

Geophysical on-site service provider EH&S expectations

v 6.2 July 2012

Revision history

Revision	Author	Date revised	Comments
6.1	Geophysical Acquisition Services & Operational Safety Group	Nov 2011	Original
6.1	B. Anderson	Nov 2011	Formatted, edited
6.2	B. Anderson	Jul 2012	Edits from legal for external posting

Table of contents

Preface	1
Definitions	1
Prime Contractor.....	3
Project-specific <i>Safety Management Plan</i>	4
Geophysical business structure.....	4
Contractor requirements.....	5
<i>Master Service and Supply Agreement</i>	5
ISNetworld profile.....	5
Contract or service agreements.....	5
Incorporated company	5
Certificate of insurance	5
Workers compensation coverage	5
Industry recommended and best practices	5
Petroleum industry recommended practices	5
Canadian Association of Geophysical Contractors best practices	6
Encana policy on driver distraction.....	6
Hazard management	6
Pre-job hazard identification	6
Hazard knowledge sharing	6
First aid hazard assessment.....	6
Hazard maps	7
Purpose and utilization.....	7
Hazard map communication	7
Personal protective equipment.....	7
Encana geophysical <i>EH&S Daily Tracker</i>	8
Encana reporting	9
Incident reporting matrix	9
Incident reporting process.....	10
Subcontractor management	10
Basic safety programs.....	10
Machinery / equipment audit.....	11
General training certificates	11
Adequate supervision	11
Training requirements.....	11
Minimum training and competency requirements	12
Program orientation	13
Encana <i>General Safety Orientation for Contractors</i>	13
Site-specific orientation.....	13
Emergency response plans	14
Telephone contact procedures	14
Engaging the Encana Corporate ERP	15
Medical providers.....	15
Journey management.....	16
Hand cutting / falling	16
Subcontractor safety program.....	16
Ticket verification	17
Competency verification.....	17

Table of contents (continued)

Survey and mapping.....	17
Hazard map production standards.....	17
Geophysical marking scheme.....	18
Line locators / survey.....	18
Drilling.....	18
Ground disturbance.....	18
Encana <i>Ground Disturbance Orientation</i>	19
Industry-recognized supervisor level ground disturbance training	19
Encana <i>Ground Disturbance Supervisor Orientation</i>	19
Encana <i>Ground Disturbance Checklist</i>	19
Conducting the <i>Ground Disturbance Orientation</i>	20
Explosives.....	20
Inventory controls.....	20
Unexploded / misfired charges	21
Explosive incidents causing injury or damages	21
Camps	21
Joint worksite health & safety committees.....	21
Occupational health and safety legislation	22
Program signage	22
Crew office	22
Field signage.....	22
Wildlife reporting.....	22
Encana <i>Bear Management Practice</i>	23
Spill control and reporting.....	23
Program completion information submittal	24

Appendices

Appendix 1: Project-specific <i>Safety Management Plan</i> template.....	A-1
Appendix 2: <i>Geophysical Operations Inspection Form</i>	A-2
Appendix 3: <i>First Aid and Medical Services Practice</i>	A-3

Geophysical on-site service provider EH&S expectations

Preface

This document is intended for review by companies working for the Encana Canadian Division Geophysical Acquisition Group in the capacity of Seismic General Contractor (GC).

All persons working for the GC in a management or administrative role must be fully familiar with the expectations and processes outlined in this document. Subcontractors hired by the GC will be provided with a copy of this reference guide by the GC prior to field mobilization.

Any questions regarding the content of this document can be directed to the Encana Canadian Division Geophysical Acquisition Group email: ga@encana.com.

This reference guide is intended to enhance Encana's existing health and safety management system (Ethos). It is not intended to replace the existing health and safety program of the GC.

Should a discrepancy exist between the information presented herein and the requirements outlined in the provincial Occupational Health and Safety (OHS) legislation the regulatory requirements shall be observed as the minimum acceptable standard.

The most current version of this document is available publicly on the Encana website (www.encana.com) under **Do Business with Us, Contractor Connection, Expectations & Practices, Canada**.

Definitions

Term	Definition
Basic safety program (BSP)	A safety program such as the Certificate of Recognition (COR) or Small Employer Certificate of Recognition (SECOR) that is auditable and demonstrates management commitment to meeting or exceeding the regulatory requirements for protecting the safety of workers and the general public on their worksites.
Business unit (BU)	An Encana operating area (e.g., Fort Nelson).
Competent	A person is deemed competent when adequately qualified, suitably trained, sufficiently experienced and regularly assessed as able to safely complete a defined procedure or task.
Contractor	A company Encana has selected to perform a service. The individual performing the service is specified (e.g., site representatives or site supervisor) as acting as an agent for Encana.
Corporate emergency response plan (ERP)	Required by regulatory agencies to cover operations where a site-specific ERP is not required. Encana Corporate ERPs are also known as Divisional / Business Unit (BU) ERPs.
Encana EH&S site representative	Encana environment, health and safety (EH&S) specialist assigned to support Encana geophysical operations on a site-by-site basis.
Encana site representative / field representative	Representative for Encana's interest in geophysical operations on a site-by-site basis.
Field office	Location used by the GC for site management and administrative purposes.

Geophysical on-site service provider EH&S expectations

Term	Definition
General contractor (GC)	Contractor responsible for the execution of the project and managing health and safety on the project. Responsible for managing subcontractors, providing administrative and supervisory skills for the project and tracking and reporting project costs.
Health, safety and environmental (HSE) advisor	General Contractor (GC) or subcontractor health, safety, and environmental advisor.
Incident	An undesired or unplanned event or non-conformance that has resulted in, or could result in, personal harm, property damage, detrimental environmental impact or loss of production which could, or does, result in loss to people, property, process or environment.
Incident Management System (IMS)	Encana software system used to collect information on hazards, incidents, investigations and corrective actions for management review and trending analysis.
Industrial hygiene	The practice of anticipation, recognition, evaluation and control of workplace hazards, which may affect the short and long term health of workers.
Journey management	Actions taken to authorize a journey management plan (consisting of opening and closing journeys, monitoring, and check ins until final destination is reached safely) by mitigating all potential risks to people, assets, and environmental conditions.
Master Service and Supply Agreement (MSSA)	One type of legal agreement used by Encana to engage contractors. Used in conjunction with a service order specifying the type of work and associated costs.
Medic Desk	The Encana Medic Desk is responsible for setting the medical care standards and for pre-qualifying all medical service contractors for Encana.
Medical provider	An on-site service provider responsible for providing equipment and competently trained personnel that meets or exceeds Encana's medical care standard for the site.
Prime contractor	Unless delegated by agreement, Encana is the Prime Contractor. The Prime Contractor shall ensure, as far as it is reasonably practicable to do so, that the Alberta / British Columbia Occupational Health and Safety (OHS) and Worker's Compensation Board (WCB) Acts and Regulations are complied with.
Program / project	Encana geophysical worksite.
Project falling plan	Written falling plan that is specific to each project that anticipates, recognizes, evaluates and controls the hazards associated with falling and bucking operations. All falling and bucking supervisors on the project must be conversant with the plan.
Project manager	GC manager(s) for the front end operations and recording crew operations assigned to the program.
Qualified safety trainer (QST)	GC employee or contractor that is a certified Enform QST, who is responsible for verifying competency of fallers and buckers on the project. The QST may also be assigned the responsibility of supervising the falling and bucking operations on the program.
Risk assessment	A process for managing risk by recognizing, evaluating, and eliminating or effectively controlling risks on the worksite.
Safety management plan	A component of the operations plan, specific to EH&S for mitigating associated risks, developed in the planning stage and maintained during project execution.

Geophysical on-site service provider EH&S expectations

Term	Definition
Service provider	A company Encana has selected to perform a service without specifying the individuals who provide the service.
Shock Trauma Air Rescue Society (STARS)	Shock Trauma Air Rescue Society (STARS) air ambulance service, Emergency Link Centre, site registration system, and call centre.
Site-specific emergency response plan (ERP)	Site-specific plan generated by the General Contractor (GC) that supplements the Encana Corporate (i.e., Divisional / BU) ERP.
Staff	Includes all Encana employees and contractors hired to conduct work on Encana's behalf.
Supervisor	A person who instructs, directs and controls workers in the performance of their duties.
Supervisor hierarchy	Defined by the service provider and / or the General Contractor (e.g., drill push supervises drilling operations, service provider foreman supervises company driller, driller supervises driller's helper).
Tailgate meeting	Type of safety meeting carried out by workers in the field to discuss scope of work, hazards and mitigation plans for the immediate tasks at hand. If tasks or scope of work changes during the shift, additional tailgate meetings are required. Records of tailgate meetings need to be submitted to management.
Worksite	Any active Encana worksite where work is being completed (i.e., production, seismic exploration, road / lease / pipeline / facility construction, drilling completions, excavation, maintenance, or repair activities are taking place).

Prime Contractor

If there is no agreement in place delegating the duties of the Prime Contractor, as owner of the worksite Encana is by law the Prime Contractor. The Prime Contractor has overall responsibility for OHS at the worksite.

Note: Encana does not assign Prime Contractor status to GCs.

Encana's role as Prime Contractor is to:

- ensure that the GC and contractors at the worksite comply with OHS regulations
- establish and maintain a system or process that ensures compliance
- ensure that the GC and subcontractors cooperate with one another to ensure the health and safety of workers at the worksite
- monitor activities at the worksite to ensure that the health and safety management systems are functioning properly
 - Obvious instances of non-compliance are considered to be a breakdown of the health and safety management systems. The prime contractor has the authority to intervene, correct the situation and alter the health and safety management systems if necessary.
- ensure that First Aid services and equipment employed by the GC are appropriate for the worksite
- complete the British Columbia (B.C.) *Notice of Project*

Geophysical on-site service provider EH&S expectations

Project-specific *Safety Management Plan*

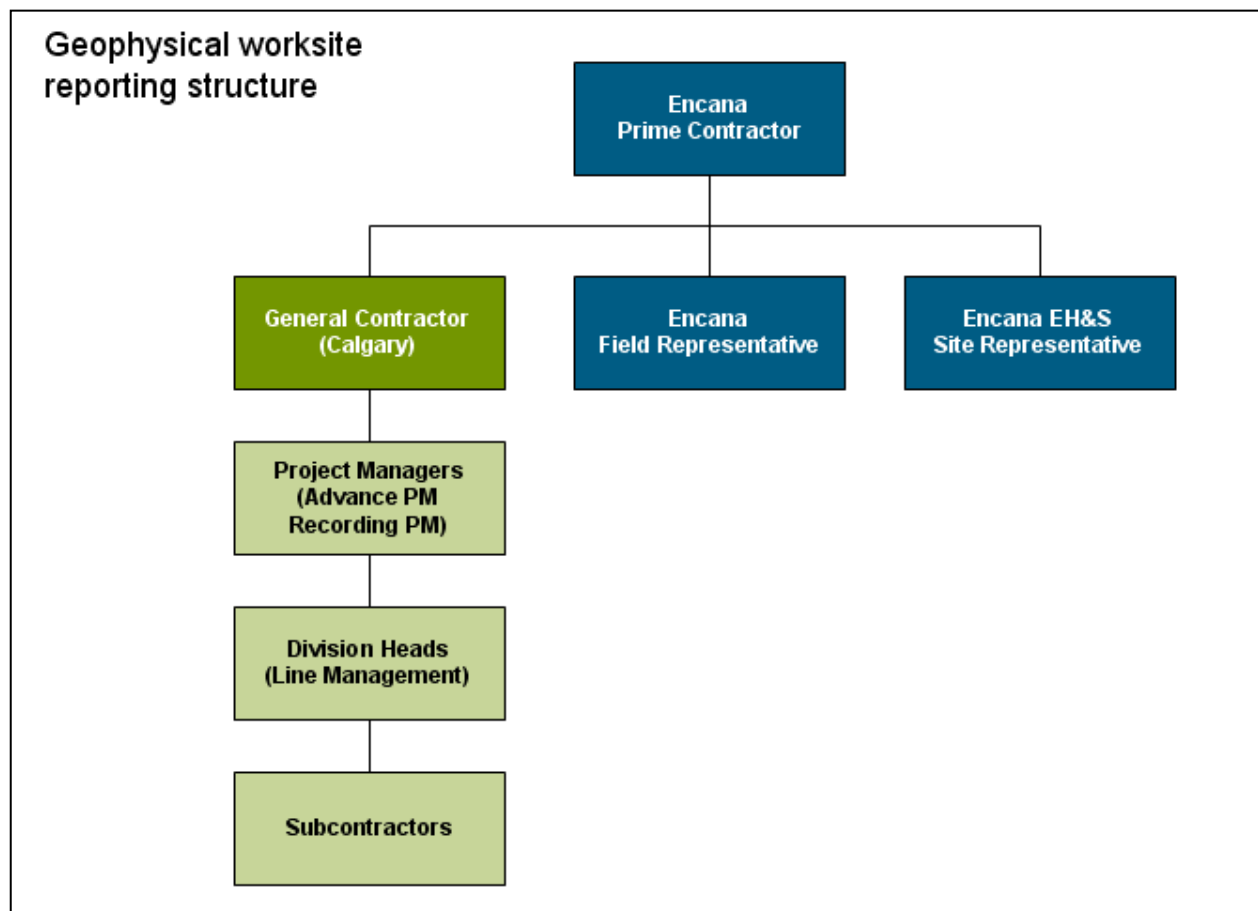
The GC is responsible for the development of the project-specific *Safety Management Plan* ([Appendix 1](#)). The Encana management team is responsible for the review and approval of the *Safety Management Plan*.

The *Safety Management Plan* must include:

- compliance with OHS regulations
- compliance with the GC's health and safety program
- operations in accordance with industry best practices

Geophysical business structure

- Level 1: Owner / Prime Contractor (Encana)
- Level 2: General Contractor
- Level 3: Subcontractor



Geophysical on-site service provider EH&S expectations

Contractor requirements

Master Service and Supply Agreement

The *Master Service and Supply Agreement (MSSA)* is the agreement between Encana and the GC. Some subcontractors may have an *MSSA* with Encana but will be working directly for the GC. Only contractors that are direct billing Encana are required to have an *MSSA* in place.

ISNetworld profile

All companies that have a direct business relationship with Encana and are providing a service under an active *MSSA* are required to have a profile in ISNetworld (ISN) if their work activities take place on Encana worksites and present a potential OHS liability to Encana operations. The profile on ISN must have an acceptable dashboard grade (i.e., C or better).

Contract or service agreements

These are agreements established between the GC and subcontractors, which contain scope of work and rates for services provided. The GC will provide copies of these agreements to Encana. A subcontractor to a GC cannot engage another subcontractor under the contract or service agreement without expressed written consent of the GC.

Incorporated company

The GC and all subcontractors must be incorporated or be a limited company.

Certificate of insurance

The GC and subcontractors must carry adequate insurance. The insurance limits for the GC are determined by Encana; the insurance limits for the subcontractors are determined by the GC. Insurance limits must meet the minimum standards as outlined in the GC's *MSSA*.

Workers compensation coverage

Subcontractors must supply the GC with confirmation of coverage and / or a letter of clearance at the commencement of the program and upon completion of the program.

Industry recommended and best practices

This document refers to best practices as established by Enform and by the Canadian Association for Geophysical Contractors (CAGC).

Petroleum industry recommended practices

Encana requires all service providers to conduct work activities in accordance with the industry recommended practices (IRPs) that govern those activities. IRPs can be found on the [Enform website](#).

Geophysical on-site service provider EH&S expectations

Canadian Association of Geophysical Contractors best practices

Encana requires all service providers to conduct work activities in accordance with the CAGC best practices including environmental best practices that govern those activities. CAGC best practices can be found on the [CAGC website](#).

Encana policy on driver distraction

In line with Encana's overall approach to identification of hazards in the workplace and the application of appropriate controls to reduce risk, Encana prohibits the use of a cell phone (both hand-held and hands-free) while driving. Two-way radio use is permitted where essential operations and related communication is required, and on radio-controlled roads where use is mandated.

Use of a cell phone while driving presents a hazard to the driver, other workers and the general public. Encana also prohibits the use, programming, adjusting or reading of other portable electronic devices while driving including:

- personal digital assistant (PDA) (e.g., Blackberry, Palm, iPhone)
- GPS or satellite radio and laptops
- ear buds, head phones, video games and DVD players

Hazard management

Pre-job hazard identification

The GC is responsible to identify all known hazards prior to the start of operations.

A risk assessment factoring in potential severity, potential probability, and frequency of exposure is to be utilized in order to assess the possible risk impact to the operation.

Controls are to be implemented in accordance with the hazard control hierarchy as contained within the Alberta OHS Code (i.e., eliminate, apply engineering controls, apply administrative controls and use personal protective equipment (PPE)).

Hazard knowledge sharing

The GC will convey hazard knowledge collected from past projects or concurrent projects to other clients and apply this information to all current Encana projects where similar hazard conditions or processes may exist. Hazard knowledge sharing is considered by Encana as vital in the effort to continuously improve safety at our worksites.

First aid hazard assessment

In accordance with Encana's *First Aid and Medical Services Practice* ([Appendix 3](#)), the GC is responsible for assessing each project to identify the appropriate number and type of emergency response personnel and equipment. The GC must factor in fluctuating staffing and equipment levels during the various stages of the project and adjust needs to reflect these changes.

Geophysical on-site service provider EH&S expectations

Hazard maps

Purpose and utilization

- Hazard maps are utilized on Encana geophysical projects to geographically identify locations and types of hazards that maybe encountered by persons performing work in the program area.
- Hazard information is received through any of the following processes: pre-job or project hazard assessment, historic hazard information, scouting the program, hazard identification programs or post-incident hazard identification.
- Hazard information is to be reviewed and risk ranked by the project managers. Effective controls are to be implemented.
- Once the controls have been identified and implemented the hazard identification and control information is to be included on the hazard map.

Hazard map communication

- All efforts must be made to visually communicate all applicable hazards.
- Hazard maps are to be posted, at a minimum, in common areas (e.g., staging areas and meeting rooms).
- The safety meeting discussion should reference general program hazards, any new hazards posted since the last safety meeting and mitigation plans to reduce the risk to an acceptable level.
- All hazards discussed must be documented in safety meeting minutes with notations of corresponding hazard identification numbers.
- Supervisors must carefully review their specific area when completing their day plan or assigning crews to work tasks and areas. Any additional hazards not covered in the morning safety meeting should be captured and recorded in the tailgate meeting.
- A final project hazard file must be provided to Encana at the completion of the project. This file must have spatial attributes.

Personal protective equipment

The project-specific *Safety Management Plan* must define PPE requirements for each phase / task of the project.

The GC and all subcontractors must ensure personnel are equipped with and wear appropriate PPE while conducting work. The GC will communicate the minimum PPE requirements and will audit for compliance. All PPE must be maintained in good condition and be worn in accordance with manufacturer specifications.

Geophysical on-site service provider EH&S expectations

Encana geophysical *EH&S Daily Tracker*

A daily reporting document called the *EH&S Daily Tracker* will be provided by Encana at the start of every project. All indicators, statistics and incidents are tracked and reported on a daily basis for all geophysical projects.

All incidents are to be categorized in accordance with Encana's reporting guidelines.

The *EH&S Daily Tracker* includes:

Reporting item	Today	To date
Total personnel on site (includes mobilized / demobilized personnel)	0	0
Total project hours	0	0
Kilometres travelled (including all vehicles travelling to, from or within the worksite)	0	0
Safety meetings	0	0
Hazard reports	0	0
Near hit reports	0	0
Emergency response plan tests	0	0
Encana inspections and spot checks	0	0
Wildlife sightings	0	0
IMS-reportable bear encounters	0	0
Minor spills	0	0
IMS and regulatory reportable spills	0	0
Non-injury incidents (material loss or damage, policy failure)	0	0
First aid case (non-recordable)	0	0
Medical aid case (recordable)	0	0
Restricted work case (recordable)	0	0
Lost time accident (recordable)	0	0

Geophysical on-site service provider EH&S expectations

Encana reporting

The GC shall immediately report to Encana all written or verbal communications, including inspections, infractions, violations, orders, notifications, advice from government or regulatory bodies and all incidents, injuries, damage and losses arising out of provision of services.

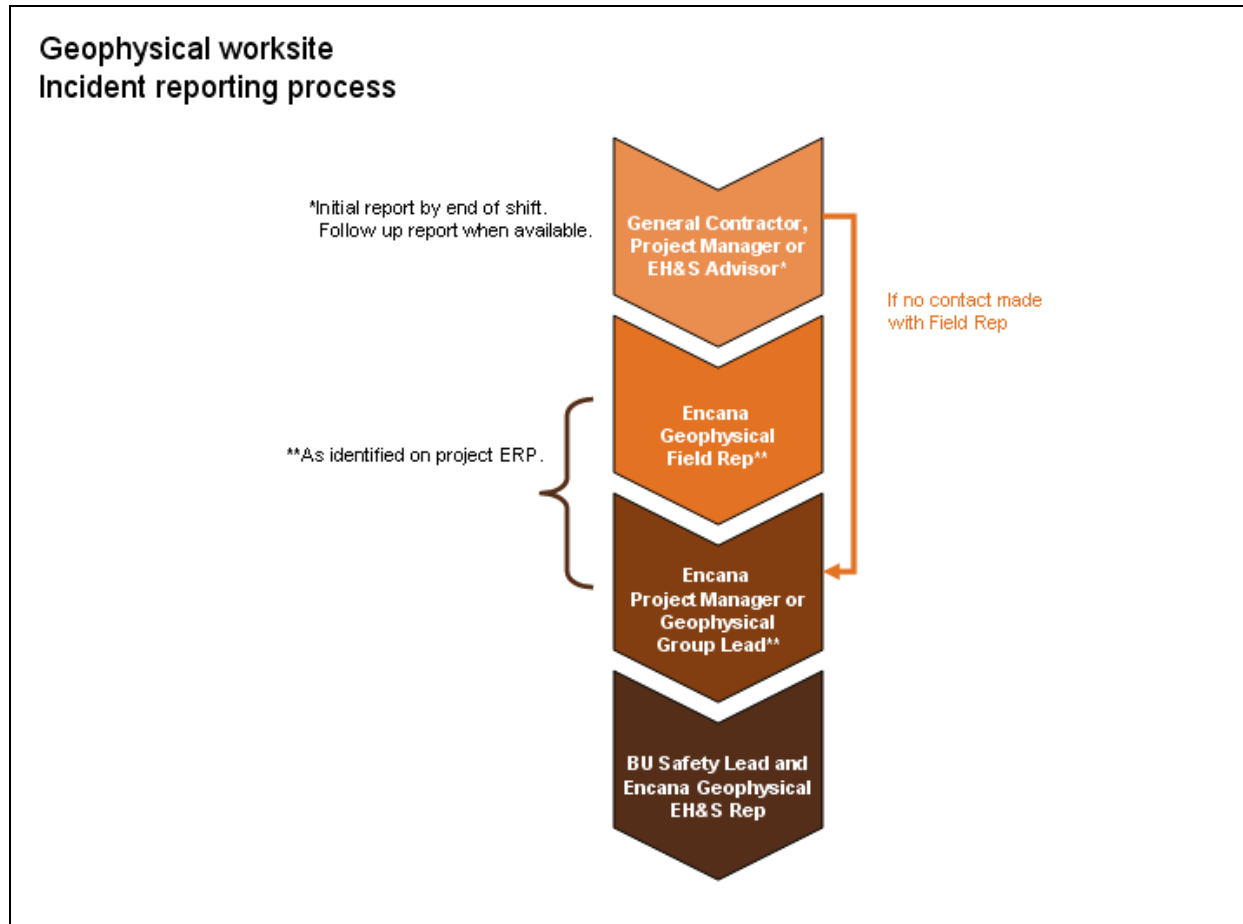
- Communicate initial report by telephone or email.
 - When communicating by telephone, if there is no answer leave a voicemail (i.e., name, date, time, call-back number and brief description of the incident).
- For all Encana geophysical programs forward incident reports, investigation reports and supporting documentation by email to the project manager and field representative.
- All work-related medical aid and first aid reports are to be sent to the EH&S advisor assigned to the project and emailed to the Encana Medic Desk at medic102@Encana.com.

Incident reporting matrix

Incident type	Immediate telephone or email notification	Incident report
Recordable Incidents: <ul style="list-style-type: none"> ▪ fatality ▪ lost time ▪ medical treatment (not including First aids) ▪ restricted work ▪ loss of consciousness ▪ injury requiring a job transfer 	Yes	<ul style="list-style-type: none"> ▪ initial report by end of shift ▪ incident investigation report to follow as soon as investigation of the incident is completed
Injury requiring medically-assisted transport off program	Yes	Initial report by end of shift with follow up reporting when available.
All other injuries (first aids)	Yes	Initial report by end of shift.
Incidents that impact public	Yes	Initial report by end of shift with follow up reporting when available.
Any incident involving production facilities	Yes	Initial report by end of shift with follow up reporting when available.
Near hit with high or major potential incident severity	Yes	Initial report by end of shift with follow up reporting when available.
Spill of any volume of fluid where regulatory reporting is required	Yes	<ul style="list-style-type: none"> ▪ initial report by end of shift ▪ incident investigation report to follow as soon as investigation of the incident is completed
Low risk, near hits and hazards	No	Submitted to Encana (when completed) for archiving, and noted in the <i>EH&S Daily Tracker</i> .

Geophysical on-site service provider EH&S expectations

Incident reporting process



Subcontractor management

The GC is responsible for selecting, managing and supervising all subcontractors in a manner which promotes compliance to regulatory, Encana and GC company standards. Encana and the GC each have the right and authority to determine the suitability, safety and competency of all personnel working on projects. Encana and the GC, at their discretion, will determine any additional subcontractor requirements. These requirements will be communicated to subcontractors, along with all equipment requirements. The GC must ensure that all subcontractors meet the minimum requirements described in the subsections below.

Basic safety programs

A BSP is required and must include, but is not limited to, program content in accordance with applicable OHS regulations. The BSP must, at minimum, ensure compliance with all regulations and laws. BSPs may be audited and equipment on Encana worksites will be inspected.

The BSP must include policies for fitness and readiness for work, drug and alcohol, PPE, harassment and violence, driver / operator approval, rotation, modified work and emergency response planning and preparedness.

Geophysical on-site service provider EH&S expectations

If the subcontractor is deficient in any of the above policy requirements it is the responsibility of the GC to have a written understanding that the subcontractor will work to the GC's written standards and policies.

Copies of the subcontractor BSP (or signed agreements as described above), proof of insurance coverage, and Workers Compensation Board (WCB) clearances are to be kept on site for the duration of the contract.

CAGC membership is encouraged for all subcontractors.

Machinery / equipment audit

The GC and all subcontractors must ensure equipment and machinery utilized meets regulatory requirements and manufacturing specifications.

Equipment should be pre-audited before arrival on site by the subcontractor, and audit results should be available for verification by the GC. A mutually agreed upon repair plan must be in place and maintained for any deficiencies identified by the pre-audit or subsequent verifications audits. No billing can occur for unqualified equipment.

General training certificates

Original training certificates must be available for inspection at the field office to the GC. Workers must abide by the regulatory requirements for the worksite and be able to produce original training certificates in the field. No billing can occur until personnel produce original training certificates.

Adequate supervision

Encana and the GC will review and determine what constitutes adequate supervision for the project during the planning phase. All contractors are required to provide adequate supervision for their operations. If the subcontractor does not have the required resources to provide adequate supervision, the GC is responsible for insuring the workers are adequately supervised by providing the necessary resources.

Supervisors must have appropriate supervisor training for their supervisory level and be fully aware of their legal responsibilities.

Training requirements

The GC is responsible for ensuring all worksite personnel are competent to perform the tasks to which they are assigned. The subcontractor is responsible for providing appropriately trained and competent workers.

Completion of training is one of the critical components in proving competency. As such, the GC must receive, verify and copy original training tickets for all personnel. These records must be kept in the field office for the duration of the program. Only original training tickets are acceptable.

The GC is responsible for verifying the competency of every worker on the worksite. An appropriate tracking method must be in place which distinguishes competency from training and records verification. The GC is required to review and record the worker's experience / history and competency by reviewing a worker's log book or by receiving a declaration of competency from the supervisor / subcontractor.

Geophysical on-site service provider EH&S expectations

Minimum training and competency requirements

Requirement	Description
All workers	<ul style="list-style-type: none"> General contractor safety orientation Encana <i>General Safety Orientation for Contractors</i> WHMIS H2S awareness (H2S Alive preferred) Bear / wildlife awareness
As required by legislation	<ul style="list-style-type: none"> First Aid Transportation endorsement for BC
As required: Mobile equipment operation (operators of equipment)	<ul style="list-style-type: none"> ATV and / or UTV* Snowmobile*
As required: Vehicle operation (operators of vehicles)	<ul style="list-style-type: none"> All drivers must be in possession of a valid drivers license* All drivers must review the Encana <i>Driver Distraction Practice</i>
As required: Transporting hazardous products	<ul style="list-style-type: none"> Transportation of Dangerous Goods (TDG) Certificate*
Seismic supervisors (APM, cat push, cutting foreman, head surveyor, drill push, RPM, observer and staging coordinator)	<ul style="list-style-type: none"> Seismic Field Operations Supervisor (SFOS) Hazard identification and control Accident and incident investigation
Falling / slashing (operators of chainsaws)	<ul style="list-style-type: none"> Level 1 – Basic course with log book* Level 2 – Faller entry with log book * Level 3 – Certified faller with log book* Level 4 – Faller tutor with log book*
Qualified supervisor trainer	<ul style="list-style-type: none"> QST Certification (Level 4 & 9 day training program)*
Buried facility locating (APM, cat pushes, surveyors)	<ul style="list-style-type: none"> Encana <i>Ground Disturbance Orientation</i> Enform <i>Buried Facility Locator - Basic (Buried Facility Locator – Seismic is preferred)</i>
Buried facility locating (locators, drill push, drillers)	<ul style="list-style-type: none"> Encana <i>Ground Disturbance Orientation</i> Supervisor level ground disturbance training (<i>IRP 17</i> - one person (driller or helper) at each drill)
Loading and detonating seismic shot points (drillers and helpers, shooters)	<ul style="list-style-type: none"> Blasters Certificate*
Emergency medical staff	<ul style="list-style-type: none"> Appropriate First Aid or emergency medical certification*
Seismic EH&S representatives	<ul style="list-style-type: none"> Hazard identification and control (advanced course) Accident and incident investigation (advanced course)

*Note: Tickets must be carried on the person while involved in the particular work or task related to the training certificate.

Geophysical on-site service provider EH&S expectations

Program orientation

All workers and visitors to an Encana program must receive the appropriate orientations as delivered by the GC or Encana representatives.

Encana *General Safety Orientation for Contractors*

The GC is responsible for presenting the Encana *General Safety Orientation for Contractors* to all persons engaged in work activities on the program as part of a project orientation process. The GC provides all workers with a copy of the Encana *General Safety Orientation* booklet and all workers are required to watch the accompanying video.

At the end of the video the GC must:

- review the exclusions and differences of the standards quoted in the Encana *General Safety Orientation* for the following.
 - PPE requirements will be determined by the GC's project-specific *Safety Management Plan* prior to subcontractor selection, so that they may bid the work accordingly.
 - Facial hair may be allowed on worksites depending on the requirement to wear respiratory protective equipment due to H₂S and / or other industry hygiene (IH) concerns.
 - Smoking may be allowed on some worksites (follow the policies and rules of the GC).
- supplement the video with local business unit (BU) information such as the traffic enforcement, emergency services and wildlife programs.
- review pertinent information from the project-specific *Safety Management Plan* based on worker roles and tasks.
- have workers complete the orientation documentation.
 - Complete the Worker Signoff (page 58 of the orientation booklet). The GC's representative is delegated the authority to sign off as the Encana representative. Remove and collect these pages from the *General Safety Orientation* booklet. Maintain copies for the duration of the project, and then forward them to the Encana's Geophysical Operations Field Representative with project completion materials.
 - Flip past the sticker page and complete the information on the Encana Orientation card.
 - Remove the card and ensure it is completely filled out. Copy it into the worker's training record.

Site-specific orientation

The GC is expected to offer a site-specific orientation to all personnel and visitors, including Encana representatives and regulators. Encana maintains the right to have representatives visit active worksites for any reason and at any time. Visitors without appropriate tickets / training will be escorted at all times during the site visit.

Site-specific orientations should cover the following:

- current scope of work activity
- hazards currently present on the worksite
- hazard controls currently in place
- hazard identification processes in use
- radio call in procedure
- ERP information, including activation procedures and equipment availability and location

Geophysical on-site service provider EH&S expectations

Emergency response plans

The GC must complete a *First Aid Hazard Assessment* for every project to determine the required medical personnel and equipment. This assessment must be posted in an area visible to all workers. Refer to the Encana *First Aid and Medical Services Practice* ([Appendix 3](#)).

ERPs must be in place for construction / acquisition projects and worker accommodations, and must include information about:

- provision of first aid
- transportation of injured party
- emergency meeting points / assembly areas

The following Encana contacts must be listed on every ERP:

- Geophysical Operations Project Manager (Calgary)
- Geophysical Operations Field Representative
- Geophysical Operations Group Lead (Calgary)
- Geophysical EH&S Representative

All listed Encana contacts must receive all initial and revised program ERPs:

- Copy all ERPs to:
 - Encana Medic Desk at medic102@encana.com (Calgary)
 - other individuals as advised by the Encana Geophysical or EH&S Representatives
- Encana medical coordinators are responsible for monitoring all medical service providers working at Encana worksites. The Encana Geophysical Acquisition Group will have an agreement with other Encana worksites in the area for mutual aid, which may require the on-site medical service provider to respond to additional worksites.
- ERP contact numbers must be verified by the crew clerk / administrator.
- ERPs must be tested at reasonable intervals or when site conditions or activity changes.
- ERPs must include a site access map with the project boundary, primary access and staging highlighted, and a map showing access and route to the closest medical facility.
- The GC must register the Encana worksite with STARS. The emergency contact number for any medical emergency on an Encana worksite is: **1-888-888-4567**.

Telephone contact procedures

If you are required to provide immediate incident notification in accordance with the [Incident Reporting Matrix](#) (page 9) and your call is not answered, DO NOT hang up without leaving a message.

Your message should include, at a minimum, the following information:

- your name, position and company
- your contact number
- geophysical program you are working on
- brief description of the events as you understand them

Continue to work through the contact list until you have contacted someone directly.

Geophysical on-site service provider EH&S expectations

Engaging the Encana Corporate ERP

Once the GC's site-specific ERP is engaged and the required notifications are made, the GC is expected to deal with the immediate response, evacuation and investigation of the event. However, Encana would have to assume control of the emergency situation and enact the Encana Corporate (i.e., Divisional / BU) ERP if any of the following occur:

- GC loses control of the situation
- GC has no resources for the situation
- incident impacts Encana facilities
- incident impacts the public or Encana's reputation

If any of the above scenarios were to unfold during an emergency situation, the GC representative would contact Encana immediately in the following priority sequence:

1. Geophysical Operations Project Manager
2. Geophysical Operations Group Lead
3. EH&S Representative assigned to the program
4. Information line for EH&S Support 403-645-3980

Medical providers

Encana expects that an on-site medical provider will be present on all geophysical projects during all phases of the operation. In accordance with the Encana *First Aid and Medical Services Practice* ([Appendix 3](#)):

- Medical personnel must be trained to the appropriate level. At least one medic on site must meet or exceed the requirements outlined in the practice, while additional medics could be of a lower level of training if the *First Aid Hazard Assessment* allows.
- Medics must be able to arrive on scene within 20 minutes of being notified of an incident. Due to size and the separation of work groups, some programs may require more than one medic.

The GC will contact the Encana Medic Desk at 403-645-3980 for a list of approved service providers. The medical service provider should send units out fully equipped and pre-audited. Personnel should be fully qualified and competent. Medical service providers are responsible for their own costs until equipment / personnel are accepted as suitable / qualified on the worksite.

Medics should arrive on site already having completed the Encana *Medical Provider Orientation* with their mobile treatment centre (MTC) pre-audited. The medic must present the orientation certificate, training tickets and MTC audit checklist to the Encana EH&S representative. If the Encana EH&S representative is unable to perform the verification audit upon arrival of the medical service provider, the GC will conduct the audit.

Encana requires the medical service provider to carry the following equipment, in addition to OHS requirements:

- semi-automated external defibrillator (SAED)
- blood pressure cuff
- glucose monitor

This equipment may require updates to training and sign off by the medical service provider, medical director or medical review officer (MRO).

Geophysical on-site service provider EH&S expectations

Journey management

Journey management is a critical process that requires an extreme level of diligence and participation by all involved parties. The GC is responsible for communicating the necessity of all persons visiting Encana geophysical operations to comply with established journey management procedures. The GC's journey management procedures must meet the following criteria.

- Journey management procedures must be in place prior to the GC's mobilization. Initial personnel mobilizing to the worksite must communicate their travel itinerary and arrival time to Encana.
- The GC is expected to champion the journey management program once initial personnel are on site.
- Subcontractors must be informed of journey management procedures prior to mobilizing on a project.
- Journey management logs will be maintained in field offices.
- Logs must be available for review; incomplete logs will require a full audit of the journey management procedures.
- Determine who will take ownership for journey management on your project.
- If required, journey management procedures may have to accommodate a 24-hour operation.
- Emphasis will be placed on the GC's compliance to initiating appropriate actions should a travelling party not communicate their location and condition at the required time or location.
- All persons failing to call in as required must be contacted by the journey management owner.
- *Policy Failure Incident Reports* must be submitted for non-compliance with journey management procedures and reported in the *EH&S Daily Tracker*.
- All Encana representatives work under established in-house journey management procedures when on site.
- Encana representatives may arrive on a worksite without prior notification.

Hand cutting / falling

Subcontractor safety program

In accordance with WorkSafeBC, the GC must develop a *Project Falling Plan* that defines falling supervisor roles and responsibilities, identifies hazards and mitigation plans, and defines a process to manage subcontractors. This plan may be incorporated into the *Project Operation Plan*.

The GC must review the written safety programs of all subcontractors that employ chainsaw operators to ensure they contain the following safe work practices (BC OHS 26.23):

- maintaining minimum and maximum distances between fallers and other workers
- controlling the fall of trees and dangerous trees
- bucking
- using lines and jacks to fall trees, if required
- summoning and rendering assistance to deal with a difficulty or emergency
- ensuring each falling crew meets or exceeds the required radio checks to ensure the well-being and location of each crew.

If written safety programs are not provided by the subcontractors, the GC is responsible for implementing the safe work practices into the GC's safety program and initiating a bridging document with the subcontractors.

Geophysical on-site service provider EH&S expectations

Ticket verification

- All workers involved in chainsaw operations must hold current certification for their level of training and experience.
- Tickets must be presented to the GC and will be copied for safekeeping in the crew office.
- The GC is responsible for verifying all training tickets through the Enform online verification system.
- Any fraudulent or forged tickets must be destroyed.
- Expired training tickets are not acceptable.
- Certified faller log books must also be copied.
 - Copy the inside page showing certification date; verify the log book is signed and stamped by a qualified safety trainer (QST).

Competency verification

- BC OHS 26.21 faller qualifications:
 - *An employer must not allow a worker to fall or buck trees until the worker has demonstrated to the employer that the worker is qualified.*
- All persons operating a chainsaw on an Encana geophysical program must undergo a competency evaluation as administered by a qualified QST.
- The competency evaluation to be administered is the one outlined in the Enform [Faller Competency Checklist](#).
- The competency evaluation must be submitted to Enform by the QST to help maintain the faller's certification.
- Fallers that do not meet the falling standard must be advised they are not to fall timber with a diameter greater than six inches. Remedial training and re-evaluation is at the discretion of the QST.
- The GC must ensure the QST performs adequate follow-up inspections on all fallers and buckers to ensure work complies with regulations. The GC maintains documentation and digital photos for reference purposes.

Survey and mapping

Hazard map production standards

- The map must have a clear and readily identifiable title of "Hazard Map" in large bold font.
- The map legend must be clearly identifiable and include the map revision number and date of production. Hazards will be identified with numbers, colors and shapes.
 - Numbers must correspond to the hazards identified in the GC's hazard identification process. Use the same number for hazards of the same type throughout the program area.
 - Color and shape of identified hazards corresponds to risk potential as follows:
 - green circle = low risk
 - inverted yellow triangle (think yield sign) = medium risk
 - red octagon (think stop sign) = substantial or high risk
- The combination of color and shape is used to ensure that, if the person reading the map is colorblind or the map is photocopied in black and white, risk assessment information is still clearly identifiable.

Geophysical on-site service provider EH&S expectations

- Terrain which meets yellow or red status as identified in the CAGC *Terrain Assessment Guidelines* are identified as such.
- Identified underground facilities are highlighted in orange to identify setback requirements.

Note: Encana's *Ground Disturbance Practice* prohibits any drilling within six metres of any known facility (even though provincial setback requirements allow closer access to some facilities such as communication lines). Modelled source points are to be removed from within the setbacks. Power lines requiring primacord detonation will be identified in the same manner.

- ERP information on the map must be consistent with the program ERP.
- Maps are produced to a size and scale where all pertinent information is visible.
- Regular PDF updates of the map are sent to the geophysical project manager.
- Hazard data is compiled on a separate layer on the map and so that hazard information can be identified as an attribute for each map feature. This data will be provided in ESRI shape format to Encana at project completion.

Geophysical marking scheme

All field marking of seismic survey points, site access and hazards must comply with the seismic flagging colour standard in accordance with CAGC best practices and [IRP 17: Ground Disturbance and Damage Prevention \(IRP 17\)](#).

Line locators / survey

All buried utility locates and source positioning shall adhere to the following Encana guidelines.

- All One-Call documents, plats, notifications, and confirmations must be delivered in PDF format to the drill push and Encana site supervisor prior to drilling commencement. This is required supporting documentation for the *Ground Disturbance Checklist* and a critical component of the ground disturbance process.
- Encana maintains the regulated distance from all known underground utilities or a distance of six metres, whichever is greater.
- All known underground utilities must be staked and exclusion buffered to meet the required provincial setback distance plus a minimum 10 percent extra for margin of error purposes.

Drilling

Failure to comply with Encana's ground disturbance requirements will result in an immediate shut down of the drilling operation.

Ground disturbance

- Persons involved in ground penetration greater than 30 centimetres must complete the Encana *Ground Disturbance Orientation*.
- Drill pushes require supervisor level ground disturbance training and must complete the Encana *Ground Disturbance Supervisor Orientation* (in addition to the general Encana *Ground Disturbance Orientation*).
- One person at each location where a shot hole is being drilled must have industry-recognized supervisor level ground disturbance training.

Geophysical on-site service provider EH&S expectations

- A *Ground Disturbance Checklist* must be completed for each section of a project as it is released by survey for drilling. This checklist must be completed by a ground disturbance supervisor (generally the drill push) and reviewed and signed by all persons involved in seismic drilling.
- The ground disturbance supervisor is responsible for obtaining required documentation as outlined in the *Ground Disturbance Checklist* and maintaining a file that is readily accessible throughout the duration of the drilling program.
- Persons refusing to complete the required orientations or sign the *Ground Disturbance Checklist* cannot work on the project.

Encana *Ground Disturbance Orientation*

All persons involved in ground disturbance activities, including surveyors and drill crew personnel, must attend the Encana *Ground Disturbance Orientation*. GC representatives (i.e., generally project managers or drill pushes) that have completed the Encana *Ground Disturbance Supervisor Orientation* can facilitate the general *Ground Disturbance Orientation* for surveyors, drillers and helpers.

Industry-recognized supervisor level ground disturbance training

One person, either the driller or the helper, at each drilling location must have industry-recognized supervisor level ground disturbance training. These courses are a minimum 6.5 hours in duration and meet the training requirements as established in *IRP 17* and the CAGC best practices.

Any person supervising a drilling program (i.e., typically a drill push or project manager) must also have industry-recognized supervisor level ground disturbance training program.

Encana *Ground Disturbance Supervisor Orientation*

Any person supervising a drilling program must attend an orientation to review the Encana *Ground Disturbance Practice*. This orientation will allow the supervisor to complete the Encana *Ground Disturbance Checklist* and provide information specific to applying this in the seismic environment. Supervisors will also be able to present the Encana *Ground Disturbance Orientation* to surveyors, drillers and helpers on their projects.

Prerequisite: Supervisors must have proof of completing industry-recognized supervisor level ground disturbance training and appropriate work experience to manage a drilling program.

Encana *Ground Disturbance Checklist*

- The drill push / project manager takes on the role of the Encana ground disturbance supervisor.
- The ground disturbance supervisor completes the Encana *Ground Disturbance Checklist*. The checklist must be reviewed with all persons involved in the drilling operation prior to commencing drilling on each project.
- The checklist is completed for each section of the program as it is released by the survey group. Multiple checklists will need to be completed and reviewed on the majority of Encana projects.
- The drill push / project manager assembles a file containing required first call notifications, crossing agreements and line locate information to identify known underground utilities. This information must be in place prior to completion of the checklist.
- The hazard map identifying known underground utilities and appropriate setbacks can be utilized in place of the requirement for an Encana *Safe Work Permit*.
- Encana maintains the regulated distance from all known underground utilities or a distance of six metres, whichever is greater.

Geophysical on-site service provider EH&S expectations

Conducting the *Ground Disturbance Orientation*

When conducting the *Ground Disturbance Orientation*, the ground disturbance supervisor is responsible for reviewing the *Ground Disturbance Orientation Booklet* with workers and may exclude the following information, which does not pertain to seismic activities:

- mandatory hand exposure (page 10)
- mechanical excavation (page 11)
- hydrovac use (page 12)
- construction manager / leader (page 13)

The ground disturbance supervisor must have workers complete and sign the following documentation:

- Acknowledgement (page 25). Remove the signed Acknowledgement for record keeping.
- Worker training card. The ground disturbance supervisor can sign the card as the Encana representative. Remove the card, make a copy for the worker's training records and return the card to the worker.

Explosives

Inventory controls

- Strict controls must be in place for the receipt and issuing of explosive products, including detonators, on all Encana geophysical programs.
- Natural Resources Canada *Directive Letter 61: Blasting Explosives and Initiation Systems – Storage, Possession, Transportation, Destruction and Sale* requires that all explosives magazines in Canada be electronically monitored by June 1, 2010.
 - iButtons and readers must be utilized on all Encana geophysical programs.
 - Overnight storage of explosives on drilling rigs or heli-drills must also meet iButton compliance.

Note: Overnight storage of explosives on the drilling rig requires prior consent from Encana.

- The drill push must perform a daily (including standby days) physical check of the magazine and log the information in the iButton software program.
- The drill push is responsible for receiving the shipment from the explosives supplier and performing a count with the delivery driver to ensure correct initial inventory.
- The drill push is responsible for monitoring all explosive materials coming onto the project and must reject any package that is labelled as a re-pack or appears damaged in any way.
- When assigning product to the drillers, the drill push must be present with the driller to verify the product count and sign off on product received at the start of every shift.
- All inter-day transfers of explosive product must be jointly counted and signed off by the drill push and the driller.
- When receiving product at the end of shift, the drill push must recount the returned product with the driller present and both must sign off on product returned.
- GC drilling guidelines must clearly define the consequences for non-compliance with powder counting controls by either the drill push or the drillers. This is to be clearly defined during the startup orientation.
- Any inventory discrepancies must be reported immediately to Encana geophysical representatives and a full investigation must be initiated.

Geophysical on-site service provider EH&S expectations

Unexploded / misfired charges

All efforts must be made to detonate misfired charges by the shooter on the recording crew. Where misfired charges cannot be detonated safely by any means, an unexploded charge report is to be fully completed the same day that the misfired charge is recognized.

CAGC *Report of Misfired Charges* reports are to be forwarded to the following Encana personnel:

- Geophysical Field Representative
- Geophysical Project Manager

In Alberta and Saskatchewan

The location of unexploded / misfired charges must be effectively marked. A permanent record of the location must be kept and both the GC and Encana must maintain a copy of the report.

In British Columbia

- CAGC *Report of Misfired Charges* must be faxed to the B.C. Oil and Gas Commission (OGC).
- The location of unexploded / misfired charges must be effectively marked in accordance with B.C. guidelines with a marker.
- CAGC *Report of Misfired Charges* and an *Explosive Dangerous Incident Report* must be faxed / emailed to WorkSafeBC.

Explosive incidents causing injury or damages

An explosive incident that causes injury or damage, or has the potential to cause serious injury including an unexpected result or problem with explosive products, must be reported immediately to Encana with the requisite details and the appropriate OHS regulator must be notified. A full investigation will be conducted by the GC and the Encana EH&S representative.

Camps

- Industrial work camps will be inspected and audited by Encana's Operational Safety Services personnel.
- The GC is responsible for informing the camp operator of any health or safety concerns. If these concerns are not addressed in a timely manner the GC is requested to inform the Encana field representative for required follow up.

Joint worksite health & safety committees

- When required to do so by legislation, the GC must implement an effective joint worksite health and safety committee (JWHSC) that complies with the applicable legislation and includes both workers and persons who represent the prime contractor, contractors and employers involved in the work at the work site for Alberta and management representatives in British Columbia.
- Each contractor should have a representative on the committee.
- Safety personnel must act only as a resource to the committee, not as an active member.
- The JWHSC must meet on a monthly basis and perform a workplace inspection. This inspection must be reviewed with all workers on the program at the next scheduled safety meeting.
- The names of committee members must be posted in a visible location.

Geophysical on-site service provider EH&S expectations

Occupational health and safety legislation

- Up-to-date copies of relevant OHS legislation must be available at the worksite for all workers. Workers must be made aware of the location of the legislation at the program orientation.
- In B.C. a sign must be posted advising of the location of the legislation.

Program signage

Crew office

- Encana provides company-specific signage for posting in the crew office or safety meeting area, if available. These signs reference specific safety rules and standards, which may include:
 - alcohol and drug prohibition
 - no pets
 - no smoking
 - obey posted speed limits
 - hazard information
- The GC must post all regulated materials as they apply to the worksite (e.g., WCB information, company rules and safety bulletins).
- Hazard maps must be posted in crew offices, safety meeting rooms and coordinator shacks on recording crews.

Field signage

All signage along roadways must comply with applicable provincial highway regulations. All required signage (including explosives magazine and low flying aircraft signs) must be installed in accordance with regulations and be clearly legible (i.e., not hand printed on makeshift material).

Wildlife reporting

Encana is committed to conserving habitat diversity and wildlife populations in the areas where we operate.

- The GC must track wildlife sighting reports on Encana geophysical projects.
- For certain operating areas (i.e., Horn River Basin) wildlife reporting is now an operating agreement requirement.
- Wildlife sighting cards are provided by the Encana representative on site. All wildlife sightings must contain some type of spatial reference for mapping purposes (i.e., station id, GPS coordinates or access intersection reference).
- Certain wildlife sightings (i.e., bears, cougars and kill sites) may also require classification as a program hazard. In these cases, a hazard identification report must be completed in addition to the wildlife report.
- All workers on Encana sites must comply with the commitments and mitigation measures outlined in Encana's wildlife mitigation plans. This includes participating in a wildlife awareness orientation, adhering to habitat protection measures and ensuring no harassment or harm to wildlife.

Geophysical on-site service provider EH&S expectations

Encana *Bear Management Practice*

Encana has a *Bear Management Practice* which is applicable to areas where there is high risk of a bear encounter on the worksite.

- When working in bear country, all efforts must be made to mitigate risk to workers and reduce our impact on bear habitat.
- Hazard assessment and control measures must be considered a routine work practice when working in areas where bears may be present. Control measures for geophysical programs include:
 - electric fencing around campsites and dumpsters where food waste is stored
 - use of bear conditioning devices by all workers (e.g., pepper spray and air horns)
 - removal of all online refuse and garbage. Take out what you bring in!
 - use of bear-proof dumpsters for staging and field cleanup operations
- Firearms are not permitted as a bear deterrent at any time. If a bear watch person is required due to nuisance or aggressive bears on the project, Encana will engage a qualified and suitably trained bear watch person.
- Bear encounters must be reported to Encana for entry into IMS. Encounters include any situation where:
 - an aggressive bear is encountered during daily operations
 - a conditioning device (e.g., pepper spray and air horn) or helicopter is deployed to scare off a curious or aggressive bear
 - a bear is observed at or near a site where workers are regularly present (e.g., staging or explosive magazine site)
 - bear proximity / activities requires adjustment to a crew's operating plan

Spill control and reporting

Any spill, release or emergency that may cause, is causing or has caused an adverse effect to the environment and is not otherwise authorized under Acts, regulations or other approvals must be immediately reported to the regulators and Encana.

- In B.C., the [Spill Reporting Regulation](#) is part of the *Environmental Management Act*.
- In Alberta, the provincial government has developed [A Guide to Release Reporting](#), which contains information on spill and release reporting.
- For Transportation of Dangerous Goods (TDG) class 3 flammable liquids (i.e., gas, diesel and helicopter fuel) the reportable level differs for B.C. and Alberta:
 - B.C. reportable level = >100 litres
 - Alberta reportable level = >200 litres
- Other materials that may be encountered on a geophysical operation include hydraulic fluid or waste lube oil. These and any other substances not covered under TDG classification must be reported to Encana and provincial regulators if:
 - there is release into a watercourse, groundwater, or surface water
 - the release has caused, will cause or may cause an adverse effect is not otherwise authorized under Acts, regulations or other approvals
- Specific spill requirements, legislation and regulatory contact information for each province should be available in the field office.

Geophysical on-site service provider EH&S expectations

- When a spill or release occurs:
 - The first priority is always to ensure that the spill or release is contained and appropriately cleaned up.
 - All spills must be remediated and waste soil or materials disposed of in a proper manner in accordance with legal requirements.
 - An incident report is required for reportable spills; reportable spills will be entered in IMS.
 - Minor spills where cleanup has been completed and contaminated material has been disposed of in a proper manner will be reported in the *EH&S Daily Tracker*.
 - If it cannot be determined if minimum quantities have been exceeded, the release should be reported.
- Mitigation measures to prevent the release of material into the environment include the following.
 - Mechanical equipment that is refuelled at the field level should have a drip pan placed under the transfer area during refuelling
 - Absorbent materials or cloths is required at any refuelling site for cleaning up any material spilled during refuelling operations
 - Where possible, no refuelling will occur within 100 metres of a watercourse or water body.
 - Double-walled enviro tanks that contain spill release safeguards will be utilized whenever bulk fuel is required on the geophysical project (e.g., fuel bowser and card locks).

Program completion information submittal

At the completion of each project the following EH&S information must be submitted to Encana in digital format:

- final hazard assessment
- final PDF hazard map
- hazard data layer in ESRI shape format (NAD83)
- copy of all subcontractor agreements / bridging documents
- completed incident reports not previously submitted
- incident investigations or follow ups not previously submitted
- copy of any regulator orders/site visit documentation
- final PDF wildlife sighting map
- wildlife sighting data table (Excel format)
- ground disturbance documentation

Appendix 1

Appendix 1: Project-specific *Safety Management Plan* template

Encana and its General Contractors (GCs) must demonstrate accountability for the implementation and integration of EH&S commitments contained in Ethos, Encana's geophysical operations management system. Ethos consists of 16 standards, which govern how Encana manages operations and EH&S responsibilities. These standards are designed to work together to maximize worker safety, minimize environmental impact and ensure regulatory compliance.

This document is intended as a guide for creating a project-specific *Safety Management Plan* to be incorporated within the GC's operation plan. Each section below relates to one of the 16 Ethos standards. Any questions regarding this document can be directed to the Geophysical Acquisition Group email:

ga@encana.com

1. Commitment, communication and implementation

Description

Project-specific EH&S performance expectations must be communicated and understood by all. Each crew member is held accountable for integrating EH&S into their job function and processes.

Requirements

Roles, responsibilities, and accountabilities related to commitment, communication and implementation shall be defined and assigned in the project-specific *Safety Management Plan* so that:

- leaders and staff actively support, promote and integrate EH&S commitments into their business and activities
- leaders monitor conformance to EH&S standards and practices
- leaders assign and personnel participate in EH&S training appropriate to their level of responsibility.

2. Competency management

Description:

EH&S systems and compliance are some of the criteria that Encana considers when selecting contractors. Contractors that are selected must have a process for training and measuring competency.

Roles, responsibilities and accountabilities related to EH&S competency management shall be defined and assigned in the project-specific *Safety Management Plan*.

Personnel must be trained and developed to meet job-specific EH&S requirements and a process must be in place to evaluate competency on a regular basis. Each staff member is held accountable for their identified EH&S performance objectives.

Appendix 3

Geophysical Acquisition EH&S Reference Guide

Requirements:

The *Safety Management Plan* must describe the competency management practice(s) that address training and include:

- competency management process
- EH&S training / competency requirements
- regulatory compliance requirements
- compliance with training requirements as defined by the applicable IRPs (Enform), best practices (CAGC) and the contractor's own training matrix

3. Contractor and service provider management

Description:

Encana requires that contractors and service providers be identified, evaluated and selected based on an analysis of strong management practices and performance criteria that includes EH&S.

The EH&S performance of contractors and service providers will be verified and monitored for conformance to the requirements of the Encana Geophysical Operations Group.

Requirements:

Encana Geophysical Operations Group utilizes the *Geophysical Operations EH&S Reference Guide* to communicate contractor management requirements to the GC.

Roles, responsibilities and accountabilities related to contractor and service provider performance shall be defined and assigned in all of the project-specific *Safety Management Plan*.

The *Safety Management Plan* must have a process in place to evaluate service provider management practices for:

- assess EH&S performance
- include a review of their EH&S programs
- include a means for reviewing standard EH&S statistics
- include periodic review of Workers Compensation Board (WCB) coverage
- assess the contractors' orientation and training of new worker processes
- assess the compliance to training requirement as defined by the applicable IRPs (Enform), best practices (CAGC) and the contractors' own training matrix

4. Document and record management

Description:

EH&S documents and records are identified, stored, protected, accessed and retained to ensure operational integrity. The process controls the life cycle of documents to mitigate risk to the corporation and to meet regulatory compliance.

Requirements:

Roles, responsibilities, and accountabilities related to document and record management shall be defined and assigned as well as the training requirements in the Project Safety Management Plan.

The *Safety Management Plan* must describe the GC's processes for document and records management and the sharing of documents with Encana and describe:

- GC record management policies, practices and guidelines
- GC retention requirements for regulatory compliance
- EH&S reporting to Encana as described in the Encana *Geophysical Operations EH&S Reference Guide*

5. Emergency preparedness and response

Description:

Emergency preparedness and response plans are developed, kept current and regularly exercised to ensure that the GC and Encana are able to decisively respond to emergency events. Plans will provide a process to identify, mitigate, respond to and recover from emergencies.

Requirements:

Roles, responsibilities, accountabilities and training requirements related to emergency preparedness and response shall be defined and assigned in the project-specific *Safety Management Plan*.

The *Safety Management Plan* must describe the GC's process for emergency preparedness and response planning and must address:

- Incident Command System (ICS) roles, responsibilities and competencies
- plan-specific training which may include emergency response table top exercises, emergency communication exercises or full-scale emergency response drills. A schedule of drills (table top and/or field drill) to test the emergency response plan (ERP) will be built into the Safety Management Plan to ensure that the project ERP meets the needs of Encana and the GC
- a process to coordinate the site-specific ERP with Encana's Divisional ERP

6. Environmental stewardship

Description:

Environmental stewardship practices exist that describe how we safeguard the environment and ensure environmentally-sound performance across Encana's operations and throughout the life cycle of assets and operations.

Requirements:

Roles, responsibilities, accountabilities and training requirements related to environmental stewardship shall be defined and assigned in the project-specific *Safety Management Plan*.

Appendix 3

Geophysical Acquisition EH&S Reference Guide

The *Safety Management Plan* must describe the GC's process for environmental stewardship and must include:

- spill management, response and reporting
- material and waste management
- surface and groundwater management
- air quality management
- wildlife and habitat management
- footprint management

7. Hazard identification, elimination and control

Description:

As defined by the Encana *Geophysical Operations EH&S Reference Guide* workplace hazards will be identified, communicated and controlled or mitigated to acceptable tolerances.

Requirements:

Roles, responsibilities, accountabilities and training requirements related to hazard identification, elimination and control shall be defined and assigned in the project-specific *Safety Management Plan*.

The GC's hazard identification, elimination and control practices must address:

- hazard reporting and management process
- EH&S risk matrix and related tools
- mitigation plan and integration process
- hazard communication process

8. Incident management

Description:

As defined by the Encana *Geophysical Operations EH&S Reference Guide* incidents are to be reported, investigated and analyzed to identify root causes, establish corrective actions, have verification of closure and communication of learnings to help reduce the risks of recurrence.

Requirements:

Roles, responsibilities, accountabilities and training requirements related to incident management shall be defined and assigned in the project-specific *Safety Management Plan*.

The GC's incident management practices must address:

- incident management and investigation process
- incident database and communication procedure
- regulatory and record keeping requirements

Appendix 1

9. Management of change

Description:

Managing change is a process designed to prevent the introduction of new hazards and risks into the work environment. Risks associated with changes to the operation plan and/or the project-specific *Safety Management Plan* must be identified and managed to conform to Encana and GC risk management.

Any MOC process must address:

- increases to EH&S risk
- degradation of data quality
- program timing
- program costs

Requirements:

Roles, responsibilities, accountabilities and appropriate levels of sign off related to management of change (MOC) shall be defined and assigned in the project-specific *Safety Management Plan*.

The *Safety Management Plan* must describe the GC's MOC process and include:

- EH&S risk matrix and related tools
- risk management process and risk treatment strategies
- hazard management and controls
- management training on MOC process

10. Occupational health and industrial hygiene

Description:

The GC, service providers and / or the Encana Geophysical Operations Group must have health practices in place to promote a hazard-free workplace leading to the safety of our workforce, communities and assets.

Requirements:

Roles, responsibilities, accountabilities and training requirements related to occupational health and industrial hygiene shall be defined and assigned in the project-specific *Safety Management Plan*.

Occupational health and industrial hygiene safe work practices must in place (where applicable) and personnel must be properly trained in the safe work practices.

The *Safety Management Plan* must address:

- hearing conservation
- respiratory protection
- hazard communication
- chemical-specific standards and associated regulatory requirements as dictated by qualitative or quantitative risk assessment
- health hazard assessment and control
- fitness for work

Appendix 3

Geophysical Acquisition EH&S Reference Guide

- alcohol and drug
- ergonomics
- smoke-free workplace
- fatigue management
- first aid and medical services (refer to the Encana *Geophysical Operations EH&S Reference Guide*)
- critical incident stress debriefing

11. Regulatory compliance

Description:

The Encana Geophysical Operations Group must insure that the GC and / or service providers conduct business in compliance with all applicable government regulations, agency rules, policy standards, acts and laws and monitor changes to ensure our operations continue to comply with regulatory requirements.

Requirements:

The GC and / or service providers must develop, implement, communicate, evaluate, maintain and improve practices to manage regulatory compliance.

The GC process for ensuring regulatory compliance shall be defined and assigned in the project-specific *Safety Management Plan* as follows:

- Establish a process to meet, exceed or address deviations from regulatory requirements
- Establish a process to systematically and consistently identify, incorporate and communicate applicable regulatory requirements.
- Include planning for regulatory compliance before the work begins and continued assessment throughout the work lifecycle.
- Establish a process to address results of internal and external inspections, reviews and audits.
- Prescribe relevant document controls and record keeping requirements.
- Involvement in regulatory compliance activities requires the minimum following competencies:
 - Knowledge and understanding of regulations or requirements as applicable to the job function
 - Understanding the consequences or risks of non-compliance
 - Knowing where to seek clarity on regulatory compliance requirements

12. Reporting performance

Description:

EH&S performance data is collected and routinely reported. Performance indicators are monitored, communicated to stakeholders and used for internal and external benchmarking, looking for opportunities for continuous improvement.

Requirements:

Roles, responsibilities and accountabilities related to reporting performance shall be defined and assigned in the project-specific *Safety Management Plan*.

The GC must meet the requirements for reporting performance as defined in the Encana *Geophysical Operations EH&S Reference Guide*. The *Safety Management Plan* must also include the following:

- project specific performance metrics
- analysis and trending process
- continuous improvement process

13. Risk management

Description:

A consistent approach to risk management is required by the implementation of a process to mitigate EH&S risks, ensuring conformance with Encana policies, practices and guidelines and compliance with regulatory requirements.

Risk is defined as the chance of something happening, measured in terms of probability and impact, which may adversely affect the achievement of Encana's strategic or major business objectives. Risk management includes identifying, evaluating and prioritizing risks.

Requirements:

The Encana Geophysical Operations Group must ensure the GC has developed, implemented, communicated, evaluated and maintained a risk management process for proper risk mitigation within acceptable risk tolerances on Encana projects.

As the GC may have a different methodology of measuring risk, a normalization process must be done comparing the GC's risk ranking to Encana's *EH&S Risk Matrix*.

Roles, responsibilities and accountabilities related to the management of risk on Encana geophysical projects shall be defined and assigned in the project-specific *Safety Management Plan*. The GC's *Safety Management Plan* must meet or exceed the following criteria:

- Establish a process to integrate risk management principles into decision-making processes involving EH&S risk.
- Use a consistent approach for managing risk.
- Conform to the Encana *EH&S Risk Matrix* (a comparison of Encana and GC risk matrices will be required).
- Establish risk mitigation plans.
- Establish a process to reassess risks when there are emerging risks, new regulatory requirements or changes introduced.
- Apply risk mitigation treatments such as risk elimination, reduction, exploitation or transfer.
- Reduce the residual risk level to as low as reasonably practicable.
- Establish a process to provide ongoing analysis for extreme or high risk activities with appropriate sign off by Encana representatives.
- Establish a process to communicate risk mitigation strategies to internal and external stakeholders.
- Prescribe relevant document controls and record keeping requirements.

Appendix 3

Geophysical Acquisition EH&S Reference Guide

14. Safety practices

Description:

Safety practices establish a consistent approach to promote risk awareness and ensure conformance with Encana and GC policies, practices and guidelines, and compliance with regulatory requirements.

A safety practice is defined as a document that describes a technique, method, process or activity designed to affect safe behaviors and promote, plan and maintain a safe work environment.

Requirements:

The Encana *Geophysical Operations EH&S Reference Guide* references specific Encana safety practices that pertain to geophysical projects.

The GC and / or service providers must develop, implement, communicate, train, evaluate, maintain and improve safety practices to promote, plan and maintain a safe work environment.

Roles, responsibilities and accountabilities related to safety practices shall be defined and assigned in the project-specific *Safety Management Plan*.

The GC's project-specific *Safety Management Plan* must identify which Encana practices pertain to the specific project, as well, address the following issues:

- job-specific training relating to EH&S practices
- accredited external, job-specific training and courses
- refresher / recertification training to maintain current certification requirements

15. Security

Description:

Security practices establish a consistent methodology to identify and mitigate risks and manage incidents related to staff and assets for Encana operations. These practices shall conform to Encana policies, practices and guidelines, and comply with regulatory requirements.

Requirements:

The Encana Geophysical Operations Group must ensure that the GC has a process in place to assess the security risk of a project.

Roles, responsibilities and accountabilities related to security practices shall be defined and assigned in the project-specific *Safety Management Plan*.

The GC's *Safety Management Plan* must also describe how security practices will be implemented, communicated, evaluated for effectiveness and maintained during the project, and must also include the following:

- field location security awareness and reporting
- office security awareness
- information security awareness

Appendix 1

16. Verification and audit

Description:

Both the Encana Geophysical Operations Group and the GC have a responsibility for verification and audit of the implementation and utilization of the project-specific *Safety Management Plan* to ensure integrated EH&S performance and to identify opportunities for continuous improvement.

Requirements:

Roles, responsibilities and accountabilities related to verification and audit shall be defined and assigned in the project-specific *Safety Management Plan*.

The Encana Geophysical Operations Group and the GC must have a process and resources in place to conduct regular verifications and audit reviews on the *Safety Management Plan*. The verification and audit process must include the following:

- Determine and document the required frequency of verifications and reviews.
- Establish a process for conducting verifications and reviews.
- Establish a process to communicate gaps when identified.
- Risk rank and prioritize findings.
- Analyze results to identify the presence of any best practices and / or areas of non-conformance, or improvement opportunities.
- Ensure corrective or mitigative actions are identified, assigned and tracked to completion for identified non-conformances.

Appendix 2

Geophysical Acquisition EH&S Reference Guide

Appendix 2: *Geophysical Operations Inspection Form*

Link to [Geophysical Operations Inspection Form](#)



GEOPHYSICAL PROGRAM INSPECTION

Custodian: CD EH&S
Date approved: 2011 Sept.

Service provider: _____ **Program:** _____

Date: _____ (d / m / y) **Inspector:** _____

What is the current operation? (Check all that apply)
 Front end Recording Heli-assist Heli-portable Trashing

Date of follow-up: _____ (d / m / y)

Completed by: _____

What is the energy source? (Check all that apply)
 Dynamite Vibe Weight drop Combination

S – Satisfactory U – Unsatisfactory

A. Safety management					
		S	U	N/A	Comments
1	Is the Project Safety Management Plan on site and available to all workers?				
2	Has the Project Safety Management Plan been communicated to all managers and workers?				
3	Have all employees completed the contractor's orientation?				
4	Have all employees completed the Encana orientation?				
5	Have all employees received a site specific orientation? (ERP, known hazards, camp rules, etc.)				
6	Have daily safety meetings been held/documentated?				
7	Is a copy of all required training and certification of employees available?				
8	Do employees carry original tickets at all times while on the job? (Medic, Shooter, TDG)				
9	Does everyone on the program have the most up-to-date map?				
10	Is a documented hazard assessment available?				
11	Does the hazard assessment appear to be comprehensive and does it list of all identified hazards?				
12	Has the program been assessed for communication dead spots?				
13	Is the company utilizing a hazard map as a living document and encouraging the continuous reporting of hazards and implementation of controls?				
14	Does the employer(s) have a process in place to identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MSI)? (BC OHS Regulation Sec. 4.46 - 4.53)				
15	Is a journey management plan in place for the project?				
16	Has a Joint Worksite Health & Safety Committee (JWHSC) been set up on the project?				
	Emergency preparedness	S	U	N/A	Comments
17	Has a First Aid hazard assessment been completed?				
18	Is there an appropriate number of medics on site, with the appropriate level of training, and the proper amount of supplies, and equipment in place? (Encana First Aid and Medical Services Practice, Project Safety Management Plan)				
19	Does the ERP include the camp/motel? Has a muster area been designated?				
20	Has the ERP been tested?				
21	Does the ERP refer to the CAGC ERAP for explosive incidents?				
22	Does the ERP contain a plan for spill response?				
23	Have likely scenarios of possible events been developed and tested? (Table top/full drill)				
	Working alone	S	U	N/A	Comments
24	Is there a process in place to insure that direct communication with workers working alone includes periodic communications checks?				
	Inspections	S	U	N/A	Comments
25	Is there evidence that equipment is being inspected on a daily (pre-use) basis?				
26	Are PPE inspection completed by supervisory staff on a regular basis?				
27	Are worksite inspection documented?				
28	Are camp inspections being completed on a regular basis?				
29	Is the General Contractor performing inspections on their sub-contractors?				
	Incident reporting	S	U	N/A	Comments
30	Is there evidence that incidents are being reported?				
31	Are the incidents being investigated and are root causes being identified?				
32	Are actions assigned to address root causes?				
33	Are incident learning's shared with all workers?				
34	Have all required incidents being forwarded to Encana?				
Comments: (Insert additional comments in text box below)					

B. Front end operations					
Slashing and falling		S	U	N/A	Comments
1	Is there a minimum of one certified lead faller on each falling crew? (BC OHS Regulation 26.22)				
2	Are all saw operators currently registered in the Enform or BC faller program?				
3	Is documentation available to confirm that weekly monitoring of saw operator trainees is occurring?				
4	Are log books available and current?				
5	Is there a process in place to manage dangerous trees within 1.5 tree lengths as per IRP 11 - Dangerous Tree Control?				
6	Is a minimum of 2 tree lengths and 60 metres spacing being maintained between faller and other workers? (BC OHS Regulation 26.24)				
7	Is a minimum of 2 tree lengths and 100 metres being maintained between workers and bulldozers or other mechanical fallers?				
8	Are the Faller/Buckers equipped with the appropriate PPE? (First Aid kit, hearing protection, hard hat with face guard, whistle, gloves, leg protection, foot protection, eye protection, high-visibility vest, 2 radios/saw crew, full wrap handle on saw, 3 wedges minimum, 1 axe with 3.5 lb. head and 17 inch handle, pressure bandage)				
9	Are the Fallers/Buckers removing all of the pokers sticking out into the line which might cause a hazard to crews on line?				
Mulchers		S	U	N/A	Comments
10	Are the mulcher operators familiar with all appropriate CAGC/Enform Best Practices/IRP? (E.g. Terrain Assessment Guidelines, Mulching Operations for Geophysical Operations, Building and Working Safely on Ice Covers)				
11	Are mulchers equipped with ROPS and appropriate guarding? (BC OHS Regulation Part 16)				
12	Are the back-up alarms functional?				
13	Mulchers manufactured after 2000 must be fitted with a secondary escape system. Means of escape must be clearly marked on the interior and exterior (BC OHS Regulation 16.17)				
14	Are mulchers equipped with appropriate fire fighting equipment and signage? (Shovel, fire extinguisher and First Aid kit)				
15	Mulchers that are equipped with a factory installed fire suppression system can only be operated when the system is functional. Is the system functional?				
16	Are mulchers equipped with a radio that contains a crew channel(s)?				
17	Are all emergency shut-off systems functional?				
18	Are all workers wearing appropriate PPE as per the Project Safety Management Plan?				
Surveyors		S	U	N/A	Comments
19	Are the surveyors familiar with all appropriate CAGC/Enform Best Practices/IRP? (E.g. Terrain Assessment Guidelines, Seismic Flagging Convention, IRP-17 Ground Disturbance, Seismic Activity Near NEB Regulated Pipelines)				
20	Are all workers wearing appropriate PPE as per the Project Safety Management Plan?				
21	Are ATV operators wearing approved helmet, gloves, goggles and have an ATV training certificate with them?				
22	Are all drivers in possession of a valid drivers license and do they ensure seatbelts are utilized?				
23	If Surveyors are working alone, has a JSA (Job Safety Analysis) been completed for program?				
Comments: (Insert additional comments in text box below)					

Explosives storage, handling and transportation		S	U	N/A	Comments
1	Do all roads leading to a magazine site have signs posted, NO TRESPASSING – EXPLOSIVES?				
2	Are all containers supplied by the manufacturer marked with the user identification number (e.g. U-123) to store explosives?				
3	Is there any exposed ferrous iron metal inside the magazine that could create a spark?				
4	Is smoking allowed within 15 m or 50 feet of any explosives storage container?				
5	Is the area surrounding the magazine kept clear of tall grass, brush or other flammable material to a distance of 8 metres to reduce fire hazard?				
6	Is the magazine license and instruction poster displayed inside the magazine?				
7	Is there a process in place to prevent storage within the magazine of damaged or deteriorated explosives, partial cartridges, empty boxes, or explosives primed with a detonator?				
8	Is there a process in place for reporting change of location of seismic magazine? Magazine relocation form must be completed.				
9	Do all persons loading, handling, destroying or detonating seismic explosives hold either a provincially issued blasting certificate or is under the direct supervision of one who does?				
10	Is there a process in place to insure that magazines are never loaded beyond their legal limits?				
11	Is there a process in place to insure that waste generated at explosive mag sites is cleaned up immediately? Empty boxes should be flattened prior to transport.				
Drilling		S	U	N/A	Comments
12	Are the drillers and helpers familiar with all appropriate CAGC/Enform Best Practices/IRP? (E.g. Dust Suppression on Seismic Drilling Rigs, IRP-17 Ground Disturbance, Safe Operating Procedures for Seismic Drilling and Blasting, Seismic Drilling Inspection Checklist, and Seismic Drills-Safe Guarding of Rotating Parts)				
13	Is there a process in place to insure that all vehicles/drills used for transporting explosives are inspected on a daily basis?				
14	Are all controls on the drill clearly labeled and are the labels kept clean?				
15	Are all workers wearing appropriate PPE as per the Project Safety Management Plan?				
16	Does the drill have an emergency stopping device which is labeled and within reach of the driller? Is it being tested daily? [BC OHS Regulation 23.28(1)]				
17	Are there at least two charged 20-BC type fire extinguishers on the drill? (BC OHS Regulation 23.10)				
18	Do the temporary magazines have any exposed metal? Are the insides clean and free of dirt and debris? Are they locked at all times except when loading or removing contents? Explosives and detonators must never be carried in the same magazine or be left unattended. [BC OHS Regulation 21.18(2)]				
19	Are the explosive placards (TDG) visible on all 4 sides of the drill? Do the placards get removed when the drill does not have any explosives on board?				
20	If drilling patterns, are the shot points at least a minimum of 6m apart?				
21	Does the driller and/or helper have their valid First Aid and blasters certificate on their person(s)?				
22	If drilling dry holes with air, is the drill equipped with dust suppression? (BC OHS 6.113)				
Comments: (Insert additional comments in text box below)					

C. Seismic acquisition					
Line crew observations		S	U	N/A	Comments
1	Is the recording crew management familiar with the CAGC Heliportable Best Practice?				
2	Are all workers wearing appropriate PPE as per the Project Safety Management Plan?				
3	Does each line crew work group have a minimum of a radio, personal First Aid kit, map and ERP?				
4	Is the recorder parked in safe location? (Roads, access, power lines)				
5	Do the ATV operators wear approved helmet, gloves, goggles, and have an ATV certificate with them?				
6	Are staging areas well organized? Does staging have a dumpster for garbage?				
7	Does the line crew know the location of emergency response equipment and is it readily accessible?				
8	Are line crew personnel utilizing safe lifting and bending techniques, and do they dismount from vehicles/trailers properly?				
9	Do all trailers and trucks have appropriate ladders and stairs (if required)? Are they properly maintained and do they have appropriate hand rails?				
10	Do all personnel using pickers have the appropriate training, and carry their tickets?				
11	Do all drivers have in possession a valid drivers license and do they ensure seatbelts are utilized?				
Working along roadways		S	U	N/A	Comments
12	Is appropriate signage in place? (Seismic crew ahead, cable crossing, slow moving vehicle, etc.) Has the Project Safety Management Plan established a speed limit?				
13	Have all of the hazards associated with roads been identified and communicated to the workers?				
14	Are vehicles equipped with flashing beacons?				
15	Are cables crossings secured and is the cable protected (where appropriate)?				
Helicopter operations		S	U	N/A	Comments
16	Is the helicopter pilot and engineer familiar with the Helicopter Association of Canada (HAC) Best Practice on Heliportable or Heli-assist Seismic?				
17	Are "Warning Low Aircraft" signs posted on roadways close to heli-pad?				
18	Is a designated area cordoned off (restricted access) as a landing zone with No Smoking signs posted?				
19	Are fuel tanks and fuel hoses grounded? Is the helicopter bonded to the tanks during refueling operations? Are fuel barrels properly stored? Is spill containment available?				
20	Are a minimum of two charged 20 lb. ABC type extinguishers at the helicopter landing pad?				
21	Is the inspection and maintenance records for all cargo hooks, carousels, bags and slings on site?				
22	Is all lifting equipment engineered and tagged with visible load limits?				
23	Is staging and all landing zones kept clear of waste and debris that may fly up into rotors?				
24	As a minimum, are all landing zones cleared to twice the outside diameter of the tip to tip distance of the rotor blades of the largest helicopter?				
25	When working full heliportable, are landing zones appropriately spaced, as per the Project Safety Management Plan? Are all landing zones GPS'd, identified, and mapped and do the First Aid attendants know where they are?				
26	Have all workers received a helicopter orientation prior to being transported in a helicopter?				
27	If HETS is required, the helicopter contractor must have a Class D external load section in their operations manual. Only trained and qualified rescuers and pilots are allowed to utilize HETS: 2000 hours plus 500 in terrain. Does the Project Safety Management Plan call for HETS capability, and have all of the requirements been met?				
28	Do persons working below helicopter wear appropriate PPE (hearing, head and eye protection)? Do persons working around the helicopter follow safe work practices such as grounding equipment and always keeping equipment in line of sight? Is a communication plan in place for signaling between ground crew and pilots?				
Comments: (Insert additional comments in text box below)					

Shooting explosives		S	U	N/A	Comments
1	All shooters must be in possession of and have on their person a valid Enform Shooting ticket and log book. [BC OHS Regulation 21.4(4)] Are all shooting crews familiar with the CAGC Best Practice on Misfired Charges?				
2	Does the shooting crew wear all of the appropriate PPE? (hard hat, safety glasses, high-visibility clothing, gloves and boots)				
3	Do the shooters practice good shooting technique and avoid transmitting by radio from the time that hook-up is started until it is complete and all personnel are in a safe position?				
4	Is an approved blasting machine being used? Does the shooter know the charge depths prior to arming and do they maintain a proper safety control zone in the area that the shot is being taken (30 metres)? Is the electrical circuit of the firing line and cap tested before each shot?				
5	Is only an approved Galvanometer being used for measuring resistance of a seismic detonator?				
6	When a blast initiated by electrical methods cannot be verified to have completely detonated, or is suspected to have misfired, does the blaster disconnect the firing lines from the blasting machine, and wait at least 10 minutes before permitting anyone to enter the danger area? (WorkSafe BC Regulation 21.73)				
7	If a shot point fails to detonate, is a process in place to properly abandon the shot point? (WorkSafe BC Regulation 21.84)				
8	When a shot point fails to detonate, is an investigation conducted, and is all of the appropriate documents filed with Encana and the regulatory bodies?				
Vibrator/weight drop energy sources		S	U	N/A	Comments
9	Are all workers wearing appropriate PPE as per the Project Safety Management Plan?				
10	Are all machines equipped with seat belts and do the operators utilize them?				
11	Are all of the machines equipped with First Aid kits and fire extinguishers?				
12	Is a process in place for training the operators? (E.g. winching procedures, chaining tires, machine maintenance, spill containment and clean-up)				
13	Are daily pre-use equipment checks completed and recorded?				
14	Are all units equipped with spill kits that are readily available in event of spill or leak?				
15	Do mechanic service trucks have adequate ventilation for compressed gas storage?				
Comments: (Insert additional comments in text box below)					

Encana site representative: _____
Print name
Signature

Service provider representative: _____
Print name
Signature

Appendix 2

Geophysical Acquisition EH&S Reference Guide

Appendix 3: *First Aid and Medical Services Practice*

Link to [First Aid and Medical Services Practice](#)

First Aid and Medical Services

Custodian: Canadian EH&S
Date approved: September 15, 2011

Purpose

This practice defines the Encana Canadian Division's minimum standards and expectations for emergency medical personnel and equipment at all field sites.

Definitions

Term	Definition
ACP – Advanced Care Paramedic (BC)	Provides Advanced Life Support with high-level interventions (e.g., advanced drug therapies / cardiac intervention and monitoring). Highest level of pre-hospital care. Two to three year course. Recertification yearly. Continuing education yearly minimum.
Advanced First Aid (Alberta)	Provides training at the Advanced First Aid level. 75 hour course. Recertification every three years. No continuing education program. First responders, as a level of training, perform Advanced First Aid skills and CPR.
Contractor	A company EnCana has selected to perform a service. The individual performing the service is specified (e.g., site representatives or site supervisor, acting as an agent for Encana).
Dressing station	Additional First Aid materials needed to set up a treatment space (refer to OHS-WorkSafe BC Guidelines, <i>Schedule 3-A: Minimum Levels</i>).
EMP First Aid Attendant (Alberta / BC)	Equivalent to both OFA 3 and Advanced First Aid levels for BC/Alberta. 76 hour course. Recertification every three years. No continuing education program. First responders, as a level of training, perform basic First Aid skills and CPR.
EMR – Emergency Medical Responder (Alberta)	Provides entry level ambulance training. 76 hour course. Recertification yearly. Continuing education yearly minimum. First responders, as a level of training, perform advanced First Aid skills and CPR.
EMT – Emergency Medical Technician (Alberta)	Provides Basic Life Support with some higher level interventions (e.g., basic drug therapies / cardiac monitoring). 400 hour course. Recertification yearly. Continuing education yearly minimum.
EMT-P – Emergency Medical Technician-Paramedic	Provides Advanced Life Support with high level interventions (e.g., advanced drug therapies / cardiac intervention and monitoring). Highest level of pre-hospital care. Two to three year course. Recertification yearly. Continuing education yearly minimum.
Field worksite	Any active Encana worksite where work is being completed (i.e., production, seismic exploration, road/lease/pipeline/facility construction, drilling completions, excavation, maintenance, or repair activities are taking place).
Level 1 First Aid kit	Worksites with two to five workers per shift require a Level 1 First Aid kit and a Level 1 First Aid Attendant on site (refer to OHS-WorkSafe BC Guidelines, <i>Schedule 3-A: Minimum Levels</i>).
Level 3 First Aid kit	Worksites with 11-30 workers per shift require a Level 3 First Aid kit, dressing station, and an OFA3 Attendant on site (refer to OHS-WorkSafe BC Guidelines, <i>Schedule 3-A: Minimum Levels</i>).
Minimum level of First Aid	Regulatory minimums are set in the OHS regulations for each province. Encana's expectations as outlined in this practice meet or exceed those requirements.

First Aid and Medical Services

Term	Definition
OFA Level 1 – Occupational First Aid (BC)	One-day BC First Aid course required by Encana for all employees and contractors working in BC.
OFA Level 3 – Occupational First Aid (BC)	Course providing training at the Advanced First Aid level. 76 hour course. Recertification every three years. No continuing education program. Required by WorkSafe BC for medical providers working in industry.
On-site service providers	Service providers that perform work for Encana on Encana field sites. These include well sites, pipelines, seismic lines, roads, and facilities.
PCP – Primary Care Paramedic (BC)	Provides Basic Life Support with some higher level interventions (e.g., basic drug therapies / cardiac monitoring). 400 hour course. Recertification yearly. Continuing education yearly minimum.
Service provider	A company Encana has selected to perform a service without specifying the individuals who provide the service.
Site Safety Plan	Site-specific evacuation and emergency plan to protect personnel on the worksite. Must include: <ul style="list-style-type: none"> ▪ local emergency response contact numbers ▪ site diagram showing muster points, First Aid equipment / personnel ▪ contact information for medical provider and site supervisor ▪ Directions to site by road and GPS coordinates ▪ STARS site registration number
Staff	Includes all Encana employees and contractors hired to conduct work on Encana's behalf.
Standard First Aid (Alberta)	Two-day Alberta First Aid course required by Encana for all employees and contractors working in Alberta. Provides Basic First Aid training.
STARS	Shock Trauma Air Rescue Society (STARS) air ambulance service, Emergency Link Centre, site registration system, and call centre
Tier 1	Any site with a low_or moderate hazard rating according to the provincial OHS / WorkSafe hazard rating (e.g., camps, BC operations facilities).
Tier 2	Any site with a high hazard rating according to the provincial OHS / WorkSafe hazard rating (e.g., drilling, completions, construction, pipeline, or geophysical).
Transportation endorsement	Additional training for BC Level 1 First Aid Attendant. Includes spinal immobilizing techniques and packaging for transportation.

Scope and application

This practice applies to all Encana Canadian Division field operations that are more than **20** minutes surface travel time from a hospital in British Columbia or **40** minutes response time to a health care facility in Alberta.

In the [Controls](#) section, sites considered **Tier 1** will follow the Tier 1 requirements and sites considered **Tier 2** will follow the Tier 2 requirements. Further, sites will adhere to equipment requirements based on the competency level of medical provider on site as well as the Additional Controls listed in the Controls section.

First Aid and Medical Services

Custodian: Canadian EH&S
Date approved: September 15, 2011

Responsibilities of staff and service providers

Encana leadership

Encana leadership, through the environment, health and safety (EH&S) support group, is responsible for commissioning, developing, reviewing, and approving a practice for emergency first aid and medical services. All practices must be reviewed and updated on a yearly basis, or more frequently as required.

Business unit and site leadership

- Ensure that all facilities / sites under their control comply with the requirements of this practice and associated procedures.
- Ensure training is provided to workers required to supervise or hire emergency service providers.
- Keep records of employee training in Encana's learning management system (LMS).

EH&S personnel

- Assist the business in complying with this practice and all associated procedures.
- Respond to questions or concerns relating to the interpretation of this practice and all associated procedures.
- Provide assistance to the business regarding service provider selection and supervision criteria.

Encana worksite supervisors

- Supervise service providers in accordance with this practice and Encana policy.
- Develop on-site procedures if necessary.
- Communicate procedures to affected workers.
- Respond to worker questions directly or by seeking additional feedback from EH&S personnel.
- Provide feedback to the business unit and the corresponding EH&S group concerning the value and effectiveness of this practice and all associated procedures.

Service providers

- Provide equipment and personnel that meet all regulatory requirements and the requirements outlined in this practice.
- Ensure personnel have completed the required Encana *General Service Provider Orientation* and *Medical Provider Orientation*.

Workers

- Seek clarification concerning any practice or procedure through their immediate supervisor.

First Aid and Medical Services

Controls

Tables 1 and 2 show the appropriate level of care based on number of workers on site for Alberta and BC. Table 3 shows the on site equipment requirements based on the competency level of medical provider on site. These controls apply to all sites covered under the Scope and Application section.

Note: Management of Change process should be used if required level of care listed is not attainable.

**Table 1: Tier 1 (low / moderate hazard rating)
level of care required based on number of workers on site**

No. of workers	Competency level BC	Competency level AB
1-5	Level 1 First Aid	Standard First Aid
6-15	Level 1 + transportation endorsement	Standard First Aid
16-50	EMR	EMR
51-100	PCP-IV	EMT
101-199	ACP	EMT-P
200 +	ACP + EMR	EMT-P + EMR

**Table 2: Tier 2 (high hazard rating)
level of care required based on number of workers on site**

No. of workers	Competency level BC	Competency level AB
1-5	Level 1 First Aid	Standard First Aid
6-10	EMR	EMR
11-49	PCP-IV	EMT
50-199	ACP	EMT-P
200 +	ACP + EMR	EMT-P + EMR

**Table 3: Equipment requirements based on
competency level of medical provider on site**

Competency level	Equipment requirements
BC Level 1 First Aid / Alberta Standard First Aid	BC Level 1 / Alberta Level 2 First Aid kit
BC Level 1 + Transportation Endorsement	Emergency transport vehicle (ETV) and equipment
EMR	MTC + Level 3 First Aid kit + dressing station
PCP-IV/EMT	MTC + Level 3 First Aid kit + dressing station + additional equipment in accordance with PCP / EMT scope of practice
ACP/EMT-P	MTC + Level 3 First Aid kit + dressing station + First Aid room equipment + additional equipment in accordance with ACP / EMT-P scope of practice.

First Aid and Medical Services

Custodian: Canadian EH&S
Date approved: September 15, 2011

Additional controls

- Ensure maximum response time for medic is 20 minutes in BC and 40 minutes in Alberta.
- All mobile treatment centres (MTCs) to have automated external defibrillator (AED), blood pressure cuff, stethoscope, and blood glucose meters.
- Ensure all sites are registered with STARS Emergency Link Center.
- Ensure a *First Aid Assessment Worksheet* has been completed on each worksite (BC only).
- Ensure that the Encana [Site Safety Plan](#) has been completed where required (see Encana Canadian Division Practice [Emergency Preparation and Response](#)).
- Ensure that the roles and responsibilities of the on site medical provider are clearly understood (i.e., by completing the Encana *Medical Provider Orientation* and reviewing applicable OHS regulations) and do not impact their ability to provide medical aid in a timely manner if required (refer to OHS Regulations [Part 3.21, First Aid Attendant Roles and Responsibilities](#)).

Training, certification, and competency

Role	Description
Service providers	Ensure medics have completed the Encana Medical Provider Orientation prior to being deployed to an Encana field worksite.
Staff	Must complete the appropriate LMS training.

Disciplinary actions

Role	Description
Service providers	Appropriate disciplinary action up to and including dismissal from the worksite and/or loss of contract services must be taken based on the severity of the violation and individual circumstances.
Staff	Appropriate disciplinary action up to and including termination must be taken based on the severity of the violation and individual circumstances.

Regulations and reference material

Owner	Name
Alberta	OHS Code 2009 Part 11 Emergency Medical Technicians Regulation
British Columbia	OHS Regulations Part 3.14-3.21 WCB Standards OFA 1: Certification of Occupational First Aid Attendants
Nova Scotia	OHS First Aid Regulations

First Aid and Medical Services

Change management

This practice should be reviewed, refreshed, and approved annually to ensure alignment with current regulations, corporate policy, and industrial best practices. Regulatory changes and incident investigations may dictate a shorter review cycle. To suggest changes or provide comments, email CDEH&S@encana.com.

*If the level of care required becomes unavailable a temporary replacement of a lower level is acceptable for a reasonable amount of time. The lower level must comply with provincial requirements at all times.

Record keeping

Refer to the Encana Canadian Division EH&S [Records Management Practice](#).