



## Edmonton Terminal Expansion Project

### Health and Safety Execution Plan

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## Health, Safety, and Environmental Policy

**Kinder Morgan Canada Inc. is committed to conducting its business in a safe and environmentally responsible manner.**

In order to meet this commitment, the Company and its employees will comply with all applicable laws, company policies and industry codes of practice and require the same of our contractors

- Identify and manage risks to prevent or reduce possible adverse consequences from our operations
- Be prepared for emergencies and coordinate our response plans with emergency response organizations in the communities where we operate
- Train employees to be aware of and meet their responsibility for protection of health, safety and the environment
- Integrate health, safety and environmental protection measures into all elements of our business
- Communicate openly with stakeholders about our activities and their impact on health, safety and the environment and respond promptly to their concerns
- Work with industry associations, governments and other stakeholders to establish standards for health, safety and the environment appropriate to our business
- Use resources efficiently and effectively
- Regularly monitor our health, safety and environmental performance and strive for continuous improvement

Ian Anderson

President

Kinder Morgan Canada Inc., 2008



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## 1.0 INTRODUCTION

As part of project execution, Kinder Morgan Canada Inc. (KMC) promotes excellence in Health and Safety performance with the expectation that the Contractor and subcontractors will be in full compliance with all applicable legislative requirements.

This document was developed to be aligned with the requirements of the various regulatory bodies listed and shall govern all work site activities in Alberta:

- Alberta, OH&S
- National Energy Board
- Canada Labor Code, Part II
- Onshore Pipeline Regulations
- AB Fire Code

This Health and Safety Execution (HSE) Plan defines the safety and health policies, objectives, guidelines, and procedures that will be followed by all project personnel, whether owner or contractor companies and their personnel.

Contractors, subcontractors, and their personnel engaged in work on behalf of KMC shall take reasonable care to protect the environment, their own personal safety, that of their co-workers, the public, and any others that may be present on the work site.

This document is not intended to be an all-inclusive set of rules, but the minimum level of care and attention to safety that the Contractor, sub-contractors, and all personnel shall meet when working for KMC. In some instances where work is being performed inside existing KMC facilities, the Contractor, sub-contractor, and their personnel shall comply with the KMC HSE standards for live facilities.

KMC, through active leadership, shall support the efforts of all contractors, subcontractors, and their personnel to ensure safe a healthy workplace is maintained.

The Project HSE Plan is intended to be a living document and any recommended improvements, changes, or deviations must be approved by the Project Manager.

## 2.0 DEFINITIONS

“ACCIDENT PREVENTION” means the application of measures designed to reduce accidents or the potential for accidents within a system, organization, or activity. An accident prevention program is one which aims to avoid injury to personnel and / or damage to property, materials or, equipment.

“COMPETENT” means adequately qualified, suitably trained, and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.

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“COMPETENT PERSON” means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

“CONFINED SPACE” means an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy with a restricted means of entry or exit and may become hazardous to a worker entering it because, (a) of its design, construction, location, or atmosphere; (b) of the work activities, materials, or substances in it; (c) the provision of first aid, evacuation, rescue, or other emergency response service is compromised; or (d) of other hazards relating to it.

“CONSTRUCTION MANAGER” means the KMC-appointed Construction Manager.

“CONTRACTOR” means the person, firm, or corporation identified as such in the executed agreement.

“CONTRACTOR SAFETY PROGRAM” means the Contractor’s health and safety system in which the Contractor defines how they do their work and administer their health and safety system.

“EMPLOYER” means (a) a person who is self-employed in an occupation, (b) a person who employs one or more workers, (c) a person designated by an employer as the employer’s representative, or (d) a director or officer of a corporation who oversees the occupational health and safety of the workers employed by the corporation.

“GROUND DISTURBANCE” means a ground disturbance is defined as any work, operation, or activity that results in a disturbance of the earth to a depth of 30cm or more, or that results in a reduction of the initial installation cover over a pipeline. The term 'ground disturbance' has been adopted by industry to replace 'excavation' since there are many activities other than excavation that disturb the ground. Some types of buried facilities, other than pipelines, may not have 30cm of cover; hence it would be prudent to consider any disturbance of the ground, regardless of depth, as a ground disturbance.

Under the Alberta OH&S Act, Code, and Regulations Part 32 441, ground is disturbed if a work operation or activity on or under the existing surface results in a disturbance or displacement of the soil, but not if the disturbance or displacement is a result only of routine, minor road maintenance, or cultivation to a depth of less than 450mm below the ground surface over a pipeline.

“HOT WORK” means the use of open flames, other heat sources, static, and / or spark-producing devices where there is a potential for explosion or fire.

“INCIDENT” means an unplanned event or chain of events, which has or could have resulted in injury and / or damage (loss) to assets, or which may have an impact on the public. "INCIDENT" denotes both near miss events and accidents. The extent of near miss reporting and investigation is determined by the seriousness of the incident (i.e. its potential).

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“KMC REPRESENTATIVE” means the person representing KMC with the primary responsibility of overseeing the completion of the work being performed by Contractor personnel.

“MATERIAL SAFETY DATA SHEET” means a summary sheet supplied by the controlled product manufacturer that identifies the hazards, proper storage, and handling procedures and emergency treatment for the controlled product.

“OPERATOR” means Kinder Morgan Canada Inc.

“PRIME CONTRACTOR” means the Contractor, employer, or other person who enters into an agreement with the Owner of the work site to be the Prime Contractor, or if no agreement is made, the Owner of the work site.

“PROJECT ENGINEER” means KMC-appointed Project Engineer.

“PROJECT HSE PLAN” means this document with the expectations and requirements contained herein.

“REGULATION” means a rule, ordinance, law, legal regulation, or device by which conduct or performance is controlled.

“SAFE WORK PERMIT” shall mean a permit issued as a written record by which KMC authorizes a worker and / or work crew to do a specific job at that worksite.

“SAFE WORK PRACTICES” means the procedures for performing specific tasks which, when followed, protect persons from illness, injury, and the protection of property from damage.

“VISITOR” means any individual who is not performing any assigned work activity on a project controlled worksite. An example of a visitor is any individual or group on a tour of a KMC worksite.

“SAFETY REPRESENTATIVE” means an individual who is qualified to provide on-site safety services.

“WORKER” means any person engaged in an occupation at the worksite.

“FACILITY or FACILITIES” means any above or below ground appurtenances (e.g. pipelines, piping, valves, communication or electrical cables, poles or towers, etc ) or the site on which such appurtenances are situated (e.g. pumping stations, valve settings, etc.)

### 3.0 PROJECT HEALTH, SAFETY, AND ENVIRONMENT GOALS

KMC’s goals are to achieve 100% safe performance through hazard recognition, education, skill training, and clear accountability concerning health and safety performance. KMC values the results of safe work practices and results are given the highest priority with an idealized goal of zero incidents.

The following are the established project health and safety objectives to which all project personnel will subscribe and strive to achieve:

- Minimum number of first aids



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- Zero medical aids
- Zero lost time incidents (injuries and work-related illnesses)
- Zero fatalities
- Continuous improvement and reduction of occurrences that could lead to any of the above incidents.

The KMC Project Management Team commits to our contractors and coworkers to actively promote the highest standards of health and safety compliance in the conduct of our business by:

- Leadership by attitude and example,
- Promotion of a positive safety culture,
- Effective communication between KMC and all contractors and Subcontractors and their personnel,
- Commitment to a Zero Incident philosophy, and
- Managers demonstrating our commitment to leadership in safety performance by involving every level of the organization in promoting 100% Safe performance.

#### **4.0 PRINCIPLES OF SAFETY MANAGEMENT**

KMC will assume the role of Prime Contractor for health and safety management for the work site.

This Project HSE Plan and its execution by KMC shall meet or exceed all applicable legislation and requirements of governing regulatory bodies, locally, provincially, and federally.

Construction safety shall be a prime consideration in contract award, construction planning, and construction execution. Construction safety procedures shall be evident in written manuals and execution plans prepared for the project.

Copies of this Project HSE Plan, when approved, shall be made available to the KMC Project Management Team, including field supervisory staff, safety personnel, and construction contractors for reference and implementation during the construction and commissioning phase of this project.

Potential contractors shall have their current safety programs and historical performance records evaluated with a commitment to the objectives and procedures of this Project HSE Plan prior to or in conjunction with the invitations to submit bids for project assignments.

All construction personnel will be advised of the project safety goals, policies, requirements, and procedures through a mandatory site safety and environmental awareness orientation session prior to contractor personnel being permitted to enter the worksite.

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Each construction site employee shall be provided with a copy of the orientation safety handbook, as a well as a safety decal indicating that they have completed the site HSE orientation.

The safety and performance of construction and inspection personnel and subcontractors will be audited by KMC Safety Personnel and / or third-party agencies and upgraded as required throughout construction.

Every employer shall ensure, as far as reasonably practicable, the health and safety of workers engaged in the work of that employer and those workers not engaged in the work of that employer but present at the work site at which that work is being carried out and that the workers engaged in the work of that employer are aware of their responsibilities and duties under the Alberta OH&S Act, Codes, and Regulations and other applicable regulatory agencies.

Each and every employee is responsible for his own safety; that of his co-workers, and other workers not engaged in the work of that employer but present on the work site at which that work is being carried out.

Every worker has the right to refuse to perform work that the worker considers to be an unsafe condition and no penalty shall apply for their action.

KMC and Contractor project personnel shall promote and participate in safety meetings, audits, and reporting to reinforce the importance of safety on the project. KMC project personnel may, at times, observe the quality and content of Contractor daily tool box meetings.

## 5.0 RESPONSIBILITIES

### 5.1 Project Manager

The Project Manager has the overall responsibility for the implementation of the Project HSE Plan and provides the senior project direction to the line managers, safety personnel, and Contractors in the application of the provisions of this Project HSE Plan. The Project Manager provides the implementation resources and training necessary to carry out the Project HSE Plan and ensures that the policies and procedures are communicated and applied throughout the project organization.

The Project Manager provides support to the Construction Manager by ensuring that adequate resources are available for the effective implementation of the Safety Execution Plan at site. The Project Manager shall initiate corrective actions or system improvements.

The Project Manager ensures the project(s) under his control have the resources needed to effectively carry out the requirements of the Project HSE Plan and ensures that corrective actions or system improvements are completed.

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## 5.2 Construction Manager

The responsibility for implementation of the Project HSE Plan at the site level lies with the Construction Manager, who shall delegate actions to Line Management and Supervision in order to meet KMC's goals and objectives.

The Construction Manager will also be responsible to assess the impact on project safety that could result from project execution strategies, such as schedule enhancement and the resulting requirements for increased work hours, manpower loading, shift work, etc., and report those needs to the Project Manager.

## 5.3 Safety Manager, Major Projects or Manager, Safety, KMC

The Safety Manager, Major Projects or Manager, Safety, KMC, shall provide safety and health support to the Project Manager, project line management, and project safety personnel. He ensures that this Project HSE Plan meets the requirements of all regulatory requirements and during the project conducts monitoring of its implementation throughout the life of the project.

## 5.4 Resident Inspectors

The Resident Inspector shall be responsible to ensure that the site requirements of this Project HSE Plan are adhered to and to provide management support to the KMC Site Safety Inspector in the enforcement of this Project HSE Plan.

In the event of an emergency, the Resident Inspector fills the role of the Senior Emergency Site Manager, or his delegate.

The Resident Inspector shall enforce the Project Disciplinary policy when required.

The Resident Inspector will also perform site safety orientations if needed.

No work shall be carried out on any KMC site unless appropriate KMC Representation is present.

## 5.5 Site Safety Inspector

The Site Safety Inspector reports to the Safety Manager, Major Projects or Manager, Safety, KMC, and ensures that this Project HSE Plan is implemented and complied with by all KMC personnel, contractor / subcontractor staff, and workers.

The Safety Inspector shall:

- Conduct site safety inspections, which include the monitoring of contractor personnel and corrective intervention when required. Included in this shall be a weekly formal inspection of the site in the company of the Contractor Supervisor and the Resident Inspector.
- The Safety Inspector, in consultation with the Resident Inspector, shall issue stop work instructions when conditions require that action.

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- Provide assistance to Superintendents in the implementation of the Project HSE Plan.
- Enforce the Project disciplinary policy when required.
- Attend Contractor weekly safety meetings and occasionally monitor the quality and content of Contractor daily tool box meetings.
- Conduct new hire orientations at the site he is available at.
- Ensure that advisories or safety bulletins are communicated to the Contractor.
- Provide the necessary Construction Safety Administration required for reporting and records and transfer those documents to KMC upon completion of project.
- Dispatch daily field reports to the Safety Manager, Major Projects or Manager, Safety, KMC, containing all statistics, including project hours. This shall be followed up with a monthly report.
- Audit monthly the content and quality of Contractor Construction Safety Administration files.
- Notify the Safety Manager, Major Projects or Manager, Safety, KMC, and Resident Inspector of all incidents and near misses using the EHS Project Reporting Matrix. (See incident Reporting Section)
- Attend KMC / Contractor Progress meetings and report the daily and weekly site activities and statistics.
- Provide coverage for the sites under his control.

## 5.6 Contractor Management

KMC requires that it's Contractors / Sub-Contractors:

- Obtain a KMC Safe Work Permit from the KMC Representative prior to initiating any work. (NOTE: A general safe work permit may be adequate for greenfield construction).
- Maintain communication with the KMC Representative throughout the duration of the project.
- Commit to worker health and safety protection through active Health and Safety Leadership.
- Fully comply with all applicable federal, provincial, local health and safety laws, rules, regulations, and established industry standards.
- Fully comply with this Project HSE Plan.
- Maintain an effective health and safety compliance program.
- Ensure that pre-job hazard assessments are completed.
- Employ only competent individuals at the project site.

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- Provide workers with appropriate equipment and training to protect worker safety.
- Conduct business in a legal and ethical manner to protect the health and safety of their workers at the project site.
- Cease operations immediately if a health or safety hazard exists at the project site.
- Provide progressive discipline to personnel for infractions pertaining to health, safety, and the environment.
- Administer their Corporate Drug and Alcohol Program.
- Administer / enact their Modified Duty program for their workers upon injury.

The Contractor shall take all necessary steps to prevent injury or environmental damage and to protect any persons, on or off the worksite, from potential injury or illness resulting from the work.

The Contractor is responsible for ensuring all its subcontractors and all other contractors or employees comply with all applicable project health, safety, and environment requirements. Subcontractor safety program and previous WCB statistics shall be submitted to the Safety Manager, Major Projects or Manager, Safety, KMC, for assessment and approval before they are brought onto site.

Incident prevention is a primary responsibility of all levels of KMC personnel and Contactor / Subcontractor Line Management and Supervision. Line Managers and Supervisors are expected to:

- Communicate Health and Safety responsibilities as personnel are assigned to the project. Project personnel will be held accountable for fulfilling their specific responsibilities.
- Ensure that every reasonable precaution is taken to eliminate hazards and prevent incidents including use of effective communication, training, motivation, and hazard assessment techniques.

## 5.7 Contractor Worker

Contractor workers must be informed of, understand, and follow:

- The worker is responsible for his own safety, that of his coworkers. and any other worker present on the job site who may or may not be in the direct employ of his employer.
- The Right-to-Refuse unsafe work.
- The Right-to-Know and the Right-to-Participate in their Employer's Safety Program.
- The scope of work for which they are responsible.
- Task-specific hazards and procedures for emergencies.

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- Health and safety laws, regulations, and operating procedures applicable to the project and each job task they are asked to perform.
- This Project HSE Plan.
- Their Contractor's health and safety requirements.
- The use of drugs, alcohol, and firearms are strictly prohibited at all KMC worksites.
- That smoking is allowed in designated areas only, which does not include onsite mobile equipment.
- Job fitness requirements.
- Incident and hazard reporting requirements.
- Ensure the safety and health of themselves as well as their co-workers, subcontractors, and the public.
- Contact their Supervisor if in doubt regarding safety procedures or practices.
- Report unsafe conditions or hazards they encounter and correct if able to do so safely.
- Report all injuries or incidents immediately to their Supervisor.
- Use required personal protective equipment (PPE).
- Attend and participate in safety and tool box meetings. **(Mandatory)**

All personnel must work in a manner that does not create a danger to themselves or fellow workers, and strive to achieve a high level of awareness to the hazards that may exist in their work environment.

Safety personnel assigned to site have responsibility for system administration and to act as a resource to all personnel on issues related to health and safety. Safety personnel shall provide advice to the Construction Management Team to ensure that project compliance with corporate, project and legislative requirements is achieved and have the authority to take prompt corrective action.

### **5.8 Contractor Supervisor / Foremen Responsibilities (including subcontractors)**

Management of health and safety at the worksite is the responsibility of each supervisor who directs the work of others, to maintain a safe working for their workers each supervisor will:

- Ensure compliance with corporate policies, practices, procedures, Project HSE Plan, and regulatory requirements by knowing and understanding their OH&S obligations and by demonstrating strong safety leadership to those persons he is responsible for on his work site.
- Maintain a daily logbook to record any activities that relate to improving site safety conditions, corrections of workers and a description of daily activities.

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- Ensure all workers are adequately qualified, suitably trained, and have sufficient experience to perform work safely.
- Promptly inform project management of high potential safety and health near misses and incidents.
- Attend at any supplemental training that may be deemed necessary by KMC that shall improve the project's safety performance.
- Follow the system for reporting safety and health incidents according to the Emergency Response Plan and Incident Reporting Matrix and initially fills the role of the on scene Incident Commander until Command is passed over to a more Senior Person having Jurisdiction.
- Ensure hazards are eliminated to the extent practicable and adequately control any remaining identified hazards.
- Complete hazard assessments and job safety analysis at the worksites.
- Monitor the workers and correct any unsafe worker behaviors.
- Conduct informal inspections on an ongoing basis in the relevant area of responsibility.
- Conduct formal inspections at each worksite on a regularly scheduled basis with the Resident Inspector, worker, and KMC Safety Personnel and correct deficiencies noted and to ensure that corrective actions assigned to himself and crew are completed and the inspection form signed off.
- Ensure PPE is readily available at the worksite, correctly used, stored, maintained, and replaced when necessary

## 5.9 Contractor Safety Coordinators

The Safety Coordinator will ensure compliance with this Project HSE Plan, along with their own respective Contractor's program and applicable legislated requirements, provincially and federally, and conditions herein and shall advise Contractor management / supervision on matters related to occupational health, safety and environment.

The Safety Coordinator's résumés shall be submitted with the Bid for approval by KMC. As a minimum, the Construction Safety Officer (CSO) designation is required, with applicable experience.

- They have the obligation and responsibility to stop any work that is immediately dangerous to life and health and consult and provide advice, mentoring, and correction to any person(s) on that particular site.
- The Contractor Safety Coordinator(s) shall attend at the daily Pre Job Safety Instruction meetings and weekly safety meetings in order to provide additional advice and to monitor such meetings for safety quality and content. They shall also be required to attend at any job planning meeting that due to a



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change in construction methodology, process, etc. that may impact the persons working on his spread he is responsible for.

- The Contractor Safety Coordinator(s) shall monitor and provide correction to any person(s) on their spread who is not in compliance of any part of the Project Health and Safety Execution Plan, including applicable federal and provincial regulations.
- Task Observations that shall be documented will be performed weekly by the Contractor Safety Coordinator(s) to verify compliance to safe work practices, procedures and rules.
- The Contractor Safety Coordinator(s) shall, upon consultation with the Foremen, recommend or initiate the disciplinary process to effectively deal with negative safety behaviors and forward those recommendations based on the initial investigation to the Safety Manager, Major Projects or Manager, Safety, KMC, for further actions.
- The Contractor Safety Coordinator(s) shall be responsible to review the Incident Reports generated from an incident with the respective person(s) who caused or contributed the incident and review the corrective actions from the field crews as a lessons learned tool and shall be required to do the same with Near Miss Cards that have been turned in regarding non compliance. This shall be done at the field level.
- Contractor Safety Coordinator(s) shall be required to participate in the gathering of information for any incident investigation and forward a completed copy with corrective actions and dates to be completed to the KMC Project Safety Inspector.

### 5.10 Suppliers

Suppliers are directed to provide tools and equipment to the project that meets all legislated requirements and standards as well as manufacturers specifications.

Suppliers shall ensure that all tools, appliance, equipment, designated substance, or hazardous material that the supplier supplies complies with all applicable legislation, regulations, and codes.

## 6.0 PRE-CONSTRUCTION SAFETY MEETING (WITH CONTRACTORS)

In addition to any bid review meetings that may be held with potential Contractors / Subcontractors during the bid evaluation phase, each Contractor (individually) will be required to attend a Pre-Construction Safety Meeting after contract award and prior to that Contractor starting any site work. This meeting shall be scheduled well in advance of the Contractors arrival at the work site and may be held as part of a general pre-job meeting with the Contractor. The following personnel at a minimum shall attend any portion of the meeting dealing with safety issues:

- KMC Project Manager



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- KMC Construction Manager
- KMC Safety Manager, Major Projects or Manager, Safety, KMC
- Contractor Management
- Contractor Senior Site Superintendent
- Contractor Safety Representative

A meeting agenda will be provided to all attendees prior to the meeting and the meeting will be minuted.

## **7.0 CONTRACTOR SAFETY PROGRAM**

Contractors / Subcontractors shall modify their safety program to comply with this Project HSE Plan as required. Contractors must diligently administer and comply with Contractor's own Health and Safety program as well as KMC expectations and requirements.

The Contractors / Subcontractors Health and Safety Program will consist of but not be limited to the following components:

- Management commitment.
- Assignment of responsibilities.
- Safety planning and rules.
- Regulatory requirements.
- Personal Protective Equipment.
- Emergency planning and preparedness.
- Training and communication (including proof of valid CSTS, Ground Disturbance Level 1 and 2, WHMIS, and Equipment Operator Training for applicable equipment)
- Incident investigation.
- Inspections.
- Near Miss Card Program
- Safe work practices and procedures
- Codes of Practices for Respiratory Protective Equipment, Confined Space, Fall Protection and Hearing / noise management.
- Records, statistics, and forms
- Supplementary programs, i.e. WCB Case Management / Modified Work Program, Drug and Alcohol Policy including post incident testing.
- Hazardous / controlled products
- Maintenance program for tools, mobile equipment

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- Hazard assessment and control, including Field Level Risk Assessment Cards
- Certificate of Recognition (COR)

### 7.1 Subcontractor Control

The Contractor shall ensure that Subcontractors' own HSE program meets the intent of, and follows this Project HSE Plan. The Contractor should obtain this commitment in writing. The Contractor shall submit to the Safety Manager, Major Projects or Manager, Safety, KMC, a copy of the sub contractors' safety program and three (3) year average of WCB and safety statistics prior to being allowed on the project site.

## 8.0 COMMUNICATION

### 8.1 Orientation

All KMC personnel, Contractor workers, and visitors must receive a safety and environmental awareness orientation before entering a project site. The orientation consists of the following:

- KMC Policies and Procedures.
- Site Specific hazards.
- Understanding of the worker's right to refuse unsafe work.
- Alcohol and Drug Guidelines for Contractors.
- Introduction to KMC's expectations and requirements.
- Emergency Response Plan.
- Environmental Protection Plan (EPP).
- Orientation Quiz.
- Presentation of applicable training certifications. CSTS / WHMIS (all); Ground Disturbance Level I (oilers, grademen), Level II (foremen and equipment operators); Equipment Operator Certifications; First Aid / CPR; etc. (Copies of each certificate will be attached to the worker's orientation file)  
NOTE: any certificate that expires during the phase of the work being done will have to be renewed by the worker prior to being permitted to continue work.

Orientations start promptly at 07:00. Special arrangements for late arrivals will have to be made through the Resident Inspector.

All KMC personnel will have been orientated prior to site arrival.

Contractor personnel will attend their own Contractor-specific orientation after completion of the KMC orientation.

Upon completion of the KMC orientation each Contractor worker will be provided with an Orientation Sticker and an Orientation handbook.

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## 8.2 Meetings

### 8.2.1 *Daily Tool Box Meeting*

- Prior to beginning a daily task, or a task within a job the Supervisor or designate must assemble all involved workers to discuss and review the proposed work. Workers must participate in the discussion, with a question period provided at the end of the meeting.
- Attendance is mandatory and must be recorded and any necessary job procedures reviewed.
- Hazard identification, PPE requirements and emergency preparedness shall be included in the discussion.
- Records of the meeting shall be maintained on site and shall be made available to the KMC Representative if requested.

### 8.2.2 *Weekly Safety Meetings*

- These meetings are similar to the daily toolbox meetings but additional time should be scheduled so that major topics of safety and discussions on resolution of previous safety items can be discussed. They will be relevant to the site and will address safety and health issues only and are conducted by the Contractor.
- Attendance by KMC Representatives is required.
- All Contractor supervision, subcontractors, and workers must attend.
- Copies of the meeting minutes shall be made available to the KMC Safety Representative if requested.
- Other representation from Regulatory bodies may also attend.

### 8.2.3 *Hazard Assessment Meetings / Pre-Phase Meetings*

- Prior to the commencement of the project, the Contractor shall assess the Site to identify existing or potential hazards and prepare a written hazard assessment report. It shall be dated and specify the methods that will be used to control or eliminate the hazards. **(Mandatory)**
- Workers should be involved in the preparation of the hazard assessment and report if able to do so.
- A hazard assessment meeting shall be conducted by the Contractor when any work has an elevated hazard potential. A Job Safety Analysis (JSA) or Field Level Hazard Assessment shall be used to identify and control the hazards.

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- Before the commencement of each “phase” of construction, a documented Pre-phase safety meeting shall be held with each crew.

**8.2.4 Weekly Progress Meetings (When Scheduled)**

- Safety shall be the first item discussed on the agenda of the weekly KMC / Contractor progress meeting. A summary of weekly HSE activities including incidents for the most recent period and outstanding items shall be discussed.

**8.3 Communication with the Media**

Any and all communication with the press or news media on the project shall be conducted by and through the Project Manager or his delegate.

**8.4 Safe Worker Incentive Program**

A safe worker incentive program may be established for those workers involved in the terminal facility construction.

Criteria for eligibility will be communicated to all personnel involved.

**8.5 Hazard Identification and Construction Warning Signs**

- The Contractor shall be responsible to ensure that suitable warning signs identifying known hazards shall be posted to warn workers and others in the area.
- Overhead Power Line signs shall be posted in accordance with drawings referenced in Overhead Power lines.
- Confined Space Entry signs shall be placed at each end and alongside a pipe section while entry by a worker is in progress. Warning signs must be placed at any confined space in facilities that has been identified in the hazard assessment to ensure workers are aware of the hazard.
- Hearing Protection signs must be posted to warn workers of excessive noise and hearing protection is required in the area.
- Miscellaneous Warning signs shall be erected by the Contractor as necessary or as requested by the KMC Representative to warn construction personnel and / or the public of other hazards (e.g. “Trucks Turning”, “STOP”, “Slow”, “Curve”, “Steep Hill”, “Caution”, “Work Crews Ahead”, suggested speed restrictions, work in / over navigable waters, etc.)

**9.0 HEALTH AND SAFETY INVESTIGATION AND REPORTING**

To meet the requirements of the Alberta OH&S Act, Code, and Regulations, Section 18, and Alberta WCB, all incidents shall be investigated. These reports will be kept on file by the Contractor and copies forwarded to the KMC Site Safety Representative according the KMC Incident Reporting Matrix:

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- To ensure the affected worker receives the proper first aid treatment and any other benefits to which they may be entitled.
- To provide information that may be useful in preventing similar occurrences and to provide the data needed for the established project health and safety reports.

### 9.1 Investigation Requirements

The following incidents must be investigated:

- Fatalities
- Work related injuries/illnesses
- Fire and explosions
- Property or equipment damage
- Production losses / business interruption
- Management system losses
- Environment losses / excursions
- Security, thefts, vandalism
- Emergency evacuations
- Vehicle collisions
- Near miss with serious potential
- Non compliance to project procedures
- Refusal to work due to imminent danger

Loss potential will determine the depth of the investigation. The greater the loss or potential loss, the more detailed the investigation and the more senior level participation required.

In the event of a serious injury or accident, efforts shall be made to not disturb evidence.

### 9.2 Statistics

- **Weekly Summaries** shall be submitted by the Contractor of all man-hours worked, including a summary of any near misses, first aids, medical aids, lost time incidents, modified duty, etc.
- **Lost Time Incident Frequency Rate** is calculated by multiplying the number of Lost Time Incidents by 200,000 and dividing that result by the number of work hours expended during the time period of the report.
- **Total Injury Frequency Rate** is calculated by multiplying the total number of work days lost to injury and illness by 200,000 and dividing that result by the number of work hours expended during the time period of the report.

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### 9.3 Safety Reporting Terms

- **Near Miss.** An event which had the potential to cause serious injury, illness, damage or loss. **Notification** to Site Safety Representative / Resident Inspector verbally, follow with investigation report on Contractor's own form.
- **First Aid Case.** A work related injury or illness which requires only one time treatment with possibly some follow up observation. It remains a first aid case by definition even though the treatment may be applied by a licensed medical practitioner such as a nurse-paramedic / OFA3. **Notification** to KMC Site Safety Representative verbally once treatment has been administered and a copy of the incident report within eight (8) hours after the event
- **Medical Aid Treatment.** A work related injury or illness which requires the attention of a physician or of a licensed medical practitioner under the direction of a physician, whereby an actual medical procedure was administered. **Notification** to KMC Site Safety Representative immediately and follow up incident report and any WCB related information within two (2) hours after the event.
- **Lost Time Case.** The result of a work related injury or illness that renders the affected worker incapable of performing his regular task on the next scheduled work day following the day of the incident and any subsequent lost days. **Immediate Notification** to KMC Site Safety Representative and ALL copies of the Incident Report, Employer and Employee WCB Reports forwarded with two (2) hours of the event.
- **Modified Work Case.** An assignment which the worker can perform resulting from a work-related injury or illness. The Contractor shall communicate this information to the on-site KMC Representative and forwarded within two (2) hours of notification of the event.
- The worker's right to privacy regarding confidential health information shall be adhered to.

NOTE – all Contractors and subcontractors shall be expected to provide excellent case management of injuries to their personnel on the project sites if the situation arises.

## 10.0 INSPECTIONS

- Inspections are used to identify compliance of safe work practices, site conditions, at risk behaviors, and substandard conditions that could cause or contribute to an incident or loss.
- Contractor and KMC personnel are expected to identify substandard conditions, work practices and at risk behaviors during the normal course of the day's routine monitoring of work and provide immediate intervention and correction.

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- The Contractor shall conduct a weekly formal inspection of the work site with the KMC Representative, applicable Safety Personnel, and worker.
- Items requiring immediate correction will be completed promptly and those items that cannot be corrected at the time of the inspection shall be assigned to a foreman for corrective actions with noted timeline for completion and signed off when done.
- A signed copy of the Contractor completed inspection report detailing location, the action item; person assigned to correct it and signed off as completed and will be forwarded to the KMC Safety Representative.

## 11.0 AUDITS

All KMC sites and Contractors may be subject to KMC internal and / or independent third party Safety Audits. The prime objective of these audits are to verify that this Project HSE Plan is being properly and effectively administered and to ensure compliance, identify potential shortcomings, and potential improvements in the overall project construction safety program.

## 12.0 TRAINING

- Contractors must establish and maintain training programs and record keeping systems to document training given to their workers.
- Training must be tailored to the specific needs of each Contractor's workers to guarantee safe work performance at the jobsite (e.g. Zoom Boom, Crane, Confined Space Awareness, Fall Protection, Respirator Training and Fit Tests, JLG Qualification training). WHMIS is the bare minimum for admittance onto the project site to work.
- Training must include formal programs and on-the-job practical experience under a knowledgeable supervisor or craftsman.
- Only appropriately trained individuals will be allowed to work on KMC job sites. The KMC Representative has the right to review a Contractor's training history to determine if he is qualified to work at the jobsite. Copies of applicable certifications will be made available by the Contractor employee during the KMC orientation.
- The Contractor must be aware of his scope of work and how it will pertain to training requirements for his personnel. The Contractor shall be responsible to ensure that his personnel have the appropriate training before they arrive to a work site.
- The minimum required training is as follows: H<sub>2</sub>S Awareness (all), Construction Safety Training System Course (all),
- Foremen; Inspectors; and excavator, grader, hydro vac, piling, front end loaders, dozer, boring, and skidsteer / bobcat operators shall be required to have Ground Disturbance Level 2 certification. Any oiler, swamper, or gradesman dedicated to excavation and ground disturbance work shall have a Ground Disturbance Level 1 certification.



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### 13.0 MANAGEMENT OF CHANGE

Any change to the construction methodology that falls outside the limits prescribed by the original or revised specifications, flow sheets, or work procedures that may affect the safety of the workers will only be allowed to proceed with prior KMC approval. The change methodology will also include the facilitating of deviance from existing policies, practices or procedures. This process will also accommodate variance from standard procedures on a singular basis for a specific period of time on a specific site. All changes that may affect the safety of the workers, the protection of equipment, property and the environment shall be communicated to each and every worker through the use of updated Hazard Assessments, Job Safety Analysis, Tool Box Meetings, and planning meetings.

### 14.0 SAFE WORK PERMIT SYSTEMS

- Safe work permits develop, document, and communicate understanding between individuals responsible for performing work and the individuals responsible for the work area.
- Permits are valid for only the time period indicated.
- The permit is cancelled in the event of an emergency and must be re-established.
- Safe work permits may be cancelled or not issued by the Resident Inspector if previously noted safety concerns/hazards have not been corrected.
- Specialized permits will be required when the activity creates or may create an additional hazard to the workers, equipment, environment, production or other construction activities. Some examples are:
  - A work activity creating a source of ignition within a restricted area.
  - Any excavation/ground disturbance
  - Any critical lift.
  - Any systems requiring lockout / tag out / blanking procedures.
  - A confined space entry.
  - Any system(s) testing.
  - Any work activity deemed by KMC to require special conditions.

### 15.0 EMERGENCY PREPAREDNESS AND RESPONSE

Contractors must establish an emergency response plan for responding to an emergency that may require rescue or evacuation.

#### 15.1 Contents of the Plan

- The identification of potential emergencies.



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- Procedures for dealing with the identified emergencies.
- The identification of, location of, and operational procedures for emergency equipment.
- The emergency response training requirements (drills).
- The location, use of emergency facilities and applicable phone numbers.
- The fire protection requirements and required equipment.
- The alarm and communication requirements.
- The first aid services required.
- Muster Point Locations and headcount procedures shall be in place.
- The designated rescue and evacuation workers.

### **First Aid Requirements**

Where two (2) or more employers are present and working on a job site, the Owner (Prime Contractor) must do everything that is reasonably practical to establish and maintain the first aid equipment, supplies, facilities, attendants and services - (Refer to Table 7, Alberta OH&S Act, Code, and Regulations, Schedule 2, Table 7 Hazard Classification) to ensure requirements are met for high hazard classification work.

### **15.2 Fire Extinguishers**

- The Contractor shall have adequate 20lb. ABC Dry Chemical Fire Extinguishers on site to meet applicable codes.
- All mobile equipment, including pickup trucks, light plants, rig welders, portable welding rigs, generators and fuel trucks will have 20lb ABC fire extinguishers.
- All offices / lunchrooms will have 10lb. ABC Dry Chemical Fire Extinguisher.
- The Contractor shall have an adequate amount of additional fire extinguishers on site for other purpose such as hot work.
- Maintained, serviced as needed and inspected monthly with a legible inspection tag.
- Personnel shall be trained in the correct use of the fire extinguishers.

### **15.3 Fire Prevention Plan**

Good housekeeping is an important part of fire prevention. The Contractor shall take all necessary precautions to prevent fires including, but not limited to:

- All fuels, volatile solvents, or any other flammable substances must be stored in containers that are clearly labeled, approved for their contents, and located in a safe place away from a source of ignition.

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- All light plants, and generators must be placed into a secondary containment tub
- Fixed fuel tanks must either be double walled or placed into secondary containment tubs
- Where flammable substances are stored or used, conspicuous signs must be posted stating “NO SMOKING OR OPEN FLAMES WITHIN 10 METERS”.
- Flammable liquid containers must be electrically bonded when liquids are being transferred from one to another.
- Flammable substances and quantities of chemicals in excess of that needed for one day’s work must be stored in an approved storage facility, isolated from the actual work area. These containers shall have a WHMIS workplace label affixed to them to identify contents.
- Workers shall guard against any part of their clothing from becoming contaminated with flammable liquids.
- All spills will be cleaned up immediately.
- All oily rags shall be stored in a suitable covered container with a label clearly indicating it is for the storage of contaminated rags.
- All empty spray cans will be placed into a similar storage bin and labeled accordingly as “Empty Spray Cans”
- Smoking will be confined to designated work areas that are clearly identified, with a metal butt can, 20 lb. ABC Dry Chemical Fire Extinguisher present, and snow fence to keep workers inside the area.
- Butt cans are not to be filled with combustible trash.
- A metal garbage can with lid and labeled “Trash Only” shall be placed inside the smoking area.
- While welding or cutting is in progress, the welder’s helper shall act as fire watch and while the helper is grinding / buffing, the welder shall in turn act as fire watch. This is to ensure immediate response with fire extinguishers or backpack sprayers in the event of a fire.
- Extra care shall be taken on days of high winds that could spread sparks over distances into dry brush or grasses. This may include wetting down the surrounding work areas with water.
- The Contractor shall ensure that the elements of this plan are discussed in regularly scheduled tool box meetings.

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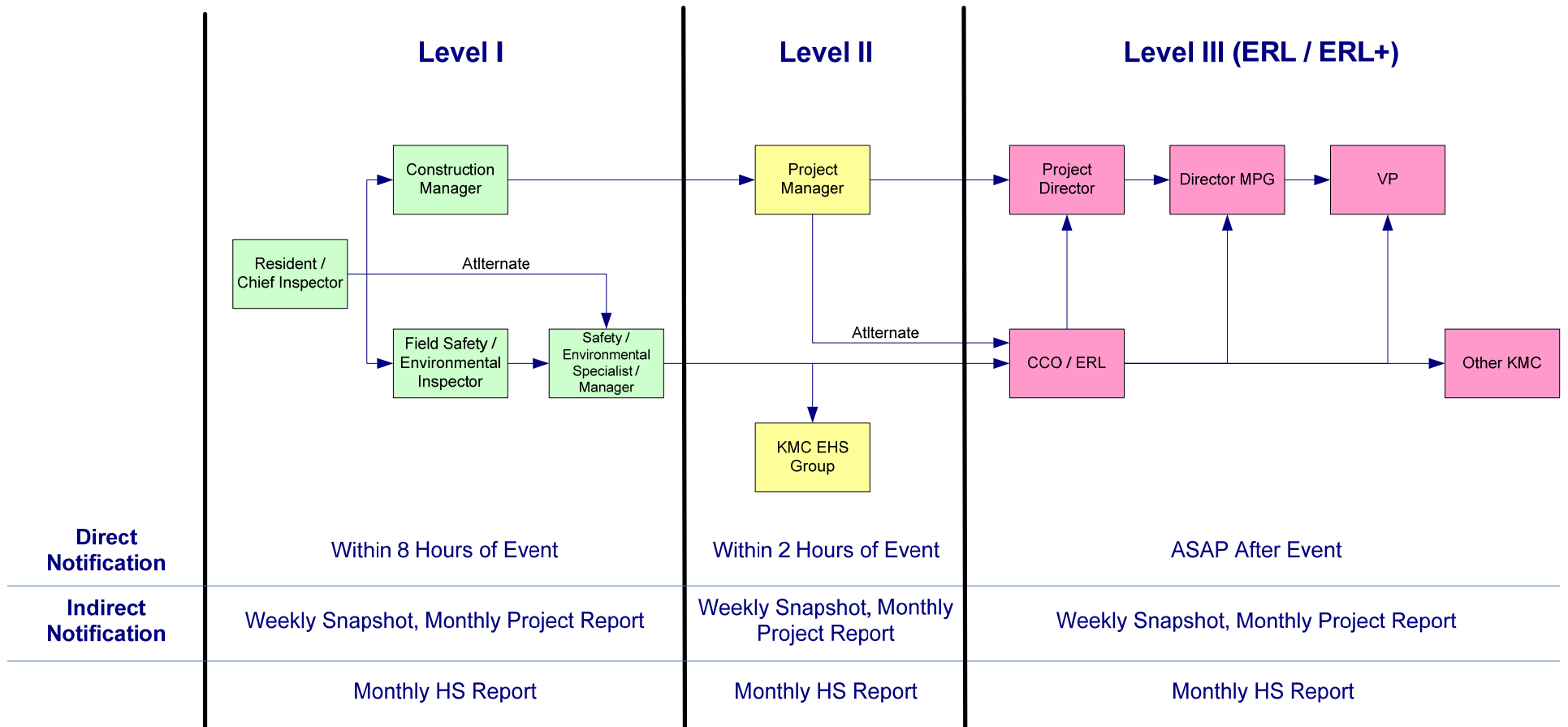
## 16.0 SECURITY

- The Contractor shall be responsible for ensuring the security of their equipment, materials, and offices on all project work sites and for providing a method to receive deliveries in order to open and close any fenced access gates and to keep out unauthorized people from entering.
- On gated and fenced property the gate shall be locked at the end of each shift.
- If after work coverage is required, the Contractor shall ensure that the requirements of the working alone legislation are met and followed.

## 17.0 WORKING ALONE

If the Contractor workers are required to work alone on any KMC site, the Contractor shall comply with Part 28, Section 383, Application, and 394, Precautions, required of the Alberta OH&S Act, Code, and Regulations.

### 18.0 NOTIFICATION MATRIX AND KEY CONTACTS



NOTE: This chart is general for all KMC Projects. Some positions may not exist on every project. Where positions do not exist, communication is deemed to flow to the next higher level position.

### 18.1 Projects EHS Incident Reporting Matrix

Incident Type	Severity		
	Level I	Level II	Level III (ERL/ ERL+)
<b>Injury</b> Level 1 Near Miss/Workplace Hazard Form Level 11-111+ Incident Investigation Form	<ul style="list-style-type: none"> <li>Near Miss</li> <li>First</li> </ul>	<ul style="list-style-type: none"> <li>Medical Aid</li> <li>Modified work duties</li> </ul>	<ul style="list-style-type: none"> <li>Serious Injury w/ LTI potential*</li> <li>Fatality</li> </ul> * Involving employee(s), contractor(s), or public regarding KMC projects, equipment or facilities.
<b>Fire/Explosion</b> All Levels Incident Investigation Form	<ul style="list-style-type: none"> <li>Contained/ controlled on site</li> <li>Notify applicable Provincial OHS Office immediately</li> </ul>	<ul style="list-style-type: none"> <li>First responder</li> <li>Off site</li> <li>Notify applicable Provincial OHS Office Immediately</li> </ul>	<ul style="list-style-type: none"> <li>Corporate ERP activation</li> <li>Public</li> <li>Notify applicable Provincial OHS Office immediately</li> </ul>
<b>Vehicle</b> Level 1 Near Miss Form Level 11-111+ Incident Investigation Form	<ul style="list-style-type: none"> <li>Near Miss</li> </ul>	<ul style="list-style-type: none"> <li>All vehicle incidents</li> </ul>	<ul style="list-style-type: none"> <li>All vehicle incidents involving 3<sup>rd</sup> party</li> </ul>
<b>Equipment/ property Damage</b> All Levels Incident Investigation Form	<ul style="list-style-type: none"> <li>less than \$5.0k</li> </ul>	<ul style="list-style-type: none"> <li>greater than \$5.0k</li> </ul>	<ul style="list-style-type: none"> <li>Involving 3<sup>rd</sup> party.</li> </ul>
<b>Spill (Non Commodity)</b> All Levels Environmental Spill Report	<ul style="list-style-type: none"> <li>Less than 5 gal., and; Contained on facility site or on ROW, and; No release to water</li> </ul>	<ul style="list-style-type: none"> <li>Less than 5 gal., and,</li> <li>Off site impact and,</li> <li>No release to water</li> </ul>	<ul style="list-style-type: none"> <li>Greater than 5 gal. whether contained or not on facility site or ROW</li> <li>Any release to water</li> <li>Environmental impact</li> <li>Public impact</li> </ul>
<b>Spill (Commodity – P/L Product)</b> All Levels Environmental Spill Report			<ul style="list-style-type: none"> <li>Any product release from the pipeline system</li> </ul> Note: Company personnel will determine the level of response via the emergency response line (ERL)
<b>Non-Conformance</b> Level 1 Job Safety Analysis Level 11, 111+ Forward correspondence to Safety Manager/Specialist	<ul style="list-style-type: none"> <li>Minor procedural variation with no or minor EHS impact (Job Safety Analysis to grant waiver of policy, i.e. hard hat welding combo)</li> </ul>	<ul style="list-style-type: none"> <li>Scheduled inspection or audit resulting in regulatory action.</li> <li>Procedural variation with or without EHS impact and potential for Regulatory involvement</li> </ul>	<ul style="list-style-type: none"> <li>Receipt of a Regulatory Order with potential for fines or requiring significant action or resources.</li> <li>Notification to a Regulatory Agency is required regarding an incident or a non-compliance.</li> <li>Regulatory involvement or inquiry regarding an incident or a non-compliance</li> <li>Unannounced regulatory inspection/ investigation</li> </ul>
<b>Security</b> All Levels Incident Investigation Report Notify Local Police	<ul style="list-style-type: none"> <li>Theft/ vandalism less than \$5.0k</li> </ul>	Theft/ vandalism greater than \$5.0k	<ul style="list-style-type: none"> <li>Security threat (to personnel/ equipment)</li> <li>Protest</li> </ul>

Note: Any incidents involving media attention automatically become Level III and KMC Media Policy must be followed.

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## 18.2 Investigation Requirements

The following occupational incidents must be investigated:

- Fatalities
- Work related injuries/illnesses
- Fires and explosions
- Property and equipment damage
- Production losses/business interruption
- Management system losses
- Environment losses/excursions
- Security, thefts or vandalism
- Emergency evacuations
- Vehicle collisions
- Near miss, with serious potential
- Non compliance to project procedures
- Refusal of work due to imminent danger

Loss potential will determine the depth of the investigation. The greater the loss or potential loss, the more detailed the investigation and the more senior level participants required.

### 18.2.1 *First Aid Definitions*

- Application of antiseptics during the first visit to medical personnel
- Treatment of first-degree burns
- Application of bandages including butterfly bandages during any visit to medical personnel
- Use of elastic bandages during the first visit to medical personnel
- Removal of non-imbedded foreign body in the eye, irrigation only
- Removal of foreign bodies from wound-splinters etc
- Use of non-prescription meds and administration of a single dose of prescription medication on the first visit for minor injury or discomfort
- Soaking therapy during an initial visit to any medical personnel, or removal of bandages by soaking
- Application of hot or cold compresses during first visit to medical personnel

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- Application of ointments to abrasions to prevent them from cracking or drying
- Application of heat therapy during the first visit to medical personnel
- Use of whirlpool bath therapy during the first visit to medical personnel
- Negative x-ray diagnosis
- Observation of injury during a visit to medical personnel

### **18.2.2 Medical Aid Definitions**

- Treatment of an infection
- Application of antiseptics during a second visit or subsequent visit to medical personnel
- Treatment of second or third degree burns
- Application of sutures
- Removal of foreign bodies imbedded in the eye
- Removal of foreign bodies from a wound if the procedure is complicated due to depth of embedment
- Use of prescription medications (except a single dose of prescription on the first visit for minor injury or discomfort)
- Use of hot or cold soaking therapy during a second or third visit to medical personnel
- Application of hot/cold compresses or heat therapy during a second or subsequent visit to medical personnel
- Surgical debridement (cutting away dead skin)
- Use of whirlpool bath therapy during a second or subsequent visit to medical personnel
- Positive x-ray diagnosis (broken bones, fractures)
- Admission to a hospital or equivalent facility for treatment
- Administration of tetanus shots or booster shots is not considered a medical treatment; however, loss of consciousness is at a minimum a medical aid regardless of what treatment was provided

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The following are examples to illustrate non work-related incidents:

- Employee(s) who travel on company business and re-injured or become ill during normal living activities (eating, sleeping, recreation) after having established a ‘home away from home’ or if the employee deviates from a reasonably direct route of travel (such as a side trip for vacation or other personal reasons)
- Employees who work on an offshore installation and become ill or injured during normal living activities while off shift, unless the illness or injury is caused by some defect or condition in the workplace
- Incidents that occur during normal commuting are not work related. Company parking lots provided and used for normal commuting are not to be considered part of the worksite and are not recordable

## 19.0 FLAMMABLE AND COMBUSTIBLE LIQUIDS / GASES

### 19.1 General

- Only approved CSA fuel cans are permitted on site. They must also be labeled with an appropriate product label
- Fuel Tanks must be diked with a holding capacity equal to 125% of the largest tank within the berm and lined to prevent spillage onto the ground and be protected from damage.
- “NO SMOKING” signs must be posted and a 20 lb. ABC Dry Chemical Fire Extinguisher available.
- Tanks must display applicable hazard placards, per the Transportation of Dangerous Goods (TDG) regulations.
- No smoking / open flame within 7.5 meters of fuel tanks or while refueling any piece of equipment, either mobile or stationary.
- Fuel trucks must be electrically bonded while filling tanks and carry spill prevention, containment and clean up materials that are suitable for the volume of fuels carried.
- Pick up trucks with slip tanks must be bonded while filling mobile equipment and shall carry spill prevention kits.
- All gas engines shall be shut off and small equipment engines must be shut down and allowed to cool before refueling.
- Never fill a gas can in the bed of a truck, which has a bed liner in it as the liner can build up static electricity causing an ignition of the gas can while refueling.
- Generators, welding machines, and compressors shall have secondary containment to prevent spillage while fueling or containing potential fuel leaks.



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- Where practical, there shall be no refueling of vehicles or equipment while on or near high voltage transmission rights-of-way. If it is absolutely necessary to do so, all vehicles and equipment to be fuelled shall be bonded to the fueling vehicle / facility and grounded as required prior to the commencement of fueling. Fuel truck drivers must be trained and knowledgeable in how to apply effective bonding and grounding techniques.

## 19.2 Compressed Gases

- No cylinder shall be lifted without a suitable cradle.
- Cylinders must be secured in an upright position at all times to prevent from falling.
- Compressed gas cylinders shall not be transported loosely in the back of pickup trucks.
- Oxygen cylinders must never be stored near highly combustible materials, especially oil and grease, nor near other fuel cylinders.
- Acetylene cylinders must be used in the vertical position.
- Compressed gas cylinders must be stored outside of hoardings.
- Propane tanks shall not be taken into any ditch or excavation. A longer hose will be used and protected from damage when torches are required in excavations. Gas testing will be conducted prior to any flammable torch being used in ditches or excavations.
- Propane torches shall not be left unattended at any time.
- Cylinders / tanks on propane pre-heat trucks must have emergency shut off valve(s) with the controls remotely mounted on the side of the truck, away from the hoses or delivery pipes, to ensure there are not obstructions to allow the propane feed to be safely shut off in an emergency.
- All hoses shall be rated Type 111.
- Any heaters must be installed, ignited, and serviced by a competent person, in accordance with the manufacturer's instructions and the Authorities Having Jurisdiction.
- A competent safety watch must monitor all fuel heaters operated within hazardous or restricted areas at all times. Proper ventilation should be of prime concern for all those who may have to work in areas being heated by fuel heaters.
- Any after hours fire watch, heater watch must be accommodated under the applicable provincial working alone legislation.

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## 20.0 COMPRESSED AIR

- Compressed air shall not be used to blow dust or other substances from clothing or the body.
- All air lines will have a whip check and cotter pin.
- Wherever possible, compressed air lines shall be kept out of the way of common walking paths, stairs, and routed so as not to cause either tripping hazards or upper torso obstruction.

## 21.0 WELDING SERVICES FROM VEHICLES

- The Contractor shall ensure that welding services from a vehicle shall comply with Part 10, Fire and Explosion Hazards, Storage Compartments, Section 172 (1-5), 173 (1-3) and 174 (1-4) Compressed and Liquefied Gas Section 171 (1-8) of the Alberta OH&S Act, Code, and Regulations.
- Welding stubs must be placed in a suitable bucket and not left on the ground.
- MSDS sheets should be consulted prior to any cutting / welding on painted or coated steel. The preferred method is to grind off the painting / coating prior to cutting or welding.
- All rig welding units shall be inspected / approved by the KMC Representative prior to being used on site to ensure compliance with the above regulations.

### 21.1 Welding and Cutting

- Only experience, authorized workers, suitably trained in their craft shall be allowed to use welding and / or cutting equipment.
- Welders and helpers shall wear all appropriate personnel equipment or clothing and welders shall wear a combination hard hat/face shield when on the job site.
- All site personnel must take precautions against exposure to excessive ultraviolet radiation, toxic gases, fumes or dust, asphyxiation and, to prevent fire or explosion when welding or cutting equipment is used. Proper ventilation must always be maintained.
- Welding or cutting within the fenced boundaries of KMC or other Owner facilities or welding on an existing facility shall only be done under the control of a safe work permit.
- Prior to welding with sight of a station site, the Contractor shall ensure that station Operations personnel are aware of the welding activity and have deactivated the station 'fire eyes', where applicable.
- All welding equipment and accessories must be maintained in safe working order; defective equipment must be repaired or replaced.

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- When cables are laid on the ground they should be protected in such a manner that they will not be damaged or become a tripping hazard.
- The welder or welder's helper will ensure that no other person is in the cutting or spark path before commencing work. Fire blanket or welding screens are acceptable means of control in certain situations.
- Ensure that no combustible materials are nearby, (e.g., oil, rags, gasoline, paper, dry grass). Extra precautions should be used during high fire season, such as a fire watch remaining behind after work stoppages for breaks and end of shift, and pre-soaking the ground in the immediate area.
- A serviceable 20lb. ABC dry chemical fire extinguisher will be at the welding and cutting site at all times, and personnel must be competent in their use.

## 21.2 Gas Welding and Cutting

- Oxygen does not burn, but supports and accelerates combustion, and will cause oil and similar materials to burn intensely. Oil or grease in the presence of oxygen under pressure may ignite violently. Never lubricate oxygen fittings and keep oil and grease away from oxygen cylinders or hoses.
- Only the torch and regulators shall be used to control the flow of gas. Oxygen cylinder valves must be fully open when in use to prevent leakage around the valve stem; the cylinder valves shall be closed when the torch is not in use.
- All hoses must be approved and maintained in good order and good practice dictates that hose are not placed where they can be burned or mechanically damaged.
- Where gas welding / cutting equipment is used, suitable flashback arrestors must be installed at the regulator end of each hose, to prevent flow of gases.
- Cylinders, including smaller propane tanks shall never be lifted by the neck or handle. A proper lifting cradle shall be used to raise or lower cylinders to work areas.

## 22.0 HAZARDOUS / CONTROLLED PRODUCTS

- All Contractor workers must be trained by their company in WHMIS. The Contractor must maintain a written program in accordance with applicable federal, provincial and local regulations that instructs workers to comprehend Material Safety Data Sheets (MSDS), labels and safe hazardous material handling.
- Contractor must maintain a list of hazardous chemicals, their use and storage location on the job, and associated MSDS. Training must be performed that identifies the hazards associated with the specific chemicals and their proper handling procedures.
- All chemicals used on site must be clearly labeled, and safety precautions and warnings clearly visible.

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- In addition to chemical hazards, Contractor workers must be informed by the Contractor of all hazards associated with performing non-routine tasks and physical hazards that may be present at the jobsite.
- Transportation of Dangerous Goods (TDG) onto or from KMC sites must comply with applicable TDG regulations which include complete documentation, labeling and marking of all goods and placarding of vehicle(s) used for transport.
- The Contractor is responsible for employee training and ensuring compliance with TDG regulations.
- Contractor vehicles carrying more than 200 liters of fuel or liquid hazardous materials to the worksite shall be equipped with suitable spill prevention kits.
- The Contractor must discuss the job hazards present in the site-specific orientation. He must also update all Contractor workers if new hazards are introduced to the work location.

## 22.1 Characteristics of Pumped Products

- If crossing agreements do not provide adequate information (e.g. MSDS), regarding the type and characteristics of products pumped or transported in adjacent parallel pipelines or pipelines that will be crossed, the Contractor must ensure that the owners of all existing buried pipelines are contacted for this information.
- Pipelines transport various hydrocarbons, which include flammable, volatile liquids and gases under high pressure. Typical products may include, but are not limited to, e.g.: methane, crude oil, condensates, gasoline, diesel, natural gas liquids (NGL), ethylene, hydrogen, nitrogen, etc. Common properties of these products include:
  - Most of these products are highly flammable.
  - If a leak occurs, the products give off vapors, which can be toxic.
  - All spills and liquids must be considered flammable until all liquid has evaporated or has been cleaned up.
  - Hydrocarbon vapors are typically heavier than air and will collect in low places or depressions in the ground. Thus, when testing for vapors, test should be taken at the lowest point in the area.

The Contractor must ensure that all site personnel are informed of the potential hazards and appropriate emergency response and evacuation procedures, in the event of an inadvertent release of products from existing pipelines in the work area.

## 23.0 ABRASIVE BLASTING, COATINGS, AND PAINTING

The Contractor shall ensure that abrasive blasting conforms to Part 18, PPE Requirements, Respiratory Protective Equipment, Section 244-255 of the Alberta OH&S Act, Code, and Regulations.

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## 24.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The minimum requirements for PPE are CSA-approved boots, hard hat, safety glasses, and fire retardant coveralls, or pants and shirt of similar nature. All hoodies must be of similar fire retardant materials.

### 24.1 Protective Headgear

- All workers and visitors to the site are required to wear a CSA approved hard hat. (Inside offices, vehicles, lunchrooms and washrooms are exempt).
- All Contractor employees hard hats shall be no less than three (3) years old.
- Equipment operators inside enclosed cabs are exempt from wearing hard hats while operating equipment. When the operator leaves the cab, a hard hat and other applicable PPE must be worn.
- Welders shall wear a CSA-approved combination helmet while welding. At times, it may be difficult to access tight areas to weld. A variance request on the Contractor's own JSA Form will then be submitted to the Resident Inspector or his designate, to remove the helmet for the specific task only.
- Bump Caps are not permitted and hard hats are required to be worn with the peak forward.
- Delivery drivers are required to wear a hard hat while unloading materials, equipment, or remain in the truck while being off-loaded.
- Hardhats shall be worn with the peak forward, unless it is a fibre metal eight (8) point suspension helmet.
- Metal and 'cowboy' style hard hats are not permitted.
- Riggers who are exposed to potential 'side impact' must wear hard hats that meet the standard for protection from this hazard.

### 24.2 Protective Footwear

- All personnel on site are required to wear CSA, Class A steel toed work boots, with minimum 150mm (6 inches) in height.
- Office personnel while in the confines of the site trailer are exempted.
- Footwear must be in good shape, no exposed steel caps, nor run down on the heels, or torn.
- Delivery drivers are required to wear protective footwear while on site or remain in the truck while be off-loaded.

### 24.3 Eye Protection

- Safety glasses must be worn at all times while in the general work area.
- Safety glasses must meet ANSI Standard Z87-1.
- Floppy, plastic side shields are not permitted.

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- Contact lenses are permitted to be worn with appropriate safety glasses.
- Welding screens shall be used when workers in the immediate vicinity can be exposed to electric arc welding.
- Double eye protection (safety glasses and face shield) shall be worn for any grinding, chainsaw use, chipping, buffing, bush-hammering or hydro-vac use.
- Delivery drivers must wear safety glasses or remain in the truck while being off-loaded.

#### **24.4 Fire Retardant Clothing**

- At existing facilities where hydro-carbons are present, the Contractor personnel shall be required to wear fire retardant clothing including pumping or compressor stations, valve sites etc.
- Persons involved in, or any persons within 50m of mechanical ground disturbance work (e.g. stumping, stripping, grading, excavating, boring / drilling, backfilling, etc) within 5m of operating facilities that carry flammable products, e.g. gas or oil pipelines, whether above or below ground;
- Welding / cutting on an existing Owner pipeline and / or, any piping system that has recently been hydro-tested using a water-methanol mix and that may still have a flammable atmosphere.

#### **24.5 Hearing Protection**

Hearing protection is required when noise levels are above 85 db (decibels) or when you cannot hear a conversation in a normal voice in close proximity. The Contractor must have a Noise Management Plan or Code of Practice.

#### **24.6 Respiratory Protection**

The Contractor must have a Respiratory Code of Practice in place in the event a worker is required to wear Respiratory Equipment.

#### **24.7 Fall Protection**

- Fall protection equipment must be worn where the potential exists for a worker to fall from a distance of 1.8m.
- The Contractor shall have a fall protection plan or Code of Practice in place prior to the use of any said equipment on the site as per the Alberta OH&S Act, Code, and Regulations.
- A worker shall use a fall protection system at a temporary or permanent work area where a potential exists to fall from 1.8m (6ft), or if there is an unusual possibility of injury if a worker falls less than 1.8m (6ft).
- A fall protection violation is serious and must be dealt with immediately using the disciplinary policy.

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## 24.8 Hand Protection

Gloves are required at all times when working on site.

## 24.9 High Visibility Vests

- Reflective vests or stripes shall be worn during the road building and earthworks portion of facility construction.
- A determination on continued use of High Visibility vests, based upon a further hazard assessment once the tank construction commences shall be done by the Contractor and KMC Field Construction Team.
- A rigger shall wear a reflective vest and / or reflective wrist gauntlet during lifting operations.

## 24.10 Personal Floatation Devices / Life Jackets

- If there is a foreseeable danger that a worker may be working under conditions that involve a risk of drowning a personal floatation device or life jacket with sufficient buoyancy to keep the worker's head above water.
- Floatation Devices shall conform to CGSB Standard CAN/CGSB 65.11-M88 and Lifejackets shall conform to CGSB Standard CAN/CGSB 65.7-M88.
- Working alone legislation may also be applicable.
- Both devices must have at least 200cm<sup>2</sup> of white or silver retro-reflective material fitted on surfaces normally above the water surface.
- PPE must be upgraded when performing tasks that require additional protection or when changes in conditions are documented during monitoring of the site.
- Specific PPE Requirements for handling hazardous substances are available from the MSDS.
- Contractors are required to provide workers with appropriate PPE and must maintain a written PPE program in accordance with applicable provincial and local regulations. Contractor must provide training in the proper use, maintenance, and inspection of provided PPE.
- It is the worker's responsibility to ensure that issued PPE is in good working order, is maintained and decontaminated properly, and replaced as needed.
- All visitors to any project site must have and shall wear the appropriate PPE for the area to be visited.
- First Offence, Verbal Warning, but not limited to Written Warning or Termination.
- Second Offence, Written Warning, but not limited to Termination.
- Third Offence, Termination.



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## 25.0 OPERATING NEAR OVERHEAD POWER LINES – SAFE LIMIT OF APPROACH

- Any boomed equipment (crane, backhoe, side boom, piling rig, concrete pump, jig, or zoom boom) operating within the boom length of the minimum safe distance (7m) of any electrical line shall contact the power line operator before work is initiated or equipment operated.
- When operating, no part of any machine, or its load, shall be permitted to approach any closer to any power line than the specified distance unless the electrical authority has been notified and the line de-energized or insulated.
- Signs indicating overhead power lines shall be placed by the Contractor to alert workers to the overhead hazard.
- Contractors should reference Alberta OH&S Act, Code, and Regulations Part 17, Section 225, 226,
- Particular attention should be made to the location of utility power and access ramps constructed on site required for heavy equipment to enter. The Contractor shall ensure that the operator of any equipment requiring crossing under any overhead power line or warning device (e.g. Goal Posts) is able to clear the overhead obstructions using the necessary precautions, including spotters or signalmen.

## 26.0 SCAFFOLDS

- Tube and clamp scaffold is required on site.
- CSA Standard applies, subject to Sections 324 (design) and 325 (load), and Part 13, of the Alberta OH&S Act, Code, and Regulations; an employer must ensure that scaffolds erected to provide working platforms during the construction, alteration, repair, or demolition of buildings and other structures comply with CSA Standard CAN/CSA-S269.2-M-87-Access Scaffolding for Construction Purposes.
- All scaffolds will be inspected and tagged. A tag attached to a scaffold expires 21 calendar days after the date of inspection it records.
- Contractor must ensure that a scaffold is color coded using tags at each point of entry indicating its status and conditions.
- The Contractor must ensure that no worker performs work from a ladder that is used to give access / egress to the working levels of a scaffold.
- No worker is permitted to tie off to a scaffold as an anchor point, unless it is the actual scaffold erector.
- No worker shall break the plane of protection by either reaching out or crawling outside the handrails unless tied off.

## 27.0 LADDERS

Contractor must ensure



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- That ladders conform to applicable CSA and ANSI Standards.
- That no worker performs any work from the top two rungs, steps of a portable ladder, nor the top four of an extension ladder.
- That all ladders extend 1m above a platform landing if the ladder is used as a means of access / egress.
- That all ladders are positioned properly, with the correct climbing angle and secured from movement; either tied off or held by a co-worker.
- Job-built ladders are not permitted.
- Aluminum ladders are not permitted.
- Three-point contact must be maintained and tools and materials shall not be carried while ascending or descending any ladder.
- Step ladders must be fully opened and the braces locked.
- Fall protection equipment must be worn when working from a ladder higher than 1.8m (6ft).

## 28.0 ENTRANCES, WALKWAYS, STAIRWAYS, OPEN HOLES, AND LADDERS

- **Safe Entry and Exit** – the Contractor must ensure that every worker can enter and exit a work area safely.
- **Door** – the Contractor must ensure that doors to and from a work area can be opened and are not obstructed.
- **Walkways, ramps** – the Contractor must ensure that the surface of a walkway, ramp, or runway has sufficient traction and support to allow workers to move on it safely.
- **Stairways** – the Contractor must ensure that the width of the treads and height of the rise of a stairway are uniform throughout its length, and the treads of the stairway are level. Any stairway with five (5) or more risers is equipped with a hand rail that extends the length of the stairway and is secured and cannot be dislodged.
- **Open Holes** – the Contractor must ensure that any hole cut out of grating, scaffold decks, floors, or landings are covered with ¾” plywood, secured from being moved and marked “HOLE”.

## 29.0 GUARDRAILS, BARRICADES, AND WARNING SIGNS

- The Contractor is to provide and maintain all warning signs, guardrails, barricades, warning lights, flag persons, etc, as necessary to protect workers and the general public from injury. Fencing must be installed where the work is accessible to the general public. Barricades and / or fencing at areas accessible to the public (e.g., road crossings) are to have flashing lights during hours of darkness.

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- All work areas, walkways, platforms, etc., elevated 3m or more, whether permanent or temporary, are to be enclosed by an approved guardrail (with an upper and intermediate rail and toe board) are to provide safe working surfaces. All floor openings or excavations must have a securely installed temporary covering or a proper guardrail to limit access of individuals not directly related to the opening or excavation work.
- Ribbons or rope do not constitute an acceptable guardrail or barricade.
- Steps to offices, warehouses, or trailer housed tool cribs must have suitable guardrails or handrails.

### 30.0 HAND AND POWER TOOLS

- Worn or broken hand tools shall be replaced.
- Come-a-longs and chain falls shall be certified as inspected for use prior to being used on site.
- Snipes and cheaters are not permitted.
- Electrical drills, saws, grinders, etc, must be equipped with a three-conductor pronged cord.
- Grinders must be equipped with a grinding guard.
- Tool rests are required on bench grinders and shall be securely attached.
- Grinder wheels shall be inspected frequently to ensure no chips or cracks exist which may cause failure.
- The rated rotational speed of the wheel or disc must exceed that of the grinder to which it is attached.
- Double eye protection is required while grinding, chipping, bush hammering, or chiseling.
- Power tools shall be double insulated or three prong cords.
- The use of chainsaws includes, but is not limited to, that operators shall meet all legislated training / certifications; shall be operated and maintained in accordance with the manufacturers specifications; that personnel shall wear appropriate protective equipment (i.e. head, face, hearing protection, gloves, safety boots, and chain saw pants). All saw operators must be provided a personal first aid kit, and an effective means of communication for summoning assistance in an emergency.
- Fallers shall wear reflective vests and fluorescent orange hard hats.

### 31.0 CRITICAL LIFTS

A critical lift study shall be required and permitted when:

- Any lift that requires two (2) or more hoisting devices (except pipeline).

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- Any lift that requires additional attachments such as spreader beams.
- Any lift to be hoisted over process equipment.
- Any lift requiring any change to the structural parts of the hoisting equipment.
- Any lift that may exceed 85% of the hoisting capacity of the equipment to be used.
- Any lift deemed by the Resident Inspector to be critical for other reasons.
- All cranes, spreader bars, and other mobile lifting equipment shall have documentation of current annual inspection. These documents shall be copied and kept on file by the KMC Representative and must be made available before any equipment is to be used on site.

### 32.0 RIGGING

All rigging practices and equipment shall comply with Part 21, Rigging, Alberta OH&S Act, Code, and Regulations.

### 33.0 EXCAVATION AND GROUND DISTURBANCE

Prior to performing any ground disturbance tasks at a KMC site, the Contractor shall contact the appropriate Alberta One Call @ 1-800-242-3447, <http://www.alberta1call.com/>, to determine the whereabouts of underground utilities. Only after receiving clearances from the utility owner and an excavation permit from the KMC Representative, can the Contractor commence work. All excavation shall also be performed in accordance with KMC Pipeline Protection requirements.

The Contractor shall appoint a person with applicable skills to act as the Designated Ground Disturbance Supervisor. This person shall be solely responsible for ensuring that all activities regarding ground disturbance are coordinated through this position.

- The spoil pile must not be closer than 1m from the edge of an excavation and that the slope of the spoil pile is not greater than 45°.
- Barriers shall be erected around an excavation to warn others.
- That any holes drilled from piling operations that are not filled with rebar and concrete are covered with a ¾" plywood cover, secured from moving and marked "HOLE".
- That adequate access and egress is available to workers in a trench more than 1.5m deep and that access and egress of two (2) locations is not more than 8m from the worker.
- The Contractor must ensure that the open side of an excavation or a route used by powered mobile equipment to gain access to an excavation has a barrier high enough to stop the equipment from sliding or rolling into the excavation.

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- The Contractor must ensure that soil classified as hard and compact the walls are sloped to within 1.5m of the bottom of the excavation at an angle not less than 30° measured from the vertical.
- The Contractor must ensure that soil classified as ‘likely to crack or crumble’ or ‘soft, sandy or loose soil’, the walls are sloped from the bottom of the excavation at an angle of not less than 45° measured from the vertical.
- The Contractor will ensure that equipment operators have current certification in ground disturbance and excavation training and the excavation is safe, before allowing personnel in to a trench / excavation.
- If an excavation cannot be adequately sloped, a trench box or shoring cage shall be used to ensure worker safety. Such equipment must be used, inspected, repaired and maintained in accordance with the manufacturer and the instructions of a professional engineer.
- Trench boxes are designed to be stacked and must be adequately secured to one another and the continuous sides must extend a minimum of 300mm (12 inches) the vertical wall of the excavation.
- All excavations shall be barricaded

### 34.0 EXCAVATION NEAR LIVE PIPELINES AND BURIED UTILITIES

ANY CONTACT with live pipelines, buried electrical cables and other underground utilities will be reported to the Resident Inspector IMMEDIATELY.

The following items shall have been done by the Contractor prior to excavation:

- The Contractor shall appoint a person with applicable skills to act as the Designated Ground Disturbance Supervisor. This person shall be solely responsible for ensuring that all activities regarding ground disturbance are coordinated through this position.
- First call completed and clearances received from owner(s) and coordinate with said owners, the locating and exposing of all existing buried facilities. The names and addresses of the representatives of all known facility owners are provided in the Line List. Specific requirements pertaining to buried facility crossings are detailed in the Contract Documents and the facility crossing agreements.
- All drawings available.
- Complete any crossing agreements.
- Hold a hazard assessment meeting with all workers involved and invite pipeline / utility operators to attend.
- Lines identified and clearly marking the centerline with flags or stakes.
- The Contractor must ensure that work with mechanical excavation equipment is not permitted within the hand expose zone of a buried facility until the buried facility has been exposed to sight by either hand digging or hydro-vac.

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- Despite the above, the Contractor may use mechanical excavation if the only buried facility is an electrical cable or conduit that is grounded and isolated so that the disconnection is visible from both ends.
- The Contractor may reduce the width of a hand expose zone for a high pressure pipeline to within 1m on each side of the pipeline locate marks if:
  - The high pressure pipeline is not governed by the Pipeline Act, and
  - The Contractor obtains written permission from the owner of the high pressure pipeline and should request the owner to be on site.
- If the ground that will be disturbed lies within a pipeline right of way, the Contractor must contact the operator or licensee of the pipeline to get their consent. (5m)
- The Contractor must not allow the use of mechanical excavation equipment within 600mm of a buried pipeline, a direct bury trunk or a toll fibre optic cable unless the use of the equipment is under the direct supervision of a representative of the owner of the utility.
- The Contractor must ensure that any exposed buried facilities are protected and supported so that workers are not injured.
- The Contractor must notify the pipeline operator if a pipeline is exposed before backfilling an excavation.

### 35.0 PIPELINES CONTAINING H<sub>2</sub>S

The Contractor must confirm if any existing pipelines potentially affected by construction activities contain hazardous levels of H<sub>2</sub>S. The Contractor shall develop and implement appropriate procedures, in accordance with legislated requirements, to ensure worker and public safety when exposing, excavating and backfilling these facilities. The procedures may include, but are not limited to, the following:

- Place warning signs and windsocks at the point of crossing.
- Ensure H<sub>2</sub>S monitors are used while conducting any ground disturbance or tie-in work in the vicinity of the facilities.
- Ensure the facility owner representative is on site at all times during performance of any work; and
- Ensure all personnel exposing, excavating and backfilling or doing tie-ins at these facilities are adequately trained in the proper safe work procedures, the use of all related safety equipment, emergency response and evacuation procedures.

### 36.0 LOCATING (ELECTRONICALLY) AND STAKING BURIED FACILITIES

- KMC will conduct a 'search' of the proposed work area for presence of buried facilities, consistent with industry standards and those authorities having jurisdiction. Those buried facilities that KMC is aware of are shown on the drawings.

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- The Contractor shall arrange to have a ‘third party company’ that specializes in the electronic location of buried facilities carry out a sweep of the any proposed excavation activities that will start after the First Call, clearances. and permits are granted.

### **37.0 EXPOSING BURIED FACILITIES**

- All existing buried facilities that cross or encroach on any terminal piping, shall be exposed in a minimum of three (3) locations, i.e. work-side boundary, centerline of proposed new trench, and the spoil-side boundary, and any additional locations as may be directed by the facility owner or Construction Manager, to ensure the facility is accurately located, confirmed and adequately protected.
- After being exposed, all underground facilities shall be identified by placing markers (i.e., 1x4 or 2x4) in the exposure hole. These markers are to be clearly visible to construction traffic, with information and colors as specified on the Typical Survey Color Codes drawing.

#### **37.1 Working Adjacent To or Over Existing Facilities**

Prior to any ground disturbance work within 5m of existing gas, oil, water, or sewer lines and electrical, fibre-optics or telephone cables, a Ground Disturbance checklist / Hazard assessment shall be completed. In addition, the Contractor must be in possession of an Excavation Safe Work Permit from the KMC Representative. All work shall be conducted in accordance with the requirements of the KMC Representative or the facility owner and the conditions of the permit. Alberta One Call is the responsibility of the Contractor to complete and obtain the necessary clearances from KMC and any third-party owner in the vicinity.

#### **37.2 Crossing Ramp Requirements**

All buried facilities shall be crossed in accordance with the terms of the facility agreements(s), or as directed by the facility owner and any letters of agreement. The Contractor is responsible to obtain and install any materials required such as rig mats in order to safely cross a buried line.

#### **37.3 Backfill of Existing Buried Facilities**

A minimum of 24 hours, prior to the shading and / or backfilling of any existing buried facilities, the Contractor shall ensure that the facility owner(s) has been notified so they may present for backfilling operations, unless approval is otherwise provided to the KMC Representative.

### **38.0 TEMPORARY POWER SOURCES / LINES**

Portable generators used on the worksite must be grounded in accordance with the manufacturer’s instruction. All distribution lines / cables must be properly protected or supported and must not present a hazard to workers. Secondary fuel containment shall



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be used to limit spillage of fuel due to a leak. Double walled fuel tanks are an acceptable alternative.

### 39.0 OVERHEAD OR BURIED POWERLINES

- All personnel must be aware of the hazards and safety requirements associated with working near energized electrical conductors, whether overhead or buried.
- The Contractor's Electrical Safety Coordinator shall be on site and will be responsible for directing all work in close proximity to buried or overhead electrical transmission and distribution lines.
- Prior to commencing any work along the Right-of-Way, the Contractor shall identify all powerlines and erect warning devices at these locations in accordance with the following:
- **Identification:** the Contractor's Electrical Safety Coordinator or designate shall review the Right-of-Way and the project drawings to determine the location of overhead and buried powerlines, confirm their location in the field and contact the utility owner to determine operating voltage, respective safe limits of approach and any other safe work requirements (e.g. exposing and excavating buried powerlines).
- **Signs:** Overhead powerlines shall be identified with warning signs placed approximately 7m on either side of the over head powerline, 1.8m above grade and in view of equipment traveling in either direction under the powerline. Signs shall be installed before the work commences, and be maintained throughout construction.
- **Guard Poles:** Powerline guard poles are typically not installed for clearing, access or grade work, however, safe limits of approach must be maintained. Guard poles must be installed immediately after the completion of grade and the installation of Right-of-Way access ramps (from roadways).
- **Two Guard pole** assemblies will be required at each overhead powerline crossing location. Each guard pole assembly, consisting of a pole on each side of the Right-of-Way connected by rope, shall be installed 6m away from and on each side of the overhead powerline. Poles and ropes shall be non-conductive. The Contractor shall confirm the location of any buried facilities (e.g., pipelines, cables) prior to installation of guard poles, to prevent any contact / damage to existing buried facilities.
- **Safe Limits of Approach:** No worker, tools, lifting device, vehicles, or other equipment being used around overhead powerlines shall be closer that the safe limits listed in the following Table 37.0.A:

**Table 37.0.A - Safe Limit of Approach Distances for Persons and Equipment**

<b>Operating voltage of overhead power line between phase conductors</b>	<b>Safe limit of approach distance for persons and equipment</b>
0 – 750 V insulated or polyethylene covered conductors (1)	0.3 m



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0 – 750 V bare, uninsulated	1.0 m
Above 750 V insulated conductors (1) (2)	1.0 m
.75 kV – 40 kV	3.0 m
69 kV, 72 kV	3.5 m
138 kV, 144 kV	4.0 m
230 kV, 260 kV	5.0 m
500 kV	7.0 m

NOTE: “V” means Volts; “kV” means kilovolts or ‘thousands of volts’

The above safe limit distances apply in all directions, vertical or horizontal (i.e. a 360° circle around the conductors).

- If any work or activity is being carried out near overhead powerlines, a safety watch / signal person shall be assigned to ensure the minimum safe distances are maintained.
- Where safe limit of approach distances cannot be maintained, the Contractor shall contact the utility owner / operator for assistance. Safe limit distances may be varied under the direction of a qualified electrical utility lineman, in accordance with the authorities having jurisdiction, in order to safely route personnel, vehicles, equipment or objects under the overhead powerlines or energized conductors.
- Vehicles and powered mobile equipment shall not approach electrical utility structures (i.e. towers, poles, guy wires, or anchors) any closer than specified by the utility owner Crossing Agreements or the authority having jurisdiction.

#### 40.0 ELECTRICAL SAFETY

- Only qualified electrical workers may perform electrical work as per the applicable provincial regulations or as otherwise specified with the Contract.
- Contractor personnel assigned to work where potential electrical hazards exist must prepare and review a hazard assessment, applicable control measures, and the safe work practices or procedures to be followed.
- While working in close proximity to electrical lines or equipment, personnel will keep sleeves down and buttoned, avoid wearing loose clothing, and unnecessary metal articles such as rings, watches, necklaces, key chains, or other metal, head or facial adornments.
- Conductive tools (e.g. metal measuring tapes, ladders, survey rods, GPS antennas, ropes having conductive threads woven into the fabric, etc.) must not be used near live electrical works.

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- The Contractor shall comply with all regulatory requirements and those of the utility owner when conducting work in the vicinity of energized conductors, whether overhead or below ground. All cords shall be color coded.

#### 41.0 TAGOUT AND LOCK OUT

- Equipment lockout provides a method to ensure the safety of employees while they are working on equipment which is still attached to power sources and may be easily or automatically reactivated. A permit is required from KMC personnel.
- The Contractor shall have a system for ensuring that equipment reactivation does not take place on any of the machinery / equipment / processes he is working on.
- When the facility is turned over to KMC, the KMC lockout procedure will apply.

#### 42.0 PRESSURE TESTING AND PIGGING

- Prior to any pneumatic or hydro-static test, the Contractor shall submit a 'test plan' to the Resident Inspector a minimum of three (3) weeks prior to the start of any high-pressure testing that outlines the steps, hazards, personnel, and controls used to safely conduct the test.
- For pigging operations, as a minimum the test plan shall address inspection and maintenance reports for contractor-supplied pigging and / or test heads, warning signs, safety patrols where required, restricted site access to authorized personnel only and additional spill containment requirements when using methanol / water media during cold water testing.
- Only personnel directly involved in pigging or testing shall be allowed in the immediate vicinity of pig launchers or catchers, test heads, pressure pumps or exposed sections of pipe or facilities during testing. Personnel involved in pigging / testing operations shall ensure they do not place themselves in a position where they could be struck by any part of a launcher / receiver or test head in the event of a device failure.
- Pig catchers shall be fully enclosed (no slotted catcher heads are allowed) and constructed to the satisfaction of the Construction Manager. The Contractor shall submit a 'Pigging Procedure' for the Construction Manager for approval prior to the start of pigging. As a minimum this procedure shall address:
  - Visual inspection and maintenance of pig launchers and catchers
  - Safety procedures associated with the installation and removal of pigs
  - Procedure to ensure the safety of workers and the public
  - Procedure to ensure line is at zero pressure prior to removal of the pig(s)
- End closures on non-welded launchers or catchers shall be inspected by a competent supervisor to ensure they are in a safe operating condition and have been installed correctly prior to use.

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- The Contractor shall place warning signs a minimum of 50m from any exposed piping and the testing facilities, directing unauthorized personnel to stay out of the area. If deemed necessary by the Construction Manager, the Contractor shall install temporary fencing. “HIGH PRESSURE TEST” warning signs approved by the Construction Manager must also be installed at all road / highway crossings, before commencement of testing.
- No equipment, vehicles or persons will be permitted to work or travel along the Right-of-Way while a pipeline section is under test, except authorized personnel or member of the testing crew and the crew identified by a different colored vest with reflective stripes.
- Upon successful completion of the test, Right-of-Way travel may resume when the pressure has been reduced to 50% or less of the ‘leak test’ pressure.
- The Contractor shall provide adequate heated and lighted facilities (test shack) for testing personnel; the facilities should be located as far from the exposed piping as possible and as a minimum no closer than 5m.
- The Contractor shall provide workers a safe means of egress and access for trenches, proper scaffolding at the test heads, adequate lighting when night work is necessary, and a fire extinguisher at both ends of the pigging or test section.
- The Contractor shall provide the Construction Manager a minimum of two (2) hours notice prior to the release, venting or bleeding down of any sections during pigging / testing to allow sufficient time for the Construction Manager to notify KMC Control Center Operations. In addition, any other workers or crews in the vicinity shall be provided ample warning (minimum 24 hours) so that they can vacate the area during the test period and / or ensure they have adequate hearing protection while any sections are being ‘blown down’.
- Prior to any attempt to remove a test head, open a pig launcher / catcher or work on fill lines or crossover piping, the Contractor’s Testing Supervisor, or other competent person, shall ensure all lines are in a state of zero pressure. Pressure must be released from both ends of the pigging or test section, prior to loosening or removing any fittings.
- The Contractor must ensure that no unauthorized persons are at the ends of the pipe or in the immediate vicinity of the pig launcher / catcher or test heads when the piping is under pressure during pigging or testing. The area directly in front of the pig catcher / trap shall be flagged off or fenced to prevent persons from inadvertently entering the restricted zone.
- All hoses, piping, fittings, valves, pig catchers, test heads, etc., will be of adequate design to safely withstand pressures they will be subjected to and must be maintained in safe operating condition. All pressurized hoses or piping shall be adequately restrained (i.e. whip checks, chains, cable wrap, etc.) to prevent movement while under pressure or in the event of failure.

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- Only welded rigid piping or a Construction Manager-approved alternate shall be used for pressuring, filling, de-watering, test section crossovers and all piping shall be adequately restrained (i.e. whip checks, chains, cable wrap, etc.) to prevent movement while under pressure or in the event of a failure.
- The Contractor is advised that no pigging or testing of piping or facilities will commence until off of the above are met.

### **43.0 BLINDING OF VESSELS AND PIPING SYSTEMS**

The Contractor shall submit a safe work procedure to the Resident Inspector that outlines the steps, hazards, personnel, and controls used to safely conduct the work. A permit is required.

### **44.0 CONFINED SPACE**

The Contractor shall have a written Code of Practice governing the practices and procedures to be followed when workers enter and work in a confined space. The Code of Practice must take into account and apply the requirements of Part 5, Confined Space and Section 169 of the Alberta OH&S Act, Code, and Regulations.

### **45.0 X-RAY REQUIREMENTS**

- A safe work permit is required before starting work.
- For facility work the area to be x-rayed shall be flagged off with the appropriate signage and rope or barrier to prevent anyone accessing the zone and check area inside zone to ensure all personnel are out of the area.
- When working within live stations, ensure that KMC operations personnel have been notified, so that 'fire eyes' can be deactivated.
- A hazard assessment shall be conducted to determine the level, (A, B, or C) and the applicable requirements needed based on KMC's Confined Space Practices.
- Inform other workers of the ongoing work.
- A confined space permit may be required.
- The safe work permit is cancelled in the event of an emergency.

### **46.0 GENERAL RULES**

- All KMC Representatives are authorized to remove any Contractor personnel from the site for non compliance to safe work practices.
- It is important to view disciplinary action as a means of preventing incidents and not punitive action against employees.

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- At all times, persons acting on behalf of KMC or the Contractor(s) will act professionally and at no time will they discipline, intimidate, or coerce a worker that has acted in compliance with the legislative Acts, Regulations, Contractor's Safety Program, and / or KMC Safety requirements.
- However, disciplinary measures and penalties for non-compliance with KMC or the Contractor(s) Health, Safety and Environmental requirements, and / or Provincial / Federal Regulations will be strictly enforced for all Contractors and Subcontractors engaged in the work.
- Horseplay, fighting, and disregard for the safety requirements may result in permanent removal of those involved from the Site.
- Running is permitted only during an extreme emergency.
- No person shall deface or vandalize equipment, materials or property.
- Theft of any equipment, materials, and tools is grounds for immediate dismissal.
- Actions of gross negligence which results in injury, fatality, property, material, or equipment damage will not be tolerated.
- All personnel are required to wear the applicable PPE when required.
- No person is permitted to smoke in any area other than the designated smoking area.
- Rings, jewelry, facial / head adornments are not permitted to be worn during construction activities.
- Any act of sexual harassment is not permitted.
- Harassment by other means is not permitted. Everyone has the right to be treated with respect and dignity in the workplace.
- The use of personal stereos (e.g. walkmans, ipods) is strictly prohibited on all KMC sites.
- Cell phones in the general work area are only to be used by Supervisory personnel. (On live sites, they must be intrinsically safe). Permission must be obtained prior from the KMC Representative.
- Cameras are not permitted to be used on site unless permission has been obtained from the Resident Inspector or Construction Manager.
- First Offence, Verbal Warning, but not limited to Written Warning or Termination
- Second Offence, Written Warning, but not limited to immediate Termination
- Third Offence, Termination

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#### 47.0 MANUAL LIFTING

- Proper methods of manual lifting and handling protect workers from injury and make the job safer and easier to perform.
- Whenever equipment is available, use mechanical devices for lifting and carrying.
- Use the proper manual lifting methods when required to lift objects from a position below arm's length.
- The Contractor shall ensure that all workers required to perform manual lifting tasks receive proper training.

#### 48.0 HOUSEKEEPING

- The jobsite must be kept clean and orderly. All emergency exits, fire, and lifesaving equipment must be maintained clear of obstructions. The Contractor shall provide and maintain adequate fire extinguishers. Clean up is daily and at end of shift cycle.
- Whenever possible, aisle ways, walk ways, stairs and gratings must be kept clear of cords, cables and air hoses. Elevate whenever possible.
- Oil, grease, mud, litter, and other debris must be cleaned up as soon as it is spilled or discovered.
- Materials must be stored in a neat, secure place where they do not obstruct operations.
- Waste must be disposed of in properly designated containers and food scraps must not be left lying about in order to discourage wildlife that may be present in the area from entering onto the site.
- Stairs, walkways, and aisles must have good lighting and be clear to allow easy access.
- Snow must be cleared from stairs, pathways and roads and sanded as needed
- Machinery and other equipment must be kept clean.

#### 49.0 ALCOHOL AND DRUGS

- Contractors working on any KMC site will have a Drug and Alcohol Policy that will be used for reasonable cause and post-incident testing.
- No one shall enter any KMC work location if they are under the influence / possession of alcohol or an illegal or improperly used drug.
- Unauthorized drugs and alcohol, drug paraphernalia, or other such contraband items are prohibited at all KMC facilities.

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## 50.0 SMOKING

- Smoking is only allowed in designated areas. The Contractor shall ensure that a metallic butt can and fire extinguisher must be at the area and the area clearly identified with signs and snow fence indicating the smoking area.
- Butt cans are not to be used for trash. A suitable metal garbage can with closing lid and labeled trash shall be placed by the Contractor at each designated site.
- Disciplinary action, up to including termination may result from a smoking infraction.

## 51.0 FACIAL HAIR

No facial hair will be permitted other than mustaches.

## 52.0 FIREARMS / PETS

No firearms or pets are allowed on KMC sites unless prior approval has been obtained from the KMC Representative.

## 53.0 MOBILE EQUIPMENT

- Only trained and authorized personnel may use, maintain, or repair equipment.
- Seatbelts must be worn.
- Before starting any electrical, mechanical, pneumatic, or other type of powered equipment, survey the equipment and its surroundings to ensure that it is safe to operate.
- Clean, adjust, or perform maintenance on equipment only after power is disconnected in accordance with the electrical and lockout / tagout written procedures.
- Block or position all equipment to avoid movement during maintenance.
- Do not bypass safety equipment devices. Make sure all warning signs, guards, and protective devices are in place before operating. Never reach over, through, or around a machine guard while equipment is running.
- Post warning signs, rated load capacity charts, recommended operating speeds, and other information clearly on all heavy equipment.
- Do not operate equipment outside of the manufacturer's recommended limits. No piece of equipment will be modified in such a way as to render the equipment unsafe or exceed the equipment's rated load or working capacity.
- Do not allow anyone within the operating radius of a trencher, conveyor, boom or backhoe.



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- Do not allow anyone to ride on the equipment except in a factory installed seat. Never ride on the back of a tractor, on the forks of a forklift or in a bucket on a backhoe.
- Do not work on or leave heavy equipment until all hydraulically operated parts are lowered to the ground, locked into position, ignition off and key removed.
- Ensure equipment has audible backup alarms and emergency stop switches.
- Equipment is equipped with the appropriate size fire extinguisher.
- The interior of mobile equipment shall be kept clean, the floor free of materials, tool or other objects that may interfere with the operation of the machine's controls or create tripping hazards.
- Windows shall be kept clean and if broken or cracked glazing obstructs the operator's view it shall be replaced as soon as practical.
- The Contractor shall ensure that all equipment meets applicable safety requirements before being delivered to site. Those checks must be made available to the KMC Representative upon request.
- All of Part 19, Powered Mobile Equipment of the Alberta OH&S Act, Code, and Regulations, including Pile Driving Equipment, shall require a valid inspection certificate, certified as inspected by an engineer for the work it is expected to perform.
- The Contractor shall ensure and the operator shall use a **daily** inspection sheet to verify that a pre-trip inspection was completed and that any maintenance items recorded or repairs made. These must be available for examination upon the request of the KMC Site Representative.
- Any equipment, which in the opinion of the KMC Representative, fails to meet any project safety requirements shall be immediately removed from service and repaired, or removed from site and replaced with equipment satisfactory to the KMC Representative.
- Vehicles transporting loads of pipe which has the ability to shift must have bulkheads or other effective means of protecting the driver.
- Trucks and crawler tractors equipped with a winch must have suitable guard to protect the operator from the danger of flying cable in the event of a cable failure.
- No worker shall be allowed to ride in the back of a pickup truck.
- Impervious tarps shall be laid down prior to refueling any mobile equipment as preventative containment.
- Three point contact must be maintained while mounting or dismounting vehicles or equipment.

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- Powered mobile equipment or vehicles with restricted vision, operating in the vicinity of workers, congested work areas, powerlines or above ground facilities shall be guided and directed by a designated signaler. Equipment and / or vehicles shall travel no faster than walking speed (6 km/hr) in the general work areas of the tanks and the posted speed limits on the terminal access roads
- Signalers must be used when the operator's vision of the work area is restricted, or when equipment is mobile and the operator cannot clearly see all parts of the machine and its path of travel; the fully extended boom may come in contact within the safe limit of approach to an overhead powerline.
- When the view of the operator is obscured, the signaler will direct the operator and alert other workers to any hazards that arise while the equipment or its load is being moved. The signaler must be able to communicate with the operator, either verbally or with standard hand signals.
- The operator must take direction from only one appointed signaler; the only exception is the STOP signal. This person must be identified by a high-visibility vest and wrist gauntlets.
- All equipment shall maintain a clearance of at least 1 meter from the edge of any trench or excavation.

#### **54.0 BACKUP ALARMS, POSITIVE AIR SHUT OFFS, SPARK ARRESTORS**

- Back up alarms must be installed on all heavy equipment or trucks over ¾ ton, any Contractor vehicle where the rear vision is partially or totally obstructed.
- Positive air shutoff devices must be installed on all diesel-powered equipment involved in any ground disturbance within 5m of 'live' buried pipelines or above-ground piping or when working inside active tank bays. Positive air shutoff devices must also be installed when working within the fenced boundaries of a facility site. A decompression or fuel shutoff switch is not an approved alternative to a positive air shutoff.
- Positive air shutoffs can be automatic or manually operated and the manual system must be clearly identified and workers familiar with its use.
- An effective spark arresting device must be installed on the exhaust systems of all internal combustion engines in accordance with applicable fire protection legislation. This may include a muffler, which is designed to effectively reduce sparks, or a device designed specifically for that purpose. Spark arrestors must be in place on all diesel-powered equipment with the following noted exceptions:
  - Diesel-powered equipment fitted with a turbo-charger and muffler, and
  - Vehicles used primarily for the transportation of people.

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## 55.0 MOBILE HOISTING EQUIPMENT

- All lifting / hoisting devices and all eyes / hooks on backhoes used for lifting must be re-certified annually. Copies of the current Engineering Certifications must be provided to the KMC Representative prior to the equipment being used in the site. These certifications must remain valid for the project duration.
- All hooks shall be free of bends, cracks, corrosion and enlarged throat openings and any modifications such as welding a safety latch onto the hook must be inspected by magnetic particle inspection, to ensure the weld is free of cracks, etc., prior to use.
- The Contractor shall ensure that only a competent (licensed / certified) operator will operate the unit
- A signal man will wear a high visibility vest with arm gauntlet.
- The Contractor shall assign a competent worker to be the rigger.
- Operators are required to perform daily equipment checks prior to starting any task.
- A log book shall be maintained by the operator and it shall be made available for inspection by KMC personnel.
- Each piece of lifting equipment shall have a load chart and radius chart that can be easily read, is permanently attached and not removed from the equipment for any reason.
- The operator shall remain at the controls while holding a suspended load and if it is necessary for the operator to leave the controls the operator and / or supervisor shall ensure that all suspended loads are adequately secured (skidded or blocked up).
- When lifting a load, the operator must ensure the hoisting line is in a vertical position and is centered over the load in such a manner as to reduce the danger to workers from a swinging or uncontrolled movement of the load. The only exception to this is when lifting equipment is positioned / traveling on a slope and it is necessary to anchor / stabilize the hoist line to keep the load perpendicular to the slope, i.e. when carrying loads up or down steep slopes and the hoist line must be perpendicular to the slope to prevent the equipment from tipping forward or backward.
- When personnel or property may be endangered by the rotation or uncontrolled motion of a load being hoisted or carried, one or more tag lines shall be used, where practical, to prevent the rotation or uncontrolled motion.
- Loads shall never be moved, carried, or swung over top of workers and loads shall never be picked up or lowered while any worker is between the machine and the load. No person shall allow any part of their body to extend under suspended loads and tag lines shall be used to guide and control the load where practical.
- No person is to be in the trench, on the pipe or between the pipe and trench when lowering pipe or any other devices into the trench.

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- Outrigger pads shall be used and must be at least two (2) times the size of the actual outrigger foot.
- The Contractor must ensure that operation of a crane is suspended when: 1) the wind velocity at the elevation of the crane exceeds the limit recommended by the manufacturer or, 2) when the ambient temperature is below that recommended by the manufacturer. Contractors shall have a policy of de-rating the lift capabilities of the crane below certain ambient temperatures.

## 56.0 VEHICLES ON SITE

- The speed limit on facility sites is restricted to walking speed (6km/h) and the posted speed limit on access roads. Seatbelts must be worn at all times.
- As a rule all vehicles over ¾ Ton must have a backup alarm.
- All vehicles must carry one 20lb. ABC Dry Chemical Fire Extinguisher
- All vehicles must back into any parking spots.
- Walk around vehicle inspections shall be made prior to starting and moving vehicle.
- Headlights are to remain on at all times.
- Vehicles with restricted vision are not to be moved in the vicinity of workers or in congested work areas except under the direction of a designated signal person.

## 57.0 CRANES, PICKERS, AND BOOM TRUCKS

- Outrigger pads shall be used and must be at least two (2) times the size of the actual outrigger foot.
- Avoid two-blocking, which may cause load line failure. Cranes will be equipped with an anti-two-blocking warning device.
- Traveling with suspended loads shall be avoided whenever possible. If travel is absolutely necessary, the load must be carried as close to the ground as possible, with the boom carried in line with the direction of travel and tag lines used to control the load.
- All loads carried on boom trucks will be adequately secured and the boom lines are not to be used to tie down the load.
- When traveling on site, all booms and knuckles, etc. shall be in its proper resting position to avoid contact with any overhead obstructions.
- The crane operator shall be the person determining if the load is safe to lift.
- The crane operator shall take signals from only the signalman, unless the “STOP” signal is given by another worker in the event of an emergency.

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## 58.0 GRAVEL TRUCKS

- Drivers who do not have the proper PPE shall remain in the cab of their vehicle.
- No person shall attempt to slam the tailgate of a dump box shut with their hands.
- Drivers are not permitted to drive away from the dump site with the box still in the air; it must be fully lowered after dumping the load.
- Care must be taken when reversing a pup or truck on uneven ground to ensure the weight of the load does not topple the truck over sideways.
- A spotter shall be used at all times when reversing.

## 59.0 DELIVERY TRUCKS

- General contractors must provide clear directions and site access information to all cartage companies making deliveries to the project site and the PPE requirements

## 60.0 EXCAVATING EQUIPMENT USED FOR LIFTING PURPOSES

- Before excavating equipment can be used for material lifting, the operator must ensure:
  - A “lifting Capacity Chart’ is readily available for the equipment being used,
  - The weight of the material to be lifted is known,
  - The machine is equipped with an approved (factory supplied) lifting point (e.g. a welded plate with an eye or a bolted on hook with a safety latch),
  - An engineering Certification dated within the previous 12 months that certifies the lift point and its method of attachment (i.e. bolts, welds) is available, and
  - The lifting point is visually inspected before each lift.
- NOTES:
  - Bolts used to attach hooks or other attachment points must be rated higher than the lifting capacity of the excavating equipment.
  - Slings should be connected to the lift point using a clevis or shackle.
  - Slings or the clevis / shackle are not to be placed in a hook that does not have a suitable safety latch.
  - Slings are not to be placed on an hook with sharp edges, which could damage or cut the sling
  - Unattended hooks must be lowered to the ground or blocked in position.

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- **WARNING:** Excavating equipment hydraulic systems are subject to hydraulic drift and are not designed to hold suspended loads. As hydraulic systems are not typically equipped with emergency lock safety systems, load can be dropped due to failure in the hydraulic system.

## 61.0 VEHICLE TRAFFIC CONTROL AND RADIO-CONTROLLED ACCESS ROADS

- Depending on site location and road access for the delivery of large equipment and machinery, the Contractor shall provide trained flag persons should the situation warrant the need.
- If any road does not allow for the safe two way passage of traffic, the Contractor must ensure that an appropriate traffic control system and procedures are implemented, including the use of 'radio control' for any vehicle traffic on them.
- The Contractor shall assure that all site personnel are informed of the traffic control system and procedures to ensure the safety of all persons traveling on access roads within the project length. All vehicle operators shall abide by these procedures.
- Other hazard warning signs at locations where they are needed.
- All vehicles shall operate with headlights on at all times.

## 62.0 CROSSING / WORKING ON OR ADJACENT TO ROADS, HIGHWAYS, OR RAILWAYS

- The Contractor shall not conduct any work, load, or unload equipment / material where a hazard is created to traffic, trains or the public, unless adequate traffic control measures are used to control or stop the approaching traffic. As such measures shall be in accordance with the Authorities having jurisdiction and this program.
- Single pieces of tracked equipment may cross municipal roads (gravel) and trails with the assistance of one flag person to direct them across, providing there is a minimum of 500m clear visibility in both directions at the point of crossing.
- Rubber-tired vehicles (e.g. graders, loaders, tractors, etc) may cross unassisted if there is adequate visibility (approximately 500m in either direction from point of crossing) and the crossing can be completed safely.
- Two (2) flag person must be present to control traffic for any vehicles or equipment that are:
  - Backing across roads or highways.
  - Backing out onto roads, highways.
- All flagging personnel shall wear appropriate high visibility clothing, approved paddles and must be adequately trained, all in accordance with the authorities having jurisdiction.

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### 63.0 ALL-TERRAIN VEHICLES

- The Operator shall wear a safety helmet that conforms to Part 18, Section 236, Sub-sections 1, 2, 3, and 4 of the Alberta OH&S Act, Code, and Regulations and Part 16, Mobile Equipment, All Terrain Vehicles, Sections 16.49-16.55.
- Three (3) wheeled units and dirt bikes are not permitted.
- The operator shall be trained in the use of the equipment and certification made available upon the request of the KMC Site Representative.
- ATV's shall have an aerial whip and flag, and if working in remote areas, a first aid kit and portable communication equipment.
- If being operated during hours of darkness, a lighted buggy whip is required.

### 64.0 WINTER DRIVING PROGRAM

- Winter weather can severely impact the health and safety of personnel who are required to travel back and forth from work sites.
- Prior to the onset of fall / winter, KMC will issue a training session regarding winter driving and vehicle preparations for all KMC and Contractor personnel. The contractor shall also make this a training focus topic.
- KMC personnel shall be required by October 31, 2006, to outfit their vehicles with snow tires and additional traction weight in their vehicles.
  - A list of recommended tires can be viewed at <http://www.tc.gc.ca/roadsafety/tires/wintertires/menu.htm>.
- Contractors are advised to follow the same rules with respect to snow tires and traction weight in pick up boxes.
- A sample copy of a typical Winter Driving Program is included at <http://www.mto.gov.on.ca/english/safety/winterdrive/winterdrive.htm>.

### 65.0 LIGHTING

The Contractor shall ensure that adequate lighting is available to do the work safely, both inside and outside, that shall include office trailers, tool cribs, general grounds and interior of tanks being constructed

### 66.0 LIGHTNING

- The Contractor shall determine when all work will stop due to lightning. The general principle is to follow the 30/30 rule when a storm is within approximately 10km of the worksite. Personnel should be advised to seek safe shelter and by counting the seconds between the time you see lightning and hear the thunder, you should be in a safe area if that time is less than 30 seconds.



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- It is recommended that personnel stay inside until 30 minutes have passed after you hear the last thunder.

## **67.0 HYGIENE (TOILETS, WASHING FACILITIES, AND DRINKING FLUIDS)**

- The Contractor shall ensure that Part 24, Section 354 – 361 and Schedule 7 – Toilets at a Work Site, of the Alberta OH&S Act, Code, and Regulations. Preference is for piped, plumbed, heated wash cars.
- Any person caught using the site or grounds as a toilet will be terminated.

## **68.0 SAFETY IN TRANSITION -FACILITY**

As the project evolves from Construction to an Operating facility or tie-ins from new pipeline construction, so too will the requirements to continue to safely execute this project. As part of front-end alignment, a review will be conducted to determine the extent of integration of operations and construction safe work practices and procedures. Emergency Response Plans, PPE, and training requirements, etc., will be revised as required.

The intent of this review will be to determine the Safe Work Standards that will be utilized in and around designated construction areas.

Procedures that will be reviewed, revised, or developed will include but not limited to:

- Safe work permit procedures
- Confined space entry
- Electrical tag and lock out
- Blinding and isolation
- Excavation and ground penetration
- Tie in procedures
- Start up and commissioning procedures / work processes.

## **69.0 OFF-THE-JOB SAFETY**

Employees are far more likely to suffer an injury at home, on the road, or during leisure activities than on the job. Off-the-job injuries vastly outnumber those suffered on the job. The Canada Safety Council estimates that 90% of the injuries that keep employees away from work occur outside the workplace. In some organizations, off-the-job-injuries resulting in absenteeism outnumber those suffered on the job by a ratio of as much as 20 to 1.

- All project personnel are temporary 'guests' in the project site areas. Always follow the rules of the road with respect to speed, seatbelts and road conditions. Never drink and drive.

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- Wildlife may be a factor on the highways, so be prepared. For more information on how to avoid collisions with wildlife please see <http://www.wildlifeaccidents.ca/hints.htm>.
- Sports and other recreational activities also have their inherent hazards. Be safe when participating, and make sure your children are as well.

## 70.0 WASTE MANAGEMENT PLAN

- The Contractor shall have a Waste Management. Requirements regarding Handling, Storage, Use and Disposal at Pump Station Sites, items
- Refer to Environmental Plans pertaining to Facility Construction and the requirements set therein.

## 71.0 GUIDELINE FOR CELL PHONE USE IN PASSENGER VEHICLES

This Guideline addresses the use of a cell phone by a driver in a passenger vehicle. It does not address the use of a cell phone by a passenger, the use of a cell phone by a heavy equipment operator, or the use of a cell phone in a restricted area.

This Guideline is intended to recognize the following generally accepted principles:

- Drivers have a responsibility (and possibly liability) to ensure their own safety, the safety of their passengers, other drivers and passengers, and the general public.
- The use of a cell phone while operating a vehicle increases the inherent risk, due to both mechanical and cognitive interference.
- The level of increased risk may vary depending on the circumstances under which the cell phone use occurs.

It is important that all members of the Major Projects Group take a leadership role with respect to safety. In this context, and in accordance with the above principles, this Guideline is intended to provide direction related to cell phone use:

- A driver should not intend to use a cell phone while operating a passenger vehicle, regardless of whether a hands-free device is used.
- An accepted practice for a driver to make a cell phone call during a vehicle trip is to safely exit to a designated turn-out or parking area prior to making the call.
- An accepted practice for a driver to receive a cell phone call during a vehicle trip is to let the call go to voice-mail, safely exit to a designated turn-out or parking area, retrieve the message, and return the call before continuing the trip.
- A driver may make or accept a cell phone call while operating a passenger vehicle, but only after a purposeful and realistic assessment of the “criticality” of the call and the level of risk associated with:
  - Location
  - Road quality (including availability of turn-outs)

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- Speed limit
- Traffic intensity
- Time of day
- Expected length of call
- Nature of call
- It is anticipated that few calls will have sufficient “criticality” to out-weigh the increased risk associated with making or taking them without following the accepted practices.
- It is an accepted practice for a driver to use a cell phone to call for help for him or others in road-side emergencies.

The management of the Major Projects Group recognizes that the result of following the intent of this Guideline will be that vehicle trips may take longer than planned.