that systems in place have resulted in continuously improving performance for several years versus various Safety and Health performance metrics and concluded that the Canexus management system for Safety and Security meets or exceeds code expectations with Improvement Opportunities having been identified as documented below.

Works in Progress:

- Canexus is encouraged to finalize and fully implement their plant performance management standard (PPM) and enhanced leading indicator process in 2015 as currently planned.
- The verification team encourages Canexus to pursue through full implementation the Engineering Scorecard process across all engineering and technology functions at all sites.

Improvement Opportunities:

- Canexus is encouraged to continuously improve their emergency response exercise processes for scenarios extending beyond plant boundaries including traffic management exercises to isolate and protect potential impact areas during adverse environmental conditions at peak usage times of day.
- While acknowledging the thoroughness of their contractor qualification process where contractors are assessed by their level of risk, Canexus is encouraged to continue to focus on improving contractor safety performance to achieve results consistent with that for company employees. For this company identified area of focus, the verification team also provided contact information for a CIAC member company with “successful practices” in contractor safety for consideration by Canexus.
- There is an opportunity for improvement in the Occupational Health and Safety program by:
 - Addressing the causes for inconsistent worker representative participation in North Vancouver site JHSC meetings. This was also identified as an opportunity for improvement during the 2009 verification with subsequent corrective actions apparently not having successfully identified and/or resolved the root cause(s). The team suggests that the Health and Safety Committee continue to work together to clearly define representative roles and responsibilities. Periodic reviewing of roles and responsibilities and performance versus these would also be of value.
 - The development of a structured accident scene information gathering process with the objective of improving the quality of information input to the Taproot Incident Analysis system.

Successful Practice:

- The company’s leading edge cyber security management process.

2.1.4 Environmental Protection

Canexus has a defined “Corporate Liability List” with their annual planning process including the identification of projects from this list to be implemented during the year. Examples of improvements implemented since the previous verification include-

North Vancouver site:

- Acid growth projects reduced the volumes of the chlorine liquid produced by more than 40% with an offsetting increase in the volumes of lower hazard hydrochloric acid.
- Four PCB contaminated transformers were disposed of in line with regulatory requirements. The site is now largely PCB free with only trace amounts found in two remaining transformers.
- By pro-actively seeking out an environmentally friendly and cost effective disposal process for over 1900 metric tonnes of contamination free waste asphalt and concrete, generated by the several projects implemented since 2009, this material was recycled and reused in a road improvement project.

Elsewhere:

- Greenhouse gas emissions at all sites are primarily from natural gas fired steam boilers and are based on gas consumption, which varies with production rates. By increasing the usage of waste hydrogen as a fuel, no other fuel sources are currently used for steam production at the Brandon site and waste hydrogen sales to an adjacent site have increased by 33% at Beauharnois, reducing their usage of other fuels.
- Improvement projects implemented at the Beauharnois site reduced salt emissions in wastewaters by 35% and reduced once through cooling water usage by 20%.
- Installation of a reverse osmosis water treatment system at Brandon has reduced the sludge waste generated at the site by over 50%.

The Company's continued commitment to environmental protection meets or exceeds CIAC code expectations in this area as evidenced by the inclusion of specific environmental improvement initiatives in their annual planning process, improvements made since the previous verification and the projects currently underway.

Works in Progress:

The Nanaimo site's plan to, with their adjacent customer site, evaluate opportunities for projects which will potentially result in efficiency, safety and environmental improvements.

2.1.5 Resource Conservation

See Section 2.1.4 above.

2.1.6 Promotion of Responsible Care by Name

The verification team found that employees interviewed had a good understanding as to how Responsible Care applied to their work. The Responsible Care® logo is included on manufacturing sight signage, promotional materials, business cards, and internal company documents. Documented business relationships contain references to the Responsible Care® commitments by both Canexus and their business partners. For example, credits are given to Responsible Care Partner companies in the Canexus motor carrier selection process.

Successful Practice:

- Canexus Corporation's continued commitment towards excellence in all Operations Code areas as evidenced by the examples detailed in the various sub sections of the Operations Code (section 2.1) of this report.

2.2 Team Observations Concerning Stewardship Code:

2.2.1 Expectations of Companies

Canexus has successfully developed and implemented significant technology upgrade projects in recent years, documented elsewhere in this report. Working collaboratively with technology suppliers, Canexus has ensured that R & D code expectations are met. Recently, a Research Allocation (RAT) Team has been established whose responsibilities include managing the stage gate process for process development.

The management process for implementing projects has also been improving as lessons learned from completed projects are incorporated into those that follow. A unique accomplishment of the Bruderheim transloading project is that it included significant safety and environmental facility upgrades from similar installations constructed elsewhere in Alberta. For example, the facility includes a vapour recovery system to capture and recycle hydrocarbons which are vented to atmosphere by other area transloading facilities. The technology upgrades over existing facilities have led Alberta Environment to use the Bruderheim site as a "benchmark" facility in determining requirements for the construction of future transloading facilities in the province.

Canexus experienced high worker injury rates during the construction, commissioning and startup of the Bruderheim facility. A significant contributor was the need to hire and train a large number of inexperienced workers when the availability of older, more experienced workers was very limited due to the myriad of other area projects being constructed and placed in service simultaneously. Canexus has captured various learnings from this experience.

Canexus products include well known high risk commodity chemicals. A thorough process exists to ensure that potential users are well aware of the handling risks. The company also has made a conscious effort to, through

technology improvements, reduce the production volumes of their highest risk chemical, chlorine, replacing it with lower risk options to usage areas.

As noted elsewhere in this report, Canexus experienced high worker injury rates during the construction, commissioning and startup of the Bruderheim facility. A significant contributor was the need to hire and train a large number of inexperienced workers when the availability of older, more experienced workers was very limited due to the myriad of other area projects being constructed and placed in service simultaneously. Canexus has captured various learnings from this experience.

Successful Practice:

- The application of Responsible Care principles and codes in the design and construction of the Bruderheim Trans-loading project and the Responsible Care ethic, principles and expectations continue to be applied at this site.

2.2.2 Expectations with Respect to Other Parties

Code expectations in this area have been addressed elsewhere in this report.

Based on our review, the team concluded that work processes and management systems in place meet or exceed the expectations of the stewardship code.

2.3 Team Observations Concerning Accountability Code

Canexus has a defined process for community engagement, documented in community standard F-4 to address Responsible Care requirements. Standard F-4 was updated to address the risk communication improvement opportunity identified in the previous verification report and the company has a proactive outreach process to ensure that appropriate dialogue processes exist with identified stakeholder groups at all locations. The company also proactively interacts with a wide variety of outside stakeholders including first responders, elected officials etc. through their TransCAER activities, industry associations etc. While it was concluded that Canexus meets CIAC's Accountability Code expectations, in the team's discussions with the North Vancouver Community Advisory Panel (CAP) members, it was agreed that their proactiveness in ensuring that the CAP effectively meets its mandate could be improved.

Improvement Opportunity:

- Continue to improve communications with local communities and encourage community representatives on Community Advisory Panels to be more proactive in defining, understanding and enacting both their collective and individual committee roles and responsibilities.

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 the Canexus management system and compared and contrasted the attributes of that system 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 are as follows:

BACKGROUND;

A Company requested focus area during the Canexus 2012 verification was their overall Responsible Care Management process in light of the significant changes implemented to address the various Findings Requiring Action and Opportunities for Improvement identified during their 2009 verification. Improvements implemented between these verifications resulted in the 2012 verification team identifying the Canexus Responsible Care Management System in place at that time as a “Successful Practice”.

CURRENT STATUS:

The 2014 verification team found that the solid Responsible Care Management System foundation in place during the 2012 verification not only remained in place but had been strengthened in various areas as a result of various continuous improvement initiatives implemented since that time.

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 Canexus management system, the verification team observed the following:

Annual Responsible Care targets and objectives are set based on inputs from internal results, external stakeholders and corporate objectives. Goals and objectives are communicated, resource requirements identified and performance results tied directly to both plant and personal objectives and bonuses. Drawing on examples in the areas examined, and from more general observations, the team is of the opinion that the company’s Plan Step is consistent with the considerations discussed in the CIAC Management System guide.

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 the Canexus management system, the verification team observed that responsibilities for the development and implementation of action plans to achieve established goals and objectives are delegated to specific leadership positions and that processes are established and implemented for their achievement. Resources are made available for ongoing training, audits, continuous improvement of management systems, emergency plan exercises, community involvement, capital upgrades etc. The team is of the opinion that the company’s Do step is consistent with the considerations discussed in the CIAC Management System Guide.

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 the Canexus management system, the verification team observed the following:

- Compliance with the relevant Responsible Care codes of practice is assured through integrated internal Responsible Care Audits, external audits, and on-going reviews of the organization's Responsible Care performance. In order to measure the effectiveness of our Responsible Care® programs and processes, Canexus has implemented an integrated audit approach for their facilities. As part of this process a team is created consisting of peer employees from across the company. Team members are chosen based on their related expertise and experience. This team of peers then audits and reviews various aspects of Canexus' Responsible Care® program elements, including safety, process safety, environmental practices, quality management, transportation practices, security, product stewardship, and community involvement as they are implemented at Canexus facilities. A full integrated audit of each facility is conducted at a minimum every 3 - 4 years on a rotating schedule. There are also assessments and audits of internal and external managements systems including contractors, transporters, customers, and terminal operators.

The verification team concluded that the "CHECK" step meets or exceeds CIAC's management system expectations.

Work in Progress:

- Canexus is encouraged to complete the internal assessment of their Responsible Care Audit process with the objective of having each audit involving "deep dives" of specific areas based on the prior identification of areas where the greatest continuous improvement opportunities exist.

Improvement Opportunity:

- An opportunity for improvement exists by updating the "check" process for the updating of policies and procedures by establishing more frequent updates for critical policies and procedures, less frequent updates for less critical policies and procedures and with time "windows" being established and monitored for completing specific reviews.

Successful Practice:

- Effectively working with outside resources to achieve common Responsible Care objectives. Examples include:
 - Working with a local roadwork contractor to develop and implement a means of recovering and reusing waste asphalt and related materials resulting from projects completed at the Canexus North Vancouver site.
 - Working collaboratively with another leading chemical shipper to develop and implement an assessment process for USA shortline railways.
 - Working with various TCP technology providers to define and implement state of the art TCP technology at Canexus facilities.

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 or corrected, etc.

The verification team observed that systems in place for the tracking and closure of identified system deficiencies, opportunities for improvement, action plans for continual improvement initiatives etc. were being

effectively utilized. An annual President's award and other on-going rewards are also in place to recognize and encourage commitment towards corporate objectives, including Responsible Care.

In considering the "ACT" step of the Canexus management system, the verification team observed that items from the "CHECK" step are tracked through completion using the systems in place and that the company's goals, policies etc. were being revised where warranted based on results achieved.

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 is 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 Canexus Corporation's 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:

Many aspects of Canexus Corporation's application of the Responsible Care ethic and commitment to sustainability are detailed in the variety and number of examples detailed throughout this report. The verification team is thus of the opinion that the Responsible Care Ethic and Principles for Sustainability are guiding company decisions and actions.

Successful Practice:

The company's commitment to the sustainability of facilities and Responsible Care principles by the allocation of funds in their annual budgeting process to specific projects in each of the following areas:

- Maintaining facilities
- Business development
- Continuous Improvement
- Responsible Care/Social Responsibility

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 range of Findings Requiring Action identified during the verification, as summarized in the Executive Summary and discussed in detail in the report. The verification is complete and no further involvement is required by the verification team.

ATTACHMENT 1

COMPANY RESPONSE TO VERIFICATION TEAM REPORT

On behalf of Canexus Corporation I have reviewed this verification report. The observations and conclusions contained in the report have been discussed with the verification team.

This was our 7th verification and I would like to thank the verification team for their thoughtful review of our management systems. We are proud of our representation of the Responsible Care ethic, and we appreciate the observations and suggestions made by the team to assist us in further improving them.

We were pleased to see that the team was able to identify six “successful practices” within our organization, and look forward to sharing them with other CIAC members to help them meet and further their Responsible Care commitments.

Canexus will communicate the results of the verification exercise with its CIAC peers at their next meeting, and will discuss the verification results with our 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. No findings were identified during the verification, however our progress in implementing the opportunities for improvement 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.

Jennifer Lewis
Manager Responsible Care and Quality
Canexus Corporation
March 9, 2015

ATTACHMENT 2

INTERVIEW LISTS

A: Company Personnel Contacted During Verification Process

| Name | Position | Location |
|------------------|---|---------------------|
| DOUG WONNACOTT | PRESIDENT & CEO | CALGARY, AB |
| ANDY LACARA | SENIOR VICE PRESIDENT MANUFACTURING | CALGARY, AB |
| JENNIFER LEWIS | MANAGER, RESPONSIBLE CARE & QUALITY | CALGARY, AB |
| DEAN NORMAN | DIRECTOR, TECHNOLOGY & ENGINEERING | CALGARY, AB |
| TOM JACKSON | DIRECTOR, SUPPLY CHAIN | NORTH VANCOUVER, BC |
| GINA JACKSON | MANAGER, CUSTOMER SERVICE | NORTH VANCOUVER, BC |
| ARNO VELTHUIJZEN | MANAGER, PROCUREMENT | CALGARY, AB |
| MARK LOGAN | TECHNICAL SERVICES MANAGER, CHLOR-ALKALA | NORTH VANCOUVER, BC |
| STEPHANE MESSIER | TECHNICAL SERVICES MANAGER, CHLORATE | BEAUHARNOIS, QC |
| SUZANNE PLEICE | SR. TRANSPORTATION SPECIALIST, TRUCK & MARINE | NORTH VANCOUVER, BC |
| KAREN KOZIKI | SR. TRANSPORTATION SPECIALIST, RAIL | NORTH VANCOUVER, BC |
| MARTY COVE | MANAGER, LOGISTICS | NORTH VANCOUVER, BC |
| BRIAN BOURGEOIS | SENIOR V.P., SALES & MARKETING | CALGARY, AB |
| GRAYDEN HACKETT | DAY OPERATIONS SUPERINTENDENT, EMERG. RESPONDER | NORTH VANCOUVER, BC |
| RICK DENTON | PLANT MANAGER | NORTH VANCOUVER, BC |
| TONY GUTENBERG | RESPONSIBLE CARE MGR. | NORTH VANCOUVER, BC |
| ROB SCHULTZ | OPERATIONS MANAGER | NORTH VANCOUVER, BC |
| OWEN HORN | PROJECT ENGINEER | NORTH VANCOUVER, BC |
| BRYAN PRICE | SR. PROCESS & PROCESS SAFETY ENGINEER | NORTH VANCOUVER, BC |
| JASON MAYO | SAFETY & TRAINING COORDINATOR | NORTH VANCOUVER, BC |
| JOSE LINS | MAINTENANCE MANAGER | NORTH VANCOUVER, BC |
| JILLIAN COOKE | QUALITY ENGINEER | NORTH VANCOUVER, BC |
| BRYAN RITCHEY | MANAGER, CORPORATE ENGINEERING | CALGARY, AB |
| CHRIS MOSER | MANAGER, TECHNOLOGY & PROCESS SUPPORT | CALGARY, AB |
| ROBERT BOWEN | MANAGER, AUTOMATION, CONTROL & ELECTRICAL | CALGARY, AB |
| TROY CARRICK | MANAGER, INDUSTRIAL INFORMATION SYSTEMS | CALGARY, AB |
| IAN KNIGHT | SR. MANAGER, I.T, INFRASTRUCTURE | CALGARY, AB |
| JAMIL HIRJI | SR. MANAGER, I.T. APPLICATIONS | CALGARY, AB |
| SYLVAIN PAGE | PLANT MANAGER | BEAUHARNOIS, QC |
| BRUCE MANZER | RESPONSIBLE CARE STAFF ADVISOR | BEAUHARNOIS, QC |
| ANNIE HINCE | PROCESS ENGINEER/QUALITY COORDINATOR | BEAUHARNOIS, QC |
| DALE BOSSONS | PLANT MANAGER | BRANDON, MB |
| DOUG PARKER | SAFETY & SECURITY COORDINATOR | BRANDON, MB |
| COLIN WELCH | ENVIRONMENTAL COORDINATOR | BRANDON, MB |

| | | |
|------------------|--|----------------|
| MURRAY BROWN | PLANT CHEMIST & QUALITY COORDINATOR | BRANDON, MB |
| MIKE SHEPARD | PLANT MANAGER | NANAIMO, BC |
| DAVE MCNULTY | SAFETY & MAINTENANCE COORDINATOR | NANAIMO, BC |
| JATINDER DAHRI | PROCESS ENGINEER/QUALITY COORDINATOR | NANAIMO, BC |
| RICK DANILKEWICH | TERMINAL MANAGER | BRUDERHEIM, AB |
| APRIL BOOKER | ENVIRONMENTAL, HEALTH & SAFETY MANAGER | BRUDERHEIM, AB |
| SAM CHANDRARATNE | ENVIRONMENTAL & QUALITY COORDINATOR | BRUDERHEIM, AB |

B: External Stakeholders

| Name | Company / Organization | Position | Location |
|------------------------|---------------------------------|--|---------------------|
| Doug Allan | District of North Vcr. | Local CAP Member | North Vancouver, BC |
| Patricia Banning-Lover | Wild Bird Trust | Local CAP Member | North Vancouver, BC |
| John Hunter | Seymour Community Association | Local CAP Member | North Vancouver, BC |
| Stuart Porter | Maplewood Community Association | Local CAP Member | North Vancouver, BC |
| Sharon Porter | Local Resident | Local CAP Member | North Vancouver, BC |
| Katie Gaydon | Local Resident | Local CAP Member | North Vancouver, BC |
| Dave Mair | Local Resident | Local CAP Member | North Vancouver, BC |
| Robin Lee | Univar Canada | Industrial Neighbour & Local CAP Sponsor | North Vancouver, BC |
| Helen Holt | Erco Worldwide | Industrial Neighbour & Local CAP Sponsor | North Vancouver, BC |



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