



RESPONSIBLE CARE[®] Verification Report

*Nexen Inc.
North America Gas & Tight Oil Division*

August 25 - 28, 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.

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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 Nexen Inc's North America Gas and Tight Oil (NAGTO) Division. The verification was carried out between September 25th and 28th, 2014 and included visits to the following locations:


- Nexen's corporate headquarters in Calgary and their previous natural gas process site in Balzac, Alberta, where remediation and restoration of the former plant site were in progress.
- NAGTO's regional office in Fort Nelson and Shale Gas operations sites in the South Laird and Dilly Creek areas of north eastern British Columbia.

In addition to interviewing both company and contract personnel at the above locations, the verification team also conducted interviews with external stakeholders from the Balzac/Calgary, Alberta, Fort Nelson B.C., and Fort Laird N.W.T. areas.

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:

- Process Safety Improvements.
- Environmental Protection, especially site restoration plans and activities.
- Community outreach and communications.
- Promotion of Responsible Care by name.
- Transportation.
- Expectations with respect to other parties.

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 Nexen's NAGTO Division decisions and actions, and that a self-healing management system is in place to drive continual improvement. The verification is complete and no further involvement is required by the verification team.

Signed: 
Alec Robertson
Verification Team Leader

Date: October 6, 2014

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 the verification.

Works in Progress

1. Development of a “Risk Registry” for the recording of identified operational hazards with feedback on control measures into related company standards (Ref OP 7).
2. Set up of an on-boarding process for contracted supervisors with respect to company standards and procedure awareness (Ref OP 25).
3. Fully implement the process of re-validating baseline Hazard and Operability Studies (HAZOP’s) which have been completed for company operations (Ref OP 28-30).
4. Implementation of an enhanced event recording and analysis (ERA) program intended to improve the quality and effectiveness of incident investigation and analysis (Ref OP 56-57).
5. Complete the updating of the NEBC Shale Gas Operation’s field visitor orientation process to include environmental requirements and Responsible Care by name.
6. Fully implement the currently planned locally delivered petroleum industry training program for youth in north east B.C. to enable them to become qualified candidates for petroleum industry positions without leaving the local area to receive this education.

Improvement Opportunities

1. Develop and implement a formal management process for contract laboratories 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. Develop and implement a Responsible Care awareness process for contractor employees.
3. Document the process used for the Responsible Care related selection and on-going performance monitoring of second party pipeline operators.
4. Seek out and expand opportunities to promote Responsible Care with external stakeholders - e.g. Synergy Alberta.

Successful Practices

1. Nexen’s NAGTO Division overall Health and Safety program which includes 12 Life Saving Rules based upon injury experiences throughout the oil and gas industry.
2. The overall concern for and actions taken to minimize impacts on wildlife and the environment. Noteworthy examples include –
 - A landscape ecological assessment and planning (LEAP) process which includes an Invasive and Pest Species Management Standard for drilling sites to ensure that Invasive and Pest Species are properly managed to minimize the introduction of invasive species to operational areas and that established invasive species on current sites are controlled or eradicated. LEAP also includes a soil management

process to ensure that surface soils removed during drilling site preparations are classified and segregated for use in remediating the site to its natural condition upon project closure.

- A wildlife sustainability process to protect Caribou and other wildlife from human activities and natural predators in drilling site areas.
- Enhancement of bear safety awareness and encounter mitigation practices in the light of a recent industry employee fatality in Alberta.
- Delaying the scheduled demolition of a tall incinerator stack at the Balzac site where peregrine falcons were nesting until the chicks were self sufficient and the family had abandoned the nest.

3. The company's focus on the effective use of resources is evidenced by the following examples-

- The use of deep sub surface hydrogen sulphide containing water from the Debolt Formation for use in fracking operations, considerably reducing the use of fresh water from surface sources.
- The Introduction of a polymer for drilling waste stabilization instead of sawdust, considerably reducing waste volumes to landfill sites.
- The use of clean burning natural gas from nearby Nexen producing wells as an engine fuel supplement for drilling operations to offset diesel fuel that must otherwise be transported and stored at safety & environmental risk.
- During the Balzac Plant site and Field well site demolition /remediation process, a focus on waste minimization resulted in best practices being identified and implemented to reduce the quantities of wastes generated versus normal practices of waste disposal as follows :
 - a. The utilization of a Vapour Phasing process involving steam and a biodegradable agent for the cleaning of vessels and pipes not only eliminated the handling of hazardous cleaning agents normally employed but also significantly reduced the volumes of contaminated liquids disposed of via deep well injection. This process also contributed significantly towards 90% of all metals from the plant and field demolition process being recycled versus the 70 % average for comparable projects.
 - b. By developing and implementing effective on site recovery processes and seeking out recyclers etc. with the capability to handle these waste products, 300,000 liters of contaminated glycol was recovered and reclaimed from field equipment and 52,000 tonnes of soil contaminated sulphur was salvaged and the sulphur reclaimed.

4. The widespread understanding and acceptance of the Responsible Care ethic and values (buy in) by NAGTO Division personnel.

5. The overall community engagement process applied throughout Nexen's NAGTO operations.

6. The documented Responsible Care Management System which clearly defines the plan-do-check-act continual improvement process and links to the Responsible Care Codes of Practice, all supported by specific standards and procedures.

7. The Responsible Care Management System presentation package which describes the process and how to use it, rolled out to all levels within the organization.

1. INTRODUCTION

1.1 About Responsible Care Verification

As a Responsible Care Partner member of the Chemistry Industry Association of Canada (CIAC), the most senior executive responsible for Nexen Inc.'s North America Gas & Tight Oil Division 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, Nexen Inc.'s North America Gas & Tight Oil Division 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.canadianchemistry.ca). Nexen Inc.’s North America Gas & Tight Oil Division 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 Nexen Inc.’s North America Gas & Tight Oil (NAGTO) Division

Nexen is a Canadian based upstream oil and gas company developing energy resources in the UK North Sea, offshore West Africa, the United States and Western Canada. A wholly-owned subsidiary of China based CNOOC Limited, Nexen has three principal businesses: conventional oil and gas, oil sands and shale gas. Until very recently, the NAGTO Division included conventional natural gas production operations in Alberta and Saskatchewan as well as coal bed methane production operations in north central Alberta and shale gas production operations in northeastern British Columbia. With all NAGTO assets except the shale gas operations in northeastern B. C. having been divested shortly before this verification, the numbers of divisional personnel were also changing with the total approximating 200 during the time of our visit.

More information on the company can be found on their corporate website www.nexencnoocld.com.

1.3 About This Verification

The scope of this verification included visits to Nexen’s:

- Calgary AB headquarters where NAGTO Management as well as both Corporate and NAGTO divisional personnel who provide support services to NAGTO’s field operations are based.
- The company owned Balzac (near Calgary) site where their former natural gas processing plant had been located. This facility was decommissioned and demolished since the previous verification in 2010 with site remediation work in progress during the time of this verification.
- Shale gas operations office in Fort Nelson and field operation sites in the South Laird and Dilly Creek Basin areas in northeastern B.C.

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. Appendix 2 contains a list of individuals interviewed and their affiliations.

This was the second verification exercise completed for Nexen’s NAGTO Division. The last verification was completed between October 4th and 8th, 2010.

The verification team was comprised of the following individuals.

Name	Affiliation	Representing
Alec Robertson	C.I.A.C.	<i>Industry verifier/Team Leader</i>
Dave Mack	C.I.A.C.	<i>Industry verifier</i>
Kris Lee	C.I.A.C.	<i>Public-At-Large Verifier</i>

Lois Habberfield	Balzac Area, AB Resident	<i>Community Representative</i>
Joanne Deneron	Fort Laird N.W.T Resident	<i>Fort Laird/Laird Basin Community Representative</i>
Scott Stephenson	Fort Nelson B.C. Resident	<i>Northern Rockies Regional Municipality Representative</i>

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

During the verification of NAGTO, 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:

- Process Safety Improvements.
- Environmental Protection, especially site restoration plans and activities.
- Community outreach and communications.
- Promotion of Responsible Care by name.
- Transportation.
- Expectations with respect to other parties.

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

1. **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.
2. **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.
3. **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.
4. **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 (OP 1-6)

Nexen and NAGTO have a comprehensive set of standards detailing requirements for the design and construction of facilities and equipment. Specific standards include:

- A Facility Siting Standard which defines the processes used to locate equipment and buildings, verify proper placement and assess the hazards associated with their location throughout their lifecycle.
- Hazard and Risk Assessment Standard which defines the requirements for hazard and risk assessments to consistently identify the associated risk of any given activity, situation or process.
- A Facility Engineering Design Standard which defines the Responsible Care and process safety management requirements for facilities engineering design.
- An Asset Integrity and Reliability Standard to provide assurance that Nexen's assets comply with local regulations and are effectively designed, constructed, operated and maintained within design limits and at acceptable risk for the entire asset lifecycle.

The verification team concluded that the Nexen/NAGTO management system for the design and construction of facilities met code expectations.

2.1.2 Operations Activities (OP 7- 30)

A comprehensive set of standards detailing requirements for the various aspects of how equipment and physical assets are used is in place including:

- A Process Safety Information standard which is intended to ensure that up-to-date and accurate process information required for the safe design, construction, operation, maintenance and decommissioning of site facilities is readily available to those requiring it.
- A Management of Change Standard which defines the management process for modifications to facility design, equipment, process technology, and personnel/organizational changes that impact Process Safety as well as Health , Safety , Environment, Social Responsibility, Responsible Care expectations or the Integrity Management System for pressure equipment/pipelines.
- A Safe Operating Envelope Standard which defines the requirements for defining, implementing and maintaining the safe operating envelope for a facility.
- The Hazard and Risk Assessment Standard as detailed in section 2.1.1 above.
- Product and Route Assessment and Product Carrier Standards which define the minimum requirements for product carriers by road, rail and pipeline.
- A Critical Control/Protection By-pass or Inhibition Standard which defines the minimum requirements to ensure a system exists to identify, evaluate the risk of and communicate changes associated with bypass /impairment of safety/business critical equipment and associated systems.

The verification team concluded that management systems in place meet or exceed code expectations in this area with the exceptions detailed below.

Work in Progress:

- Development of a "Risk Registry" for the recording of identified operational hazards with feedback on control measures into related company standards (Ref OP 7).

Improvement Opportunity:

- Develop and implement a formal management process for contract laboratories 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)

2.1.3 Safety and Security (OP 22-57)

Nexen/NAGTO has Health and Safety Standards in place to provide employees and all other involved personnel with the necessary knowledge and tools to recognize potential safety, health and environmental hazards. These include a Hazard and Risk Assessment Standard and a Work Permit Standard to ensure that potential hazards for work being performed are identified and mitigated, an Equipment Isolation and Securement Standard, a Personal Protective Equipment Standard and a Working Alone Standard to protect those performing work, a Contractor Management Standard defining minimum requirements for contractor selection, safe work and performance reviews etc.

Process Safety Standards as detailed in section 2.1.2 above define processes to prevent unwanted releases of hazardous substances or energy that could expose employees and others to risks.

Emergency Response Standards include specific Site Emergency Response Plans for all sites. NAGTO are also proactive participants in CIAC's Prairie Regional TransCAER Group and are playing a lead role in having a local TransCAER exercise carried out in the 2014 fall season. A Security Standard is also in place to provide protection against hostile and criminal acts.

NAGTO's Incident Investigation & Reporting Standard includes an Incident Stewardship Chart defining responsibilities for the reporting, investigation and analysis of accidents, incidents and near misses. A database management system is in place to track identified corrective actions through to completion.

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 Nexen/NAGTO management system for Safety and Security meets or exceeds code expectations.

Works in Progress:

- Set up of an on-boarding process for contracted supervisors with respect to company standards and procedure awareness (Ref OP 25).
- Fully implement the process of re-validating baseline Hazard and Operability Studies (HAZOP's) which have been completed for company operations (Ref OP 28-30).
- Implementation of an enhanced event recording and analysis (ERA) program intended to improve the quality and effectiveness of incident investigation and analysis (Ref OP 56-57).

Successful Practice:

- Nexen's NAGTO Division overall Health and Safety program which includes 12 Life Saving Rules based upon injury experiences throughout the oil and gas industry.

2.1.4 Environmental Protection (OP 58-75)

Nexen's NAGTO Aspects and Impacts Standard defines the process for identifying, assessing, controlling, communicating and maintaining environmental Aspects and Impacts.

The verification team concluded that the comprehensive and effective processes in place for environmental protection meet or exceed the relevant expectations contained in the Responsible Care Commitments (codes and benchmark and collective expectations) for this area as evidenced by the examples below.

Successful Practice:

The overall concern for and actions taken to minimize impacts on wildlife and the environment. Noteworthy examples include -

- A landscape ecological assessment and planning (LEAP) process which includes an Invasive and Pest Species Management Standard for drilling sites to ensure that Invasive and Pest Species are properly

managed to minimize the introduction of invasive species to operational areas and that established invasive species on current sites are controlled or eradicated. LEAP also includes a soil management process to ensure that surface soils removed during drilling site preparations are classified and segregated for use in remediating the site to its natural condition upon project closure.

- A wildlife sustainability process to protect Caribou and other wildlife from human activities and natural predators in drilling site areas.
- Enhancement of bear safety awareness and encounter mitigation practices in the light of a recent industry employee fatality in Alberta.
- Delaying the scheduled demolition of a tall incinerator stack at the Balzac site where peregrine falcons were nesting until the chicks were self sufficient and the family had abandoned the nest.

2.1.5 Resource Conservation (OP 76-80)

Company expectations in this regard are defined in various applicable Standards including Water, Air Emissions, Soil, Species, Waste Management Standards, a Sustainability and Assurance Standard etc.

The verification team concluded that the processes in place for resource conservation are appropriate for this code area as evidenced by the examples below.

Successful Practice:

The company's focus on the effective use of resources is evidenced by the following examples-

- The use of deep sub surface hydrogen sulphide containing water from the Debolt Formation for use in fracking operations, considerably reducing the use of fresh water from surface sources.
- The Introduction of a polymer for drilling waste stabilization instead of sawdust, considerably reducing waste volumes to landfill sites.
- The use of clean burning natural gas from nearby Nexen producing wells as an engine fuel supplement for drilling operations to offset diesel fuel that must otherwise be transported and stored at safety & environmental risk.
- During the Balzac Plant site and Field well site demolition /remediation process, a focus on waste minimization resulted in best practices being identified and implemented to reduce the quantities of wastes generated versus normal practices of waste disposal as follows :
 - o The utilization of a Vapour Phasing process involving steam and a biodegradable agent for the cleaning of vessels and pipes not only eliminated the handling of hazardous cleaning agents normally employed but also significantly reduced the volumes of contaminated liquids disposed of via deep well injection. This process also contributed significantly towards 90% of all metals from the plant and field demolition process being recycled versus the 70 % average for comparable projects.
 - o By developing and implementing effective on site recovery processes and seeking out recyclers etc. with the capability to handle these waste products, 300,000 liters of contaminated glycol was recovered and reclaimed from field equipment and 52,000 tonnes of soil contaminated sulphur was salvaged and the sulphur reclaimed.

2.1.6 Promotion of Responsible Care by Name (OP 81-84)

Responsible Care was found to be actively promoted in areas where the company operates as well as to other Nexen personnel by NAGTO Division employees. All employees receive extensive formal Responsible Care training. Through interviews and informal discussions with employees across the organization a good understanding of the Responsible Care was evident. Field employees were able to articulate how the ethic in some way related to their day to day work activities. As a example of commitment to the Responsible Care ethic, it was reported that, prior to the divestment of operational assets in the Medicine Hat, AB region, local employees asked for and had obtained management approval to set up and operate a Responsible Care booth at the Medicine Hat Petroleum Show.

The team is of the opinion that the company meets or exceeds the relevant expectations contained in the Responsible Care Commitments with regard to the promotion of Responsible Care.

Work in Progress:

- Complete the updating of the NEBC Shale Gas Operation’s field visitor orientation process to include environmental requirements and Responsible Care by name.

Successful Practice:

- The widespread understanding and acceptance of the Responsible Care ethic and values (buy in) by NAGTO Division personnel.

Improvement Opportunity:

- Develop and implement a Responsible Care awareness process for contractor employees.

2.2 Team Observations Concerning Stewardship Code

2.2.1 Expectations of Companies (ST 85-114)

With NAGTO’s operations primarily involving the extraction of natural gas and natural gas liquids from underground formations, their Research and Development activities are directed towards performing this work in the safest, most efficient and environmentally friendly manner possible. Examples of initiatives in this regard are detailed in previous sections of this report. In addition, the team noted, that for the north east B.C. extraction and processing site visited, facilities in place included elements to minimize the potential for environmental releases to both the ground and atmosphere while also minimizing the risk exposure for those working on site. Examples include vapour recovery units and the use of solar panels for field area lighting systems. There are no historical waste sites for operations in north east B.C. and all waste products being generated are disposed of at Government approved landfill sites. The verification team concluded that the company meets or exceeds the relevant expectations in this code area.

2.2.2 Expectations with Respect to Other Parties (ST 115-124)

Suppliers interviewed during our visit reported that NAGTO worked in concert with them to ensure safe and environmental friendly delivery of supplies and services and, unlike many other companies, worked with local services providers to finalize supply contracts with unique features which enabled them to competitively bid on contracts being placed. Motor carriers transporting drilling and other supplies to field locations are subject to a periodic assessment process and special provisions are made to minimize the potential for sites being contaminated by adverse environmental plant species being transported in.

The verification team concluded that the company’s processes in place are consistent with the relevant expectations in this code area with the following exception.

Improvement Opportunity:

- Document the process used for the Responsible Care related selection and on-going performance monitoring of second party pipeline operators.

2.3 Team Observations Concerning Accountability Code

2.3.1 Operating Site Communities (AC 125-136)

NAGTO’s standards include a Community Involvement Plan which defines both the internal and external requirements with respect to performance, compliance, education and training. Community involvement tools have been developed to support decisions and activities that relate to community involvement activities in each area. Minimum requirements are also defined for the compiling and distributing their “Community Matters” newsletter, the division’s method for project specific blanket communications with stakeholders.

Community involvement commitments and expectations include that, for each project area, an open and honest dialogue process is carried out in a cooperative manner in an effort to provide informed and transparent communication with Nexen's stakeholders.

Other elements of the program include a Community Research and Characterization Standard which defines the minimum requirements for ensuring that adequate and accurate information about the community is gathered in the initial phases of a project and an In House Training Standard which defines the minimum training requirements for all NAGTO staff whose responsibilities involve interaction with Nexen stakeholders and/or the media.

External stakeholders (Appendix 2B of this report) who participated in meetings with the verification team in Balzac and Fort Nelson were unanimously supportive of NAGTO's community dialogue process by providing both monetarily and "hands on" support to community projects and initiatives at both locations. Local business representatives also praised Nexen for "thinking outside the box" when awarding contracts as detailed elsewhere in this report. The only suggestion made for consideration by Nexen during these meetings was that they find a way for local youth in the north east BC area to receive training near their home base to make them qualified candidates for petroleum industry work in the area. This was subsequently discussed with NAGTO who shared that such an initiative was planned with implementation to begin in the near future.

The verification team concluded that the company meets or exceeds the relevant expectations in this code area.

Work in Progress:

- Fully implement the currently planned locally delivered petroleum industry training program for youth in north east B.C. to enable them to become qualified candidates for petroleum industry positions without leaving the local area to receive this education.

Successful Practice:

- The overall community engagement process applied throughout Nexen's NAGTO operations.

2.3.2 Other Stakeholders (AC 137-152)

The Community Involvement Standards discussed in section 2.3.1 above detail processes in place to ensure ongoing dialogue with the groups defined in this code area. Stakeholders contacted during the verification process were aware of Responsible Care and credited this to NAGTO being proactive in this regard.

The team's review of processes in place led to the conclusion that they generally meet code expectations in this area with the following improvement opportunity being identified.

Improvement Opportunity:

- Seek out and expand opportunities to promote Responsible Care with external stakeholders - e.g. Synergy Alberta.

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 Nexen's NAGTO Division 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:

As a subsidiary of Nexen, the International Code of Ethics for Canadian Business, and the Nexen ULC Corporate HSE&SR Policy and supporting management system provide direction to all divisions of Nexen, including NAGTO. This is augmented and supported by NAGTO Division specific management systems to ensure that the Responsible Care Ethic and C.I.A.C. Responsible Care Codes of Practice are imbedded. These provide direction and guidance to staff within the operating areas of NAGTO that reach beyond the current Nexen ULC Corporate HSE&SR management system.

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 Nexen's NAGTO Division's management system, the verification team observed that Divisional staff actively seek input from various stakeholder groups including employees, contractors, local neighbours, first responders and municipal leaders as well as from applicable regulations etc.

Drawing from 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.

Successful Practices:

- The documented Responsible Care Management System which clearly defines the plan-do-check-act continual improvement process and links to the Responsible Care Codes of Practice, all supported by specific standards and procedures.
- The Responsible Care Management System presentation package which describes the process and how to use it, rolled out to all levels within the organization.

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 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. As discussed in the "DO" step above, 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 Nexen's NAGTO Division management system, the verification team observed that a software application entitled "Performance Excellence & Action through Knowledge" (PEAK) is used to list and track goals and objectives. This application is used throughout Nexen so goals from Divisional staff are rolled up to Divisional management to ensure that goals are aligned and focused from top to bottom. Specific action items linked to PEAK are tracked in a Lotus Notes database. A root cause analysis process named APOLLO is currently in the implementation stage for incident/accident investigations as an upgrade of the process currently used. With APOLLO's tracking capabilities also being considered as an upgrade to Lotus Notes, a transition to this program for detailed item tracking is in progress. A program entitled "Skills Track" is used to ensure that critical procedures and standards are reviewed annually and others at three year intervals. The verification team concluded that the "CHECK" step meets or exceeds CIAC's management system expectations.

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.

In considering the Act Step of Nexen's NAGTO Division management system, the verification team observed that items from the Check step are tracked through completion using the systems in place described above.

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 Nexen's NAGTO Division 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 Nexen NAGTO Division'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.

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

COMPANY RESPONSE TO VERIFICATION TEAM REPORT

On behalf of Nexen – NAGTO Production Operations, I have reviewed this verification report. The observations and conclusions contained in the report have been discussed with the verification team.

Every verification we participate in becomes another milestone. When we (Nexen's Oil & Gas business) were first introduced to Responsible Care at the Balzac Gas Plant in 2000, we struggled to produce a simple, one page explanation about our Plan, Do, Check, Act management system (because we didn't have one!) and we knew little of what process safety management was. We operated in a silo from other parts of the Division.

When most people read this report, it may seem "business as usual". But, when my colleagues and I read through this report, it fills us with pride. With support from our RC Executive Contact, the CIAC and the CIAC verifiers over the years we have stuck with this "Responsible Care" and we have evolved. We now conduct our business within a functioning, effective management system. We are achieving "best ever" performance. We can talk candidly about "asset integrity". Even our newest employees can talk about the RC ethic. And we know we can "always do better".

Thanks to the industry verifiers Alec, Dave and Kris for their efforts in undertaking an extremely busy verification schedule of interviews, travel and tours through our businesses. I also want to thank our community verifiers Lois, Scott and Joanne; I think the most engaged and helpful group we have shared our Nexen world with to date.

We look forward to moving RC along and to our next verification milestone.

Nexen – NAGTO Production Operations 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. 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.

Brian McAusland
Manager, Responsible Care & Stewardship NAGTO HSE&SR/RC
Nexen Energy, ULC
October 2, 2014



INTERVIEW LISTS

A: Company Personnel Contacted During Verification Process

Name	Position	Location
Brian McAusland	Manager,-Responsible Care & Stewardship NAGTO-HSE & SR/RC	Calgary
Bob Cargill	Team Lead- Process Safety NAGTO Div. -HSE & SR/RC	Calgary
Shawn Williams	Contractor/Consultant- NAGTO HSE & SR/RC	Calgary
Chad Pickering	Contractor/Consultant- NAGTO HSE & SR/RC	Calgary
Peter Chemik	Program Manager-NEBC, NAGTO	Calgary
Blaine Sebry	GM-Canada Prod. Ops, Energy Marketing-Power-Balzac Station (RC Executive Contact)	Calgary
Melodi Pritchard	Corp. Manager-Sustainability Reporting, Social Responsibility	Calgary
Nadine Busmann	Corp. Manager-Stakeholder Engagement & Aboriginal Relations	Calgary
Dale Dechief	Project Manager-Shale Gas Ops, NAGTO Production Ops.	Calgary
Murray Schmidt	Sr. Staff Prod. Eng. Supervisor, NAGTO Production Ops.	Calgary
Scott Harrison	PSM/MOC Coordinator-Shale Gas, NAGTO Production Ops, Shale Gas Projects	Calgary
Dana Pettigrew	Sr. Staff Tech-Production, NAGTO Production Ops, Shale Gas Projects	Calgary
Sean Przy	Facilities Engineering Mgr., Technical Services	Calgary
Mark White	Sr. Engineer-Facilities Engineering Mgr., Technical Services	Calgary
Mark McCutcheon	Mgr., Automation & Controls, Technical Services	Calgary
Derek Brown	Manager-Process/Mech. Eng., Technical Services	Calgary
Patrick Dixon	Manager-Environment & Social Responsibility, NAGTO HSE & SR/RC	Calgary
Lyle Stang	Manager ,- Health, Safety & Emerg. Resp. NAGTO HSE & SR/RC	Calgary
Bruce Bunting	Coordinator, Assurance- NAGTO HSE & SR/RC	Calgary
Krystle Merkley	HS&ER Project Supv. -NEBC-NAGTO HSE & SR/RC	Calgary
Lynn McQueen	Emergency Response Coordinator- NAGTO HSE & SR/RC	Calgary
John Entz	Contractor/Consultant- NAGTO HSE & SR/RC	Calgary
Brent Jessiman	Director-HSE SR/RC, NAGTO HSE & SR/RC	Calgary
Kim Hilkewich	Mgr.-Plant Projects, Balzac A&R, NAGTO Balzac A&R	Balzac
Greg Denham	Mgr.-Abandonment & Reclamation, NAGTO Balzac A&R	Balzac
Dale D'Arcy	Contractor/Consultant- NAGTO Balzac A&R	Balzac
Elizabeth Oldfield	Senior Analyst-Social Responsibility-NAGTO HSE & SR/RC	Balzac
Claire Serdula	Environmental Engineer- NAGTO Balzac A&R	Balzac
Mike Ferris	Safety Contractor/Consultant- NAGTO Balzac A&R	Balzac
Todd Jorgensen-Nelson	Senior Coordinator-HSE&SR, NAGTO Balzac A&R	Balzac
Lawrence Tulissi	Contractor/Consultant- NAGTO Balzac A&R	Balzac
Brian Henne	A&R Project Planner, NAGTO Balzac A&R	Balzac
Michelle Paul	Business Assistant, NAGTO Balzac A&R	Balzac
Aaron Chaffey	Safety Coordinator-HSE&SR, NAGTO-Production Ops-Shale Gas	Fort Nelson
Dan Pawlachuk	Mtce. Foreman, NAGTO-Production Ops-Shale Gas	Fort Nelson

Tony Knuttila	Maintenance. Superintendent, NAGTO-Production Ops-Shale Gas	Fort Nelson
Brock Johnson	Manager-Production Ops, Shale Gas-NAGTO Production Ops-Shale Gas	Fort Nelson
Greg Hermon	Operations Superintendent, NAGTO Production Ops-Shale Gas	Fort Nelson, South Laird, Dilly Creek
Trevor Dorey	Environmental Coordinator, NAGTO HSE & SR/RC	Fort Nelson
Scott Harrison	PSM/MOC Coordinator, Shale Gas-NAGTO Production Ops-Shale Gas Project	Fort Nelson
Ron Bleakley	Contractor/Consultant- NAGTO HSE & SR/RC	Fort Nelson
Adam Judd	Mgr.-Integrated Project Delivery NEBC, NAGTO HSE & SR/RC	Calgary, Fort Nelson, South Laird, Dilly Creek
Dorron Goodbun	Contractor/Consultant- NAGTO HSE & SR/RC	South Laird

B: External Stakeholders Contacted During Verification Process

Name	Company / Organization	Position	Location
Dave Downs	Airdrie Modelers Aircraft Society	President	Balzac
Wayne Shuttleworth		Local Resident	Balzac
Terry-Lyn Martin	Martindale Community Association	President	Balzac Area
Chris Clark	Martindale Community Association	Vice President	Balzac Area
Greg Steiner	Saddleridge Community Association	Representative	Balzac Area
Paul Leong	City of Calgary	Sr. Technical Adviser	Calgary
Tim Wilson	Enmax Calgary Energy Centre	General Manager	Balzac site neighbor
Diane Wittner	Alberta Institute for Wildlife Conservation	President	Calgary
Joey Bleviss	Calgary Poppy Fund	Chief Admin Officer	Calgary
Cameron Allan	Qwest Helicopters	President	Fort Nelson
Laurie Dolan	Fort Nelson Hospital Foundation	President	Fort Nelson
Seanah Blair	Fort Nelson Community Literacy Society	Executive Director	Fort Nelson
Barney Dohm	ADK Holdings Ltd.	President & CEO	Fort Laird
Kim Eglinski	Fort Nelson Hospital Foundation		Fort Nelson
Todd Osborne	Stuwelk Energy Inc.		Fort Laird
Alex Fanni	ADK	Coordinator	Fort Laird
Sukhi Dhaliwal	Distribution Now-Supplier		Fort Nelson
Mark Misquitte	SAO		Fort Laird
Steve Kotchea	Acho Dene First Nation		Fort Laird



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