LOGAN DRILLING GROUP

Safety Manual

LOGAN
SAFETY FIRST
QUALITY ALWAYS
IMPROVEMENT CONTINOUSLY

EMPLOYEE ORIENTATION SECTION

Table of Content

Doc #	Version	Creation Date	Last Revision
001 EO -New Employee Orientation Checklist	1	08.14.2014	23.11.2014

NEW EMPLOYEE ORIENTATION CHECKLIST

GENERAL INFORMATION

Employee Name	Date Hired	Title
Name of Trainer		

This checklist is to ensure that Logan Drilling Group new employees or contractors have completed all parts of the New Employee Orientation. Place a check in each box to indicate that the subject has been covered.

The supervisor has reviewed the following information with the employee:

- ☐ Reviewed the company history
- ☐ Emergency Preparedness Plan has been reviewed
- ☐ Complete Tour of the facility & equipment has been completed
- ☐ The employee has been given a copy of the Employee Orientation Manual and it has been reviewed

- ☐ The supervisor has gone over the following documents with the employee:
  - ○ Responsibility for Health and Safety
  - ○ Health and Safety Procedures
  - ○ Worker Training Program
  - ○ Hazardous Substance Orientation
  - ○ Harassment Policy
  - ○ Disciplinary Policy
  - ○ Inspection Policy
  - ○ PPE Policy
  - ○ Maintenance Policy
  - ○ Drug & Alcohol Policy
  - ○ Workplace Violence Policy

- ☐ All required forms and information for Human Resources have been filled out and forwarded to head office
  - ○ Payroll & Banking Information
  - ○ TD1 Forms
  - ○ Medical Disclosure Form
  - ○ Medical/Life Insurance Form
  - ○ Pension Benefit Form

- ☐ Copies of the following have been made and placed into Training and/or Personnel files.
  - ○ Valid Driver's Licence
  - ○ Signed Driver's Abstract Release Form
  - ○ Passport
  - ○ All Valid Training Certificates/Cards/Tickets
    - □ First Aid
    - □ WHMIS
    - □ Power Line Safety (NL)
    - □ CORE (Ont.)
    - □ CSTS (Alberta, BC)
    - □ Other: _____

Doc #	Version	Creation Date	Last Revision
002 EO-Hazardous Substance Orientation Checklist	1	08.14.2014	23.11.2014

HAZARDOUS SUBSTANCE ORIENTATION CHECKLIST

GENERAL INFORMATION

Employee Name	Date Hired	Title
Name of Trainer		

This checklist is to ensure that Logan Drilling Group new employees and contractors have been informed of the Hazard Communication Program. Place a check in each box to indicate that the subject has been covered.

The purpose of the hazard communication standard is to require chemical manufacturers or importers to assess the hazards of chemicals they produce or import. All employers must provide information to their employees about the hazardous chemicals to which they may be exposed.

The supervisor has reviewed the following information with the employee:

☐ Employees must be informed about the hazard communication program, labels and other forms of warning, and material safety data sheets, and they must have training on the hazardous substances they may encounter

☐ The supervisor has reviewed the hazardous chemical list with the employee

☐ The supervisor has shown the employee the following:

- Location of hazardous chemicals within the employee's work site
- Location of the written Hazard Communication Program
- Location of the material safety data sheets for all hazardous chemicals in the employee's assigned work area
- Location of the list of person(s) trained and authorized to handle the hazardous chemicals (if applicable)

DISCIPLINARY PROCEDURES

The failure of any employee to abide by the Logan Drilling Group Company Rules and the Personal Conduct & Appearance policies will result in the following disciplinary action (except where noted):

Note: Depending on the severity of the infraction and the discretion of management, corrective action taken may omit the first and second steps and move directly to suspension or dismissal.

Company Rules

First Offence: Verbal Warning documented in personnel file

Second Offence: Written Warning documented in personnel file

Third Offence: Written Warning documented in personnel file & 5 day suspension without pay

Fourth Offence: Immediate dismissal

Safety and PPE Infraction:

First Offence: Verbal Warning documented in personnel file

Second Offence: Written Warning documented in personnel file & up to 2 days suspension without pay

Third Offence: Written Warning documented in personnel file & up to 5 day suspension without pay or immediate dismissal

Fourth Offence: Immediate dismissal

Impairment while on Duty (Drugs or Alcohol)

First Offence: Immediate Dismissal

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Disciplinary Procedures and will abide to all the above mentioned during my employment with the company.

Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

Personal Protective Equipment Policy

Scope

Logan Drilling Group, as an employer, is very interested and ultimately responsible for its employees' health and safety.

Logan Drilling Group management will work closely with the health & safety manager, field managers, safety supervisors, foremen and other individuals in the field to establish the standards and guidelines for required personal protective equipment (PPE) and to ensure that all employees have access to the required personal protective equipment. All protective clothing, equipment, or devices used must meet or exceed the minimum standards prescribed in the respective acts and regulations, CSA, ANSI, OSHA or MIL Specs.

Policy

This policy has been developed with the intent to setting out specific guidelines and standards for personal protective equipment both at the warehouse/shop and in the field level. PPE is an integral part of health and safety and this organization's everyday operation.

The Personal Protective Equipment Procedure will be reviewed at least annually and modified for new equipment, changing conditions and locations.

Responsibility

Personal protective equipment will be supplied by Logan Drilling Group or made available for purchase. Any specialized PPE will be supplied by the company.

Safety supervisors, foremen, drillers and driller helpers, will be trained in the proper use and selection of PPE. They will also be responsible and accountable for ensuring that they are following the set standards for PPE. Personal protective equipment will be inspected as required. Any PPE that is of questionable reliability, damaged or in need of repairs is to be removed from service. The safety supervisor, foreman or supervisor is to be notified immediately and the equipment is to be repaired/replaced promptly.

Any PPE removed from service will be tagged "OUT OF SERVICE" and shall not be returned in to service until repaired and inspected by a qualified and/or competent person.

Specialized PPE will be inspected at the start of each job as well as yearly by a competent qualified person. PPE Inspection Records shall be kept and maintained for all specialized PPE. These will be audited yearly by the Health & Safety Manager.

Management

All management shall follow at minimum the following standards:

1. Within the designated area in the warehouse/shop facility:
    a. CSA Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle
    b. Coveralls or long trousers
    c. CSA approved safety glasses
    d. CSA Type 2, Class E Hard Hat
    e. CSA "Earmuffs" 110 that clip to Hard Hat (to be used as required)
    f. Gloves (if working)

2. While on any work sites:
    a. CSA Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle
    b. Type 2, Class 2 Vest, Long sleeved shirt and trousers
    c. CSA approved safety glasses
    d. CSA Type 2, Class E Hard Hat
    e. CSA "Earmuffs" 110 that clip to Hard Hat
    f. Any other PPE requested by the client

Employees

All employees shall follow at minimum the following standards:

1. Within the designated area in the warehouse/shop facility:
    a. CSA Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle
    b. Coveralls or long trousers
    c. CSA approved safety glasses
    d. CSA Type 2, Class E Hard Hat.
    e. CSA "Earmuffs" 110 that clip to Hard Hat (to be used as required)
    f. Gloves

2. While on any work sites:
    a. CSA Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle
    b. HiVis Coveralls or HiVis long sleeve shirt and long trousers
    c. CSA approved safety glasses
    d. CSA Type 2, Class E Hard Hat
    e. CSA "Earmuffs" 110 that clip to Hard Hat
    f. HiVis gloves
    g. Any other PPE requested by the client

Visitors or Guests

All visitors or guests shall follow at minimum the following standards:

1. Within the designated area in the warehouse/shop facility:
    a. CSA Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle
    b. Coveralls or long trousers
    c. CSA approved safety glasses
    d. CSA Type 2, Class E Hard Hat
    e. CSA "Earmuffs" 110 that clip to Hard Hat (to be used as required)
    f. Gloves (if working)

2. While on any work sites:
    a. CSA Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle
    b. Type 2, Class 2 Vest, Long sleeved shirt and trousers
    c. CSA approved safety glasses
    d. CSA Type 2, Class E Hard Hat
    e. CSA "Earmuffs" 110 that clip to Hard Hat
    f. Any other PPE requested by the client

At no time shall any personal protective equipment be modified, changed or worn contrary to manufacturer's specifications or the applicable Health and Safety Act.

Failure to adhere to the Personal Protective Equipment Procedure or follow the set standards will result in disciplinary actions being taken as set out in the Disciplinary Policy.

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Personal Protective Equipment Procedures and will abide to all the above mentioned during my employment with the company.		
Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed to the daily report mailing list.

The original is to remain on the Employees' Personal File.

DATE RECEIVED STAMP

Drug & Alcohol Policy

Scope

Logan Drilling Group strives to provide a safe and productive work environment and considers being under the influence of alcohol and/or drugs while on the job to be unsafe and counterproductive to work practices.

Policy

In an attempt to minimize the risk of impaired performance and prevent accidents and injuries resulting from the misuse of alcohol or use of controlled substances by employees and/or contractors Logan Drilling Group has put in place the following policy.

Management recognizes that employees working under the influence of controlled substances or alcohol may prove to be harmful to themselves, other employees, clients or property. Therefore it is Logan Drilling Group's policy that employees are not to work under the influence of, possess, sell, distribute, dispense, manufacture or use any controlled substances or alcohol in the workplace.

Medication & Prescription Drugs

It is prohibited to intentionally misuse any medication both prescribed or over the counter. The following are examples to medication that can contribute to impairment:

- Antihistamines
- Narcotics
- Muscles relaxants
- Cold Remedies
- Anti-Depressants
- Sedatives
- Anti-Convulsants
- Anti-Virals

Employees must advise their physician of their line of work and ensure that any prescribed medications will not interfere or hinder his/her ability to conduct their work. Safety supervisors must be made aware of any prescription medications being used and possible ill-effects.

Alcohol

Logan Drilling Group prohibits the use or possession of any alcoholic beverages while working, on any company premises, job site or camps. There will be an exception for those employees required to travel to and from the workplace to their living accommodations while working away from their place of residence. Any personnel carrying unopened alcoholic beverages in a company vehicle MUST carry it in their personal bags in the back of the truck. Under NO circumstances will the alcoholic beverages be allowed in the cab of any vehicle, and under NO circumstances will any opened beverages be allowed anywhere in the vehicle.

Fitness for Duty

It is prohibited by Logan Drilling Group for any employee or contractor to report for work while visibly impaired or being unfit for duties due to the after effects of alcohol, illicit drugs or medications. Should an employee or contractor report for work visibly impaired or unable to properly perform their duties they will not be allowed to work and will be removed from the site. All accrued cost will be billed back to the employee.

This policy applies to all employees and contractors engaged in company business or working on company premises. Violation of this policy is grounds for disciplinary action as stated in the Disciplinary Procedure for all Logan Drilling Group employees and contractors.

Responsibilities

Management

- Making suggested or mandatory referrals for assessment or assistance
- Ensure that all employees are aware of resources and services available and how to access them
- Communicating and monitoring the policy's implementation
- Maintain an active and cooperative effort with employees to assist in any case where suspected use or dependency is detected
- Ensure that the Drug and Alcohol Policy is reviewed annually and updated as required

Supervisor

- Early identification and handling of performance problems which may be caused by alcohol and/or drugs
- Referring employee for alcohol or drug testing in post-incident or reasonable cause situation

Employee

- Read and understand the policy and their responsibilities
- Abstain from alcohol use a minimum of 8 hours prior to reporting for scheduled duties
- Seek and follow appropriate treatment should he/she feel they have a substance dependency or emerging problem
- Report the use of any medication that could have a negative effect on the performance of their duties
- Report any potential violation of the Drug and Alcohol Policy to their safety supervisor, foreman, manager or the Health & Safety Manager

Contractor

- Meet the same "fitness for duty" standards and prohibitions concerning the use of drugs, medications and alcohol as all other Logan Drilling Group employees
- Supervisors will have the same responsibility for contractors as they do for employees
- Non-compliance with the policy will be grounds for immediate termination of the contract

Assessment/Rehabilitation

Logan Drilling Group management will ensure that all employees are made aware of assessment and treatment services to resolve any problems they may have with alcohol, drugs or medications. Counselling services can be accessed through the provincial addictions agencies or private counseling.

Although Logan Drilling Group may direct employees to qualified services, the cost of these services will not be covered by the company and there is no guarantee to hold a job for anyone who is unable or ineligible to perform his/her duties during treatment.

Logan Drilling Group will, however, underwrite the cost of the initial Substance Abuse Professional assessment as a result of a positive drug and/or alcohol test.

Procedure

Impaired Driving Charges/Conviction

Any impaired driving incidents, whether on company business or personal time, relative to alcohol or substance abuse must be reported immediately to management and/or the Health & Safety Manager.

Any loss of license must be reported to management and the employee will no longer be qualified to drive on behalf of Logan Drilling Group. In addition, any individual charged with an impaired driving offence when operating a vehicle on behalf of Logan Drilling Group:

- Must inform their supervisor immediately
- The situation will be investigated
- Individual may be required to complete a medical or substance abuse professional assessment to determine if they have an alcohol or drug problem
- Alternative work assignment and disciplinary action as per the Disciplinary Policy will be taken.

Search

Logan Drilling Group reserves the right to conduct unannounced searches for alcohol, drugs or drug paraphernalia on company owned/operated sites, equipment and lodging including vehicles, where there are reasonable grounds to believe that they may be present. Searches will be conducted in accordance with and in cooperation with local law enforcement agencies where required.

Alcohol & Drug Testing

All Logan Drilling Group employees and contractors may be subject to testing as a requirement of regulatory compliance or contract compliance at the client's or company's management discretion.

Pre-Access

For certain clients, or to sites, a pre-access drug and alcohol test must be passed. The testing requirements will be set by the client or site operators. Testing will be conducted by a qualified and properly trained firm.

Post-Incident

Post-incident testing, for drugs and alcohol, is required for all employee and contractors after a significant incident occurs unless there is clear evidence that acts or omissions of the employee or contractor could not have been a potential contributing factor. The test must be completed as soon as possible following the accident, but may done up to 12 hours after the incident, for both drugs and controlled substances. Written instructions on the procedure for reporting to a collection facility for post-incident testing will be provided.

Reasonable Cause

Logan Drilling Group may require an employee or contractor to be removed from the site where reasonable cause exists to suspect alcohol or drug use, in violation with this policy. The basis for the decision will be documented as soon as possible after action has taken place. The referral for a test will be based on specific, personal observation and documentation resulting from, but not limited to:

- Observed use or evidence of use of substance
- Erratic or atypical behavior of the employee/contractor
- Changes in the behavior of the employee/contractor
- Changes in the speech patterns of the employee/contractor

Testing will be conducted as soon as reasonably possible once the determination has been made that reasonable cause exists. If more than 4 hours pass from the time of reasonable cause, a valid reason for delay must be documented.

Return to Duty

If an employee tests positive for a banned substance or refuses to provide a suitable sample to be tested or otherwise violates the policy, he/she must complete a return to work test yielding a negative result prior to returning to work with Logan Drilling Group.

Follow-up

Any employees in violation of this policy and requiring alcohol and/or drug abuse related treatment must comply with "follow-up" testing (unannounced testing at the discretion of the employer). Follow-up testing shall include at least six tests in the first twelve months following the employee's return to duty.

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Drug & Alcohol Policy and will abide to all the above mentioned during my employment with the company.		
Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed to the daily report mailing list.

The original is to remain on the Employees' Personal File.

DATE RECEIVED STAMP

Harassment Policy & Procedure

Logan Drilling Group, in cooperation with our employees, is committed to a healthy, harassment-free work environment for all our employees. To this extent, Logan Drilling Group, has developed a company-wide policy intended to prevent harassment of its employees and to deal quickly and effectively with any incident that might occur.

Definition of Harassment

Harassment is any unwelcome physical, visual or verbal conduct. It is against the law. Harassment may include verbal or practical jokes, insults, threats, personal comments or innuendo. It may take the form of posters, pictures or graffiti. It may involve touching, stroking, pinching or any unwelcome physical contact. Any behaviour that insults or intimidates is harassment if a reasonable person should have known that the behaviour was unwelcomed.

The *Human Rights Act* protects everyone within provincial jurisdiction from harassment and other forms of discrimination on the basis of race, religion, sex, (including pregnancy and sexual orientation), marital status, physical disability, mental disability, political opinion, colour or ethnic, national or social origin and age (in employment only, between the ages of nineteen and sixty-five).

Logan Drilling Group will not tolerate harassment on the basis of any of those protected grounds.

Procedure

A) If you are being harassed:

1. Tell the individual his/her behaviour is unwelcome and ask him/her to stop. Give the harasser an opportunity to end the harassment.

2. Keep a record of incidents (dates, time, locations, possible witnesses, what happened, your response). You do not have to have a record of events to file a complaint, but a record can strengthen your case and help you to remember details over time.

3. Report the problem and file a complaint to your immediate supervisor, manager or any other senior manager.

You also have the right to file a complaint with the New Brunswick or Nova Scotia Human Rights Commission. A complaint has to be filed with the Commission within twelve months of the last incident. Within New Brunswick the toll free number is: 1-888-471-2233. Within Nova Scotia the toll free number is: 1-877-269-7699.

Dealing with the Complaint:

1. Once a complaint is received, an investigation will be undertaken immediately and all necessary steps taken to resolve the problem.

2. The complainant and the alleged harasser will both be interviewed along with individuals who may be able to provide relevant information.

3. If the investigation reveals evidence to support the complaint of harassment, the harasser will be disciplined appropriately. Discipline may include suspension or dismissal, and the incident will be documented in the harasser's file. Documentation will be placed in the complainant's file, whether the complaint is upheld or not.

4. If the investigation fails to find evidence to support the complaint, there will still be documentation concerning the complaint placed in the file of the alleged harasser.

5. Any complainant who has lost opportunity for job advancement, promotion, wage raise, etc., due to harassment, will have his or her qualifications re-examined in a fair, unbiased manner.

C) Responsibility of Management:

It is the responsibility of the director, manager, or any person within this company supervising one or more employees to take immediate and appropriate action to report or deal with incidents of harassment whether brought to their attention or personally observed. Under no circumstances should a legitimate complaint be dismissed or down played or the complainant told to deal with it personally.

Logan Drilling Group seeks to provide a safe, healthy and rewarding work environment for its employees. Harassment will not be tolerated within this company. **If you feel you have been harassed, contact us, we want to hear from you.**

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Harassment Procedures and will abide to all the above mentioned during my employment with the company.		
Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed the daily report mailing list.

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Inspection Policy

Logan Drilling Group strives to provide a safe productive work environment and minimize the risk of injuries and down time due to mechanical failures and unsafe conditions.

At Logan Drilling Group we will maintain a program of safety inspections at all company facilities and sites. It is our policy to conduct daily, weekly and monthly inspections and surveys of equipment, tools, vehicles, support vehicles, drills and work sites in order to minimize the risk of injuries, disturbances and/or work stoppages. All inspections and surveys are to be properly documented and stored in the event of an audit. It is the responsibility of all safety supervisors, foremen and respective managers to ensure that all inspections and surveys are conducted as prescribed.

Safety supervisors, drillers and driller helpers will be instructed on conducting the inspections and surveys. They will be held accountable for the adherence to the inspection schedules and proper documentation and maintenance of these records.

Inspections and surveys are to be submitted to Management and the Health & Safety Manager with copy to the safety committee.

Health and safety is an integral part of this organization's everyday business. It is in the best interest of all to join together and put it into practice health and safety principles in all work activities

This policy will be reviewed annually and revised as necessary.

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Inspection & Survey Policy and will abide to all the above mentioned during my employment with the company.		
Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

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Maintenance Procedure

Scope

Logan Drilling Group recognizes that well maintained equipment is key to the success of its operations.

In support of this, it will be ensured that all equipment, vehicles and support tools and equipment receive appropriate regular preventative maintenance in order to enable Logan Drilling Group to conduct their work in the most efficient manner with minimal work stoppage due to breakdowns and emergency repairs.

This section outlines maintenance schedules and requirements.

Definitions

Certified and competent mechanics and or inspectors are required to conduct maintenance and inspections. These individuals are certified by the agencies or boards governing their fields.

A competent person is deemed competent by the company. For example, a mechanic may be used to train a new helper on air brake adjustments.

Policy

This policy has been developed with the intent to setting out specific guidelines for regular maintenance for all equipment including drills, vehicles, support vehicles, tools and Personal Protective Equipment. Maintenance is an on-going process that not only takes place during a set schedule but on a daily basis as it is needed.

The Maintenance Procedure will be reviewed at least annually and modified for new equipment, changing conditions and locations. Maintenance will be conducted by certified mechanics, inspectors and/or competent and qualified personnel.

Responsibility

It will be the responsibility of every manager, safety supervisor and foremen to ensure that the procedures outlined in this section are followed and employees are trained in the proper manner.

The Health and Safety Manager will audit the maintenance records annually to ensure that all equipment, vehicles, support vehicles, tools and Personal Protective Equipment are being maintained as outlined. A maintenance schedule must be developed for any new equipment brought into the workplace.

Procedures

Any maintenance or repairs shall be recorded on the vehicle's Maintenance Record Form including the signature of the individual who completed the work. All supporting documentation of maintenance/repair shall also be attached to the maintenance record sheet.

Vehicle Maintenance

All vehicles owned by Logan Drilling Group or any vehicles used for work purposes, will be inspected using a Daily Vehicle Inspection Checklist. This must be completed prior to using the vehicle. Any deficiencies shall be noted on the inspection sheet and reported to the immediate supervisor. Any noted damage or need for repair shall be looked at and repaired by a certified and competent mechanic.

All vehicles will undergo general inspection, tire rotation and fluid and filter changes as per manufacturer's guidelines. These will be conducted by a competent mechanic. Any replacement filters must be dated and signed by the individual completing the work as well as noted on that vehicle's maintenance record form.

Support Vehicles

All support vehicles owned by Logan Drilling Group or any support vehicles used for work purposes, will be inspected using the appropriate inspection checklist. This must completed prior to using the support vehicle. Any deficiencies shall be noted on the inspection sheet and reported to the immediate supervisor. Any noted damage or need for repair shall be looked at and repaired by a certified mechanic or a competent person.

All support vehicles will undergo general inspection, fluid and filter changes as per manufacturer's guidelines. These will be conducted by a competent mechanic. Any replacement filters must be dated and signed by the individual completing the work as well as noted on that vehicle's maintenance record form.

Drill Maintenance

All drills, including geotechnical, exploration and truck mounted will be inspected prior to use, using the appropriate drill checklist. This inspection must be completed prior to the start of shift. Any deficiencies shall be noted on the inspection sheet and reported to the immediate supervisor. Any issues noted shall be repaired by a competent person as soon as the deficiency is noted.

All drills will undergo a general inspection, fluid and filter changes and preventative maintenance as per manufacturer's guidelines. This inspection will be completed by a competent person or a certified mechanic when possible. All replacement filters must be dated and signed by the person conducting the work as well as noted on the drill's maintenance record form.

Tools & Support Equipment

All tools and support equipment used to assist in the drilling shall be inspected and replaced as required and prior to the start of any new job.

Tools showing wear and tear or damage are to be noted on the Workplace Daily Checklist and the immediate supervisor shall be notified. Tools and support equipment are to be repaired or replaced as required.

Fall Protection

All fall protection equipment is to be inspected prior to use by the user to ensure that all the hardware, webbing and stitching is in good condition. All fall protection equipment must be inspected using the appropriate inspection form prior to the start of all job. Any defects or deficiencies are to be noted on the inspection sheet and the equipment is to be "tagged out" and removed from service until it is repaired or replaced as required.

All fall protection equipment is to be stored and cared for as per manufacture's specification. Annually all the fall protection equipment must be inspected and signed off by a trained and competent inspector. Any defects or deficiencies will be noted and rectified accordingly.

Documentation

Complete documentation of maintenance is available from the local office or the Shop Manager. Documentation includes maintenance dates, person who completed the work and type of maintenance conducted.

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Maintenance Procedures and will abide to all the above mentioned during my employment with the company.		
Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed the daily report mailing list.

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WORKPLACE VIOLENCE POLICY

Purpose

It is the objective of Logan Drilling Group to provide a workplace for all employees, contractors, clients and visitors that is free from violence by putting in place proactive measures, holding perpetrators of violence accountable and by providing assistance and support to victims. Committing violent acts, whether on duty or off duty, has the potential to impact an employee's ability to perform his/her work. Provincial legislation requires that employers provide a safe and healthy work environment.

Definitions

Workplace violence includes, but is not limited to, any intimidation, threats, physical attack, or property damage and includes acts of violence committed by company employees, clients, relatives, acquaintances or general public against company employees in the workplace.

Intimidation is engaging in actions that include, but are not limited to, stalking, behavior intended to frighten, coerce or induce stress including the use of social media to embarrass, harass or demean.

Physical attack is any unwanted or hostile physical contact such as hitting, fighting, pushing, shoving or throwing things.

Property Damage is intentional damage to property and includes property owned by the company, employees, visitors or vendors.

Coverage

This policy applies to all full time and part time employees and contractors. This policy applies to the conduct of an employee while functioning in the course and scope of employment as well as off-duty violent conduct that has a potential of adverse impact on an employee's ability to perform the assigned duties and responsibilities.

Authorized Exceptions to Policy

An employee may only have a weapon in their vehicle if it is in compliance with management approval as being required as part of the employee's work duties (i.e. protection from wildlife) and only if they hold the necessary possession permits and certifications.

Reporting Responsibility

All employee are encouraged to be alert to the possibility of violence on the part of employees, former employees, clients, and the general public. Employees shall place safety as their highest concern and shall report all acts of violence and threats of violence. All reports of violence will be handled in a confidential manner, with information released only on a need-to-know basis. Management shall be sensitive and responsive to reporting employee's fear of reprisal.

Procedure

- The Hazard Reporting form and procedure will be used and detailed report will be submitted in writing.
- Employees will be instructed regarding proper response to acts or threats of violence.
- The Disciplinary Procedure will be used after the investigation, if warranted. Please note that the severity of the infraction and the discretion of management, the corrective action taken may omit the first and second steps and move directly to suspension or dismissal.
- Local law enforcement will be contacted and full legal investigation conducted if deemed necessary.

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Work Place Violence Policy and will abide to all the above mentioned during my employment with the company.

Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed the daily report mailing list.

The original is to remain on the Employees' Personal File.

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Doc #	Version	Creation Date	Last Revision
012 ES-Cellular Phone Safety Policy	1	11.23.2015	11.23.2015

CELLULAR PHONE POLICY

Cellular Phone Safety Policy

Distracted Driver Legislation

Driver distraction legislation has been introduced across all 10 Canadian provinces. Under this legislation it is prohibited to use a hand held cell phone (except when operating in hands-free mode), texting devices and other portable entertainment devices while driving.

In maintaining compliance with provincial legislation, the use of cell phones while driving is permitted **only** when using hands-free/Bluetooth accessories. If such device is not available, employees must pull over before answering/making a call. During inclement weather the use of cell phone while driving should be limited.

Cell Phones/Smart Phones

Personal calls during work hours that interferes with employee productivity and/or become distracting to others are strictly prohibited. If cell phone use becomes a safety issue, employees will be subject to Logan Drilling Group Disciplinary Procedure. We are aware that personal calls may need to be made during the workday. The following guidelines shall be followed.

The use of cell phones while on work site is to be limited to work related functions and must only be used away from the work area and in a safe area.

Agreement

By signing below I hereby acknowledge that I have read and fully understand the Logan Drilling Group Cellular Phone Safety Policy and will abide to all the above mentioned during my employment with the company.		
Employee Printed Name	Employee Signature	Date
Witness Printed Name	Witness Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed the daily report mailing list.

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DATE RECEIVED STAMP

Electronic Communication Policy

As technology changes so does the way that we communicate and conduct business. The vast majority of people make use of cell phones/smart phone, tablets and laptops to do everything from making calls, checking email, daily banking and doing research. With the use of all these devices it is vital that we, at Logan Drilling Group, have a policies in place to ensure the safe and proper use of this technology.

Policy

Cell Phones/Smart Phones

The following guidelines shall be followed.

- The use of cell phones while on work site is to be limited to work related functions and must only be used away from the work area and in a safe place
- For confidentiality and potential liability concerns it is prohibited to use a cell phone to take any pictures or videos without the express consent from the client or management.
- No personnel shall post any Logan Drilling Group information, video, pictures on the internet, including social media, without authorization.
- The use of any other personal devices must be limited to off-duty time and not violate this policy. Inappropriate use may result in disciplinary actions up to and including suspension and termination
- Should any personnel have personal devices/cell phones/smart phones at the work site, Logan Drilling Group will not cover these devices should they be damaged, lost or stolen.

Company Issued Cell Phones and Devices

- All Logan Drilling Group cell phones and devices are password protected. Users are not to change any passcodes/passwords and/or setting on the assigned devices
- For all personnel who are assigned an iPhone or iPad, personal iCloud accounts are not to be installed or used on company devices.
- Device protective cases are not to be removed. If cases become damaged or need replacing your manager is to be notified.
- All devices should be stored in safe & secure place
- The majority of company issued devices' use must be for intended purpose and Logan Drilling Group business. They may be used for personal use provided that it is not excessive and does not interfere with its intended use.
- If personal use is deemed excessive, the employee may be required to reimburse any and/or all cost incurred by the personal use. This reimbursement may be deducted from the employee's pay.
- Logan Drilling Group may routinely look over monthly cell phone/data usage, as to guard against excessive personal use.
- The shared data pool is limited. Personnel shall make use of Wi-Fi when available.
- Company issued cell phones are not to be used for downloading, facetiming, streaming, tethering, as mobile hotspot, etc. for personal reasons. These applications for work related use should also be limited.

Internet Usage

Computers, smart phones, tablets and other electronic devices are provided to Logan Drilling Group personnel to facilitate communication and enhance productivity. The use of the internet/intranet/data on company provided devices is Logan Drilling Group property and such, Logan Drilling Group has the right to monitor and store such materials. Discretion when using these devices is the responsibility of each individual employee. Personal use is to be limited and may not interfere with the performance of your job, consume significant resources or interfere with the activities of other employees.

Unacceptable usage

Below is a list of example items/action which are unacceptable. This list is by no means all-inclusive but rather a guideline as to the type of activities that are prohibited.

- Communicating or accessing material that may contain matter that is or might reasonably be considered, harassing, defamatory, offensive, disruptive, and derogatory or be in contradiction with Logan Drilling Group's Harassment Policy.
- Access to sites that contain obscene, hateful, pornographic, unlawful, violent or otherwise illegal material
- All users must respect all copyrights and licenses to software and on-line materials.
- Using the device to perpetrate any form of fraud and/or software, film or music piracy
- Stealing, using, or disclosing someone else's password without authorization
- Sharing confidential material, trade secrets or proprietary information outside of the company
- Hacking/accessing unauthorized websites
- Sending or posting information that is defamatory to Logan Drilling Group, it's services, colleagues and/or clients
- Accessing/using file sharing sites (dropbox, google docs etc.) without prior approval
- Employee who downloads any apps that results in charges will be required to reimburse the cost unless it is directly related to work
- Posting Logan Drilling Group pictures/information on social media without authorization
- Passing off personal views as representing those of Logan Drilling Group

Email

Email access across all electronic device is a critical part of Logan Drilling Group's communication system. Inappropriate use of email exposes Logan Drilling Group to virus attacks, compromised network systems and services and legal issues.

Personal use of email is allowable but should not interfere with or conflict with business use; employees should keep personal use minimal.

Although personal use of email is allowed, misuse can result in disciplinary actions up to and including dismissal. Misuse includes but is not limited to:

- Any form of harassment, whether through language, frequency of size of message
- The use of Logan Drilling Group communication system or devices to set up personal

business
- Forwarding confidential Logan Drilling Group messages to outside locations
- Sending unsolicited email or junk mail to individuals who did not request it
- Sending or posting solicitations or advertisements not related to business purposes or activities

Logan Drilling may monitor these devices and systems for reasons such as, but not limited to, retrieving the contents of emails to find lost messages, investigate wrongful acts, to recover documents from a system failure etc.

WORKER TRAINING PROGRAM

Scope

Logan Drilling Group understands that well trained employees are vital to the success of its success.

In support of this, Logan Drilling Group will ensure that all personnel and contractors receive or have received appropriate training to allow them to carry out their work in a safe and efficient manner. It is also recognized that many skills that are required in the industry are not learned in traditional classroom environment and that in most cases these skills are learned through experience and on-the-job-training. This section outlines employee training requirements.

Definitions

Certified instructors are required for certain courses such as First Aid and Fall Arrest. These instructors are certified by the agencies governing the course.

A Competent Person is deemed by the company. For example a mechanic may train a new helper on air break adjustments.

Legislative Requirement

Under all safety legislation, training is a key requirement for the success of a safety program. Specific training required by law is outlined for each area below.

Policy

This program has been developed with the intent of creating a highly trained and safe work force and to meet the legislative requirements. It is understood that training is an on-going process that continues throughout employment. Training programs will be reviewed annually and modified and updated as required. Training will be developed for new equipment, procedures and identified hazards. Training will be conducted annually and on continuous basis by certified and competent instructors.

Responsibility

It will be the responsibility of every manager, Safety Supervisor and Foreman to ensure that the procedures as outlined are followed and that personnel is trained properly. New employees will complete the required training before being placed in the field.

The Health & Safety Manager will audit training sessions, records and personnel files to confirm that employees are getting the required training. The training program as a whole must be reviewed and audited annually to ensure that training is adequate and complete.

Procedures

New Employee Orientation

All personnel hired by Logan Drilling Group, as a new hire or a re-hire, shall complete a New Employee Orientation. This must be complete prior to starting into the field. It is recognized that it is not possible to cover all aspect of the job during the orientation period. Personnel will get additional training as job assignments change, new processes or procedures are introduced or when the employer is made aware of a new or previously unrecognized hazard.

New Employee Orientation should be conducted by the employee's manager or the Health & Safety Manager and should include at least the following:

- Review of Logan Drilling Group Policies
- Review of the OH&S Program
- Emergency Preparedness Procedures
- Hazard Communication Training
- Description of the Employees assigned tasks
- Walk around the facility, equipment, drill and/or site

Hazard Communication

All employees should receive appropriate Hazard Communication training. Training will be conducted and documented in the employees training file. Personnel engaged in operations where they are exposed or may be exposed to hazardous substances will be current and trained in WHMIS.

The Hazard Communication program should reviewed yearly and be updated as required.

First Aid & CPR

All personnel working in the field shall be certified in Standard Workplace First Aid and CPR. All designated first aid providers will receive the required refresher training annually.

Supervisor Safety Training

On-site managers, safety supervisors and supervisors will receive specialized supervisor training.

Jobsite Safety Training

The foreman or safety supervisor will perform daily ToolBox Meetings at each drill rig to discuss any safety issues or concerns that have arisen from the previous day's event. The meeting will take place before the start of work. This meeting should be short and take approximately 5-10 min.

Monthly Safety Meetings

At a minimum of once per month, foremen, safety supervisors and management will conduct a safety meeting at all active drill site locations. Monthly meetings will cover items such as:

- Logan Drilling Group monthly Safe Practice
- Review the previous month's incidents, injuries and near misses and

discuss how to prevent them.
- Encourage suggestions, improvements or identify any safety related issues/concerns

Note: When possible have the employees discuss these points and bring forward their concerns, as opposed to having a management driven meeting.

Documentation

All training documentation (certificates, tickets, cards) must be presented to head office, upon receipt, to be copied and kept in the employee training files. Training files will include documentation of completed courses, training dates, instructors, expiration dates, and sign-in sheets.

STANDARD

Employees and contractors at all levels of the organizations must be aware of their individual health and safety responsibilities. Responsibilities shall be referred to in the New Employee Orientation Manual, during in-house training and during performance reviews by appropriate managers/supervisors. Supervision should not only ensure that employees and contractors are aware of their responsibilities, but should also continuously reinforce performance requirements and motivate employees and contractors to become involved in the health and safety program.

The following identifies the more general responsibilities for employees and contractors at all levels.

Management

Management shall promote health and safety by:

1. Providing information, instructions and assistance to all supervisory staff in order to protect the health and safety of all our employees and contractors
2. Understanding and enforcing our health and safety program as well as the Occupational Health & Safety Act & Regulation and any other industry specific regulations and standards
3. Providing all supervisory staff with an understanding of our accident prevention program as well as relevant sections of the Occupational Health & Safety Act and Regulations
4. Providing all supervisory staff with proper, well maintained tools and equipment plus any special personal protective equipment which may be required
5. Providing ongoing safety education programs and approved first aid training as required.
6. Monitoring each division, departments and projects and hold them accountable for their individual safety
7. Continuously demonstrating management's commitment to health and safety by attending safety meetings, planned worksite inspections/tours, safety training sessions, by writing memos regarding health and safety and by participating in the development and implementation of health and safety corrective actions

Supervisors

Supervisors shall cooperate with and assist management with health and safety efforts by:

1. Knowing and applying Logan Drilling Group's Health & Safety Program and the relevant sections of the Occupational Health and Safety Act and Regulation
2. Ensuring that all employees and contractors are educated to work in a safe manner and that they all use protective devices, equipment and procedures as identified by Logan Drilling Group, industry standards and legislation
3. Advising all employees of any potential or actual hazards and how to isolate, prevent or remove them

4. To arrange for medical treatment as required in the case of injury or illness including transportation to clinic or hospital as necessary
5. Immediately reporting, investigating and proposing corrective actions for all incidents and near misses
6. Carrying out regular inspections of worksites to ensure a safe and healthy environment
7. Being actively involved in the development, maintenance and implementation of the safety program by providing feedback

Safety Supervisor

The Safety Supervisor for the drill crew, in most case, will be the drill operator. The Safety Supervisor shall:

1. Consider the "responsibility" for safety and "authority" to enforce safety to be a matter of first importance
2. Set the example and standard in using proper personal protective equipment and in following the company and site rules
3. Enforce the use of proper personal protective equipment and take appropriate corrective action when required PPE is not being used
4. Ensure that the "drill crew" has had adequate training and is thoroughly familiar the drill rig and its controls and capabilities
5. Conduct daily inspection on the equipment for structural damage, loose nuts & bolts, proper tension in chain drive, loose or missing guards and protective covers, fluid leaks, damaged hoses, gauges and pressure relief valves
6. Check and test daily all safety devices such as: emergency shutdown switches; Drilling shall not be permitted until all emergency shutdown and warning systems are working correctly. No emergency devices shall be wired around, by-passed or removed.
7. Inform all personnel on the crew of safety operating procedures and practices on and around the drill
8. Have available for all personnel the Logan Drilling Group Safety Manual and equipment manufacturer's operations & maintenance manual.
9. Instruct and carefully monitor any new personnel on the drill crew progress towards understanding the safe operating procedures
10. Assess and monitor the mental, physical and emotional capabilities of each worker to perform their assigned duties safely and correctly; and remove, from the drill site, any personnel whose mental, physical or emotional capabilities may cause injuries to themselves or others
11. Ensure that a first aid kit, fire extinguisher and spill kit, of appropriate sizes and conditions, are located at the required locations and on additional vehicle
12. Maintain a list of the appropriate emergency contacts and locations (police, ambulance, fire department etc.) and ensure that all crew members are familiar with these and that the list if visibly posted at the site

Employees

Employees shall cooperate with and assist management and supervisors with health and safety efforts by:

1. Becoming familiar, understanding and complying with Logan Drilling Group's Safety Policy, Safe Work Practices, procedures and rules and by asking questions when requirements are unclear
2. Wearing safety equipment, personal devices and clothing as required by the employer and the regulations
3. Following safety requirements and rules as identified in this manual
4. Notifying their supervisor of any unsafe acts or conditions that may be of danger to themselves or other workers
5. Reporting all accidents and near miss to their supervisor as soon as possible
6. Becoming actively involved in the development and maintenance of the safety program
7. Inspecting equipment, tools and vehicles daily, weekly or monthly as prescribed and correcting any deficiencies as quickly as possible
8. Becoming familiar with Emergency Preparedness plans and knowing the locations and how to use emergency equipment

Contractor

1. Cooperate fully with the management to ensure the safety of the workplace
2. Comply with safety regulations, procedures and standards stipulated by regulatory agencies and Logan Drilling Group
3. Fulfill responsibilities as an employer to their own workers and any other sub-contractors under their hire
4. When performing work on any Logan Drilling Group site, contractors are required to abide by the policies, rules and procedures that are stipulated within the safety program set forth by Logan Drilling Group

Visitor

1. Report immediately to a company representative upon arrival to any Logan Drilling Group Site
2. Follow instructions and directions for the Logan Drilling Group employee, and remain escorted throughout the visit
3. Adhere to all applicable legislated requirements and company rule and procedures while on the site

LEGISLATIVE COMPLIANCE

All employees, contractors and sub-contractors must strive to ensure all municipal, provincial, territorial and federal government legislation applicable to the work is adhered to.

GENERAL SAFETY

Every employer shall ensure:

- The health and safety of all persons at a worksite and workers engaged in the work of that employer; and
- That all employees are aware of the duties and responsibilities under the Act and Regulations

Every worker shall:

- Take reasonable care to protect the health and safety of him/herself and other workers; and
- Cooperate with his/her employer to the purpose of protecting the health and safety of him/herself and other workers

ACCIDENT REPORTING

If an accident occurs that has the potential of causing serious injury:

The Worker shall:

- Immediately notify his/her supervisor and employer

The Employer shall:

- Notify the appropriate provincial and territorial authority of the accident;
- Complete and accident investigation report and prepare a report;
- Ensure that a copy of the report is made available to the applicable agency; and
- Ensure that no person disturbs the scene of a serious accident until the agencies have given approval

REFUSAL TO PERFORM UNSAFE WORK

No Worker shall:

- Carry out any work or operate any tool/equipment if, on reasonable grounds, he/she believes there exists, or that it will cause to exist, an imminent danger to that worker or any other worker

Upon being notified the Employer shall:

- Investigate and take action to eliminate the imminent danger;
- Ensure that no other worker is assigned that work until the imminent danger has been eliminated;
- Not discipline the worker who refused work

HEALTH AND SAFETY PROCEDURES

Scope

This section outlines the general health and safety requirements and procedures for the prevention of accidents. Items noted require strict attention and it is identified where more specific safety procedures are available. This section will be used in all Logan Drilling Group workplaces and is also to be enforced among all contractors/sub-contractors when and where applicable.

Clients may have their own policies, procedures and forms. Where it is a requirement that client procedures and forms are used, these will be in addition to those in this section.

Legislative Requirement

Under most safety legislation, specific safety procedures must be developed for certain practices. These include but are not limited to confined space entry, lock-out/tag-out, thermal stresses, and fall arrest. These procedures are noted and referenced where required.

Policy

This program has been developed with the intent of developing a heightened level of awareness regarding safe work practices when working in areas with extreme hazards

Responsibility

It will be the responsibility of every employee and contractor to ensure that the procedures outlined in this section are followed and all specific safety policies and procedures are followed.

It is the responsibility of Logan Drilling Group Management, safety supervisors and drill foremen to ensure all safety policies and procedures are audited and modified or updated when necessary.

It is the responsibility of the foremen and safety supervisors to ensure that Logan Drilling Group Management is notified of any new or changing work practices for which safe work procedures will be needed.

Procedures

Unsafe Situations

All employees will report to the nearest accessible supervisor any unsafe condition, practice, or circumstance associated with or resulting from site activities.

In case of immediate hazard to employees or the public, any employee on the scene should take all practical steps to eliminate or neutralize the hazard. This may include leaving the site. Follow-up consultation with the Safety Supervisor or Foreman must then be made at the first opportunity. In such circumstances the Safety Supervisor or Foreman must take, the necessary steps to ensure that

the project can be completed safely.

This may include changes in procedures, removal or neutralization of a hazard or consultation with appropriate experts. In the event the hazard is not immediate, the employee should consult the Safety Supervisor or foreman regarding appropriate corrective measures.

General Environmental Site Personal Work Practices.

- A site specific health and safety plan is required for environmental sites and the plan must be observed.
- All personnel going on site shall be thoroughly briefed on anticipated hazards and trained on the equipment to be used, safety procedures, emergency procedures and communications.

General Work Practices

- The Logan Drilling Group safety program shall be made available to all personnel.
- Precautionary labels shall be attached and visible on containers of chemicals, materials and contaminated scraps, debris or clothing. These materials will be labeled in accordance with local and federal standards and other legislated requirements.
- All confined space, trenching, shoring, excavation work and working at heights work must comply with applicable regulations
- Specific safety procedures for all drilling equipment and support equipment shall be followed
- All visitors to the drill site must comply with the health and safety program and procedures. In some cases PPE for visitors may be modified. Any modifications must be pre-approved by the site Safety Supervisor and/or Foreman.
- Emergency contacts and locations emergency facilities must be identified and available on site

Mobile Equipment Guidelines

- All company vehicles shall follow all applicable laws, rules and regulations.
- Any personnel operating mobile equipment (forklift, dozer, UTV etc.) must be properly trained to the manufacturer's recommendations and deemed competent by Logan Drilling Group. All applicable laws, rules and regulations must be followed.

Spill Prevention and Control

This section has been developed with the intent in heightening the level of awareness regarding safe work practices when working with, transferring and transporting chemicals which poses a hazard with potential harm to people, property or environment. These procedures establish an approved course of action to be implemented should a spill occur. These procedures are as specific as possible, however these must be reviewed at each site as the sources of spills change and specific remedies and procedure may vary from site to site.

Doc #	Version	Creation Date	Last Revision
062 SWP-General Company Rules	1	02.02.2015	02.02.2005

GENERAL COMPANY RULES

The health and safety of all workers is paramount here at Logan Drilling Group. The following general company rules should be followed at all time. Additional safe work practices for specific tasks and areas can be found in the Logan Drilling Group Health & Safety Manual.

- Accidents, Injuries or Near Misses, regardless of their nature, shall be promptly reported to your supervisor and the health & safety manager.
- Approved PPE shall be worn on the job by all personnel.
- Clothing shall be appropriate to the duties being performed. Long pants, long sleeved shirt and steel toed boots are the minimum requirements. No tank tops, shorts or tennis shoes permitted.
- Smoking is permitted only in designated areas. “Strike Anywhere” matches are prohibited.
- No smoking permitted in any company buildings or vehicles.
- Running is not permitted except in extreme emergencies.
- Safety glasses. Goggles and/or face shields must be worn when breaking concrete, chipping metal, welding, grinding and for any other tasks where eye protection is required.
- Hand tools shall not be used for any purpose other than that intended.
- Any damaged or worn parts on tools shall be promptly repaired or replaced.
- Power tools she be operated only by authorized personnel, with guards furnished by the manufacturers in place.
- Guards, barriers or any other safety mechanism shall not be removed or tampered with
- All electrical hand tools she be grounded or double insulated.
- Explosive/power actuated tools shall be used only by persons who have been instructed and trained in their safe use.
- Compressed gas cylinders shall be secured in an upright position.
- Possession or use, on the job, of intoxicating substances or unauthorized drugs (prescription or not) is strictly forbidden and constitutes grounds for dismissal.
- Riding on equipment is prohibited. No person shall ride any hook, hoist or other material handling equipment. This equipment is designed strictly for handling material and not to carry riders.
- Welding and burning operations shall be carried out only by authorized personnel with appropriate personal protective equipment.
- Horseplay, fighting, gambling and possession of firearms are strictly forbidden on the job and constitute grounds for dismissal.

POLICIES SECTION

Table of Content

Employee Training Policy

Logan Drilling Group understands that well trained employees are vital to the safety and success of its operations.

In support of this, Logan Drilling Group will ensure that all personnel and contractors receive or have received appropriate training to allow them to carry out their work in a safe and efficient manner. It is also recognized that many skills that are required in the industry are not learned in traditional classroom environment and that in most cases these skills are learned through experience and on-the-job-training. This section outlines employee training requirements.

Under all safety legislation, training is a key requirement for a safety program. All employees shall ensure that they possess the specific training required by law to work in the drilling industry and its demanding environment.

It will be the responsibility of every manager, Safety Supervisor and Foreman to ensure that all new employees have completed the required training before beginning work.

The Safety Coordinator will audit training records and personnel files to ensure employees are receiving the required training. The overall training program must be audited at least annually to ensure that the training regimen is adequate.

The Logan Drilling Group training program has been developed with the intent of creating a highly skilled and safe work force and to meet legislative requirements. Training is an on-going process that continues throughout employment. Training programs will be reviewed at least annually and modified for new equipment, procedures or identified hazards. Training will be conducted by qualified and competent instructors.

_____ _____

President, Logan Drilling Group Date

Health & Safety Policy

The management of Logan Drilling Group is committed to a strong and progressive health & safety policy that protects from accidental loss of all its resources, including employees, physical assets and the public.

In fulfilling this commitment to protect both people & property, Management will provide and maintain a safe and healthy work environment in accordance with industry standards and in compliance with legislative requirement. We will strive to eliminate any foreseeable hazards, which may result in property damage, incidents, or personal illness.

Employees at every level, including management, are responsible and accountable for the company's overall safety initiatives. Management is committed to working in conjunction with employees to develop, implement and review the safety program. Complete and active participation by everyone, every day, in every job, is necessary for the safety excellence the company expects.

This policy will be implemented through:

- ✓ The meaningful involvement and participation of all employees through a cooperative, open, and positive attitude to health and safety issues
- ✓ The provision of safe and appropriate equipment and working conditions
- ✓ The development and maintenance of work practices and procedures ensuring the ongoing health, safety, and well-being of all employees
- ✓ The training and education of all employees in safe work practices and procedures
- ✓ Emergency preparedness training and practices to minimize losses or injury arising from and accident or incident

All employees of Logan Drilling Group have the right & obligation to work together in an environment that promotes and maintains everyone's well-being; and protects everyone from risks arising from short cuts, poor practices, procedures, conditions, or acts.

An injury and accident free work place is our goal. We will meet or exceed all applicable rules and regulations by establishing, practicing, and maintaining the highest standards of health & safety.

_____ _____

President, Logan Drilling Group Date

Disciplinary Procedure

The failure of any employee to abide by the Logan Drilling Group Company Rules and the Personal Conduct & Appearance policies will result in the following disciplinary action (except where noted):

Note: Depending on the severity of the infraction and the discretion of management, corrective action taken may omit the first and second steps and move directly to suspension or dismissal.

Company Rules

First Offence: Verbal Warning documented in personnel file

Second Offence: Written Warning documented in personnel file

Third Offence: Written Warning documented in personnel file & 5 day suspension without pay

Fourth Offence: Immediate dismissal

Safety and PPE Infraction:

First Offence: Verbal Warning documented in personnel file

Second Offence: Written Warning documented in personnel file & up to 2 days suspension without pay

Third Offence: Written Warning documented in personnel file & up to 5 day suspension without pay or immediate dismissal

Fourth Offence: Immediate dismissal

Impairment while on Duty (Drugs and/or Alcohol)

First Offence: Immediate Dismissal

_____ _____

President, Logan Drilling Group Date

Personal Protective Equipment Policy

Logan Drilling Group, as an employer is ultimately responsible for its employees' health and safety. The management is very interested in its employees' health and safety.

Logan Drilling Group management will work closely with field managers, safety supervisors, foremen and other individuals in the field to establish the standards and guidelines for required personal protective equipment (PPE) and to ensure that all employees have access to the required personal protective equipment. All protective clothing, equipment, or devices used must meet or exceed the minimum standards prescribed CSA, ANSI, OSHA or MIL Specs.

Personal protective equipment will be supplied by Logan Drilling Group or made available for purchase. Any specialized PPE will be supplied by Logan Drilling Group.

Safety supervisors, foremen, drillers and including driller helpers, will be responsible and accountable for ensuring that they are following the set standards for PPE. Personal protective equipment will be inspected as required.

Specialized PPE will be inspected at the start of each job as well as yearly by a competent person. PPE Inspection Records shall be kept and maintained for all specialized PPE. These will be audited yearly by the Health & Safety Manager.

This policy will be reviewed on an annual basis and revised as necessary.

_____ _____

President, Logan Drilling Group Date

Drug & Alcohol Policy

Scope

Logan Drilling Group strives to provide a safe and productive work environment and considers being under the influence of alcohol and/or drugs while on the job to be unsafe and counterproductive to work practices.

Policy

In an attempt to minimize the risk of impaired performance and prevent accidents and injuries resulting from the misuse of alcohol or use of controlled substances by employees and/or contractors Logan Drilling Group has put in place the following policy.

Illicit Drugs

Management recognizes that employees working under the influence of controlled substances or alcohol may prove to be harmful to themselves, other employees, clients or property. Therefore it is Logan Drilling Group's policy that employees are not to work under the influence of, possess, sell, distribute, dispense, manufacture or use any controlled substances or alcohol in the workplace.

Medication & Prescription Drugs

It is prohibited to intentionally misuse any medication both prescribed or over the counter. The following are examples to medication that can contribute to impairment:

- Antihistamines
- Narcotics
- Muscles relaxants
- Cold Remedies
- Anti-Depressants
- Sedatives
- Anti-Convulsants
- Anti-Virals

Employees must advise their physician of their line of work and ensure that any prescribed medications will not interfere or hinder his/her ability to conduct their work. Safety supervisors must be made aware of any prescription medications being used and possible ill-effects.

Alcohol

Logan Drilling Group prohibits the use or possession of any alcoholic beverages while working, on any company premises, job site or "camps" and including company owned vehicles.

Fitness for Duty

It is prohibited by Logan Drilling Group for any employees or contractors to report for work while visibly impaired or being unfit for duties due to the after effects of alcohol, illicit drugs or medications. Should an employee or contractor report for work visibly impaired or unable to perform properly their duties they will not be allowed to work and will be removed from the site. All accrued cost will be billed back to the employee.

This policy applies to all employees and contractors engaged in company business or working on company premises. Violation of this policy is grounds for disciplinary action as stated in the Disciplinary Procedure for all Logan Drilling Group employees and contractor.

Responsibilities

Management

- Making suggested or mandatory referrals for assessment or assistance
- Ensuring that all employees are aware of resources and services available and how to access these
- Communicating and monitoring the policy's implementation
- Maintaining an active and cooperative effort with employees to assist in any suspected situation
- Ensuring that the Drug and Alcohol Policy is reviewed annually and updated as required

Supervisor

- Early identification and handling of performance problems which may be caused by alcohol and/or drugs
- Referring employee for alcohol or drug testing in post-incident or reasonable cause situation

Employee

- Read and understand the policy and their responsibilities
- Abstain from alcohol use a minimum of 8 hours prior to reporting for scheduled duties
- Seek and follow appropriate treatment should he/she feel they have a substance dependency or emerging problem
- Report the use of any medication that could have a negative effect on the performance of their duties
- Report any potential violation of the Drug and Alcohol Policy to their safety supervisor, foreman, manager or the Health & Safety Manager

Contractor

- Meet the same "fitness for duty" standards and prohibitions concerning the use of drugs, medications and alcohol as all other Logan Drilling Group employees.
- Supervisors will have the same responsibility for contractors as they do for employees.
- Non-compliance with the policy will be grounds for immediate termination of the contract.

Assessment/Rehabilitation

Logan Drilling Group management will ensure that all employees are made aware of assessment and treatment services to resolve any problems they may have with alcohol, drugs or medications. Counselling services can be accessed through the provincial addictions agencies or private counseling.

Although Logan Drilling Group may direct employees to qualified services, the cost of these services will not be covered by the company and there is no guarantee to hold a job for anyone who is unable or ineligible to perform his/her duties during treatment.

Logan Drilling Group will, however, underwrite the cost of the initial Substance Abuse Professional assessment as a result of a positive drug and/or alcohol test.

Procedure

Impaired Driving Charges/Conviction

Any impaired driving incidents, whether on company business or personal time, relative to alcohol or substance abuse must be reported immediately to the Health & Safety Manager.

Any loss of license must be reported to management and the employee will no longer be qualified to drive on behalf of Logan Drilling Group. In addition any individual charged with an impaired driving offence when operating a vehicle on behalf of Logan Drilling Group:

- Must inform their supervisor immediately
- The situation will be investigated
- Individual may be required to complete a medical or Substance Abuse Professional assessment to determine if they have an alcohol or drug problem
- Alternative work assignment and disciplinary as per the Disciplinary Policy

Search

Logan Drilling Group reserves the right to conduct unannounced searches for alcohol, drugs or drug paraphernalia on company owned/operated sites, equipment and lodging including vehicles, where there are reasonable grounds to believe that they may be present. Searches will be conducted in accordance with and in cooperation with local law enforcement agencies where required.

Alcohol & Drug Testing

All Logan Drilling Group employees and contractor may be subject to testing as a requirement of regulatory compliance or contract compliance at the client's or company's management discretion.

Pre-Access

For certain clients or sites, a Pre-Access drug and alcohol test must be passed. The testing requirements will be set by the client or site operators. Testing will be conducted by qualified and properly trained firm.

Post-Incident

Post-incident testing, for drugs and alcohol, is required for all employee and contractors after a significant incident occurs unless there is clear evidence that acts or omissions of the employee or contractor could not have been a potential contributing factor. The test must be completed as soon as possible following the accident, but may done up to 12 hours after the incident, for both drugs and controlled substances. Written instructions on the

procedure for reporting to a collection facility for post-incident testing will be provided.

Reasonable Cause

Logan Drilling Group may require an employee or contractor to be removed from the site where reasonable cause exists to suspect alcohol or drug use, in violation with this policy. The basis for the decision will be documented as soon as possible after action has taken place. The referral for a test will be based on specific, personal observation and documentation resulting from, but not limited to:

- Observed use or evidence of use of substance
- Erratic or atypical behavior of the employee/contractor
- Changes in the behavior of the employee/contractor
- Changes in the speech patterns of the employee/contractor

Testing will be conducted as soon as reasonably possible once the determination has been made that reasonable cause exists. If more than 4 hours pass from the time of reasonable cause, a valid reason for delay must be documented.

Return to Duty

If an employee test positive for a banned substance or refuses to provide a suitable sample to be tested or otherwise violates the policy, he/she must complete a return to work test yielding a negative result prior to returning to work with Logan Drilling Group.

Follow-up

Any employees in violation of this policy and requiring alcohol and/or drug abuse related treatment must comply with "follow-up" testing (unannounced testing at the discretion of the employer). Follow-up testing shall include at least six tests in the first twelve months following the employee's return to duty.

_____ _____

President, Logan Drilling Group Date

Harassment Policy

Logan Drilling Group, in cooperation with our employees, is committed to a healthy, harassment-free work environment for all our employees. To this extent, Logan Drilling Group, has developed a company-wide policy intended to prevent harassment of its employees and to deal quickly and effectively with any incident that might occur.

Harassment is any unwelcome physical, visual or verbal conduct. It is against the law. Harassment may include verbal or practical jokes, insults, threats, personal comments or innuendo. It may take the form of posters, pictures or graffiti. It may involve touching, stroking, pinching or any unwelcome physical contact.

The *Human Rights Act* protects everyone within provincial jurisdiction from harassment and other forms of discrimination on the basis of race, religion, sex, (including pregnancy and sexual orientation), marital status, physical disability, mental disability, political opinion, colour or ethnic, national or social origin and age (in employment only, between the ages of nineteen and sixty-five).

Logan Drilling Group will not tolerate harassment on the basis of any of those protected grounds.

It is the responsibility of the directors, managers, or any person within this company supervising one or more employees to take immediate and appropriate action to report or deal with incidents of harassment whether brought to their attention or personally observed. Under no circumstances should a legitimate complaint be dismissed or down played or the complainant told to deal with it personally.

Logan Drilling Group seeks to provide a safe, healthy and rewarding work environment for its employees. Harassment will not be tolerated within this company.

_____ _____

President, Logan Drilling Group Date

Inspection Policy

Logan Drilling Group strives to provide a safe productive work environment and minimize the risk of injuries and down time due to mechanical failures and unsafe conditions.

At Logan Drilling Group we will maintain a program of safety inspections at all company facilities and sites. It is our policy to conduct daily, weekly and monthly inspections and surveys of equipment, tools, vehicles, support vehicles, drills and work sites in order to minimize the risk of injuries, disturbances and/or work stoppages. All inspections and surveys are to be properly documented and stored in the event of an audit. It is the responsibility of all safety supervisors, foremen and respective managers to ensure that all inspections and surveys are conducted as prescribed.

Safety supervisors, drillers and driller helpers will be instructed on conducting the inspections and surveys. They will be held accountable for the adherence to the inspection schedules and proper documentation and maintenance of these records.

Inspections and surveys are to be submitted to Management and the Health & Safety Manager with copy to the safety committee.

Health and safety is an integral part of this organization's everyday business. It is in the best interest of all to join together and put it into practice health and safety principles in all work activities

This policy will be reviewed annually and revised as necessary.

_____ _____

President, Logan Drilling Group Date

Maintenance Policy

Logan Drilling Group understands that well maintained equipment is pivotal to the success of its operations.

In support of this, we will ensure that all equipment and vehicle receive appropriate and regular preventative maintenance in order to ensure that Logan Drilling Group is capable of carrying its operations in the most efficient manner with minimal work stoppage for breakdowns and emergency repairs.

Regular servicing of drills is to be completed in accordance with the itemized Service Schedule, dated and recorded in the Equipment Maintenance record book.

Truck, trailer and tractor maintenance is to be completed by our own licensed mechanics, or at an authorized service center, in accordance with the manufacturer's service manual to maximize safety, equipment performance and protect warranty coverage where applicable.

Shop repair tools and equipment shall be properly maintained and properly stored at the end of work day or when not in use.

Management, safety supervisors and foremen are responsible to ensure that the proper maintenance procedures are followed. The Health and Safety Manager will audit the maintenance record annually to ensure that all equipment and vehicle are being maintained as outlined. A Maintenance Schedule must be developed for any new equipment brought into the workplace.

_____ _____

President, Logan Drilling Group Date

Investigation Policy

Purpose

Logan Drilling Group strives to provide a safe and productive work environment. It is our policy to report and investigate incidents and near misses so the causes can be determined and corrective actions can be implemented to prevent recurrence.

Policy

Logan Drilling Group will fully investigate any incidents or near misses that:

- Result in injuries requiring medical aid;
- Cause property damage or interrupt operation with potential loss exceeding $500.00;
- Have the potential to result in the above;
- By regulation, must be reported to Department of Labour, WCB, or other regulatory agencies.

Responsibilities

Safety supervisors, foremen, drillers or driller helpers will be instructed to conduct a near miss investigation or an incident investigation. These investigation assist in determining the causes; and helps identify improvements and changes that can be made to prevent similar events from reoccurring.

All levels of the organization play an integral part of the investigation process.

- Employees shall report all incidents to their safety supervisor, foreman or manager
- Supervisors shall conduct initial investigations and submit their reports to management and the Health & Safety Manager promptly
- Management shall review all supervisors' reports, determine if there is a need for, and lead a detailed investigations. This will allow for determination of alternate causes, and recommend additional corrective actions if required.

This policy will be reviewed on an annual basis and revised as necessary.

_____ _____

President, Logan Drilling Group Date

Return to Work Policy

Definition:

Return to work

The process or strategy of safely returning employees to the workplace on a timely basis.

Accommodation

Change or modification to the job or workplace so that the work is within the injured or ill person's functional capabilities and the risk of injury is reduced

Philosophy:

The Management of Logan Drilling is committed to cooperating with all of their employees who have been injured on the job site and will do everything they can for an early and safe return to work. At Logan Drilling, we will provide a modified work program to any of our injured employees until he/she is able to return to their pre-accident job, wherever possible.

Roles and Responsibilities

Employer will:

- Contact injured worker ASAP and stay in regular contact and cooperate in providing suitable work
- Give WSIB information as required
- Provide workers with Functional Abilities Form to take to the testing practitioner for completion
- Educate workers about the return to work program
- Set specific time frames for the return to work
- Review worker's progress regularly
- Pay full wages and benefits for the day or shift on which the injury occurred
- Make certain that workers understand their obligations to co-operate
- Set clear procedures to follow in reporting injuries (Please refer to our Reporting Policy)

Workers will:

- Contact supervisor immediately in the event of any injury. If not available, phone office and contact employer.
- Stay in regular contact
- Help identify and cooperate in suitable work arrangements
- Give WSIB information as required
- Return to work within 24 hours with the completed form to develop with the employer an early and safe return to work
- Choose a doctor or qualified practitioner. Note: A change in doctor cannot be made without permission of WSIB.

Goal

Logan Drilling will:

- Assess each individual's situation according to any practitioner's report and recommendations and will provide some kind of modified work to suit the degree of injury.
- Assist in the employee's active recovery and encourage the worker to return to work to their pre-accident job, wherever possible.
- Identify jobs that are suitable for accommodating injured workers on a temporary basis in order to facilitate the early and safe return to work program and limit any loss of their earnings.

Types of Accommodations

- Reduce hours
- Graduate RTW hours
- Re-assign duties
- Restructure the job
- More frequent rest breaks
- Work platform vs. ladders
- Ladders for climbing scaffolds
- Mini stretch breaks (10-15 minutes)
- Chair with back support vs. Picnic table
- Anti-vibration tools (e.g. anti-vibration jackhammer)
- Make heavy tools available at waist height
- Light shop work, general clean-up
- Painting trailers, containers (light work with brush)
- Washing trucks
- Pickup or delivery of plans
- Training in their selected field, where possible
- Computer training in safety prevention, if available

_____ _____

President, Logan Drilling Group Date

Environmental Policy

Logan Drilling is committed to conducting all its operations in an environmentally responsible manner and to minimize risks associated with our activities that may impact on the environment.

It is our policy to plan and manage our activities so as to minimize disturbance or other adverse effects on the natural, cultural or community environments in which we operate. We believe all personnel are responsible for protecting the environment, health and safety of workers, customers and the communities in which we work. To fulfil this objective, we conduct our activities in compliance with environmental standards and regulations applicable to our operations.

We also believe:

- Environmental incidents are preventable
- Avoiding pollution or unnecessary disturbance of the natural environment including land, air and water
- Avoiding disturbance of known archeological sites of cultural, natural or scientific significance
- Environmental objectives are an integral part of our business goals and must never be sacrificed for expediency

Our driving Principles state that we accept our responsibility as a guardian of the environment.

To support this principle, we have established the following objectives:

- Our environmental performance will continuously improve and be beyond challenge.
- We will document and share our findings from any environmental incidents and concerns.
- We will ensure that all relevant environmental training and equipment are provided.
- Ensure that all employees and sub-contractors are aware of their environmental responsibilities through the on-going provision of information and internal monitoring

We expect all personnel to pay meticulous attention to safety and respect of the environmental and assure that we maintain or better Canada's standards for environmental protection.

_____ _____

President, Logan Drilling Group Date

Adverse Weather Policy

The safety of all the personnel and equipment, here at Logan Drilling Group, is paramount. It is the Policy of this Company to ensure that during adverse weather conditions precautions are taken to ensure the safety of all personnel.

For the personnel working in the field, the determination to cease or delay work due to weather conditions, will be at the discretion of the site Safety Supervisor. Should operations be delayed or stopped due to weather conditions, the respective manager is to be notified and kept up-to-date on any changes.

Personnel working at company facilities will be notified by management of any facility closure due to weather conditions or pending weather conditions. Should conditions deteriorate during the day, to the point of it posing safety concerns to the personnel and management, early closure of company facilities will take place.

Ultimately, should weather conditions become a concern for any Logan Drilling Group personnel, the decision to delay travel or work rests in that individual's hand. Should such decisions be made, management is to be notified immediately via by telephone and arrangements are to be made.

_____ _____

President, Logan Drilling Group Date

Subcontractor Policy

Purpose

The purpose of the policy is to establish an effective system of responsibility and accountability for controlling health and safety risks in the workplace for outside contracted companies and self-employed persons.

Policy

The management of Logan Drilling Group and its contracted companies and self-employed persons share and equal responsibility in ensure that health and safety of all people and preventing incidents due to everyday tasks, maintenance or related activities on the site.

Logan Drilling Group requires that all contractors or self-employed persons operate safely and in accordance with Logan Drilling Group's Health and Safety Program, Training Guide and any applicable provincial/federal legislation.

Contractors shall submit site specific Hazard Assessments, participate in site orientations and submit applicable training records.

Responsibilities

Employer

Ensure that reasonable steps are taken by contractors or self-employed persons to make certain that work undertaken does not endanger people or property at Logan Drilling Group sites.

Contractors or Self-Employed Persons

Must conform to all requirements set out by municipal, provincial and federal by-laws, acts and regulations in matter of health, safety and environmental protection.

Insurance

All sub-contractors and self-employed persons must submit a current and valid Worker's Compensation Board Clearance Letter, appropriate COR Certification or equivalent and commercial general liability insurance with a limit no less than $2 000 000.

Fall Protection Procedure

Scope

This section outlines general fall protection and safety requirements and procedures for the prevention of accidents. Items noted require strict attention. This section will be used in all Logan Drilling Group workplaces and is also to be enforced among all contractors/subcontractors when and where applicable.

Clients may have their own policies, procedures and forms. Where it is a requirement that client procedures and forms are used, these will be in addition to those in this section.

Legislative Requirement

Under the safety legislation, specific safety procedures must be developed for certain practices.

These include but are not limited to confined space entry, lock-out/tag-out, thermal stresses, and fall arrest. These procedures are noted and referenced where required.

Policy

This program has been developed with the intent of developing a heightened level of awareness regarding fall protection and safe work practices when working in areas at a height greater than 3 meters or areas including stairways, ladders of all sorts, raised platforms and where the risk of a fall exists.

Responsibility

It will be the responsibility of every employee to ensure that the procedures outlined in this section are followed and all specific safety policies and guidelines are followed.

It is the responsibility of Logan Drill Group management, safety supervisors and foremen to ensure all fall protection policies and procedures are audited and modified or updated as necessary.

It is the responsibility of the safety supervisor and foreman to ensure that Logan Drilling Group management is notified of any new or changing work practices for which fall protection procedures will be needed.

Procedures

Pre-Work Checks

Prior to beginning work in any area or on any device where fall hazards exist, the following checks must be done:

Ladders

1. Gripping safety feet in place and secure on ladders
2. Wooden ladders are coated with suitable protective material

3. All parts and fittings on ladders are secure
4. Non-slip surfaces are in place on ladder rungs
5. When setting ladder up, footing of ladder is secure on a firm, level, and non-skid surface and top of ladder is placed against a solid, stationary object
6. All ladders in this facility must meet OSHA specifications for design and safety loading

Platforms and Scaffolds

1. Guard-rails are in place and securely attached
2. Toe-boards are in place and secure
3. All platforms in this facility must meet specifications for design and safety
4. Scaffold has been inspected and tagged appropriately

Work Procedure

If any one of the conditions described in Pre-Work Check is not met for the area or a piece of equipment is posing a potential fall hazard, then the work shall not be performed until all the conditions are met.

If it is not possible to remedy the condition immediately report to your safety supervisor or foreman, or work in a different area until hazards are controlled and conditions are met, according to the situation.

If the situation calls for use of fall protection devices such as harnesses, lanyards and/or belts because the fall hazard cannot be reduced to a safe level, then the employee must put on such protective equipment before beginning the work and use it as intended throughout the duration of the work.

Only employees trained in such work are expected to perform it.

The floor or grounds of every work area shall be maintained clean and, so far as possible, dry. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable.

Training Program

Only employees who have Fall Protection Training will be allowed to work in areas with fall hazards and the use of fall protection equipment. Safety supervisors or foremen must ensure that employees fully understand the job at hand before commencement. Fall Arrest re-training will be performed every three years.

Under no circumstances shall an employee work in areas of high fall hazards, do work requiring fall protection devices, or use fall protection devices until he/she has successfully completed a Fall Arrest Training and also completed this company's machinery and equipment training program. This includes all new operators or users of machinery and equipment, regardless of claimed previous experience.

The training program includes instruction and operational training on each specific area of fall hazard to be involved in the work of the employee.

Individuals in the following departments should receive training:

1. Safety Supervisors and Foremen
2. Drillers and Drill Helpers
3. Warehouse Staff

Fall Protection Equipment Maintenance

As outlined in the maintenance policy, all fall protection equipment shall be checked for defects, deficiencies and wear and tear prior to the start of any job. It must also be inspected by the user prior to any use.

In accordance with the manufacturer's instructions, all equipment will also be inspected a minimum of once per year by a competent and trained inspector to ensure that all equipment is in proper condition. Inspection will be documented on the respective Maintenance Log.

Transportation of Dangerous Goods Procedure

Scope

This section outlines general transportation of dangerous goods, safety requirements and procedures for the prevention of transportation of dangerous goods violations. Items noted require strict attention and it is identified where more specific safety procedures are available. This section will be used in all Logan Drilling Group workplaces and is also to be enforced with all contractors/subcontractors when and where applicable.

Clients may have their own policies, procedures and forms. Where it is a requirement that client procedures and forms are used, these will be in addition to those in this section.

Legislative Requirement

Under the Dangerous Goods Transportation Act, specific safety procedures and guidelines must be followed.

These include but are not limited to proper documentation, packaging, marking and identifying of dangerous good being transported.

Policy

These procedures have been developed with the intent of developing a heightened level of awareness regarding the transportation of dangerous goods work practices when required to transport products such as gasoline and/or diesel fuel, propane and any other items identified as a dangerous goods.

Responsibility

It will be the responsibility of every employee to ensure that the procedures outlined in this section are followed and all specific safety policies and guidelines are followed.

It is the responsibility of Logan Drilling Group management, safety supervisors and foremen to ensure all transportation of dangerous goods policies and procedures are audited and modified or updated as necessary.

It is the responsibility of the safety supervisors and foremen to ensure that Logan Drilling Group management is notified of any new or changing work practices and situations for which transportation of dangerous goods procedures will be needed.

Procedures

The general practice will be that Logan Drilling Group will be the shipper, carrier and receiver; however, in the event that other companies are contracted as shipper, carrier and/or receiver, all procedures shall be followed as set out in this policy and provincial/federal transportation of dangerous goods regulations.

Shipping Documents

Prior to any dangerous goods to be shipped, the appropriate documentation must be in place. No driver shall leave with dangerous goods without having the proper documentation.

Shipping documents of dangerous goods must include the following information:

- The date the document was prepared
- The date the document was given to the carrier (if different form date prepared)
- The shipper's name and address
- 24hrs contact number of the shipper
- Description of the dangerous good being shipped (**in this specific order**)
    a. Shipping name of the good
    b. Class and subsidiary class
    c. UN Number
    d. Packing Group
- The quantity being shipped (metric) and the number of containers
  If the quantity changes prior to arriving to final destination, the driver must make changes to the quantity to reflect what is currently being transported.

Shipping Container

Any dangerous goods being transported shall be transported in containers that meet the national standards for containers transporting dangerous goods. Containers may be reused, however, they must be in good condition and shall not display any labels or other markings that do not apply to the goods being transported.

As any load being transported, the driver must ensure that the load is secured properly and will not shift during transportation.

Labels and Placards

Depending on the amount being transported, the goods must be marked with labels and/or placards indicating the class, shipping name and UN number.

Small containers shall have these safety marked visibly on at least 1 side of the container. Large containers must have these labels on all 4 sides of the container or trailer in which it is being transported. Placards or labels must remain on the container until the container is empty, then must be removed.

Training Program

Only employees who have completed the Transportation of Dangerous Goods course and hold a valid certificate signed by Logan Drilling Group will be allowed to transport dangerous goods. All safety supervisors, foreman and driller shall be trained in the transportation of dangerous goods.

As a safety supervisor or foreman you must ensure that employees fully understand the job at hand before commencement.

Transportation of Dangerous Goods re-training will be performed every three years.

Under no circumstances shall an employee transport dangerous goods, prepare dangerous goods for transportation, including documentation, or receive/unload any dangerous goods until he/she has successfully completed a Transportation of Dangerous Goods course. This includes all new operators or users of machinery and equipment, regardless of claimed previous experience.

Commercial Vehicle Policy

Policy

The management of Logan Drilling Group is responsible to ensure that all regulations and standards as it applies to commercial vehicles are followed by the commercial vehicle operators.

Each operator shall maintain an up-to-date and properly filled out log book recording all daily activities including pre-trips, on-duty and off-duty times. These log books must be kept by the operator for a minimum of 3 months.

Operators shall follow the *Commercial Vehicle Drivers Hours of Service Regulations (SOR/2005-313)*. As outlined in the document, no driver shall drive for more than 13 consecutive hours or be on duty for more than 14 consecutive hours then drive. All rest times shall be observed. All operators shall have a minimum of an 8hrs consecutive rest period and have at least 10 hours off in a day (distributed throughout the day). No driver shall drive without taking their appropriate rest period according to his or her cycle (cycle 1 – minimum 36 consecutive hours and cycle 2 – minimum 72 consecutive hours of off-duty time).

The safety of employees is paramount, no operator feeling that their ability to safely operate a commercial vehicle is compromised or that they are feeling fatigue and/or not fully alert, for whatever reason, must refrain from operate any commercial vehicle until sufficient rest time has been taken. Management is to be notified at any time of such occurrence.

Maintenance

All commercial vehicle is to be inspected regularly every 24hrs. A pre-trip must be completed once daily prior to departure and recorded in the operator's log book. During the pre-trip inspection any deficiencies must be noted and repairs or maintenance completed as soon as possible. Any deficiencies or defects that may affect the safe operation of the commercial vehicle shall be repaired immediately prior to use on public roads.

Commercial vehicles shall undergo regular scheduled preventative maintenance in accordance to the manufacturer's specification. All maintenance and repairs must be documented in the appropriate vehicle's binder.

Loads

Prior to departure, it is the operator's duty to ensure that all loads are properly secured. Loads must be secured using chains and binders of appropriate load bearing strength. These must be free of any damage, cracks or tangles. When using straps, ensure that they are of proper strength, clean and free of any knots, tears or cuts. All loads must have the proper weight distribution and shall be anchored at the proper points. The operator is responsible to ensure that the load being carried does not exceed weight or size. If the dimensions are exceeded special permits must be acquired and signage used to transport load.

Cellular Phone Safety Policy

Distracted Driver Legislation

Driver distraction legislation has been introduced across all 10 Canadian provinces. Under this legislation it is prohibited to use a hand held cell phone (except when operating in hands-free mode), texting devices and other portable entertainment devices while driving.

In maintaining compliance with provincial legislation, the use of cell phones while driving is permitted **only** when using hands-free/Bluetooth accessories. If such device is not available, employees must pull over before answering/making a call. During inclement weather the use of cell phone while driving should be limited. The use of any entertainment devices is strictly prohibited while driving.

Cell Phones/Smart Phones

Personal calls during work hours that interferes with employee productivity and/or become distracting to others are strictly prohibited. If cell phone use becomes a safety issue, employees will be subject to Logan Drilling Group Disciplinary Procedure. We are aware that personal calls may need to be made during the workday.

The use of cell phones while on work site is to be limited to work related functions. Cells phones must only be used away from the work area and in a safe area.

_____ _____

President, Logan Drilling Group Date

Electronic Communication Policy

As technology changes so does the way that we communicate and conduct business. The vast majority of people make use of cell phones/smart phone, tablets and laptops to do everything from making calls, checking email, daily banking and doing research. With the use of all these devices it is vital that we, at Logan Drilling Group, have a policies in place to ensure the safe and proper use of this technology.

Policy

Cell Phones/Smart Phones

The following guidelines shall be followed.

- The use of cell phones while on work site is to be limited to work related functions and must only be used away from the work area and in a safe place
- For confidentiality and potential liability concerns it is prohibited to use a cell phone to take any pictures or videos without the express consent from the client or management.
- No personnel shall post any Logan Drilling Group information, video, pictures on the internet, including social media, without authorization.
- The use of any other personal devices must be limited to off-duty time and not violate this policy. Inappropriate use may result in disciplinary actions up to and including suspension and termination
- Should any personnel have personal devices/cell phones/smart phones at the work site, Logan Drilling Group will not cover these devices should they be damaged, lost or stolen.

Company Issued Cell Phones and Devices

- All Logan Drilling Group cell phones and devices are password protected. Users are not to change any passcodes/passwords and/or setting on the assigned devices
- For all personnel who are assigned an iPhone or iPad, personal iCloud accounts are not to be installed or used on company devices.
- Device protective cases are not to be removed. If cases become damaged or need replacing your manager is to be notified.
- All devices should be stored in safe & secure place
- The majority of company issued devices' use must be for intended purpose and Logan Drilling Group business. They may be used for personal use provided that it is not excessive and does not interfere with its intended use.
- If personal use is deemed excessive, the employee may be required to reimburse any and/or all cost incurred by the personal use. This reimbursement may be deducted from the employee's pay.
- Logan Drilling Group may routinely look over monthly cell phone/data usage, as to guard against excessive personal use.
- The shared data pool is limited. Personnel shall make use of Wi-Fi when available.
- Company issued cell phones are not to be used for downloading, facetiming, streaming, tethering, as mobile hotspot, etc. for personal reasons. These applications for work related use should also be limited.

Internet Usage

Computers, smart phones, tablets and other electronic devices are provided to Logan Drilling Group personnel to facilitate communication and enhance productivity. The use of the internet/intranet/data on company provided devices is Logan Drilling Group property and such, Logan Drilling Group has the right to monitor and store such materials. Discretion when using these devices is the responsibility of each individual employee. Personal use is to be limited and may not interfere with the performance of your job, consume significant resources or interfere with the activities of other employees.

Unacceptable usage

Below is a list of example items/action which are unacceptable. This list is by no means all-inclusive but rather a guideline as to the type of activities that are prohibited.

- Communicating or accessing material that may contain matter that is or might reasonably be considered, harassing, defamatory, offensive, disruptive, and derogatory or be in contradiction with Logan Drilling Group's Harassment Policy.
- Access to sites that contain obscene, hateful, pornographic, unlawful, violent or otherwise illegal material
- All users must respect all copyrights and licenses to software and on-line materials.
- Using the device to perpetrate any form of fraud and/or software, film or music piracy
- Stealing, using, or disclosing someone else's password without authorization
- Sharing confidential material, trade secrets or proprietary information outside of the company
- Hacking/accessing unauthorized websites
- Sending or posting information that is defamatory to Logan Drilling Group, it's services, colleagues and/or clients
- Accessing/using file sharing sites (dropbox, google docs etc.) without prior approval
- Employee who downloads any apps that results in charges will be required to reimburse the cost unless it is directly related to work
- Posting Logan Drilling Group pictures/information on social media without authorization
- Passing off personal views as representing those of Logan Drilling Group

Email

Email access across all electronic device is a critical part of Logan Drilling Group's communication system. Inappropriate use of email exposes Logan Drilling Group to virus attacks, compromised network systems and services and legal issues.

Personal use of email is allowable but should not interfere with or conflict with business use; employees should keep personal use minimal.

Although personal use of email is allowed, misuse can result in disciplinary actions up to and including dismissal. Misuse includes but is not limited to:

- Any form of harassment, whether through language, frequency of size of message
- The use of Logan Drilling Group communication system or devices to set up personal

business

- Forwarding confidential Logan Drilling Group messages to outside locations
- Sending unsolicited email or junk mail to individuals who did not request it
- Sending or posting solicitations or advertisements not related to business purposes or activities

Logan Drilling may monitor these devices and systems for reasons such as, but not limited to, retrieving the contents of emails to find lost messages, investigate wrongful acts, to recover documents from a system failure etc.

_____ _____

President, Logan Drilling Group Date

HAZARD ASSESSMENT SECTION

Table of Content

Risk Taking Matrix

Use this form to help assist in determining the Risk Factor or Severity for tasks when completing a Job Safety Analysis. The initial rating is without any controls in place. The second rating is with controls in place.

	SEVERITY OF CONQUENCES	PRIORITY RATING
Catastrophic	Death, permanent total disability, extensive property damage or company shutdown	1
Major	Severe injury, extensive lost time injury, severe occupational illness or major property damage	2
Minor	Minor injury, minimal lost time minor occupational illness or minor property damage	3
Negligible	Minor medical treatment (First Aid) or slight property damage	4

	PROBABILITY OF OCCURRENCE	PRIORITY RATING
Nearly Certain	Highly likely to occur immediately or within a short period of time when exposed to the hazard	A
High Probability	Likely to occur after some exposure to the hazard	B
Moderate Probability	Probably will occur in time	C
Low Probability	Possibility to occur or after extended period of exposure to hazard	D
Not Probable	Unlikely to occur	E

HAZARD:

PROBABILITLY OF OCCURRENCE	SEVERITY OF CONSEQUENCES			
	Catastrophic	Major	Minor	Negligible
Nearly Certain	A1	A2	A3	A4
High Probability	B1	B2	B3	B4
Moderate Probability	C1	C2	C3	C4
Low Probability	D1	D2	D3	D4
Not Probable	E1	E2	E3	E4

Intolerable Risk	Activity should be suspended immediately until action is taken to reduce risk
Substantial Risk	Significantly high risk, reasonably practical activity should be suspended until significant action has been taken to reduce the risk. Where not reasonably practical, strict deadlines must be established for further action to reduce risk.
Moderate Risk	Significant actions should be planned to in accordance with risk management program to reduce risk.
Tolerable Risk	Risk level is acceptable as long as all reasonably practical controls are in place.
Trivial Risk	Risk level is low no significant actions required.

Doc #	Version	Creation Date	Last Revision
002 HA-Daily Risk Assessment	1	08.19.2014	23.11.2014

DAILY RISK ASSESSMENT

DETAILS

Supervisor	Drill Rig #	Project	Date	Daily JSA No.
Person(s) performing tasks				

Has been discussed with

Name (please print)	Signature

ITEM NO.	TAKS	POTENTIAL ACCIDENTS & HAZARDS	RISK RATING	RISK CONTROL & REMEDIAL ACTIONS	RISK RATING	RESPONSIBLE PERSON

Doc #	Version	Creation Date	Last Revision
003 HA-Site Hazard Assessment Form	1	08.19.2014	23.11.2014

COMPREHENSIVE SITE HAZARD ASSESSMENT FORM

Comprehensive Site Hazard Assessment Form

Conducted by	Client	Project #
Location	Type of Work Geotech ☐ Exploration ☐	Date:

Utility Clearance

Hydro ☐	Gas ☐	Water ☐	Sewer ☐	Other ☐
Clearance #:	Clearance #:	Clearance #:	Clearance #:	Clearance #:
Clearance by:	Clearance by:	Clearance by:	Clearance by:	Clearance by:

UTILITIES/TRAFFIC	SITE CONDITIONS/TERRAIN	DRILLING CONDITIONS	PPE REQUIRED	SPECIALIZED PPE
☐ Electrical/Overhead Wires	☐ Slope	☐ Over burden	☐ Hard Hat	☐ Fall Arrest
☐ Water	☐ Ditches	☐ Bedrock/Coring	☐ Hearing Protection	☐ Half Face Respirator
☐ Telephone	☐ Boulders	☐ Waste/Refuse	☐ Eye Protection	☐ Full Face Respirator
☐ Sewer	☐ Excavation	☐ Contamination	☐ Coveralls (HiVis)	☐ Portable Gas Monitor
☐ Gas	☐ Buildings	☐ Artesian Conditions	☐ Long Sleeve Shirt (HiVis)	☐ Fire Retardant Coveralls
☐ Fuel Tank	☐ Swamp	☐ H2S Gas/Methane	☐ Safety Boots	
☐ Active Construction Site	☐ Landfill	☐ Other:	☐ Gloves	
☐ Traffic	☐ Other:	☐ Water	☐ HiVis Rubber	
☐ Pedestrian		☐ On Site	☐ Leather	
☐ Other:		☐ Hauled	☐ Cotton	
		☐ Pumped	☐ Other:	

Notes/Comments:

Doc #	Version	Creation Date	Last Revision
HA-Site Hazard Assessment Form	1	08.19.2014	

SITE HAZARD ASSESSMENT FORM

***NOTE*:** Ensure that all hazards are identified and reviewed. Update any changes as they occur. Review on a bi-weekly basis or as changes occur. Any hazards identified that are not listed should be marked in **Notes/Comments** section above and reviewed with all personnel.

	Potential Hazard	N/A	App	Rev		Potential Hazards	N/A	App	Rev
1.	Site Preparation *(Workers not Aware of Potential Site Hazards)*				14.	Loading of Supplies & Equipment *(Manual Lifting)*			
2.a	Emergency Medical Aid *(Poor/Delayed Medical Response)*				15.	Heavy Equipment Operation *(Injury/Equip. & Prop. Damage)*			
2.b	Emergency Medical Aid *(Road Conditions)*				16.	Use of Hoist *(Pinch Points/Falling Object & Equip, Damage)*			
3.a	Waste Removal *(Attracting Wildlife)*				17.	Proper Use of Cables *(Damaged/Over Strained Equipment)*			
3.b	Waste Removal *(Damage to the Environment)*				18.	Use of Hand Tools *(Improper Use/Damaged Tools)*			
4.	Vehicles *(Collisions & Accidents)*				19.	Loading & Loading using Helicopter			
5.	Access Roads *(Roll Overs/Getting Stuck)*				20.a	Placing & Operating Water Pump *(Slip, Trip & Falls)*			
6.	Working Alongside of Road *(Stuck by Debris/Vehicle)*				20.b	Placing & Operating Water Pump *(Wildlife)*			
7.	Overhead Obstacles *(Electrocution/Falling Obj./Bodily Injuries)*				20.c	Placing & Operating Water Pump *(Fire Hazards & Spills)*			
8.a	Extreme Weather *(Thunder & Lightning)*				21.a	Moving & Setting Up at New Hole *(Passing Traffic & Pedestrian)*			
8.b	Extreme Weather *(Inclement Weather)*				21.b	Moving & Setting Up at New Hole *(Ground Conditions)*			
8.c	Extreme Weather *(Heat/Cold Exposure)*				21.c	Moving & Setting Up at New Hole *(Near Edge/Steep Embankment)*			
9.a	Wildlife *(Black Bears & Moose)*				22	Drilling Activities *(Falling Objects/Pinch Points/Manual Handling)*			
9.b	Wildlife *(Bites/Stings & Poisoning)*				23.a	Working with Additives *(Splashes)*			
10.	Exposure to Hazardous Materials *(Poisoning & Contamination)*				23.b	Working with Additives *(Slip & Falls)*			
11.	Climbing/Working at Heights *(Falls)*				23.c	Working with Additives *(Spills & Contaminations)*			
12.	Visitors & General Public *(Bodily Injuries)*				24	Refueling *(Fire & Contamination)*			
13.a	Loading & Unloading of Equipment *(Passing Traffic/Pedestrians)*				25	Maintenance *(Pinch Points/ Falling Objects/Fluid spray or leaks)*			
13.b	Loading & Unloading of Equipment *(Roll Over/Run Over)*								

Client/Technician: _____ Signature: _____ Date: _____

Safety Officer: _____ Signature: _____ Date: _____

Driller: _____ Signature: _____ Date: _____

Helper: _____ Signature: _____ Date: _____

Helper: _____ Signature: _____ Date: _____

Safety and field policies, and current Provincial Health and Safety Act are to be adhered to at all time; as are any site specific policies and procedures and/or Client specific policies.

SITE HAZARD ASSESSMENT FORM

Conducted by	Client	Project #
Location	Type of Work Geotech ☐ Exploration ☐	Date:

Utility Clearance

Hyrdo ☐	Gas ☐	Water ☐	Sewer ☐	Other ☐
Clearance #:	Clearance #:	Clearance #:	Clearance #:	Clearance #:
Clearance by:	Clearance by:	Clearance by:	Clearance by:	Clearance by:

UTILITIES/TRAFFIC	SITE CONDITIONS/TERRAIN	DRILLING CONDITIONS	PPE REQUIRED	SPECIALIZED PPE
☐ Electrical/Overhead Wires	☐ Slope	☐ Over burden	☐ Hard Hat	☐ Fall Arrest
☐ Water	☐ Ditches	☐ Bedrock/Coring	☐ Hearing Protection	☐ Half Face Respirator
☐ Telephone	☐ Boulders	☐ Waste/Refuse	☐ Eye Protection	☐ Full Face Respirator
☐ Sewer	☐ Excavation	☐ Contamination	☐ Coveralls (HiVis)	☐ Portable Gas Monitor
☐ Gas	☐ Buildings	☐ Artesian Conditions	☐ Long Sleeve Shirt (HiVis)	☐ Fire Retardant Coveralls
☐ Fuel Tank	☐ Swamp	☐ H2S Gas/Methane	☐ Safety Boots	
☐ Active Construction Site	☐ Landfill	☐ Other:	☐ Gloves	
☐ Traffic	☐ Other:	☐ Water	☐ HiVis Rubber	
☐ Pedestrian		☐ On Site	☐ Leather	
☐ Other:		☐ Hauled	☐ Cotton	
		☐ Pumped	☐ Other:	

***NOTE*:** Ensure that all hazards identified are addressed in the JSA. Update changes as they occur. Review on a bi-weekly basis or as changes occur.

Doc #	Version	Creation Date	Last Revision
HA 003 -Site Hazard Assessment Form	1	08.19.2014	23.11.2014

SITE HAZARD ASSESSMENT FORM

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
1. Site Preparation	1.a. Workers unaware of present/potential site hazards • Slip, Trip & Falls • Crush Injuries • Run Over • Roll Over • Bodily Injuries • Sprains & Strains • Death	B1	i. All new employee will attend induction and orientation training prior to starting work • Mandatory PPE for all employees as outlined on page 1 • Complete "Tools Box", Site and Equipment Inspections & a Hazard Assessment daily • JSA shall be completed bi-weekly, or as changes occur, to re-evaluate hazards • Review hazards and control measures with all personnel • All personnel involved shall sign attendance sheet stating they understand the "Tool Box" and Hazard Assessments • Increase awareness with the use of appropriate safety signage and posters • Through "Tool Box" meetings, ongoing training and daily risk assessments, employees will maintain awareness of the dangers/hazards at the work site	D2/D3
2. Emergency Medical Aid	2.a. Poor/Delayed Emergency Response • Increased severity of injury • Death	A1	i. Fully equipped First Aid Kits will be readily accessible at the drill, pump and in each Support vehicles • First Aid Kits will be inspected weekly during the Weekly Site Inspection. • If any content of First Aid Kit has been used/removed, a First Aid Kit Report must be completed • The First Aid Kit shall be replenish as soon as possible after each use • A minimum of one employee at each drill shall be First Aid trained • Emergency numbers are located in the First Aid Kits and the drill shack	C3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
2. Emergency Medical Aid	2.a. Poor/Delayed Emergency Response (cont.)	A1	ii. Pre-hospital emergency, the established plan shall be followed. 911 will be contacted and First Aid and dispatcher directions shall be followed iii. Any other medical emergency, will be treated with first aid and transported to the nearest hospital or medical facility as per the established Emergency Preparedness Plan. iv. Emergency meeting point and Muster point will be established during Orientation. • Ensure that all personnel are familiar with the locations of the Emergency Meeting and Muster points	C3
2. Emergency Medical Aid (cont.)	2.b. Road Conditions • Delayed response • Motor vehicle accident • Bodily injury	C1	i. Road conditions and shall be monitored daily and maintenance performed as required. ii. All vehicle shall be driven according the road conditions. • Drivers shall adhere to all posted signage. • Extra care will be used during adverse weather.	D3
3. Waste Removal	3.a. Attracting wildlife • Animal attack • Bites • Stings • Death	A2	i. All waste (food or other) shall be placed in the appropriate bag/bin. Absolutely no waste is to be left lying around. ii. Domestic waste will be removed daily at the end of the shift. • All food must remain in the vehicle, in sealed containers at all time. • Absolutely no food items/remains are to be left in the open, back of the truck or at the site	E2
	3.b. Damage to the environment • Property damage • Soil contamination • Waterway contamination	C2	i. Grease/lubricant, chemical, biological waste will be removed on a set schedule and will be brought to an appropriate waste treatment centre. • Empty grease/lubricant container will be placed in a plastic bucket for disposal.	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
4. Vehicles	4.a Collisions & Accidents • Bodily Harm • Death • Equipment Damage • Property Damage	A2	i. Daily pre-trip inspection must be completed on all vehicles/support vehicles in accordance to the approved checklist. • Any damages or issues identified in daily inspection will be repaired or replaced immediately • All maintenance will be completed by a trained and competent mechanic and will be recorded on the respective Maintenance Record ii. All vehicles on site shall be equipped with the following: • Fire Extinguisher • Amber light • Back up Beeper • First Aid Kit • Triangles • Buggy Whip • Spare Tire and required equipment iii. Only trained, competent and licensed drivers shall operate company vehicles/support vehicles. iv. The number of passengers per vehicle is limited to the number of safety belts. • All passengers and drivers must wear safety belts and other required safety equipment while the vehicle is in motion • No passenger/personnel is permitted to travel in the 'box" of the truck v. All vehicles are to be kept clean and tidy and free of garbage and food waste. • Any food kept in the vehicle will be in sealed containers/bags.	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
5. Access Roads	5.a Roll overs or getting stuck • Bodily Injury • Equipment damage • Property damage	B2	i. Appropriate access roads shall be constructed and maintained • All access roads will be inspected daily in accordance with the Site Acceptance form. • All discrepancies will be recorded and reported to the client immediately. • Repairs/maintenance must be completed as required ii. Only proper equipment is to be used to free vehicles that are stuck.	
6. Working Along Side of Road	6.a Struck by debris or Vehicle • Bodily injuries • Crush injuries • Death	A2	i. All personnel shall work within the identified barrier • Perimeter to be marked with barricades, pylons, cones and/or tape • A designated trained and competent flagman is to be used to direct traffic and pedestrian when necessary. ii. All personnel shall wear the required HiVis PPE as stated on page 1 iii. All personnel shall maintain good communication and constant eye contact	D2
7. Overhead obstacles	7.a Struck by falling objects, electrocution, entanglement and bodily injuries	B2	i. Ensure that overhead clearance is adequate prior to raising any equipment. • Appropriate hoisting equipment must be used at all time ii. Only a trained and competent operator shall operate any of the equipment • Operator must maintained communicate with all other personnel. iii. Proper and secure rigging techniques shall be used at all time by all personnel • Only certified and competent rigger shall prepare equipment	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
8. Extreme Weather	8.a Thunder & lightning storms • Electrocution • Slip, trip & falls • Bodily injuries • Equipment damage	D2	i. If lightning is detected, seek immediate shelter minimum 30 meters away from drill. • Ensure that equipment has been turned off. • Drilling shall only resume 30 minutes after the last lightning strike ii. Seek shelter immediately when extreme weather is approaching	D3
	8.b Inclement weather	C3	i. Monitor weather forecast throughout the day ii. All personnel shall prepare adequately and accordingly for the forecasted weather • Personnel shall have appropriate clothing and supplies	D3
	8.c Heat/Cold exposure	A2	i. All personnel shall be able to recognize signs of heat/cold exposure. • Frequent breaks shall be allotted during extreme cold temperature to warm up in designated area • All personnel shall dress according to the temperature • Frequent breaks shall be allotted during hot temperatures to cool down and rehydrate • During hot temperature a shaded area shall be made available for personnel.	C4
9. Wildlife	9.a Black Bear and Moose Attacks • Bodily Injuries • Death • Equipment damage	D1	i. Be aware or surroundings and possible wildlife habitats. ii. Always travel in pairs, and notify foreman when leaving drilling site. iii. Keep work area free of food at all time • All food scraps are to be kept in sealed containers/bags in the vehicle at all time • All garbage and food are to be removed from site daily	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
9. Wildlife	9.a Black Bear and Moose Attacks (cont.)	C1	• The "box" of the vehicle must be kept clear of any food, scraps and garbage iv. Never feed, or attempt to touch any wildlife. v. Notify site supervisor or any wildlife sightings or incidents.	D3
	9.b Bites, Stings & Poisoning • Anaphylactic reaction • Skin irritation	C3	i. Ensure that personnel is aware of any plants in that are that may cause irritation/reaction. • If present in close proximity to working area, mark vegetation area with caution tape. ii. Wear proper clothing and use bug spray when possible. iii. Ensure that any personnel that have allergies to certain insect/plants have the required emergency medication available (EpiPen, Benadryl…)	D4
10. Exposure to Hazardous Materials	10.a Poisoning / Contamination • Skin irritation • Breathing problems • Eye irritation • Burns	C3	i. MSDS sheets for all products used must be accessible. • All personnel shall know where to locate the MSDS sheets and know how to find the required information. ii. All personnel shall use additional required PPE (respirators, Tyvek coveralls, rubber gloves etc.) as directed on the product MSDS sheet.	D4
11. Climbing / Working at Heights	11.a Falls • Personal Injury • Death • Damage to equipment	A1	i. Any personnel required to climb or work at heights greater than 6 feet shall be Fall Arrest trained. ii. When working at heights above 6 feet personnel shall wear all required PPE, including harness, lanyards etc. • A pre-use inspection shall be completed on all Fall Protection equipment prior to use.	D1

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
12. Visitors & General Public	12.a Struck by objects, Bodily injuries, Death, Damage to equipment	C2	i. Perimeter shall be clearly marked with barricades, pylons, cones and/or tape. ii. Signage shall be used to identify area as a "work area" marking required PPE iii. All work will stop when visitor or member of the general public enters or approaches the work site	D4
	12.a Violent or Hostile person • Physical injury • Damage to property • Damage to environment	D2	i. All work shall stop and equipment be turned off when a visitor or member of the general public enters or approaches the work site. ii. Should a visitors/member of the general public become hostile, confrontational or violent in anyway, the project manager shall be advised and all interaction with individual cease. • Personnel shall not get involved in any altercation with the individual (verbal or physical) • Proper authorities shall be notified iii. Any visits or incidents shall be documented and the drilling foreman must be notified	D3
13. Loading & Unloading of Equipment	13a. Passing Traffic, Pedestrians and Obstacles • Crush Injuries • Death • Equipment damage • Property damage	C2	i. Park in area clear of traffic and pedestrians • Use HiVis PPE and emergency flashers • Designate work area with traffic barriers, cones, pylons and tape • If necessary have designated flagman to direct traffic/pedestrians • Have helper to guide/direct drill rig while moving • Maintain continuous communication • Ensure awareness of any overhead obstacle/hazards ii. All personnel shall wear HiVis PPE as described on page1	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
13. Loading & Unloading of Equipment (cont.)	13.b Roll over & Run over • Slip, trips & falls • Crush injuries • Death • Equipment damage • Property damage	B2	i. A pre use equipment inspection, using the appropriate checklist shall be completed. ii. The unloading/staging area must be on firm and level ground clear of debris and obstacles. iii. Only trained and competent operators shall be permitted to load/unload the equipment	D3
14. Loading of Supplies and Equipment (manual material handling)	14.a Lifting and/or carrying injuries • Sprains & strains • Back injuries • Slip, trip & fall • Crush injuries	A2	i. Use proper lifting techniques (lifting with your legs) and ensure a firm grasp on objects • Be conscientious of footing and ground conditions • Be aware of personal limitations and seek assistance with larger/heavier objects when required • Use mechanical aids for heavy/awkward objects. • Load equipment in designated work area, free of traffic and pedestrians	D2
15. Heavy Equipment Operation	15.a Unsafe equipment/Operator • Bodily injuries • Crush injuries • Death • Equipment damage • Property damage	C2	i. Only trained competent operators shall be permitted to operate any heavy equipment ii. A pre use equipment inspection, using the appropriate checklist shall be completed • Any deficiencies shall be noted and made aware to the foreman. • Required repairs or replacements must be done prior to use.	D4
16. Use of Hoist	16.a Pinch points, damaged equipment & falling objects • Crush injuries • Head injuries • Equipment damage	B2	i. Lifting tackle; rope, hook, clamps etc., shall be inspected during the drill pre-inspection and prior to start of shift. The inspection will be recorded. • Any deficiencies shall be repaired/replaced prior to use. ii. No personnel is to stand under hoist while equipment is being lifted or lowered.	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
16. Use of Hoist (cont.)	16.a Pinch points, damaged equipment & falling Objects (cont.)	B2	iii. Eye contact will be maintained between the operator other personnel at all time while the hoist is in operation. iv. Maintain clear communication between the operator and other personnel.	D3
17. Proper use of cables	17.a Damaged/over strained equipment • Bodily injuries • Equipment damage • Property damage	C2	i. All cables and fasteners shall be properly certified. ii. Ensure all cables are checked and properly fastened • Cables must be inspected before being fastened to equipment. • Inspection of the cables will be completed and recorded during pre-inspection of mobile equipment • Any substandard equipment will be repaired or replaced • Cables must not exceed their manufacturer's specifications	D3
18. Use of Hand Tools	18.a Improper use, damaged tools • Sprain/strains • Bodily injuries • Slip, trip & falls • Damage to equipment • Damage to property	B3	i. All personnel will be trained in proper use, application and maintenance of hand tools. • All hand tools must be inspected daily and repaired or replaced as required • Any tool that has been tagged as damage shall not be return in circulation until required repairs have been completed • All tools shall be kept clean at all times ii. All hand tools must be returned to their proper storage immediately after use/completion of task iii. Tools must be used for their intended purposes only.	D4

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
19. Loading and Unloading Using a Helicopter	19.a Falling/swinging objects • Bodily injuries • Head injuries • Death • Equipment damage • Property damage	A1	i. All personnel must be specifically trained for this type of loading and unloading. ii. All personnel shall wear appropriate PPE. iii. Ensure landing area is clear of any debris. iv. Always wait for the pilot's permissions and/or directions before approaching. • Maintain constant communication with pilot and other personnel assisting in task v. Load/unload when engine are shut down whenever possible vi. Ensure that all cables and fasteners are in proper working order vii. All cables and fasteners shall be properly certified and inspected daily in accordance to the approved checklist.	C3
20. Placing and Operating Water Pump	20.a Slip, trip & fall, Fall in the water • Sprain/strain • Bodily injury • Drowning	C1	i. Pump will be inspected daily in accordance to the approved checklist and recorded. ii. At least 2 people must be present when placing pump at the water source iii. Use path of least resistance to get to water source. iv. Always have two-way radio or other reliable source of communication on your person when going to the pump v. Be cautious of footing on steep inclines, get additional help if required vi. Appropriate First Aid Kit, with Emergency Contacts, will be present at every pump	D3
	20.b Wildlife • Bites/stings • Attacks • Bodily injuries • Property damage	D2	i. Always be vigilant of your surroundings and possible wildlife habitats in the area ii. Make your presence known iii. Never attempt to feed or touch wildlife	E4

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
20. Placing and Operating Water Pump (cont.)	20.c Fire Hazard and spills • Burns • Bodily injury • Equipment damage • Property damage	C2	i. Fire Extinguisher, 20lbs ABC, must be present at each pump ii. Proper refueling techniques must be used • Smoking is prohibited while refueling • Water pump shall be switched off during refuelling iii. Drip trays lined with absorbent materials must be used to contain any spills • Drip trays must be emptied and cleaned daily iv. Spill kit will be present at every pump v. Lined container must be used to store any fuel cans/jugs.	D3
21. Moving to & setting up at hole location	21.a Passing traffic, Pedestrians and obstacles • Crush injuries • Traffic collision • Bodily injuries • Equipment damage • Property damage • Death	C1	i. All personnel shall use the required HiVis PPE as stated on page 1 ii. Have clearly designated work area with traffic barrier, cones, pylons and tape iii. Have designated flagman to direct traffic and pedestrians. iv. Every attempt shall be made to move drill during period of low traffic. v. Drill shall be moved with mast in lowered position • All equipment and supplies must be secured properly. • There shall be a designated spotter to direct driver and to ensure safe distance from moving equipment • Spotter must always be in direct view of driver and maintain constant communication. vi. All other personnel shall stand well clear of moving equipment.	D3

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
21. Moving to & setting up at hole location (cont.)	21.b Ground conditions / Access Way • Slip, trip & falls • Equipment getting stuck	C3	i. Identify easiest path of travel (path of least resistance) • Ground shall be firm and free of obstacles (as much as possible) ii. Access way must be adequate to safely transport all equipment. iii. Any issues identified during earlier site visit must have been rectified iv. Site shall be large enough to have a clear walking path around all equipment	D4
	21.c Sites situated near edge/steep embankment. • Slip & falls • Crush injuries • Lost/damage to equipment • Property damage	C2	i. Generous border/fencing/railing, of at least 1meter in height will be erected along the drill pad's edge facing side. ii. Boarder will be clearly marked using tape, pylons, barricades or fencing iii. Signage will be used to indicate location of embankment/edge	C4
22. Drilling Activities	22.a Falling objects, pinch points, manual handling. • Head injuries • Crush injuries • Bodily injuries • Sprain/strain • Death	B1	i. All employees shall use HiVis PPE as outlined on page 1. • Only proper fitting and good condition clothing shall be worn (free of holes and loose ends) ii. Proper housekeeping shall be maintained at all time. iii. All guards must be in place, used and maintained accordingly. iv. All kill switches must be operational and maintained. v. Keep hands and hand tools clear of rotating mechanical parts and pinch points. vi. All personnel shall be aware of the locations of emergency kill switches for all equipment. vii. All Safety Operating Statements and Safe practices shall be followed at all time.	D2

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
22. Drilling Activities	22.a Falling objects, pinch points, manual handling.	B1	viii. Communication must be maintained at all time. • Ensure that all hand signals are known and understood by all personnel.	D2
23. Working with Additives	23.a Splashes • Eye irritation/injury • Chemical burn • Skin irritation	C2	i. All proper PPE must be worn at all time as indicated on the respective MSDS sheet. ii. MSDS for all products being used on site are located in the field binder box. iii. Appropriate eye was station area is to be designated • Eye wash station is to be inspected on a weekly basis to ensure that all is functional and fluid has not been contaminated iv. Appropriate First Aid kit is located at every drill containing all appropriate emergency contact numbers	D3
	23.b Slip and Fall • Bodily injury • Sprain/strain	C3	i. Any additive spill from the mixing tank shall be washed away / cleaned up immediately. ii. Proper housekeeping will be maintained. iii. All personnel shall wear appropriate steal toed footwear.	D4
	23.c Spills / Contaminations • Environmental damage • Waterway damage	B3	i. Any spills or contamination must be cleaned immediately and properly. ii. Proper spill notification process must be followed. iii. MSDS and Spill Kit are located at drill site.	C4
24. Refueling	24.a Fire & Contamination • Burns • Bodily injuries • Environmental damage • Waterway damage	C2	i. All equipment must be disengaged, de-energized or disabled prior to start of refuelling. ii. All PPE, as stated on page 1 and on MSDS, shall be worn. iii. A Spill Kit and First Aid kit must be available at every equipment while refueling. iv. Smoking is prohibited during refuelling. v. Fire Extinguisher, 20lbs ABC, shall be available at every site.	D4

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk
24. Refueling	24.a Fire & Contamination	C2	• Fire Extinguishers will be inspected and recorded monthly. Any substandard extinguishers will be replaced • Fire Extinguishers shall be visible and no more than 12 meters from drill vi. Fuel containers shall be properly labeled and identified. vii. All fuel containers are to be kept properly closed/sealed when not in use. viii. Fuel containers/tank shall be stored in secondary container lined with absorbent material ix. When possible refueling shall be done away from any waterways.	D4
25. Maintenance	25.a Pinch Points, falling equipment, fluid spray/leak. • Crush injuries • Bodily injuries • Skin/eye irritation • Ground/waterway contamination	C2	i. Daily Inspection of all equipment shall be performed and recorded. • Deficiencies will be recorded and repaired within a set and acceptable time frame. • Any maintenance must be performed by trained/competent personnel. • All equipment shall be on a regular maintenance schedule. • All maintenance shall be recorded on the equipment maintenance log. ii. Proper Lock Out/Tag Out procedures must be followed during maintenance. • No tagged out equipment shall be returned to circulation without repairs being completed iii. Ensure that absorbent materials are available when changing fluids/hoses/filter... • Follow proper disposal procedures for any chemicals/fluids.	C4

SITE HAZARD ASSESSMENT FORM

STEPS OF JOB	POTENTIAL HAZARDS	RISK	SAFETY CONTROLS AND BARRIERS	Controlled Risk

Notes/Comments:

REMINDER: Good housekeeping shall be employed and all sites are to be kept tidy. Proper and regular maintenance is required and shall be completed.

JSA Approval By: _____ Signature: _____ Date: _____

Created By: _____ Signature: _____ Date: _____

Safety Officer: _____ Signature: _____ Date: _____

Driller: _____ Signature: _____ Date: _____

Helper: _____ Signature: _____ Date: _____

Helper: _____ Signature: _____ Date: _____

Safety and field policies, and current Provincial Health and Safety Act are to be adhered to at all time; as are any site specific policies and procedures and/or Client specific policies.

Doc #	Version	Creation Date	Last Revision
001 HA JSA-Mobilization	1	08.20.2014	23.11.2014

JSA-MOBILIZATION

JSA INFORMATION

Job Title:	Location:	JSA No.:
MOBILIZATION	**ALL SITES**	**JSA 001-Mobilization**

Equipment Required:	Supervisor:
TRUCK, TRAILER, DRILL RIG, TOOLING MATERIALS & SUPPORT EQUIPMENT	

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
▩ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	▩ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Load support vehicle and drill rig	1.a Roll over 1.b Load shifts 1.c Loose materials	• Work with spotter while loading equipment • Tie down and secure all loads and equipment • Inspect load prior to departure • Inspect load whenever break or stop
2. Travel	2.a Road conditions 2.b Inclement weather	• Be aware of changing road conditions while driving • Keep safe distances from other vehicles • Drive according to weather conditions • Follow posted speed limits and other signage
3. Arrival to project site	3.a Parking 3.b Vehicle & pedestrian traffic	• Park only where permitted in designated area • Ensure equipment is not impeding pedestrian & vehicle traffic
4. Site Orientation	4.a Not fully aware of project/site conditions safety hazards and procedures	• Undergo site and/or client specific orientation • Meet with client to review scope of work and expectations

Doc #	Version	Creation Date	Last Revision
002 HA-JSA Drill Rig Set Up	1	08.20.2014	23.11.2014

JSA DRILL RIG SET UP

JSA INFORMATION

Job Title:	Location:	JSA No.:
DRILL RIG SET UP	**ALL SITES**	**JSA-002 DRILL RIG SET UP**

Equipment Required:	Supervisor:
Drill rig, truck, trailer and support equipment	

Personal Protective Equipment: ☐ **Not Required** ▨ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▨ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▨ Long Sleeve Shirt HiVis
Other:	▨ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Drill site set up	1.a Terrain 1.b Personnel (Logan & others)	• Mark perimeter with barricades, cones & tape • Use signage to identify active work area and required PPE • Clear any debris or trip hazards • Level rig, use correct blocking procedures • Always be aware of surroundings
2. Lowering jack	2.a Pinch points 2.b crush injuries	• Keep feet and equipment clear of jacks while lowering. • Ensure all personnel is standing well clear or equipment. • Maintain active and continuous communication.
3. Verify emergency shut off switches	3.a Malfunctioning emergency shut off switches	• Test all emergency shut off switches • Repair any faulty switches. • Drilling activities are not to begin if any switches are not working properly.
4. Raising tower	4.a Overhead obstacles, 4.b Weather 4.c Falling objects	• Complete visual inspection of area surrounding the drill and in the path of travel of the tower. • Check all areas for interference with tower or loose equipment. • Do not raise tower during extreme weather.
5. Unloading support equipment and tools from drill rig	5.a Pinch points 5.b Falling objects 5.c Strain/sprains 5.d Equipment damage	• For heavy or awkward pieces of equipment use a partner or mechanical assistance • Use proper lifting techniques • Do not carry/lift equipment beyond your abilities • Be aware of where your feet and hands are at all times • Cautious of footing • Take your time

Doc #	Version	Creation Date	Last Revision
003 HA JSA-Sampling & Coring	1	08.20.2014	23.11.2014

JSA SAMPLING & CORING

JSA INFORMATION

Job Title:	Location:	JSA No.:
SAMPLING/CORING	**ALL SITES**	**JSA 003-Sampling/Coring**

Equipment Required:	Supervisor:
Drill rig, rods and hand tools	

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	☐ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	■ Long Sleeve Shirt HiVis or Coveralls
Other:		

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Set drill string and drill to required depth	1.a Manual lifting 1.b Pinch points 1.c Rotating equipment 1.d Sprain/Strain 1.e Crush injuries	• Use correct lifting techniques • Use mechanical or physical assistance when needed • Be aware of pinch point locations • Do not place yourself between equipment and moving or stationary parts • Keep hand, feet and clothing clear of all rotating parts/equipment • Maintain continuous communication between driller and other personnel
2. Cleaning soil cuttings from top of borehole	2.a Rotating equipment 2.b Crush injuries	• Use a shovel to clear cuttings and soil at all times • Do not use hands or feet to clear cuttings away from the drill string • Maintain continuous communication between driller and helper
3. Use of sampling, hand tools, hoisting equipment and core barrels	3.a Moving equipment 3.b Pinch points 3.c Worn tools/defective equipment 3.d Worn/defective wire line	• Inspect all rods, hand tools and wire line, prior to start of shift, for excessive wear, and replace when needed • Make sure all rod connections are flush and tight prior to activating hammer • When pulling rods from borehole, stand clear of the upper load until tension in soil has released • Be aware of location of pinch points

Doc #	Version	Creation Date	Last Revision
004 HA-JSA Heat & Cold Exposure	1	08.20.2014	09.15.2014

JSA HEAT & COLD EXPOSURE

JSA INFORMATION

Job Title:	Location:	JSA No.:
HEAT & COLD EXPOSURE	**ALL SITES**	**JSA 004-Heat & Cold Exposure**

Equipment Required:	Supervisor:
N/A	

Personal Protective Equipment: ☐ **Not Required** ▨ **As Needed** ■ **Required**

☐ Hard Hat	☐ Gloves	☐ Fire Protection
☐ Safety Glasses	☐ Safety Vest	☐ Fall Protection
☐ Hearing Protection	☐ Steel Toed Boots	☐ Long Sleeve Shirt

Other:

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Working in hot/humid atmospheres or weather	1.a Fatigue, 1.b Heat stress & illnesses 1.c Heat stroke	• Recognize the signs and symptoms of heat related illnesses • Wear the proper PPE and clothing for the season • Always have plenty of liquids and shade available • Take breaks as required • Provide cooling and ventilation in enclosed areas
2. Working in cold, damp/freezing atmospheres or weather	2.a Numbness 2.b Frost bites 2.c Hypothermia 2.d Freezing	• Recognize the signs and symptoms of cold exposure • Wear the proper PPE and warm clothing for the temperature • Take breaks as required to warm up • Provide warming area when working outside • Wear layers of clothing offering protection against the elements

Doc #	Version	Creation Date	Last Revision
005 HA-JSA Welding & Hot work	1	08.20.2014	29.12.2014

JSA WELDING & HOT WORK

JSA INFORMATION

Job Title:	Location:	JSA No.:
WELDING & HOT WORK	**ALL SITES**	**JSA 005-WELDING & HOT WORK**

Equipment Required:	Supervisor:
Welders, torches & gas canisters	

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	■ Fire Protection
■ Safety Glasses	☐ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	■ Long Sleeve Shirt HiVis or Coveralls
■ Other: **Face sheild/mask, respratory protection**		

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Trailer mounted welders	1.a Moving equipment	• Chock wheels to prevent moving • Ensure that all equipment is properly secured
2. Torches and hoses	2.a Damaged Hoses 2.b Fire Hazard	• Inspect hoses prior to use to ensure they are in proper condition • Repair or replace any faulty or damaged hoses
3. Operating welder or torches	3.a Eye injuries 3.b Burns 3.c Arcs & Sparks	• Use proper PPE and shields to protect from flashes and sparks • **Do not operate near or around fuel tanks or flammable products**
4. Transporting and storing bottles	4.a Explosion	• Store canisters in an upright and secured position in a stand • Keep gases canisters secured and separate while transporting • Do not tamper with any gauges or other parts of the canisters

Doc #	Version	Creation Date	Last Revision
006 HA JSA-Adding Lead Rod with Rod Handler	1	10.10.2014	29.12.2014

ADDING LEAD ROD WITH ROD HANDLER

JSA INFORMATION

Job Title:	Location:	JSA No.:
Adding Lead Rod with Rod Handler	**Surface Coring**	**JSA 006-Adding Lead Rod with Rod Handler**

Equipment Required:	Supervisor:
TRUCK, TRAILER, DRILL RIG, TOOLING MATERIALS & SUPPORT EQUIPMENT	

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	▩ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Pick up the lead rod	a. Struck by rod that is being picked up, it may kick back if the gripper is not perfectly parallel	i. Place the hand of the rod handler parallel to the lead rod in the comb ii. Advance with caution towards the rod. iii. Close the hand on the lead rod ***Note***: Use the elbow of the rod handler to adjust the rod handler only as needed
2. Remove the lead rod from the comb	a. Struck by or contact with the rods that are being moved with the rod handler b. Crush injuries between equipment and the rod handler	i. Raise the lead rod approximately 1 foot off the ground ii. Remove the lead rod from the comb by moving the arm rearward until it clears the comb iii. Move the lead rod sideways towards the feed frame
3. Align the lead rod with the drill string	a. Struck by or contact with the rods that are being moved with the rod handler b. Pinch points between the pin and the box	i. Tilt the lead rod parallel to the drill string using the wrist ii. Raise the lead rod so that it clears the head using rollers iii. Lower the lead rod with caution to the pin thread and in-line with the box thread
4. Remove the rod handler		i. Release the hand from the lead rod ii. Retract the rod handler from the lead rod iii. Reposition the rod handler lined up with the next rod to be picked up ***Note***: The rod handler is always stored above the rod handler controls in the drilling operation.

Doc #	Version	Creation Date	Last Revision
007 HA JSA-Removing Rod with Rod Handler	1	10.10.2014	29.12.2014

REMOVING ROD WITH ROD HANDLER

JSA INFORMATION

Job Title:	Location:	JSA No.:
Removing Rod with Rod Handler	**Surface Coring**	**JSA 007-Removing Rod with Rod Handler**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	▩ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Pick up the rod		i. Place head parallel to the rod above the head ii. Advance with caution towards the rod using the arm iii. Wait for the driller to unscrew the rod with the chuck iv. Close the hand on the rod v. Wait for the driller to lower the head to clear the joint ***Note:*** Use the elbow to adjust the rod handler, only if needed
2. Remove the rod from above the head	a. Struck by or contact with the rods that are being moved with the rod handler b. Crush injuries between equipment and the rod handler	i. Raise the rod with the rollers so that it clears the head ii. Move the rod away from the feed frame iii. Move the rod sideways to besides the comb iv. Lower the rod so that it is approximately 1 foot off the ground. v. Adjust the tilt of the rod
3. Return the rod to the comb	a. Struck by or contact with the rods that are being moved with the rod handler	i. Move the rod rearward with the arm so that it clears the comb ii. Move the rod in line with the appropriate gap between the teeth iii. Advance the rod iv. Lower the rod with the rollers so that is touches the floor
4. Remove the rod handler		i. Release the hand from the rod ii. Retract the rod handler from the rod iii. Reposition the rod handler in line with the next rod to be picked up during the pulling operation ***Note***: The rod handler is always stored above the rod handler controls in the drilling operation.

Doc #	Version	Creation Date	Last Revision
008 HA JSA-Pick up Rod from Floor with Rod Handler	1	10.10.2014	23.11.2014

PICK UP ROD FROM FLOOR WITH ROD HANDLER

JSA INFORMATION

Job Title:	Location:	JSA No.:
Pick up Rod from Floor with Rod Handler	**Surface Coring**	**JSA 008-Pick up Rod from Floor with Rod Handler**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	■ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Pick up the rod	a. Pinch points between rod handler and rod	***Note***: prior to start complete the pre-use inspection. Note and deficiencies and attend to these as soon as possible. i. Line up the rod handler horizontal with the rod to be picked up ii. Rotate arm using the elbow joint to vertical position iii. Advance with caution towards the rod iv. Adjust the wrist to position the hand parallel to the rod v. Close the hand on the rod
2. Turn the rod to vertical	a. Struck by or contact with the rods that are being moved with the rod handler b. Crush injuries between equipment and the rod handler	i. Lift the rod up off the floor ii. Engage the elbow, bringing the rod handler to a horizontal position iii. Adjust the position of the rod with the roller when necessary, ensure adequate clearance at all times iv. Consult "Lowering Rods with Rod Handler" for placing the rod in the head or "Pulling Rods with Rod Handler" for placing the rod in the comb.

Doc #	Version	Creation Date	Last Revision
009 HA JSA-Lowering Rod to Floor with Rod Handler	1	10.10.2014	29.12.2014

LOWERING ROD TO FLOOR WITH ROD HANDLER

JSA INFORMATION

Job Title:	Location:	JSA No.:
Lowering Rod to Floor with Rod Handler	**Surface Coring**	**JSA 009 - Lowering Rod to Floor with Rod Handler**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	■ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Bringing rod to horizontal position	a. Pinch points when placing and adjusting the rod	***Note***: Consult with "Pulling Rod with Rod Handler" for pulling the rod with the rod handler i. Position the rod between the feed frame and the comb ii. Engage the elbow joint, until the rod is parallel with the shack floor iii. Adjust the position of the rod with the rollers when required for adequate clearance iv. Lower the rod until it is in contact with the floor
2. Release the rod	a. Struck by or contact with the rods that are being moved with the rod handler b. Crush injuries between equipment and the rod handler	i. Release the hand from the rod ii. Retract the rod handler from the rod iii. Engage the elbow to return the rod handler to the horizontal position. iv. Reposition the rod handler as per requirements ***Notes:*** The rod handler is always stored above the rod handler controls in drilling operations.

Doc #	Version	Creation Date	Last Revision
010 HA JSA–Adding a Rod with Rod Handler	1	10.10.2014	29.12.2014

ADDING A ROD WITH ROD HANDLER

JSA INFORMATION

Job Title:	Location:	JSA No.:
Adding a Rod with Rod Handler	**Surface Coring**	**JSA 010 – Adding a Rod with Rod Handler**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	■ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Complete drill run.	a. Exposure to the water burst if the water pressure is not released b. Struck by rod if the clamp is not engaged properly and drops the rod c. Struck by or contact with rod if the hydraulic chuck is not positioned properly above the joint, the foot clamp could bind	i. Raise the head until the joint is visible. The joint should be centered between the head and the foot clamp ii. Engage the foot clamp in the closed position iii. Engage the reverse rotation of the head to break the rod joint iv. Lower the head past the broken joint to the rod already anchored in the foot clamp v. Use the rod handler to pick up the rod above the head and then position the rod to allow another rod to be added
2. Prepare new rod and add to drill string.	a. Overexertion or manual lifting back injuries if proper lifting techniques not used b. Struck by a dropped rod when handling	i. Grease the threads of the rod in the rod handler ii. Bring the rod to be added into the drill shack iii. Refer to “Pick up Rod from Floor with Rod Handler”
3. Tighten the rod	a. Struck by dropped rod when handling b. Crush injuries when moving rod c. Pinch points when tightening rods	i. Align the threads and tighten by hand until snug ii. Utilize the rod handler to bring the rod to the drill string

Doc #	Version	Creation Date	Last Revision
011 HA JSA–Adding Rod with Brea out Arm	1	07.12.2015	07.12.2015

ADDING ROD WITH BREAK OUT ARM

JSA INFORMATION

Job Title:	Location:	JSA No.:
Pulling Rod with Break-out Arm	**Surface Coring**	**JSA 011-Adding Rod with Break Out Arm**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▨ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▨ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▨ Long Sleeve Shirt HiVis
Other:	▨ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Remove rod from rod rack	a. Lifting injuries b. Pinch points c. Slip trip and falls	i. Use proper lifting technique when lifting rod from rod rack ii. Use two hands when removing the rod from the secured position iii. Place rod on shoulder and walk back to drill rig iv. Ensure all trip hazards have been removed or marked.
2. Open Guard	1. Pinch point	i. The helper will open secondary guard first ii. The driller will then raise primary guard to the elevated resting position.
3. Adding rod	a. Pinch points b. Crush injuries between the rod and drill c. Slip trips and falls	i. Once it's in the proper position, using two hands, attach the rod to the water swivel ii. Ensure that the rod string is being held properly with clamping jaws. iii. Rotate the rod by hand until minimum of 2 threads are secured between the rod and water swivel
a. Closing guard	a. Struck or contact with primary guard being lowered into place b. Pinch points	i. Once all personnel are standing clear of rod, driller lowers the primary guard into position ii. The helper closes the secondary guard
b. Adding rod to string	a. Pinch points	i. Raise the drill head (with rod attached to water swivel) until it is above the break out arm ii. Helper opens the secondary guard and driller raises primary guard iii. Have helper to help guide rod to align with string in the ground. iv. Close the guard and slowly rotate head to attach rod to string.

Doc #	Version	Creation Date	Last Revision
012 HA JSA- Removing Rod with Break-Out Arm	1	07.12.2015	07.12.2015

PULLING ROD WITH BREAK-OUT ARM

JSA INFORMATION

Job Title:	Location:	JSA No.:
Removing Rod with Break-out Arm	**Surface Coring**	**JSA 012-Removing Rod with Break-out Arm**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	▩ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Raise the rod	a. Pinch point	i. Ensure that the guards are closed ii. Raise the rods with the head (rods attached to water swivel) until the joint is slightly above the clamping jaws iii. Close the clamping jaws, securing the rod string
2. Open Guard	a. Pinch point	i. The helper will open secondary guard first ii. The driller will then raise primary guard to the elevated resting position.
3. Breaking Rod	a. Pinch point b. Stuck by rod c. Crush injuries d. Slip trip and fall	i. Using the break out wrench, turn the rod twice, breaking the joint ii. Replace the wrench in the holding position
4. Closing guard	a. Struck or contact with primary guard being lowered into place b. Pinch points	i. Once all personnel are standing clear of rod, driller lowers the primary guard into position ii. The helper closes the secondary guard
5. Removing rod from string	a. Pinch points	i. Reverse the rod rotation with the head until only 2 threads are left ii. Helper will open secondary guard and helper will raise primary guard iii. Raise the hammer from the cradle iv. Secure a 36” pipe wrench between the tower and the rod (wrench is attached to the rod) v. Driller lowers the primary guard and helper closes the secondary guard vi. Reverse the head rotation until the water swivel is free from the rod string. vii. Helper raises the primary guard and helper opens the secondary guard viii. Remove the 36” pipe wrench and replace the hammer in the cradle ix. Spin the remaining threads on the rod until rod can be removed from string
6. Returning rod to rod rack	a. Pinch point b. Lifting injuries c. Slip trip and falls	i. With two hands lift rod back onto shoulder ii. Ensure all trip hazards have been eliminated or marked iii. Return rod to the rod rack, watch footing iv. Using both hands replace the rod to secure position in the rod rack v. Ensure proper housekeeping is maintained at all time

Doc #	Version	Creation Date	Last Revision
013 HA JSA-Auger Drilling	1	09.12.2015	

AUGER DRILLING

JSA INFORMATION

Job Title:	Location:	JSA No.:
Auger Drilling		**JSA 013 – Auger Drilling**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▨ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▨ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▨ Long Sleeve Shirt HiVis
Other:	▨ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Lock out-Tag out of Clutch Lever	a. Pinch point b. Accidentally putting clutch in gear	i. Ensure that the transmission is in neutral position ii. Following the proper procedure, the driller will place his red lock on the clutch lever latch
2. Open Guard	a. Pinch point	i. The clutch lever must be locked out before opening the guard ii. The helper will open secondary guard first iii. The driller will then raise primary guard to the elevated resting position.
3. Prepare the Starting Auger	a. Pinch point b. Lifting injuries	i. Using both hands place the auger puller on the top of the auger drive cap ii. Ensure that starting auger is properly assembled and placed in the staging area iii. When moving and assembling the starting auger always use proper lifting techniques
4. Lifting Starting Auger into place	a. Crush injuries b. Stuck by auger c. Crush injuries d. Slip trip and fall	i. Using the heavy winch cable, Hook the safety swivel latch hook to the auger ii. Have all additional personnel move to the designated area iii. After receiving the ok signal from the helper, the drill slowly picks up the starting auger with the heavy winch. iv. The auger is only lifter enough to s skim the ground with guidance from the helper v. All trip hazards must be removed from the travel path of the auger.
5. Attaching the Extension Auger to the Starting Auger	a. Lifting injuries b. Crush injuries c. Pinch points	i. Once the auger in place remove the safety swivel latch hook ii. The helper will steady the starting auger by placing flat hands on each side of the auger while the driller attaches the extension collar to the auger iii. The helper should always wear Hi-Vis gloves to ensure his hands are visible to the driller
6. Attaching the Starting Auger to the Drill Head	a. Pinch points b. Crush injuries	i. Once given the ready signal from the helper, the driller with slowly raise the drill head and line it up the extension collar with the auger pin. ii. Once given the signal from the helper, slowly lower the drill head until the collar and pin are connected Helper must ensure that: – Hands are well clear of the top of the auger.

		– Must wear Hi-Vis gloves at all time – Maintain constant and active communication with the driller iii. No loose, ill-fitting or torn clothing is permitted to be worn around the drill iv. Helper will move to designated area v. Driller will attach the collar and pin together
7. Aligning the Auger with the Hole Location	a. Pinch point	i. Using the drill head, the driller will slightly raise the auger and align it with the pre-determined hole location
8. Close Guard	a. Pinch Point	i. The driller will lower the primary guard back into place ii. The helper will close the secondary guard
9. Remove Lock-out/Tag-out from Clutch Lever		i. Following the proper procedure, the driller will remove his red lock form the clutch lever latch
10. Starting the Auger Hole	a. Rotating parts b. Pinch points	i. Ensure that the guard has been lowered and closed ii. With the transmission in low gear and engine on low RPM, apply adequate pressure to push down hollow stem auger 6”-8” into the soil iii. Ensure that all personnel and any equipment are well clear of the auger iv. Slowly engage the clutch and start the rotations, slowly increase the throttle to the appropriate speed

Doc #	Version	Creation Date	Last Revision
014 HA JSA-Pulling Augers	1	09.12.2015	

PULLING AUGERS

JSA INFORMATION

Job Title:	Location:	JSA No.:
Pulling Augers		**JSA 014 – Pulling Augers**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▨ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▨ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▨ Long Sleeve Shirt HiVis
Other:	▨ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Lock out-Tag out of Clutch Lever	a. Pinch point b. Accidentally putting clutch in gear	i. Ensure that the transmission is in neutral position ii. Following the proper procedure, the driller will place his red lock on the clutch lever latch
2. Open Guard	a. Pinch point	i. Make sure that the clutch lever is locked out before opening guard ii. The helper will open secondary guard first iii. The driller will then raise primary guard to the elevated resting position.
3. Prepare Auger for Pulling	a. Pinch point b. Lifting injuries	i. Using both hands place the auger puller on the top of the auger and attach it with drive pins ii. Using the heaving winch cable, secure the safety hook on the auger puller
4. Close Guard	a. Pinch Point	i. The driller will lower the primary guard back into place ii. The helper will close the secondary guard
5. Lifting Auger String	a. Crush injuries b. Stuck by auger c. Crush injuries d. Slip trip and fall	i. All personnel move to designated area ii. When driller is given the signal from the helper, the driller will increase the throttle accordingly to lift augers using the large winch iii. Pull auger string up until the joint is 10”-12” above the ground.
6. Open Guard	b. Pinch point	iv. The helper will open secondary guard first v. The driller will then raise primary guard to the elevated resting position.
7. Breaking the Auger String	a. Lifting injuries b. Crush injuries c. Pinch points	i. Place the auger fork as close to the ground as possible and lower than the break between the augers. ii. Disassemble the auger string by removing the drive pins
8. Removing the Auger from the string	a. Pinch points b. Crush injuries c. Lifting injuries d. Slip trip and fall	i. Remove the auger puller from the top auger by removing the drive pins ii. Using both hands and proper lifting techniques lift the auger from the string iii. Replace the auger on the rack in the staging area iv. All trip hazards must be removed from the path of travel to the staging area v. Repeat steps 3 through 8 until the last auger is pulled from the hole

Doc #	Version	Creation Date	Last Revision
015 HA JSA-Adding Auger	1	09.12.2015	

ADDING AUGER

JSA INFORMATION

Job Title:	Location:	JSA No.:
Adding Auger		**JSA 015 – Adding Auger**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▨ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	☐ Fire Protection
■ Safety Glasses	▨ Safety Vest	☐ Fall Protection
■ Hearing Protection	■ Steel Toed Boots	▨ Long Sleeve Shirt HiVis
Other:	▨ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Lock out-Tag out of Clutch Lever	a. Pinch point b. Accidentally putting clutch in gear	i. Ensure that the transmission is in neutral position ii. Following the proper procedure, the driller will place his red lock on the clutch lever latch
2. Open Guard	a. Pinch point	i. Make sure that the clutch lever is locked out before opening guard ii. The helper will open secondary guard first iii. The driller will then raise primary guard to the elevated resting position.
3. Prepare for Adding Auger	a. Pinch point b. Lifting injuries	i. Remove the pins from the drive extension and auger ii. Helper moves to designated area iii. Raise the drill head until separated from the auger
4. Add Auger	a. Crush injuries b. Pinch Points c. Slip trip and fall	i. Using both hands and proper lifting technique take auger from the staging area ii. Make sure that all trip hazards have been eliminated from the travel path between the staging area and the drill iii. Place auger on top of auger string making sure that the auger flights align (holes) iv. Secure the auger in place using drive pins
5. Attaching Auger to Drive Extension	a. Pinch points b. Crush Injuries	i. Once given the signal from the helper, driller slowly lowers the drive extension on to the new auger Helper must ensure that: a. Hands are well clear of the top of the auger, stabilizing auger with flat hands on each side of auger b. Must wear Hi-Vis gloves at all time c. Maintain constant and active communication with the driller ii. No loose, ill-fitting or torn clothing is permitted to be worn around the drill iii. Secure the drive extension to the auger with drive pins
6. Close the Guard	a. Pinch points	i. The driller will lower the primary guard into place ii. The helper will close the secondary guard
7. Removing Lock-out/Tag-out of Clutch Lever		i. Following the proper procedure, the driller will remove his lock from the clutch lever latch.

Doc #	Version	Creation Date	Last Revision
061 HA JSA-Using Tiger Torch	1	09.02.2016	

USING TIGER TORCHES

JSA INFORMATION

Job Title:	Location:	JSA No.:
Using Tiger Torches		**JSA 016 – Using Tiger Torches**

Equipment Required:	Supervisor:

Personal Protective Equipment: ☐ **Not Required** ▩ **As Needed** ■ **Required**

■ Hard Hat	■ Gloves	▩ Fire Protection
■ Safety Glasses	▩ Safety Vest	☐ Fall Protection
▩ Hearing Protection	■ Steel Toed Boots	▩ Long Sleeve Shirt HiVis
Other:	▩ Coveralls	

BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION
1. Setting up the Tiger Torch	a. Gas leak b. Explosion	i. Always wear proper PPE ii. Use only approved propane tanks iii. Connect the hose from the torch to the regulator on the propane cylinder or tank. iv. Open the shut-off valve on the propane tank and check for any leaks at the joints and fittings
2. Lighting the Tiger Torch	a. Burns b. Explosion	i. Only use tiger torch in properly ventilated area ii. Light tiger torch using proper striker iii. Ensure no flammable are in the area
3. Using Tiger Torch	a. Burns b. Equipment damage	i. Only use as directed ii. Always use at safe distance from equipment iii. Never leave lit tiger torch unattended iv. When done using the tiger torch always turn off and shut off propane

FOREMAN FORMS SECTION

Table of Content

Doc #	Version	Creation Date	Last Revision
003 FF-Modified Work Plan	1	08.15.2014	29.12.2014

MODIFIED WORK OFFER

Attention: Worker's Compensation/Case Manager or Disability Insurer

Date:	Name:
Project:	Date of Injury:
Contact Phone:	Claim No.:
Contact Fax:	Employee No.:

Please be advised that the above employee, who sustained a _____ has been placed on modified work as of _____.

In keeping with our policy to offer modified employment for employees unable to perform their regular duties, we are offering the following **Modified Work Duties.**

We will continually review your progress and adjust the length of this placement as required, based on relevant medical information. Your rate of pay will/will not remain at its pre-incident rate.

During this modified work plan, your work will be supervised by _____.

If you have any questions, concerns or difficulties, please notify your supervisor or head office (902.639.2311) immediately.

ACKNOWLEDGEMENT		
☐ **Offer Accepted**	☐ **Offer Declined**, *refusal could affect your rights to collect benefits*	
Employee Name print	Employee Signature	Date
Foreman Name print	Foreman Signature	Date
Management Name print	Management Signature	Date

Doc #	Version	Creation Date	Last Revision
004 FF-Modified Work Offer	1	08.15.2014	29.12.2014

MODIFIED WORK PLAN

Logan Drilling Group offers an employee modified duty program to assist in the rehabilitation of injured employees to accommodate a worker's injury. As such we ask for your cooperation in completing the following form.

TO BE COMPLETED IN CONSULTATION WITH ATTENDING PHYSICIAN

Name of Employee	Occupational Injury YES NO	Number of days to recover
Employee may return to work on:_____ ☐ Regular Duty	Employee may return to worn on : _____ ☐ Light/Modified Duties, for _____ days	

WORK RESTRICTIONS (if any)

COMMENTS

Employee has been referred to _____ for additional treatment. *(name of physician)*	☐ Not Applicable

Signage		
Physician Name	Physician Signature (If applicable)	Date
Logan Drilling Group Management Name	Logan Drilling Group Signature	Date

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed the daily report mailing list.

The original is to in the Employee's Personal File.

DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
005 FF-Disciplinary Violation Form	1	08.15.2014	29.12.2014

DISCIPLINARY VIOLATION FORM

Employee Name	Location	Drill Rig #	Date

☐ Verbal Warning ☐ Written Warning ☐ Suspension ☐ Dismissal

Violation: ☐ Disciplinary ☐ PPE ☐ Drug & Alcohol

Description of Violation:

_____
_____
_____
_____
_____
_____
_____

Actions Taken:

_____
_____
_____
_____
_____

ACKNOWLEDGEMENT		
By signing bellow, I acknowledge and understand the disciplinary violation and actions taken.		
Employee Printed Name	Employee Signature	Date
Foreman Printed Name	Foreman Signature	Date
Logan Drilling Group Management Name	Logan Drilling Group Management Signature	Date

DIRECTIONS

This form is to be completed fully and returned to the Logan Drilling Group Head Office Management.
The original is to remain on the Employees' Personal File.

DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
007 FF-Toolbox Meeting	1	08.18.2014	21.10.2014

TOOLBOX MEETING

Toolbox Meeting

Date	Drill Rig #	Weather
Safety Supervisor	Location	Meeting Conducting By

Attendance

Name (please print)	Signature

Review Concerns of Hazards of Previous Meeting
Topic of Discussion
Key Points
Concerns Raised
Actions to be Taken & by Who

Post Copy. Original stored in project documentation and returned at the end of the project

Geotechnical Engineer Signature: _____ Date: _____
Safety Supervisor Signature: _____ Date: _____
Safety Manager Signature: _____ Date: _____
Driller Signature: _____ Date: _____

Doc #	Version	Creation Date	Last Revision
008 FF-Weekly Safety Meeting	1	08.18.2014	29.12.2014

WEEKLY SAFETY MEETING

GENERAL INFORMATION

Name of Project	Drill Rig #	Model/Type of Drill	Crew Shift □ Day Shift □ Night Shift
Conducted By	Location	Date	Time

ATTENDEES'

NAME	SIGNATURE

REVIEW OF LAST WEEK'S SAFETY DISCUSSIONS

TOPIC(S) OF DISCUSSION	RESPONSIBILITY OF	REMEDIAL ACTION(S) TAKEN

SAFETY DISCUSSIONS

TOPIC(S) OF DISCUSSION	RESPONSIBILITY OF	REMEDIAL ACTION(S) TO BE COMPLETED

Post Copy. Original stored in project documentation and returned at the end of the project

Geotechnical Engineer Signature: _____ Date: _____
Safety Supervisor Signature: _____ Date: _____
Safety Manager Signature: _____ Date: _____
Driller Signature: _____ Date: _____

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head office via fax or scanned and emailed to the Safety Manager eleblanc@logandrillinggroup.com

The original is to remain at the project site to support safety documentation and filed in the Foreman Field Binder, upon completion of the contract originals are to be sent back to the Head Office.

DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
010 FF-Action Follow Up	1	09.15.2014	29.12.2014

ACTION FOLLOW UP

DETAILS

☐ Weekly Inspection/Meeting ☐ Monthly Inspection ☐ JOHS Meeting Other:_____ Date

ITEM NO.	HAZARD	ACTION	COMPLETED BY	PROJECTED COMPLETION DATE	COMPLETED DATE

Doc #	Version	Creation Date	Last Revision
018 SF- Work Order Form	1	14.01.2015	14.01.2015

WORK ORDER FORM

Work Order # _____

AUTHORIZATION:_____ Order Date: _____

DESCRIPTION OF EQUIPMENT: _____

_____

KM: _____ HOURS: _____

REPORTED BY: _____

EQUIPMENT PROBLEMS: _____

_____

MATERIALS:

	QTY	PART #	DESCRIPTION
Estimated Repair Time: Hours			
WORK COMPLETED:			
Actual Repair Time: Hours			

Date Completed: _____ Supervisor: _____

Mechanic:

Doc #	Version	Creation Date	Last Revision
019 FF-Shop Toolbox Meeting	1	26.02.2015	26.02.2015

SHOP TOOLBOX MEETING

Toolbox Meeting

Date	Project	
Safety Supervisor	Location	Number Attending

Inspect crew personal protective equipment

☐ Hardhat ☐ Hardhat Liner, ☐ Safety Glasses, ☐ Safety Footwear, ☐ Special PPE,

Attendance

Name (please print)	Signature

Weekly Safety Topic
Review of Previous Meeting Minutes
Incidents/Accidents Reviewed
Other Topics
Actions to be Taken & by Who

Post Copy. Original stored in project documentation and returned at the end of the project

Doc #	Version	Creation Date	Last Revision
SF-Weekly Drill & Site Inspection	1	08.21.2014	

DRILL & SITE SAFETY INSPECTION

INSPECTION TO BE CARRIED OUT ON A WEEKLY BASIS.
Comment section is to indicate corrective actions and whom shall be carrying out task.

GENERAL INFORMATION

Contract Name	Drill Rig #	Model/Type of Drill
Location	Inspector	Date of Inspection
Driller Name	Driller Helper Name	Other
Name of Safety Supervisor	Support Equipment	

Is the equipment in safe operating condition AND work environment safe?
□ Yes □ No - **IMMEDIATELY SHUT DOWN DRILL**

DOCUMENTATION

		COMMENTS
Are Logan Drilling Group Health & Safety Program binder made available to Employees?	□ Yes □ No	
Are Logan Drilling Group Safe Work Procedures (SOPs) readily available for employees to review?	□ Yes □ No	
Are MSDS readily available of ALL chemicals being used onsite?	□ Yes □ No	
Is there a Logan Drilling Group employee available on each rig as a Health & Safety Representative? List name.	□ Yes □ No	

TRAINING

		COMMENTS
Have all crew members received full site specific orientation for this site or contract?	□ Yes □ No	
Have all crew members received equipment specific training?	□ Yes □ No	
Have all crew members received WHMIS training?	□ Yes □ No	
Have all crew members been trained in First Aid and CPR?	□ Yes □ No	
Have all crew members received Fall Arrest Training	□ Yes □ No	
Have all crew members received specialized training? Please list.	□ Yes □ No	

EMERGENCY ACTION PLAN

		COMMENTS
Is the Logan Drilling Group Emergency Preparedness Information Posted?	□ Yes □ No	
Have all the appropriate medical facilities been established or identified?	□ Yes □ No	
Are there reliable communication sources on site with spare batteries or other back up power supply?	□ Yes □ No	

DRILL & SITE SAFETY INSPECTION

Are all employees' aware of proper incident/accident procedures and reporting?	□ Yes □ No	
Is there a properly equipped first aid kit onsite? Is this kit receiving regular inspection and inventory?	□ Yes □ No	
Are there emergency blankets, survival kit and an adequate supply of clean drinking water available onsite?	□ Yes □ No	

PERSONAL PROTECTIVE EQUIPMENT		COMMENTS
Are all employees' wearing approved hard hats (type 2 class E)?	□ Yes □ No	
Are all employees' wearing approved safety glasses?	□ Yes □ No	
Is additional eye protection available if needed?	□ Yes □ No	
Are employees' wearing adequate, snug fitting, HiVis clothing or coveralls?	□ Yes □ No	
Are employees' wearing approved steel-toed boots (min. 6" ankle protection)?	□ Yes □ No	
Are employees' wearing approved hearing protection?	□ Yes □ No	
Are employees' wearing appropriate gloves?	□ Yes □ No	
Are other Personal Protective Equipment means being utilized as necessary and appropriate?	□ Yes □ No	

SAFETY EQUIPMENT		COMMENTS
Are all hazardous conditions monitoring equipment in place?	□ Yes □ No	
Are emergency shutdown devices in good working order?	□ Yes □ No	
Do all employees' know the location of Lock-out-Tag-out devices and materials?	□ Yes □ No	

FALL ARREST		COMMENTS
Are harnesses in good condition and inspected on a regular basis?	□ Yes □ No	
Are all personnel aware of proper incident/accident prevention procedures?	□ Yes □ No	
Are lanyards in good condition, and inspected on a regular basis?	□ Yes □ No	
Is there more than one secure way up the tower?	□ Yes □ No	

STORAGE - FUEL CACHE & HAZARDOUS MATERIALS		COMMENTS
Is fuel being stored away from the drill as per local legislation?	□ Yes □ No	
Are all fuel containers labelled properly?	□ Yes □ No	

Have spill prevention and containment procedures been addressed?	□ Yes □ No	
Is there appropriate warning signage visibly posted?	□ Yes □ No	
Are appropriate fire extinguishers located near the storage areas?	□ Yes □ No	
Are safety fuel cans being used, properly stored and transported?	□ Yes □ No	
Is a NO SMOKING policy posted and being followed near fuel usage?	□ Yes □ No	
Are propane tanks stored and transported properly as per Logan Drilling Group Hazard Materials section?	□ Yes □ No	
Are propane tanks properly labelled?	□ Yes □ No	
Is there a NO SMOKING policy posted and being followed near propane usage?	□ Yes □ No	
Are all containers, bags, etc. being properly stored and labelled?	□ Yes □ No	

WORK ENVIRONMENT		COMMENTS
Is the drill work site well defined? (site perimeter)	□ Yes □ No	
Have site requirements been posted at the entrance to site?	□ Yes □ No	
Has a pre-shift inspection been reviewed by the helper?	□ Yes □ No	
Are routine monthly inspections being completed?	□ Yes □ No	
Are the drill rig and equipment clean?	□ Yes □ No	
Is the work area clean and organized?	□ Yes □ No	
Is the NO-SMOKING policy being observed around and inside the drill?	□ Yes □ No	
Are containers, change rooms etc. clean?	□ Yes □ No	
Is the jobsite adequately lit?	□ Yes □ No	
Are there guards on light bulbs?	□ Yes □ No	
If generators are used, are they in safe operating condition?	□ Yes □ No	
Are generators or light plants properly grounded? (Proper/safe wiring free of breaks, frays, tape etc)	□ Yes □ No	

WORK ENVIRONMENT		COMMENTS
Are jobsite noise levels acceptable with hearing protection?	□ Yes □ No	
Spill containers and/or absorbent material in place as needed?	□ Yes □ No	

Is barricade tape, signs, rails in place around holes, stumps and other obstacles that could pose a Slip, Trip & Fall hazard?	□ Yes □ No	

DRILL EQUIPMENT

		COMMENTS
Is a high standard of preventative maintenance being performed?	□ Yes □ No	
Is all equipment properly guarded?	□ Yes □ No	
Is rotation barrier being used?	□ Yes □ No	
Are proper ladders provided for accessing deck, mast, etc?	□ Yes □ No	
Where applicable, have appropriate railings been installed?	□ Yes □ No	
Are tools clean and in proper working order?	□ Yes □ No	
Are wire-ropes (cables) in good condition?	□ Yes □ No	
Are hydraulic hoses in good condition?	□ Yes □ No	
Are foot clamps in good condition?	□ Yes □ No	
Are break-out tools readily available?	□ Yes □ No	
Has the drill been setup properly, including nuts, bolts and pins?	□ Yes □ No	
Have all slip trip and fall hazards been eliminated and flagged?	□ Yes □ No	
Have all containers (fuel tanks, hydraulic tanks, etc) been labeled?	□ Yes □ No	

WASTE MANAGEMENT

		COMMENTS
Are there any signs of leaking equipment?	□ Yes □ No □ n/a	
Are oily rags stored in a receptacle with a lid?	□ Yes □ No □ n/a	
Are clean absorbent pads readily available if needed?	□ Yes □ No □ n/a	
Are waste oils, used absorbent matting and rags being removed from site regularly and properly disposed of?	□ Yes □ No □ n/a	
Is all debris and garbage picked up from each drill site and properly disposed of?	□ Yes □ No □ n/a	

DRILL & SITE SAFETY INSPECTION

VEHICLES (TRUCKS, ATVS, SKIDOOS, SKIDDERS, ETC.)		COMMENTS
Has a pre-shift inspection been completed?	□ Yes □ No	
Vehicle parked with blade down?	□ Yes □ No □ n/a	
Are back-up alarms installed and in good operating condition?	□ Yes □ No	
Are seatbelts in good standing?	□ Yes □ No	
Are all vehicles equipped with an adequate first aid kit?	□ Yes □ No	
Are vehicles equipped with fire extinguishers?	□ Yes □ No	
In winter months, are vehicles equipped with an adequate survival kit?	□ Yes □ No □ n/a	
Is the NO-SMOKING policy being observed inside/on all vehicles?	□ Yes □ No	

PUMP		COMMENTS
Is fuel being stored properly?	□ Yes □ No	
Are appropriate fire extinguishers being kept at the pump?	□ Yes □ No	
Are spill containers and/or absorbent materials readily accessible at the pump?	□ Yes □ No	
Does the pump appear in good condition?	□ Yes □ No	

OVERALL OBSERVANCE QUESTIONS		COMMENTS
Does overall crew morale appear to be high?	□ Yes □ No	
Do crew members appear to be physically and mentally capable for the work at hand?	□ Yes □ No	
Was the rig drilling upon arrival? If No, please explain why	□ Yes □ No	
What was the overall housekeeping status of this rig? □ Excellent □ Good □ Fair □ Poor		

SIGNATURES

Printed Name of Person Carrying out Inspection	Signature of Person Carrying out Inspection	Date
Report Forwarded to		Date

CORRECTIVE ACTIONS REQUIRED

SAFETY FORMS SECTION

Table of Content

Doc #	Version	Creation Date	Last Revision
001 SF-Drill Carrier Inspection	1	12.09.2014	29.12.2014

DRILL & CARRIER INSPECTION

GENERAL INFORMATION

Supervisor	Drill Rig #	Job #	Location	Date

The drill Carrier is to be inspected prior to use or when moving the drill. All items on the lists must be checked. Any item requiring maintenance or repair shall be marked and notes describing issue must be added. Issues shall be taken care of as soon as possible, if needed repairs will be done prior to the start of work. Any delays in maintenance/repair shall be noted in the comment section at the bottom of the form.

	Good	Repair		Good	Repair		Good	Repair
Back Up Beeper			Escape Hatch			Hydraulic Shut Off		
Back Up Lights			Fire Extinguisher			Jack Leg:		
Battery & Cables			First Aid Kit			Front		
Belts			Frame			Right		
Brake Fluid Level			Fuel Level			Left		
Clutch			Fuel Shut Off			Oil Level		
Control Lever			Gauges			Pedals		
Coolant Level			Glass			Tool Box		
Differential Fluid Level			Glass Hammer			Tracks/Tires		
Dome Light			Headlights			Water Tank		
Doors			Heater			Wipers		
Exhaust System			Hydraulic System					

The drill is to be inspected on daily basis prior to the start of shift/work. All items on the lists must be checked. Any item requiring maintenance or repair shall be marked and notes describing issue must be added. Issues shall be taken care of as soon as possible. If needed, repairs will be done prior to the start of work. Any delays in maintenance/repair shall be noted in the comment section at the bottom of the form

	Good	Repair		Good	Repair		Good	Repair
Auto Hammer			Fire Extinguisher			Main Winch Cable		
Battery			First Aid Kit			Moyno Pump		
Battery Cable			Fluid Shut Offs			Oil Level		
Bean Pump			Gauges			Pressure Relief Valves		
Bearings (greased)			Grab Hooks			Right Angle Drive		
Belts			Guards on all rotating/moving parts			Right Angle Drive Fluid Level		
Clutch			Hydraulic Fluid Level			Rotary Box		
Control Lever			Hydraulic System			Sheave Wheel		
Coolant Level			Kelly Bar			Small Winch Cable		
Emergency Shut Offs			Mast			Tower Lights		
Exhaust System						Wire Line Cable		

Notes/Comments

Doc #	Version	Creation Date	Last Revision
003 SF-Vehicle Incident Report	1	08.21.2014	29.12.2014

VEHICLE INCIDENT REPORT

**** Must be completed and submitted within 24 hours of occurrence****
****Please attach photographic documentation of the incident****

GENERAL INFORMATION

Employee Name		Supervisor
Job Location	Job/Rig #	Date

SCENE INFORMATION

Date of Incident	Time of Incident	Location

Were the Police/RCMP on the scene of the Accident? □ Yes □ No

If **Yes**, indicate the following: Department Name: _____

Contact Information: _____

Officer Name(s): _____

VEHICLE/DRIVER/PASSENGER INFORMATION

Make	Model	Year	Plate Number
Name of Driver	Job Title	Date of Hire	Driver's Licence No.

Address	City	Prov./Terr.	Postal Code

Name of Passenger (if applicable)	Job Title	Date of Hire	Reason of Accompany
Address	City	Prov./Terr.	Postal Code

Name of Passenger (if applicable)	Job Title	Date of Hire	Reason of Accompany
Address	City	Prov./Terr.	Postal Code

Was the vehicle being used on the job? □ Yes - What was the job task at hand _____

□ No - What was the purpose of use_____

Did the driver have permission to use the vehicle? □ Yes □ No
Who authorized use of the vehicle? _____ Date of Authorization: _____

Which part(s) of the vehicle are damaged?

Are estimates being obtained? □ Yes □ No (If No, what are your estimates of the total damage? $ _____ CND)

Were photos taken of the accident? □ Yes □ No (If Yes, ensure copies are accompanying this report)

Were there any other vehicles involved in the accident? □ Yes □ No (If Yes, complete the next section on the following page)

Doc #	Version	Creation Date	Last Revision
003 SF-Vehicle Incident Report	1	08.21.2014	29.12.2014

VEHICLE INCIDENT REPORT

OTHER VEHICLE/DRIVER/PASSENGER INFORMATION

If more than one vehicle involved attach extra pages

Make	Model	Year	Plate Number	Drivers License No.

Name of Driver	Home Phone	Work Phone	Cell Phone

Address	City	Prov./Terr.	Postal Code

Was the vehicle insured? □ Yes □ No	Name of Insurance Company	Address of Insurance Company	Policy Number

Is the vehicle driveable? □ Yes □ No	What damages occurred	Were there any environmental spillage? (Oil/Gas) □ Yes □ No

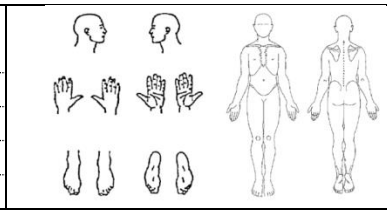
INJURIES

If more than one vehicle involved attach extra pages

First Name	Initial	Surname	Gender □ M □ F	Job Title

Injured Person Was □ CDI Employee □ In Company Vehicle □ In Other Vehicle	Loss of Impairment Details □ Fatality □ Injury

Describe the injury/illness in detail and indicate the affected body part(s) to the side



INJURY/ACCIDENT WITNESS STATEMENT

If more than one witness attach extra pages

First Name	Initial	Surname	Gender □ M □ F	Job Title

Address	City	Prov./Terr.	Postal Code

Statement Description

Print Name	Signature	Date

ENSURE THAT ALL APPLICABLE FORMS HAVE BEEN COMPLETED AND SUBMITTED TO THE WORKERS COMPENSATION BOARD

DIRECTIONS

This form is to be completed fully and forwarded to Logan Drilling Group Head office via fax or scanned and sent to the daily report distribution list.

The original is to remain at the project site to support safety documentation, upon completion of the project originals are to be sent back to the Logan Drilling Group office.

DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
005 SF-Accident Investigation Checklist	1	08.21.2014	29.12.2014

INCIDENT INVESTIGATION CHECKLIST

GENERAL INFORMATION

Investigated by	Drill Rig #	Model/Type of Drill
Location	Date of Investigation	Date of Accident/Incident

CHECKLIST

ACTION ITEMS	COMMENTS
☐ Immediate hazards were addressed or precautions have been taken to prevent additional accidents/incidents	
☐ Investigation has been completed by Investigation team and names/job titles listed on reports	
☐ Pictures and sketches have been taken of accident/incident scene	
☐ Witnesses have been identified and interviewed separately and statements documented on the Accident Incident Investigation	
☐ Injured persons interviewed separately (if applicable) and statements documented on the Accident Incident Investigation	
☐ Investigation team has met to complete report and all applicable documentation	
☐ Corrective actions determined and logged, all actions must be specific and include respective party and target date	
☐ Completed report distributed to appropriate parties	

DIRECTIONS

This form is to be completed fully and forwarded to Logan Drilling Group Head office via fax scanned and emailed to the daily report mailing list.

The original is to remain at the project site to support safety documentation and filed in the Safety file.

The original will be sent back to Logan Drilling Head Officeupon completion of the project or contract.

DATE RECEIVED STAMP

DAILY VEHICLE INSPECTION

Inspected by	Vehicle #	Date
Location	Odometer Start	Odometer End

Documentation

Yes No

- ☐ ☐ Manufacturer's handbook
- ☐ ☐ Vehicle registration
- ☐ ☐ MVI
- ☐ ☐ Vehicle insurance
- ☐ ☐ Vehicle incident report

Vehicle Interior

Yes No

- ☐ ☐ Heating/Air Conditioning
- ☐ ☐ Windshield defogging
- ☐ ☐ Windows operational
- ☐ ☐ Interior lights
- ☐ ☐ Seats in good condition
- ☐ ☐ No warning lights
- ☐ ☐ Interior of vehicle clean
- ☐ ☐ Seat belts operational

Vehicle Exterior

Yes No

- ☐ ☐ Oil level good
- ☐ ☐ Windshield washer fluid
- ☐ ☐ Windshield wipers
- ☐ ☐ Steering
- ☐ ☐ Emergency brake
- ☐ ☐ No oil/grease leaks
- ☐ ☐ Head lights/Back up lights
- ☐ ☐ Turn signals/Brake lights
- ☐ ☐ Horn
- ☐ ☐ Window, windshield & mirrors clear of cracks
- ☐ ☐ Exhaust system
- ☐ ☐ Tires & Lug nuts
- ☐ ☐ Spare tire in good condition
- ☐ ☐ Box of vehicle is clean
- ☐ ☐ Brakes Operational
- ☐ ☐ Suspension

Safety

Yes No

- ☐ ☐ Emergency roadside supplies
- ☐ ☐ Back-up alarm
- ☐ ☐ Buggy whip
- ☐ ☐ Fire Extinguisher
- ☐ ☐ Amber Light
- ☐ ☐ First Aid Kit
- ☐ ☐ Chain & Binders
- ☐ ☐ Tire Chocks

Comments:

Doc #	Version	Creation Date	Last Revision
008 SF-Daily Site Inspection	1	08.21.2014	21.10.2014

DAILY SITE INSPECTION

GENERAL INFORMATION

Inspected by	Drill Rig #	Location	Date
Client Name	Drill Type/Model	Safety Supervisor	
Support Equipment	Division	Weather	

HOUSEKEEPING

Are the Floors and entry ways clean and organized?	YES	NO	
Are the tools stored properly?	YES	NO	

PPE

Are all personnel wearing CSA approved steel toe boots?	YES	NO	
Are all personnel wearing CSA approved steel toe boot & metatarsal guard?	YES	NO	
Are all personnel wearing approved Hi-Vis clothing or coveralls?	YES	NO	
Are all personnel wearing CSA approved hard hat?	YES	NO	
Are all personnel wearing CSA approved Safety glasses?	YES	NO	
Are all personnel wearing approved hearing protection?	YES	NO	
Are all personnel wearing approved gloves?	YES	NO	

JOB ENVIRONMENT

Was the drill rig operational upon arrival?	YES	NO	
Is site perimeter and hazards marked with caution tape, barricades or pylons?	YES	NO	
Are the pre-use inspection performed for all equipment?	YES	NO	
Is there adequate parking area for support vehicles and equipment?	YES	NO	
Have all utility and/or other required clearances been completed?	YES	NO	
Is there any vehicle or pedestrian traffic close to site?	YES	NO	
Are generators or light plants properly grounded?	YES	NO	
Are guards on all light bulbs?	YES	NO	
Are ladders provided for accessing deck, mast etc.? Are they secured?	YES	NO	
Are appropriate railings installed?	YES	NO	
Is the rig set up properly?	YES	NO	
Is there a fall arrest system in place?	YES	NO	
Are waste containers clearly marked and emptied daily?	YES	NO	
Is appropriate signage in place?	YES	NO	

EMERGENCY PREPAREDNESS

Is emergency preparedness information posted? Are personnel aware?	YES	NO	
Is there proper access to the site?	YES	NO	
Is there a first aid kit of proper size that is properly stocked available?	YES	NO	
Is there a stretcher and emergency blanket available on site?	YES	NO	
Is there a reliable source on site (radio, cell phone, sat. phone)?	YES	NO	
Are appropriate medical facilities identified?	YES	NO	

FIREFIGHTING EQUIPMENT

Are fire extinguishers available for all equipment (drill, pump, vehicles)?	YES	NO	
Are fire extinguishers located within 12m of equipment?	YES	NO	
Are fire extinguishers fully charged and inspected monthly?	YES	NO	
Are fire extinguishers serviced annually? Are inspections current?	YES	NO	
Is other firefighting equipment available and clearly marked?	YES	NO	

ENVIRONMENT

Are all WHMIS labels properly displayed?	YES	NO	
Are only biodegradable drilling fluids used?	YES	NO	
Do all secondary containment hold 130% of the max. storage volume?	YES	NO	
Do all engines have full size drip pans lined with absorbent matting?	YES	NO	
Are approved Fuel/oil cans being used and properly stored in drip pans?	YES	NO	
Is fuel being stored away from the drill, as per legislation (min. 4 meters)?	YES	NO	
Are copies of the spill reporting procedure and phone #s available?	YES	NO	
Are spill kits available for all equipment (drill, pump, vehicles etc.)?	YES	NO	
Are spill kits of appropriate size and type?	YES	NO	
All pressurized cylinders properly secured and stored?	YES	NO	
Are all containers, fuel tanks and cans properly labeled?	YES	NO	

DOCUMENTATION

Is a copy of the Logan Drilling Group Safety Manual available?	YES	NO	
Is a MSDS available for all chemical product being used?	YES	NO	
Are copy of incident/emergency forms available (near miss, first aid)?	YES	NO	

NOTE: Some of these questions may be site specific and not applicable for all sites/drills

Doc #	Version	Creation Date	Last Revision
010 SF-First Aid Report	1	12.09.2014	29.12.2014

FIRST AID REPORT

GENERAL INFORMATION

Supervisor	Drill Rig #	Project
First Aider	Location	Date of Incident
Patient Name	Injured Areas	

Treatment Given:

Other Actions Taken:

First Aid Supplies Used:

First Aid Supplies to be replaced:

First Aider : _____ Date: _____

Patient: _____ Date: _____

**** Advise Site Supervisor of any incidents. ****

****Complete and submit Incident Report, attach any other supporting documents and First Aid Report****

DIRECTIONS

This form is to be completed fully and forwarded to the Logan Drilling Group Head Office or scanned and emailed the daily report mailing list.

The original is to remain at the project site to support safety documentation and filed in the ToolBox Talks binder, upon completion of the contract originals are to be sent back to the Head Office.

DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
011 SF-Incident Investigation Report	1	12.09.2014	11.16.2015

INCIDENT INVESTIGATION REPORT

WCB Ref. No. _____

Note: To be completed after an incident that results in injury, illness or loss of property
Incident Investigation Report shall be completed by Safety Supervisor for the job..

GENERAL INFORMATION

Supervisor	Drill Rig #	Project
Investigator	Location	Date

TYPE IF INCIDENT

Injury		Property Damage		Potential Lost	
A	First Aid	1	Equipment/Property Damage	1	Injury
M	Medical Attention (only)	2	Fire	2	Equipment/Property Damage
L	Lost Time (Hrs)	3	Loss to Process	3	Loss to Process
D	Lost Days	4	Environment	4	Environment
F	Fatal				

Describe Injury	Describe Loss	Describe Potential Loss
Location of incident:	Date Incident:	Date Reported:
	Time of Incident:	Time Reported:

DESCRIPTION OF INCIDENT (include what the person was doing, trying to do and anything unusual)
Is there a written method statement or safe work procedure for the job being performed? YES ☐ NO ☐ N/A ☐
Identify all equipment involved (including makes & models, size and/or weight where pertinent)

Witness Name	Witness Name	Witness Name
Number	Number	Number

Doc #	Version	Creation Date	Last Revision
011 SF-Incident Investigation Report	1	12.09.2014	11.16.2015

INCIDENT INVESTIGATION REPORT

Part A - Personal Information (*this section must be completed for each injured employee)*

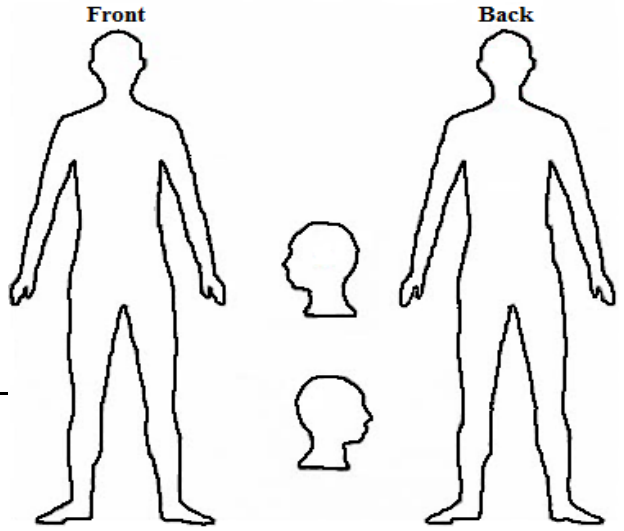
Name:				Male		Female	
Date of Birth:				Driller	Assistant		Other
Full Time		Contract					
Part Time		Other		Length of time in position:			

Part B - Injury (*this section must be completed for each injured employee)*

Type of Injuries

- ☐ Abrasion/ Scrapes
- ☐ Amputation
- ☐ Broken Bone
- ☐ Bruise
- ☐ Burn (heat)
- ☐ Burn (chemical)
- ☐ Concussion
- ☐ Crush Injury
- ☐ Cut/ Laceration
- ☐ Puncture
- ☐ Hernia
- ☐ Illness
- ☐ Sprain/Strain
- ☐ Other: _____
- ☐ Damage to Body System:

Part of Body injured



Name of attending physician	
Address of clinic or hospital	Phone

Part C - Detailed Description of Incident

Exact Location of Incident:			Date of Incident:				
When did the Incident occur:							
	Arriving or Leaving Work		During work period		During meal period		
	During break period		During overtime		Other:		
Was personal protective equipment (PPE) in use?				Yes		No	
List PPE in use:							

SKETCH

Include a sketch and photos of the incident

Part D –IMMEDIATE/DIRECT CAUSE OF INCIDENT

Check all that applies. For each item checked YES, explain in section bellow.

YES	NO	CODE	SUBSTANDARD ACTIONS	YES	NO	CODE	SUBSTANDARD CONDITIONS
		1	Operating equipment without authority			20	Inadequate guards or barrier
		2	Failure to warn			21	Inadequate group support
		3	Failure to secure/make safe			22	Inadequate/improper PPE
		4	Operating at improper speed			23	Defective tools/equipment/materials
		5	Making safety device/guard inoperable			24	Congestion or restricted action
		6	Removing safety device/guard			25	Inadequate warning system
		7	Using defective equipment			26	Fire and/or explosion hazards
		8	Using equipment improperly			27	Substandard housekeeping
		9	Failure to use PPE			28	Hazardous environmental conditions: gas, dust, smoke, fumes, vapors
		10	Improper loading			29	Noise exposure
		11	Improper placement			30	Radiation exposure
		12	Improper lifting			31	High or low temperature exposures
		13	Improper position for task			32	Inadequate ventilation
		14	Horseplay			33	Ground conditions (rocks)
		15	Influence of Drug/Alcohol			34	Inadequate or excessive lighting

INCIDENT INVESTIGATION REPORT

Code	How did the immediate/direct cause contribute to the incident?

PART E – BASIC/UNDERLYING CAUSES

Check all that applies. For each item checked YES, explain in section bellow.

YES	NO	CODE	PERSONAL FACTOR	YES	NO	CODE	JOB FACTORS
		40	Inadequate physical capability			50	Inadequate Leadership/supervision
		41	Lack of knowledge			51	Inadequate engineering
		42	Lack of skill			52	Inadequate purchasing
		43	Stress (mental/physical)			53	Inadequate maintenance
		44	Improper motivation			54	Inadequate tools/equipment
						55	Inadequate work standards
						56	Wear and tear
						57	Abuse or misuse

Immediate/Direct Code	Basic/Underlying Code	How does the immediate/direct cause stem from the basic/underlying cause?

PART F – CONTROLS

Basic/Underlying causes of incidents are the result of lack of controls. The lack of control in this incident was the result of (select all that applies)

Inadequate program/training		YES		NO
Inadequate program/training standard		YES		NO
Inadequate compliance to program/training standards		YES		NO

PART G – LOSS POTENTIAL

Probability of reoccurrence	Death, permanent total disability or property damage > $100 000	Lost time injury or property damage > $10 000 < $100 000	Medical aid injury only or property damage >$1 000 < $10 000	First Aid injury only or property damage < $ 1 000
Frequent	A	D	G	J
Occasional	B	E	H	K
Rare	C	F	I	L

PART H – ACTIONS TAKEN

Cause Code	What action has been taken to prevent similar incidents?	Responsibility

INCIDENT INVESTIGATION REPORT

PART I – ACTION TO BE TAKEN

Cause Code	What action is recommended to be taken to prevent and/or control similar incidents?	Responsibility	Date to be Completed	Date Completed

Investigation Team Members (if applicable)	Date of Investigation

REVIEW (office use only)

Health & Safety Manager		
Signature		Date
Management		
Signature		Date
Management		
Signature		Date
Management		
Signature		Date
Management		
Signature		Date
Management		
Signature		Date

DIRECTIONS

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DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
017 SF-First Aid Kit Inspection	1	19.09.2014	29.12.2014

FIRST AID KIT INSPECTION

GENERAL INFORMATION

Inspected by:	Drill Rig #	Location
	Date	First Aid Kit Number

Include detailed notes regarding any servicing, repairs or replacement needed.

	Does the First Aid Kit contain the following:	YES	NO	Notes
	Updated Emergency Contact List			
	First Aid Report			
	Incident Report			
	First Aid Pocket Guide			
6	Sterile Abdominal Pad			
12	Anti-Microbial Hand Wipes			
12	Antiseptic Towelettes			
3	Bio-Hazard Bag – red			
4	Compress Bandages			
25	Cotton Tipped Applicator			
2	Elastic Support Bandage			
1	Face Shield (with O2 inlet)			
25	Fabric Strips, Detectable (Food Industries)			
25	Fabric Strip Bandages (Non-Food Industries)			
12	Gauze Pads (10x10cm)			
1	Gauze Pad (7.5x7.5cm)			
2	Gauze Roll			
1	Hydrogen Peroxide			
2	Medical Waterproof Tape			
6	Nitech Disposable Gloves			
2	Non-Adherent Pads (5cm)			
2	Non-Adherent Pads (7.5cm)			
6	Packet of Sugar			
1	PEG Ointment			
1	Rescue Foil Sheet			
12	Safety Pins			
6	Triangular Bandage			
1	Tweezers			
1	Universal Scissors			
Is the First Aid Kit easily accessible?				
Is there a First Aid Trained person on site at all times? Provide full name.				

Signature: _____ Date: _____

Doc #	Version	Creation Date	Last Revision
019 SF-Environmental Incident Investigation Report	1	07.13.2015	

ENVIRONMENTAL INCIDENT INVESTIGATION REPORT

Note: To be completed after an incident that results in a spill or environmental damage.
Environmental Incident Investigation Report shall be completed by Safety Supervisor for the job.

GENERAL INFORMATION

Supervisor	Drill Rig #	Project
Investigator	Location	Date

TYPE IF INCIDENT

Injury		Property Damage		Potential Lost	
A	First Aid	1	Equipment/Property Damage	1	Injury
M	Medical Attention (only)	2	Fire	2	Equipment/Property Damage
L	Lost Time (Hrs)	3	Loss to Process	3	Loss to Process
D	Lost Days	4	Environment	4	Environment
F	Fatal				

Describe Injury	Describe Loss	Describe Potential Loss
Location of incident:	Date Incident:	Date Reported:
	Time of Incident:	Time Reported:

DESCRIPTION OF INCIDENT (include what the person was doing, trying to do and anything unusual)

Is there a written method statement or safe work procedure for the job being performed? YES ☐ NO ☐ N/A ☐

Identify all equipment involved (including makes & models, size and/or weight where pertinent)

Witness Name	Witness Name	Witness Name
Number	Number	Number

Part C - Detailed Description of Incident

Exact Location of Incident:			Date of Incident:				
When did the Incident occur:							
	Arriving or Leaving Work		During work period		During meal period		
	During break period		During overtime		Other:		
Was personal protective equipment (PPE) in use?					Yes		No
List PPE in use:							

SKETCH

Include a sketch and photos of the incident

Part D –IMMEDIATE/DIRECT CAUSE OF INCIDENT

Check all that applies. For each item checked YES, explain in section bellow.

YES	NO	CODE	SUBSTANDARD ACTIONS	YES	NO	CODE	SUBSTANDARD CONDITIONS
		1	Operating equipment without authority			20	Inadequate guards or barrier
		2	Failure to warn			21	Inadequate group support
		3	Failure to secure/make safe			22	Inadequate/improper PPE
		4	Operating at improper speed			23	Defective tools/equipment/materials
		5	Making safety device/guard inoperable			24	Congestion or restricted action
		6	Removing safety device/guard			25	Inadequate warning system
		7	Using defective equipment			26	Fire and/or explosion hazards
		8	Using equipment improperly			27	Substandard housekeeping
		9	Failure to use PPE			28	Hazardous environmental conditions: gas, dust, smoke, fumes, vapors
		10	Improper loading			29	Noise exposure
		11	Improper placement			30	Radiation exposure
		12	Improper lifting			31	High or low temperature exposures
		13	Improper position for task			32	Inadequate ventilation
		14	Horseplay			33	Ground conditions (rocks)
		15	Influence of Drug/Alcohol			34	Inadequate or excessive lighting
		35	Other:				

Code	How did the immediate/direct cause contribute to the incident?

PART E – BASIC/UNDERLYING CAUSES

Check all that applies. For each item checked YES, explain in section bellow.

YES	NO	CODE	PERSONAL FACTOR	YES	NO	CODE	JOB FACTORS
		40	Inadequate physical capability			52	Inadequate purchasing
		41	Lack of knowledge			53	Inadequate maintenance
		42	Lack of skill			54	Inadequate tools/equipment
		43	Stress (mental/physical)			55	Inadequate work standards
		44	Improper motivation			56	Wear and tear
		50	Inadequate Leadership/supervision			57	Abuse or misuse
		51	Inadequate engineering				

Immediate/Direct Code	Basic/Underlying Code	How does the immediate/direct cause stem from the basic/underlying cause?

PART F – CONTROLS

Basic/Underlying causes of incidents are the result of lack of controls. The lack of control in this incident was the result of (select all that applies)

Inadequate program/training		YES		NO
Inadequate program/training standard		YES		NO
Inadequate compliance to program/training standards		YES		NO

PART G – LOSS POTENTIAL

Probability of reoccurrence	Death, permanent total disability or property damage > $100 000	Lost time injury or property damage > $10 000 < $100 000	Medical aid injury only or property damage >$1 000 < $10 000	First Aid injury only or property damage < $ 1 000
Frequent	A	D	G	J
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Rare	C	F	I	L

PART H – ACTIONS TAKEN

Cause Code	What action has been taken to prevent similar incidents?	Responsibility

PART I – ACTION TO BE TAKEN

Cause Code	What action is recommended to be taken to prevent and/or control similar incidents?	Responsibility	Date to be Completed	Date Completed

Investigation Team Members (if applicable)	Date of Investigation

REVIEW (office use only)

Health & Safety Manager		
Signature		Date
Management		
Signature		Date
Management		
Signature		Date
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Signature		Date
Management		
Signature		Date
Management		
Signature		Date

DIRECTIONS

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DATE RECEIVED STAMP

Doc #	Version	Creation Date	Last Revision
020 SF-Incident/Near Miss Report	1	08.06.2015	20.08.2015

INCIDENT/NEAR MISS REPORT

Note: To be completed after an incident that results in injury, illness or loss of property or a near miss occurs.
Incident/Near Miss Report shall be completed by Safety Supervisor for the job.

GENERAL INFORMATION

Supervisor	Drill Rig #	Project
Location	Date	Time

WHAT HAPPEND? (please provide details)

WHO WAS INVOLED

WHAT WAS THE IMMEDIATE CAUSE

HOW CAN SIMILAR INCIDENT BE PREVENTED IN THE FUTURE?

NOTES FOR CORRECTIVE MEASURES

SIGNATURE

Safety Supervisor		Date
Client		Date

SAFE WORK PRACTICES SECTION

Table of Content

Introduction to Drilling Safety

General

Logan Drilling Group is interested in your safety. The management of the company cares about its employees' safety, not only when they are working on or around the drill rig and other equipment, but also when they are traveling to and from the drill sites, moving the equipment and tools from location to location or conducting maintenance. The following Safe Work Practices are for your benefit. Failure to follow the safety guidelines contained in this section could result in serious injuries or death.

Every crew will have a designated Safety Supervisor who is responsible for enforcing safety on the drill site. All personnel are responsible for their safety and that of their co-workers; and must follow the directions from their designated Safety Supervisor.

This section contains safe work practices for Logan Drilling Group personnel. It is not intended to set forth any standard industry procedures or requirements. It is to be used as a guideline for the safe operation of drilling equipment.

Governmental Regulations

All local, provincial and federal regulations or restrictions, currently in effect or to come in effect in the future, take precedence over the safe work practices outlined. Government regulations will vary from province to province and country to country.

Doc #	Version	Creation Date	Last Revision
001 SWP - Housekeeping	1	02.09.2014	20.08.2015

HOUSEKEEPING

It is paramount that the Safety Supervisor understands the importance of proper housekeeping and **MUST**:

- Ensure that there is suitable storage locations for all tools, materials and supplies so that tools materials and supplies can be easily and safely handled
- Avoid storing or transporting tools, supplies or material within or on the mast (derrick) of the drill rig
- Stack pipes, drill rods, casing, augers and other similar drilling tools in orderly fashion on racks or sills to prevent spreading, rolling or sliding
- Place penetration or other driving hammers at a safe location on the ground or secure them to prevent movement when not in use
- Keep work areas, platforms, walkways and other access ways free of materials, debris, obstructions and substances such as ice, grease or oil that could cause a surface to become otherwise hazardous
- Keep all controls, control linkages, warning and operation lights and lenses free of oil, grease and/or ice
- Gasoline shall only be stored in non-sparking red containers with flame arrester in the fill spout and must be labeled “Gasoline”
- All waste, garbage and oil, must be removed from site daily and disposed of apporpriately

Doc #	Version	Creation Date	Last Revision
002 SWP-Hand Tools	1	02.09.2014	20.08.2015

HAND TOOLS

There are almost an infinite number of hand tools that are used on and around the drill and in the repair shop. The following are general guidelines to be followed:

- Use tools for their intended purposes
- Use the proper sized tool for the job
- Damaged tools either must be repaired or replaced
- When using any hand tools, protective eyewear shall be worn
- All tools are to be kept clean and stored neatly when not in use
- When using wrench on tight nut:
  - Use some penetrating oil
  - Pull on the wrench handle
  - Use both hands with feet firmly planted
- When using a pipe wrench:
  - Keep all pipe wrenches clean and in good order
  - The jaws of the pipe wrenches must be wire brushed frequently to prevent the build-up of grease and dirt
  - Never use a pipe wrench instead of a rod holding device
  - Replace hooks and heels when they become visibly worn or damaged
- When breaking joints on the ground or drill platform, ensure that your hands are positioned so that fingers will not get crushed should the wrench slip or the joint suddenly let go

Doc #	Version	Creation Date	Last Revision
003 SWP-Defective Tools	1	03.09.2014	29.12.2014

DEFECTIVE TOOLS

Defective tools can cause serious injuries and even death.

- If a tool is defective in anyway, do not use it
- Always inspect tools before use. Look for:
  - Mushroomed heads on chisels and wedges
  - Chipped, broken or worn wrench jaws and drill bits
- Ensure that there are no missing or incomplete parts
- Ensure all guards are in place and are working properly
- Proper and sufficient grounding is required on all tools
- On/Off switches must work properly
- Repair or replace any cracked or damage blades, handles or any other part
- Tools must be tagged out when any damages or defects are detected
- No tool is to be returned into circulation, after being tagged, until it has been repaired or replaced

Doc #	Version	Creation Date	Last Revision
004 SWP - Utilities	1	03.09.2014	29.12.2014

UTILITIES

Special precautions must be taken when working within the vicinity of electrical power lines and other utilities, whether buried or overhead.

- Ensure that all utility locates have been completed, documented and marked.
- Consider all power lines and utilities to be live
- Always complete a visual check of a site to ensure that there are no power lines or other utilities that could come in contact with the drill or other equipment during the mobilization, set up or drilling process
- When setting up, if the distance between the equipment and utility is less than 3 m (100ft), consult with the utility company prior to start of operations
- Keep in mind wind and other elements may move overhead power lines and hoist lines causing them to come into contact
- Always lower the derrick (mast) when moving the drill
- If there are any questions or concerns regarding utilities contact the appropriate utility company. The utility company will provide expert advice and is capable of answering any questions or concerns.
- Never assume that the utilities are located exactly where signage is posted. Actual underground utilities may be located a considerable distance from signage. Always ensure that proper locates are completed and precise location is determined and marked.

Doc #	Version	Creation Date	Last Revision
005 SWP-Solvents & Flammables	1	03.09.2014	30.12.2014

SOLVENTS & FLAMMABLES

Special care must be taken to protect personnel and the environment from hazards created by the use of these production. Whenever possible, solvents should be non-flammable and nontoxic.

- All personnel must be informed of the proper use and possible hazard these product pose
- MSDS sheets must be made available for all solvents and flammable products
- Ensure that all personnel are trained in the Logan Drilling Group's Hazard Communication & Chemical Safety program and WHMIS certified
- Use non-flammable solvents for general cleaning
- Ensure that no hot work is permitted in the area when using flammable solvents
- Properly store flammable solvent in special cabinet
- Solvents and flammables should only be used in well ventilated areas
- Always wear required Personal Protective Equipment, goggles or face shield and gloves, to protect against splashes or spray
- Wear coveralls or protective clothing to prevent contamination and damage of worker's clothing
- When potential for hazardous fume or vapors wear appropriate respiratory protection or aid
- Never leave solvents in open tubs or vats. Always return them to their proper storage, drum or tank
- Use proper containers for transportation, storage and field use of solvents/flammables
- WHMIS requirements must be met or exceeded

Doc #	Version	Creation Date	Last Revision
006 SWP-Portable Arc Welder	1	03.09.2014	29.12.2014

PORTABLE ARC WELDER

Due to the fumes and vapors, portable arc welders should be treated like a vehicle and shall not be operated indoors.

- Ensure that the welder is firmly attached to the transporting unit
- Check all fluids prior to starting operation to ensure that they are at the appropriate levels
- DO NOT “top off” the gas tank when fueling. This may result in seepage and possible fire hazard
- Never fuel the machine while it is running
- Radiator and gas caps must be in proper working order and attached securely
- A pre-use inspection must be completed, any damages or leaks must be repaired prior to use
- All repairs and regular maintenance must be completed by a competent, qualified person
- All cables must be wounds securely while transporting
- Side covers must be kept closed to protect the machine from any damage from external objects and weather
- All guards and covers must be in place and proper working order to protect moving parts

WELDING, CUTTING & BURNING

Work involving welding, cutting and burning can increase the risk of fire and respiratory hazards. The following should be considered prior to the start of work.

- Ensure that there is proper ventilation and air circulation is in place to prevent excessive hazardous fumes
- Screen must be used to protect other personnel working in the vicinity from arc flashes and other welding, cutting and burning hazards
- Never start work without proper permits and/or authorizations
- Always have firefighting or fire prevention equipment on hand prior to start of cutting, welding or burning work
- Ensure there are no combustible materials or flammable vapors in the work or surrounding areas
- Welders should never work alone. Always have someone available for fire or spark watch
- Always complete a pre-use inspection, check all hoses and connections and protect them for slag or sparks
- Never cut lines or weld drums, tanks, etc. that have been in service without making sure that all precautions have been taken and permits obtained
- Never enter, weld or cut in a confined space without the proper gas testing equipment, PPE and safety lookout
- When working overhead, always use fire resistant tarps or blankets to control and/or contain slag and sparks
- Cutting and welding must not be performed where sparks and cutting slag may fall on cylinders. Always move cylinders to the side
- Open cylinder valves slowly
- The wrench used for opening the cylinder valves should always be kept on the valve spindle when the cylinder is in use
- Try to weld only in well-ventilated areas
- Do not weld, cut or grind near flammable or combustible materials, liquids, vapors and dusts
- Use only approved equipment in good condition, follow the manufacturer's instructions
- Inspect equipment for loose connections, bare wires or cables before operating. Make sure the machinery is properly grounded
- Handle compressed gas cylinders safely, following proper use and storage procedures
- Keep aisles and stairways clear of cables and equipment
- Learn first aid techniques for burns, poison inhalation, and shock and eye injuries
- Know where the safety showers and eyewash stations are and how to use them

Symptoms of metal fume fever, caused by breathing fumes formed while welding. Symptoms may include a metallic taste in the mouth, dry nose and throat, weakness, fatigue, joint and muscle pain, fever, chills and nausea. Notify your supervisor *immediately* if experiencing any of these symptoms.

Doc #	Version	Creation Date	Last Revisio008 n
SWP-Tiger Torches	1	04.09.2014	29.12.2014

TIGER TORCHES

Tiger Torches are a valuable tool on the job site, however when not used properly can become a hazard.

- Tiger torches are only to be used for preheating or piping prior to welding
- Always have adequate fire extinguisher present when using tiger torches
- Torches are not to be used for heating of work areas or thawing of lines and equipment when not in use
- When not in using tiger torch, ensure that the propane bottle are properly shut off
- All fuel lines must have a fuel regulator
- Propane bottle shall be secured in an upright position at all time

Doc #	Version	Creation Date	Last Revision
009 SWP-Propane	1	04.09.2014	30.12.2014

PROPANE

All installations and use of propane on Logan Drilling Group sites must comply with the Government Legislation set out for its safe use. Suppliers delivering and/or setting up the equipment must be aware of the safe work practices in place.

- Nylon slings must be used in a “choker” fashion when loading, off-loading and lifting propane tanks
- “Lifting lugs” provided on the tank are not to be used. Slings are to be wrapped around the shell of the tank
- Tank valves and regulators are to be removed from the tank prior to any movement of the tank
- Any crane hooks used shall be equipped with a “safety latch”
- All trucks, crane, or equipment used to handle propane tanks must be equipped with an appropriate fire extinguisher
- All personnel working with propane must have been trained in propane handling
- Tanks are not to be heated to increase the flow of propane
- Propane tanks must be secured in an upright position.
- Tanks are not to be hooked-up or used without proper regulators
- Prior to use always ensure that there is no damages to the tank, regulator or valves

Doc #	Version	Creation Date	Last Revision
010 SWP-Grinders	1	08.09.2014	29.12.2014

GRINDERS

Severe injuries may occur when equipment is not used properly or without required guards.

- Ensure that tool has all appropriate working guards in place
- Check the tool rest for correct distance from the abrasive wheel
- Replace grind stone if worn, damaged or chipped
- Be familiar with proper use of grinders
- Always proper PPE when using grinders, including eyewear and/or face shield, gloves and safety boots
- When mounting the wheels ensure that flanges are clean and mounting blotters are used. Do not over tighten the mounting nut
- Do not use grinders near flammable materials
- Before grinding, run newly mounted wheels at operating speed to check for vibration
- Grinding wheels are not to be operated at peripheral speeds exceeding manufacturer's recommendations
- Bench grinders are designed for peripheral grinding. Do not grind on the side of the wheel
- Ensure that bench grinders are properly secured
- Do not stand directly in front of the grinding wheel when it first starts
- Ensure that all switches work properly and any plugs and cords are in good conditions.
- Never us a grinder for jobs for which it is not intended such as cutting

Doc #	Version	Creation Date	Last Revision
011 SWP-Chain Saw	1	08.09.2014	29.12.2014

CHAIN SAW

Chain saws are primarily meant for use in the logging industry and can be unfamiliar tool to some workers.

Operating a chain saw is inherently hazardous. Potential injuries can be minimized by using proper personal protective equipment and safe operating procedures.

- Personnel must be trained in chain saw safety/use prior to use
- Required PPE, as per OH&S Legislation and manufacturer, shall be worn when using a chain saw
- Do not fuel the chain saw when it is running or hot
- Always fuel the saw in a well ventilated area
- Fuel must be kept in an approved safety container
- Proper spout or funnel must be used when fueling the chain saw
- The chain saw is to be held, stored, carried and started as per the manufacturer
- Never smoke during refueling
- Check controls, chain tension, and all bolts and handles to ensure that they are functioning properly and that they are adjusted according to the manufacturer's instructions
- Prior to start ensure that the chain break is working properly and is able to stop the chain
- The chain must be sharp, have the proper tension and lubricated prior to use
- When carrying and/or transporting a chain saw it must be turned off and the bar guard must be on
- Chain saw is not to be used to cut above the shoulder height
- The chain saw will comply with CSA Standards Z62, I-M-77
- Clear away dirt, debris, small tree limbs and rocks from the saw's chain path. Look for nails, spikes or other metal in the tree before cutting

Doc #	Version	Creation Date	Last Revision
012 SWP-Supplying Power to the Site	1	08.09.2014	29.12.2014

SUPPLYING POWER TO THE SITE

Many drilling projects take place in isolated or un-serviced areas. Some projects, at times, necessitate around-the-clock operations, thus requiring temporary electrical lighting.

- All wiring and fixtures should be installed by qualified persons in accordance with recommended practices for electrical installations for productions facilities
- Lights should be installed and positioned so that the work area and operating positions are well lit without shadows or blind spots
- Before working on an electrical power or lighting system, lock-out the main panel box as per the Logan Drilling Lock out/Tag out Procedure
- All wiring is to be installed using high quality connections, fixtures and wire all insulated and protected with consideration of the drilling environment
- Makeshift wiring and equipment is not permitted
- Place all lights directly above working areas in cages or similar enclosures to prevent loose or detached lamps from falling on workers
- Install lights so as to eliminate glare or “blind spots” on tools, ladders walkways, platforms and other work areas
- Always guard electrical cables to prevent damage by drilling operations or by the movement of personnel, tools and supplies
- Use only three-prong, U-blade, grounded type plug receptacles and have adequate current carrying capacity for the electrical tools that may be used
- Use only electrical tools that have three-prong, U-Blade, ground wire plugs and cords.
- Do not use electrical tools with lock-on devices
- Provide adequate grounding for all electrical welders, generators, control panels and similar equipment
- Provide secure protective enclosure on control panels, fuse boxes, transformers and similar equipment
- Avoid attaching electrical lighting cables to the derrick or other components of the drill
- Use only approved fasteners if electrical lighting cables have to be attached to the derrick or other parts of the drill
- Do not “string” wire through the derrick
- Do not use poles used for holding wires for any other purpose
- Always turn off the power before changing fuses or light bulbs
- Require all personnel working in an illuminated drilling area to wear protective headwear that protects against electrical shock and burns as well as falling objects
- Only trained personnel is to operate electrical equipment

- Rotary drilling tools must be inspected for any wear, damages or defects prior to the start of drilling
- Check for frozen bearings and lubricate bearings before using the water/air swivels and hoisting plugs
- The water/air swivel bearings must be free
- Stay clear of the water/air swivel hose when drill is rotating
- The drill rod chuck jaws must be checked regularly and replaced as required
- Always check the hoisting capacity of the equipment. Ensure that the anticipated weight of the rod string and other hoisting loads do not exceed manufacturers specifications
- All precautions must be taken when chucking, breaking joints, hoisting and lowering drill rods
    - Only the drill operator shall be allowed to break or set a manual chuck to ensure that rotation of the chuck will not occur before removing the wrench from the chuck
    - Drill rods are not to be broken during lowering into the hole with drill rod chuck jaws
    - Drill rods should not be held or lowered into the hole with pipe wrenches
    - If a string of drill rods is accidentally dropped in the hole DO NOT attempt to grab the falling rods with your hand or wrench
    - When there is a plugged bit or other circulation blockage, high pressure in the pipes/hoses between the pump and the obstruction should be relieved or bled before breaking the first joint
    - When drill rods are hoisted from the hole, they must be cleaned with a wiper made of rubber or other suitable material
    - Do not use hands to clean drilling fluid from the drill rods
- If personnel have to cross above a portable mud tank, the mud pit must be equipped with a rough surfaced, fitted cover panels strong enough to support personnel and equipment
- Do not lift or lean unsecured drill rods against the mast. The upper end must be secured for safe vertical storage or must be laid down

CATHEAD & ROPE HOISTS

- Keep the cathead clean and free of rust, oil and grease. The cathead is to be cleaned with a wire brush if it becomes rusty
- Check the cathead regularly for grooves. If grooves are greater than 1/8” the cathead should be replaced
- Always use clean dry rope. A dirty, oily rope may “grab” the cathead and cause tools or other items to be hoisted rapidly to the top of the mast
- If the rope “grabs” the cathead or becomes tangled;
    - Alert all personnel to rapidly step back and stand clear and release and the rope. Operator must also stand back
    - The rope will often break when tools are hoisted all the way to the sheaves, releasing the tools
    - Should the rope not break all personnel is stay clear of the rig until it is turned off and appropriate measures are taken to release the tools
- The ropes are to be protected from contact with chemicals
- Never wrap the rope from the cathead (or any other rope, wire or cable) around your hand, wrist, arm or any other art of the body
- Always maintain a minimum of 18” clearance between the operating hand and the cathead drum
- Ensure that the rope advances toward the cathead as tools or other advance toward to the ground
- Never operate a cathead hoist (or any other task) around the drill with loose fitting/unbuttoned/unfastened or ill-fitting clothing or PPE
- Ensure that the rope being used is of appropriate length
- Do not leave cathead unattended with the rope wrapped on the drum
- Position all other hoist lines to prevent contact with the operation of the cathead rope
- The cathead operator must stand on a level surface with good firm footing

Doc #	Version	Creation Date	Last Revision
015 SWP - Proper Hoisting	1	09.09.2014	29.12.2014

PROPER HOISTING

- Determine the weight of the equipment/load prior to lifting to ensure it does not surpass manufacturer's capabilities
- The lifting device should always be positioned above the estimated center of gravity
- Prepare the "landing area" for the load, ensure it is large enough for the load flat and clear of obstacles and debris
- Gently lower the load and make sure that it is stable before slackening the slings or chains
- Select only certified chains or slings
- Never exceed the maximum working load
- Ensure that crane or hoist is directly above load
- Use appropriate length chain or sling. Do not shorten by twisting, knotting or using bolts and nuts
- Personnel are not to ride the lifting hook or load
- Stand well clear from load being lifted
- Never work under a suspended load unless it is properly supported
- Never leave a load suspended when the hoist or crane is unattended
- All slings/chains are to be inspected prior to each use and maintained in good condition
- Inspect each sling/chain for cuts, nicks, bent links or hooks before each use. If any damages or defects are noted, the equipment is to be removed from circulation
- All safety latches on hooks must be in good working condition
- The spotter must be clearly identified and maintain continuous communication with the operator
- Always use a tag line to control the load

WIRE LINE, WIRE ROPE & HOISTING HARDWARE

The use of wire line and wire line hoist and hoisting hardware should be as stipulated by the manufacturer.

- Visually inspect all wire ropes and fittings daily during use
- Complete a thorough inspection of the wire line, wire rope at least once per week looking for abrasions, broken wires, wear and reduction in diameter, fatigue, corrosion, damage from heat, improper reeving, jamming, crushing, kinking and/or damaged lifting hardware
- Replace wire rope or line when inspection reveals any damages or problem with the equipment or as described in the manufacturer's manual
- Thoroughly inspect all wire ropes/lines that have not been used for a period of 4 weeks or more
- Always install all connections and end fittings according to manufacturer's specification. Never exceed ratings specified by manufacturers
- When using ball bearing type hoisting swivels, always inspect and lubricate swivel bearing daily
- Never increase the number of line parts on a sheaves without consulting with manufacturer
- Wire line/rope must properly be matched with each sheave. If rope/line to large, the sheave will pinch the wire and if it is too small it will groove the sheave
- Use tool handling hoists only for vertical lifting of tools
- Do not use tool handling hoists to pull on objects away from the drill rig
- When stuck tools or equipment loads cannot be raised with a hoist, disconnect the hoist line and connect the stuck tool directly to the feed mechanism of the drill
- Apply loads smoothly and steadily to minimize shock loading of the line
- Avoid sudden loading in cold weather
- Never use frozen rope/line
- Protect wire rope from sharp corner or edges
- Replace faulty guides and rollers
- Replace damaged safety latches and safety hooks prior to use
- Know the safe working load of the equipment and tackles being used. Never exceed this limit
- Regularly inspect and test hoist clutches and brakes
- Know and do not exceed the maximum capacity of the mast, hooks rings, links, swivels, shackles and other lifting aids
- Always wear ropes when handling wire ropes
- Do not guide the wire rope on hoist drum with your hand
- When new wire line/rope is installed, first lift a light load to allow the wire to adjust
- Never carry out any hoisting operations when the weather conditions are such that it creates hazards to personnel, property or environment
- Keep hand away from hoist, wire rope, hoisting hooks, sheaves and pinch points while slack is being taken up or when the load is being hoisted
- Never hoist the load over the head, body or feet of personnel
- Never use a hoist line to "ride" up the mast of a drill rig
- Replacement wires used must conform to the drill manufacturer's specifications

Doc #	Version	Creation Date	Last Revision
07 SWP-Rigging	1	09.11.2014	30.12.2014

RIGGING

- All riggers must have completed a certified rigging course and hold a valid certificate
- Have one designated “spotter” that will direct the operator.
- The spotter must maintain constant and clear communication with both the operator and the designated rigger
- The spotter must always wear designated HiVis PPE
- The rigger must ensure that he is in the clear before signaling the “ready” signal and that he/she has released the sling/choker
- If the sling or choker has to be held in position, ensure that hands are clear of any pinch points
- Always anticipate roll or swing of the load, spotter, rigger and all other personnel should stand well clear of any load being lifted
- Never place yourself between a load and other object and maintain distance from any objects that could be knocked over by a swinging load
- Never stand under a load or the boom
- Ensure that the load destination is clear and free of debris or other objects that may be struck by the load
- Always ensure that no body parts are under the load being lowered
- The load should always be set down slowly so that if it rolls there will be some time to move away from it
- Tag lines must be used to help control the swing of the load

Doc #	Version	Creation Date	Last Revision
018 SWP-Working Around Drilling Equipment	1	11.09.2014	29.12.2014

WORKING AROUND DRILLING EQUIPMENT

There are certain recognized hazards working around drilling equipment and drilling work zones.

- Always check the entrance leading into a drilling work zone and make your presence known to the personnel on the site
- Wait for visual acknowledgement from crew before entering site perimeter and or drill shack
- Avoid unnecessary entrance and time in drilling area and/or drill shack
- Ensure that the core examination area is a safe distance from the drill area
- Always complete site and equipment inspections prior to use
- Always wear the proper approved PPE as set out by Logan Drilling Group
- Do not assist or complete tasks for which you are not properly trained
- All personnel must maintain clear communication at all time with the driller, helper and others at drilling site
- Never exceed manufacturer's ratings of speed, force, torque pressure, flow etc…
- Only use drill rig, tools and equipment for the purpose which they are intended and designed
- Any drill rig, tool or equipment alterations are only to be done by qualified personnel and only after consultation with the manufacturer and/or an engineer

ELECTRIC DIAMOND DRILLS

- Electrical personnel must be notified of any breaker kick outs
- In the event of a short circuit when more than one drill is in operation, reset the main breaker on the 550 volt line at the transformer to determine which of the drills is shorting out
- Should the breaker kick out twice on any line, the breaker is to be left open and the proper electrical personnel is to be contacted
- The power must be turned off and locked out at the drill and pump before the main breaker is tripped
- The main breaker is to be tripped and locked out before a cable lead to a drill is plugged in or unplugged from the transformer
- When a drill is to be left unattended:
    - The drill and pump are to be turned off on the control panel
    - The main switches on the switchboard of the drill pump and lighting circuits are to be turned off
    - When turning off or on the main switches on the switchboard, always stand to the right of the switch. Never stand in front of switch
- The main control switch panel must always be installed in a vertical position and in a dry place
- All power cable leads from the switchboard to the drill must be hung overhead
- The work area is to be well illuminated
- Any auxiliary ventilation will be designed by the mine/client
- The Logan Drilling Group Lock out/Tag out procedure is to be followed at all time
- Electrically powered diamond drills shall always be properly grounded prior to being energized
- A dry chemical fire extinguisher shall be located within easy reach of the drill operator and a second shall be located at the entrance of the drill site
- Auxiliary ventilation is to be activated prior to the power being turned on any electrical drill, pump or lights
- The ventilation is to be kept on as long as the power is on for the drill, pumps or lights
- A compressed air line, connected to the main supply line, must be installed to all locations using electrical drills. This air line must be slightly opened at times in case of a stench gas warning

Doc #	Version	Creation Date	Last Revision
020 SWP-Remote Location	1	11.09.2014	30.12.2014

REMOTE LOCATION

In many cases, drilling personnel are required to work in remote areas with limited or no land access. It is crucial that all personnel limit their exposure to situations that could lead to adverse outcomes.

- Always work with a partner
- Always have a two-way radio, cellular or satellite phone with sufficient range and charge to contact help in an emergency
- Personnel working alone in a remote area must report to a supervisor/foreman at a predetermined time or interval in accordance with the Forestry Act
- A log is to be kept of the location of last contact and planned itinerary until next call
- Should contact not be established as required, the remote search and rescue procedure is to be initiated from the last point of contact.
- Dress appropriately for the conditions you may encounter
- Always wear HiVis clothing, especially during big game seasons
- Especially during spring and fall, always bring rain gear or change of clothing in the event of unpredicted precipitation
- During winter months have extra mitts, socks and warm clothing in a waterproof bag should the weather conditions change abruptly
- In summer months, bug spray and bug jackets should brought
- In areas with high level of ticks or Lyme's disease has been reported, wear high boots, tuck pants into socks and always complete a tick check at the end of day
- Always carry a basic survival pack which includes items such as; a compass, knife, waterproof matches or butane lighter, topographical map of the area (with the work area clearly marked), First Aid Kit, high energy snacks, bug spray, spare set of clothing and water
- Do not take unnecessary risks. Handle tools, equipment and vehicles carefully to avoid accidents
- Travel in hazardous areas such as steep slopes, frozen rivers, extensive blow downs, and quaking bogs should be avoided
- Always leave travel plans with someone at both the departure and arrival points. These should include:
    - Destination
    - Departure, arrival and return times
    - Make, model, color and license plate number of the travel vehicle
    - Upon arrival to destination, contact person at departure point to confirm your arrival
- All personnel working in remote locations are to be First Aid trained
- Projects conducted in the far north or highly isolated areas may require carrying a firearm for protection against wildlife. Only personnel holding a valid Firearm Acquisition Certificate and License shall carry firearms and must have undergone specific training in the appropriate methods to be used during large game/wildlife encounters.

Doc #	Version	Creation Date	Last Revision
021 SWP-Dozers & Skidders	1	18.09.2014	29.12.2014

DOZERS & SKIDDERS

Operating any heavy equipment can pose a number of safety risks. Below are some general safe work practices that should be followed at all time.

- All operator must be trained and receive proper instruction prior to operating a dozer or skidder. Certificate or proof of competency must be placed in the operator's training file
- Know how to operate your equipment. Know the purpose of all controls, gauges and indicators
- Be familiar with the rated load capacities, speed range, breaking and steering characteristics, turning radius and operating clearances
- Understand all DANGER, WARNING, CAUTION and other signs/alarms on your equipment
- Know where to find the manufacturer's manual for your equipment and become familiar with it
- All protective devices and equipment is to be in place at all time. NEVER remove or modify any safety equipment
- All safety harnesses, belts and equipment must be worn and/or used as per manufacturer's specifications
- Before use a "pre-use inspection" must be completed. Any deficiencies must be noted
- Any noted deficiencies must be repaired prior to use of dozer or skidder
- Always complete a visual check of the working area. Look for any hazards, debris, hills, gullies or holes in working area. Ensure enough clearance space overhead from power lines, wires and trees
- Always keep equipment clean and free of debris. Clean handholds, steps, pedals and floor. Remove grease and oil and brush away dust, mud, ice and snow
- Do not carry any loose items in the operator's compartment
- Always turn off engine while refueling equipment
- Ensure the fuel funnel or nozzle is grounded against the filler neck
- Ensure to use the proper type and grade of fuel and always replace fuel tank cap
- Smoking is prohibited when refueling or near fueling area
- When mounting or dismounting the machine always maintain 3-points of contact. Never jump on or off the equipment use ladder or steps provided
- Never attempt to mount or dismount the equipment while it is in motion
- Ensure there is no one under, on or in close proximity, make sure that everyone is standing well clear of equipment prior to starting the dozer or skidder
- Before starting, make sure that the blade is on the ground, the parking break is engaged and all controls are in neutral
- If dozer or skidder must be started in and enclosed space ensure proper ventilation
- Once started check all indicator lights, gauges, lights, horns and alarms to make sure they are working properly
- Equipment with air brakes are not to be moved until the recommended air pressure is reached
- Never permit anyone to ride on your machine, in/on the blade or on any other attachments
- When working with spotter, ensure that all hand signals and gestures are known prior to start

- When traveling keep blade up and any other attachments off the ground high enough to clear any obstructions or debris
- Never travel across steep slopes or hills, empty or loaded. Travel only uphill or downhill to reach your loading position
- Exercise caution when traveling down a steep slope. Engage low gear
- When transporting a dozer or skidder on a truck or trailer, ensure that equipment does not exceed capacities
- Ensure that all guidelines set out by provincial or federal legislation are followed. All flags, lights and warning signs are in place and visible
- There are to be sufficient tie downs, blocks must be in place and blades are lowered
- Always park equipment in designated area, on level ground. Lower the blade or grapples to the ground and engage parking break
- At the end of the day, always shutdown equipment properly. Do not use emergency or quick shut off
- Equipment is to be Locked out/Tagged out before any maintenance or repair work is to be completed
- Any maintenance or repairs completed on dozers or skidders should only be completed by a certified, competent person

Doc #	Version	Creation Date	Last Revision
022 SWP-Snowmobiles	1	22.09.2014	29.12.2014

SNOWMOBILES

- Complete a pre-use inspection prior to use
- All snowmobile must be licensed and insured prior to use
- All operators must have been properly trained
- Prior to starting snowmobile make sure that the throttle is free
- Ensure that track is free prior to mounting snowmobile
- When mixing the gasoline and oil together use a separate clean container. Ensure to mix thoroughly
- Using a funnel with a fine mesh screen to prevent the entry of water and foreign objects, transfer the fuel from the container to the tank.
- All operator must wear the proper safety equipment at all time, including a helmet and shatter proof visor or goggles
- All snowmobile must be equipped with the following:
    - First Aid Kit
    - Spark Plug Wrench
    - Tools
    - Snow Shoes
    - Spark Plugs
    - Drive Belt
    - Axe
    - Drive Chain & Spare Links
    - Food
    - Fuel
    - Survival Kit
- Ensure regular preventative maintenance has been carried out
- Only use the machine for the purpose intended
- Always follow trails when possible and travel in pairs
- Notify your supervisor of travel destination, what route will be used and estimated return time
- Always have a method of communication available (cell phone, sat phone, two way radio). Maintain contact on set, regular interval
- Check the weather before departure
- Dress appropriately and wear warm waterproof boots. Always have extra clothing available
- Use ridged trailer hitch while pulling toboggans or sleds
- Always observe highway and trail regulations
- Avoid crossing over rocks or stumps or ride in railroad tracks or right of ways
- Never smoke while refueling
- Always ensure appropriate ice thickness when crossing any waterways
- Do not overload the snowmobile, use a sled or toboggan to haul load. Never exceed manufacturer's specifications
- Snowmobiles are not to be used for pleasure or personal use. They must only be used for work purposes

Doc #	Version	Creation Date	Last Revision
023 SWP-Mobile Equipment	1	22.09.2014	29.12.2014

MOBILE EQUIPMENT

Due to the nature of the work undertaken by Logan Drilling Group, the use of powered mobile equipment is unavoidable. In order to ensure the safety all personnel, equipment and property the following safe work practices should be followed.

- Only trained and competent operators shall operate any mobile equipment
- An equipment specific pre-use inspection must be complete prior to use
- Any deficiencies must be noted and repaired prior to use or as soon as possible
- All mobile equipment will undergo regular, scheduled preventative maintenance and repairs as outlined by the manufacturer in the operator's manual
- The operator is responsible for the safety of any person who may be near the machine, or any equipment that may be attached to the mobile equipment
- All safety equipment and protective guards must be used as intended and should never be modified or removed
- Any powered mobile equipment should be equipped with appropriate seatbelts and rollover protection
- The engine should never be running if equipment is inside a garage or other enclosed area
- Always lock out/tag out equipment prior to completing any maintenance or repairs
- When mobile equipment is standing with engine on, transmission should always be in neutral
- When starting mobile equipment ensure that the brakes are on and chocked
- When winding or letting out winch cable, no personnel shall be holding the cable within 4 feet (1.2m) of the winding drum
- Only the operator shall ride on the machine. No personnel shall ride climb on the side or any attachments
- When powered mobile equipment is not in use, it should be blocked/chocked properly with the brake on and the keys out of the ignition and off the equipment

WORKING ON THE WATER

- The loading and unloading area should be equipped with a dock for the safety of personnel and equipment
- Any boats used must be large enough for the job
- Barges shall be equipped with guard rails and have a safety boat attached
- The safety boat must be connected to the barge with a secure hitch to prevent losing the boat and have a means of quick release in the event the barge sinks
- The walking/working area of the barge must have a non-slip surface
- The boat must be secure before loading or unloading begins
- Loads must be evenly distributed and secured
- Boats should be checked for any leaks before leaving the dock
- All personnel must wear an approved DOT lifejacket at all time while on the water, working on the dock or within 10 feet (3m) of the water
- The crew should remain seated while the water craft is in motion
- All boats must be adequately powered
- Water and wind conditions must be such as to allow safe passage
- Weather conditions must be monitored and should always be checked prior to any departures
- The boat must be secured to the dock when refueling
- When fueling, remove portable fuel tanks to shore and refuel on shore. All fuel spills or dripping on tanks must be wiped clean
- When filling a stationary tank, use a funnel with a strainer
- All electrical switches and motors must be shut off during refueling
- Every watercraft shall be equipped with the following:
    - Bailing equipment
    - Paddles
    - Whistle
    - Emergency Light
    - First Aid Kit
    - Fire Extinguisher
    - Matches
    - Compass
    - Spare Shear Pins
    - Proper Tools
    - Means of communication (Radio, Sat Phone, Cell phone)

Doc #	Version	Creation Date	Last Revision
025 SWP-Camp Set-Up	1	24.09.2014	

CAMP SET-UP

- The following should be considered prior to setting-up the camp:
  - Duration of the contract
  - Time of the year (season, weather)
  - Number of personnel
  - Method of transportation
  - Site access
  - Provincial and Rural regulations (fire, travel…)
- When possible the camp site should be set-up no more than 200 feet (60m) from the edge of a body of water
- Camp area should be located on high and well drained grounds
- Any camp area clearance is subject to environmental controls
- Ensure that foundations are solid in order to avoid twisting or sagging
- Flooring should be well ventilated to avoid dampness
- Camp structures must be built a minimum of 50 feet (15m) apart
- All structures have an alternate fire exit
- Any camp stoves must be placed on a suitably sized sheet of metal
- Fuel used for heating must be installed on proper stands outside of the camp
- All stove must have a spark arrester at the chimney top
- Stove pipes must have jacks and clearance when passing through walls
- Each structure and cookery must be equipped with easily accessible fire extinguishers
- The camp area must be equipped with the required fire-fighting equipment as per regulations
- Outside toilets must be built a minimum of 150 feet (50m) from the camp area. The content of the toilet pits must be disinfected, treated and/or disposed of regularly
- The “septic tank” for the cookery sinks must be treated daily with lime
- An adequate garbage pit must be dug in areas as required by provincial regulations. As per provincial regulations, only approved camp and cookery garbage shall be disposed in garbage pit daily
- A sturdy level platform must be supplied for propane tanks storage. Propane cylinders must be stored upright
- Health and Safety regulations relating to food and water must be followed at all time
- The Kitchen area must be separate from sleeping area
- Weekly site and cookery inspections are to be conducted and any deficiencies are to be noted and addressed
- When camps are serviced by air, a good solid unloading/dock area must be provided and must be within easy access to the camp area
- Each camp area must be equipped with first aid kits, first aid designate and first aid area
- All emergency preparedness plans must be communicated with all personnel at the camp
- Regular drills must be completed and documented
- Emergency plans must be posted and visible to all personnel
- A communication link must be established and maintained with the “outside”

Doc #	Version	Creation Date	Last Revision
026 SWP 026 -Moving	1	24.09.2014	29.12.2014

MOVING

- Prior to starting to moving ensure that path of travel has been well planned and identified
- The moving route should be free of obstacles and debris
- All equipment must be properly loaded, prepared and secured for move
- All HiVis PPE, gloves, hard hat, protective eyewear and earmuffs and steel toed boots should be worn during the moving process
- Personnel shall not stand on sloop, wagon or any other equipment while moving
- While moving a spotter should be used to direct the mobile equipment operators. All other personnel shall stand well clear of moving equipment and be following behind the equipment
- The spotter must maintain constant visual contact and communication with the operator
- While moving equipment, there should be no smoking. If smoking is necessary, personnel must stop, ensure that butt is extinguished completely and picked up. No cigarette butts are to left on the ground

ROAD CUTTING & CONSTRUCTION

- Ensure that all tools and equipment to be used are inspected prior to use
- Route should be clearly marked prior to start
- Dead tree limb and tree “hang-ups” need to be identified and clear instructions given to personnel regarding safe removal
- Roads must be wide enough to accommodate safe transport of all equipment
- Roadway must be clear of obstructions and debris
- Width of road or corduroy must extend a minimum of two feet on each side of the equipment
- Any bridge structures must safely support the weight of the equipment
- The foreman will inspect the completed roadway checking for:
    - Ground and overhead obstructions such as branches, leaning trees, tree stumps or roots
    - Width of the road or corduroy
    - Proper installation of the corduroy
    - Construction of bridge with the required weight capabilities
- Ensure that all applicable permits and environmental controls are strictly followed

Doc #	Version	Creation Date	Last Revision
028 SWP- Off Loading Equipment	1	24.09.2014	29.12.2014

OFF LOADING EQUIPMENT

Manual lifting and off-loading of equipment is part of everyday operations on a drill rig and site. The following safe work practices have been put in place to ensure the safety of both personnel and equipment.

- Ensure that off-loading area is level and clear of obstructions
- Only loosen chains or straps as required
- All mechanical equipment used to assist in the off-loading must be inspected prior to use and documented. Any deficiencies must be repaired prior to start
- Always stay well clear of any suspended loads
- A crew of a minimum of two people should be used for un-loading
- Only properly designated slides should be used in loading and off-loading equipment
- Rods and casing must be placed on sills
- Equipment must be off loaded and placed in an organized and orderly manner
- Cover supplies and equipment which could be damaged by the elements
- Never drop fuel containers. Always handle with care
- Propane tanks must be capped, stored and secured in an upright position
- Smoking is prohibited while handling fuels
- Always use proper lifting techniques
- Before lifting any object without mechanical aid, ensue that the load is within your personal lifting capacity. If it is too heavy seek assistance
- If equipment is too heavy to be lifted by hand make use a mechanical aid
- When moving heavy objects make use of hand carts, dollies or any other aid available

Doc #	Version	Creation Date	Last Revision
029 SWP-Tires, Batteries & Fuel	1	24.09.2014	29.12.2014

TIRES, BATTERIES & FUEL

Tires

- Tires on drills must be checked daily for air loss, wear & tear and damages
- If tires are deflated to reduce ground pressure for movement on soft ground, the tires should be re-inflated to the appropriate pressure prior to moving on firmer or hilly ground, streets roads or highways
- Air pressure should be maintained for travel on streets, roads and highways according to the manufacturer's recommendations
- When inspecting tires look for:
    - Missing or loose wheel lugs
    - Objects wedged between duals or embedded in the tire casing
    - Damaged or poorly fitting rims or rim flanges
    - Abnormal or uneven wear and cuts, break or tears in the casing
- The repair of truck and off-highway tires should only be made with required special tools and following the tire manufacturer's repair manual

Batteries

- Batteries contain strong acids. Extreme caution should be used when servicing them
- Only service batteries in a well-ventilated area
- Always wear all required PPE (gloves, safety eyewear, face shield…)
- When removing the battery from a vehicle or service unit disconnect the battery ground clamp first
- When installing a battery install the ground clamp last
- When charging a battery, turn off the power source to the battery before connecting/disconnecting the leads to the battery posts. Cell caps should be loosen prior to charging to permit the escape of gases
- Spilled battery acid can burn your skin and damage your eyes. Any battery acid spilled on your skin should be immediately flush with water. If battery acid splashes into eyes, flush immediately with large amounts of water and seek medical attention
- To avoid battery explosions, keep the cells filled with electrolyte. Use a flashlight to check battery electrolyte. Avoid creating sparks around the battery by shorting across a battery terminal. Keep lighted smoking materials and flames away from batteries

Fuel

- Only use the type and quality of fuel recommended by the engine manufacturer
- Always refuel in a well-ventilated area
- Always shut off engine and electrical switches before refueling
- Do not spill fuel on hot surfaces and clean any spills before starting engine
- Wipe up spilled fuel with a cotton rag or cloth. Do not sue wool or metallic cloth
- Keep open lights, cigarettes, flames and sparking equipment well clear from fueling area
- Turn off heaters in carrier cabs when refueling the carrier or drill

- Do not fill portable fuel containers completely full to allow expansion of the fuel during temperature changes
- Keep the fuel nozzle in contact with the tank being filled to prevent static sparks from igniting the fuel
- Do not transport portable fuel containers in the vehicle or carrier cap with personnel
- During travel store fuel containers and hoses so they are in contact with a metal surface to prevent the built up of static charge

Doc #	Version	Creation Date	Last Revision
030 SWP-Transporting Drill Rigs	1	24.09.2014	29.12.2014

TRANSPORTING DRILL RIGS

When transporting the drill rig on and off site:

- Only licensed personnel shall operate the vehicles transporting the drill
- Comply with all federal, provincial and local regulation
- Know the overhead clearance, width, length and weight of the drill rig with the carrier
- Know the highway, bridge loads, width and overhead limits. Always allow adequate margins and make sure that they are not exceeded
- Never move a drill rig unless the vehicle brakes are in sound working order
- Allow for mast overhang when cornering or approaching other vehicles or structures
- Be aware that the canopies of service stations and motels are often too low for a drill rig mast to clear even in the travel position
- Watch for low hanging electrical lines, particularly at the entrances to drilling sites, restaurants, motels and other commercial sites
- Never travel on a roads or highways with the mast of the drill in the raised or partially raised position
- Remove all ignition keys when a drill rig is left unattended

Doc #	Version	Creation Date	Last Revision
031 SWP-Off Road Movement	1	24.09.2014	29.12.2014

OFF ROAD MOVEMENT

When moving the drill or equipment off road:

- Prior to moving the drill, always walk the route of travel and inspect for any depressions, stumps, gullies, ruts and other obstacles
- Always complete a pre-use inspection of the drill carrier and any other mobile equipment prior to move. Ensure that the breaks are in proper working condition
- Whenever possible use spotter. Always maintain continuous communication and visual contact with the spotter
- Personnel should stand well clear of moving equipment especially in rough or hilly terrain
- Engage the front axel (4x4 or 6x6) when traveling off highway on hilly terrain
- Use caution when traveling travelling “side-hill”. When possible travel directly uphill or downhill. The addition of drill tools may alter the center of gravity
- Increase the tire pressure when travelling in hilly terrain, but do not exceed the rated tire pressure
- Attempt to cross obstacles such as small logs and small emission channels or ditches squarely rather than at an angle
- Se all brakes and/or locks after the drill has been moved to a new drilling site. When grades are present, chock/block the wheels
- Never travel off-road with the mast of the drill rig in the raised or partially raised position

Doc #	Version	Creation Date	Last Revision
031-SWP- Off Road Movement	1	24.09.2014	30.12.2014

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Doc #	Version	Creation Date	Last Revision
033 SWP- Propane Equipment	1	27.09.2014	30.12.2014

PROPANE EQUIPMENT

When working with propane equipment:

- Always store and transport cylinders in an upright position
- Cylinders must always be placed on solid footing and secured properly
- Full and empty cylinders should be stored separately in a well-ventilated area or outdoors
- Protect hoses from traffic and excessive heat
- Use only hoses and regulating equipment intended for gas propane services
- All propane equipment must have a proper regulator
- Always ensure proper ventilation around propane burning devices
- Never force the cylinder valve open beyond it's normal stop (approx.. 1½ to 2 turns)
- Cylinders should be shielded from radiated or blow heat
- Ensure that all safety shut-off valves are operational
- Always be in compliance with WHMIS and Transportation of Dangerous Goods
- Propane tank are never to be placed inside the core shack
- When checking for leak, use soap and water, never a light or a flame

PETROLEUM PRODUCTS

The contamination of a watercourse, the environmental damage caused by a leak, and the risk that it presents to public safety may be extensive and all the necessary precautions must be taken.

- Be familiar with the provincial regulations and be aware of any new regulations governing the use and transportation of petroleum products
- Ensure that all personnel are aware of the importance of making equipment safe
- Check for compulsory registration of equipment used
- Ensure that registration cards and certificates are attached to the equipment
- Ensure that the equipment used in the storage and transportation of petroleum products is in good condition and that any tanks are properly installed in accordance with applicable regulations
- Above ground tanks, pipes and distribution equipment should meet provincial building standards and must be adequately protected against corrosion. They must:
    - Be installed on a solid, fire resistant foundation
    - Be equipped with a shut-off valve
    - Be protected from vehicle impact
    - Be located according to the regulations, from all buildings
    - Be surrounded by a dyke forming a retaining basing if the capacity of the tank or group of tanks is equal to or greater than 5000liters, for a non-commercial user.
- Respect the standards for implementing and installing petroleum equipment
- Replace any tanks deemed unsafe
- Obtain authorization prior to any work carried out on petroleum equipment (installation, alteration, maintenance and/or demolition)
- Collect used petroleum products in tanks of covered metal containers and dispose of them in compliance with the Ministry of the Environment’s regulation

Doc #	Version	Creation Date	Last Revision
035 SWP-Refueling & Lubrications	1	27.09.2014	29.12.2014

REFUELING & LUBRICATION

When refueling or changing lubricants always comply with WHMIS and the Transportation of Dangerous Goods Act.

Refueling

- Never smoke while refueling or near the refueling or fuel storage area
- Wipe off any excess fuel or drippings before starting the motor
- Strain fuel and cover all containers
- Fuel containers should only be stored in well-ventilated area or outdoors
- Always repair any leaks or repair damaged storage containers

Oil Changing

- Drain old oil or lubricant into a container and check for metal cuttings
- Oil must be changed on a regular basis. This may vary by equipment
- Advise the supervisor of any oil irregularity or quality
- Make sure that the drain plugs are put back in place and are tightened
- Check daily for any water in the drill transmission and pump power end
- Change the oil filters regularly when changing the oil

Storage of Drums

- Store all drums in upright position away from buildings
- Fuel drums should always be closed properly. Only use the proper tools to open the fuel bungs
- Gas lanterns shall not be used while transferring of carrying fuel
- All drums shall be clearly marked and labeled

Doc #	Version	Creation Date	Last Revision
036 SWP-Use of Saws	1	27.09.2014	29.12.2014

USE OF SAWS

When using Chain Saws:

- Always complete a pre use inspection and not any deficiencies
- Repair any deficiencies prior to use
- Only trained competent personnel are allowed to use chain saws
- When not in use, store in a safe, conspicuous place
- Do not use the tip of your saw for cutting
- Do not limb or cut brush with your chain saw
- Always maintain correct chain tension
- Adjust the idling screw so that the chain saw stops when the motor is idling
- Never refuel the gas tank of a chain saw when the machine is hot
- Never smoke while refueling
- If fuel is spilled while refueling, clean it off before restarting the saw
- Never start up a chain saw within 10 feet (3 meters) of the place where the refueling took place
- Always carry and use, if necessary, the small bags of “chemical powder” that is supplied to put out any fire
- Always set the chain saw on a non-flammable surface to refuel
- Do not use a chain saw for stripping bark
- Only use a chain saw for its intended purposes
- Follow the manufacturer’s instructions for the maintenance of your saw
- Use only saws with an anti-kick device
- Do not walk with the power saw running
- When walking power saw should be off and pointing to the rear
- Start the saw on the ground or on a stump, never your knee

Doc #	Version	Creation Date	Last Revision
037 SWP- Felling	1	27.09.2014	29.12.2014

FELLING

Any felling activity must be well planned and prepared. Felling is mostly used in logging activities, however at times workers will be required to clear or remove trees from drilling area. When felling trees:

- Before starting always clear away brush and limbs and deep snow, as to allow yourself room to work around the tree
- Ensure that there is a fast line of retreat
- Avoid felling timber when the wind is strong enough to sway trees
- If necessary to fell timber across a road, use a spotter or flag person on the road to direct traffic as necessary
- Always use proper felling techniques and procedures
- Just before the tree is about to fall, shout “TIMBER”. Be vigilant of any objects that may be knocked down by the falling tree. Be prepared to move rapidly
- Only properly trained competent chain saw operator shall be authorized to complete any felling

Doc #	Version	Creation Date	Last Revision
038 SWP- Helicopters	1	27.09.2014	30.12.2014

HELICOPTERS

When working near and/or around helicopters:

- All personnel shall wear HiVis personal protective equipment and clothing and these must be kept in good condition
- Only trained personnel is to work around helicopters
- All emergency procedures regarding helicopters must be regularly reviewed and practiced
- No smoking is permitted within 100 feet of the helicopter
- Loads are to be arranged in accordance to load capacities
- All material must be properly tied when slinging
- Use cable chokers or lifting pods to move rods, casings and core barrels
- Always keep landing pad clear of brush and loose materials. Turbulence created by the helicopter can lift debris and cause injuries and damage to the helicopter
- Any loose materials must be weighted down
- When helicopter blades are in rotation:
    - Approach or leave the helicopter with your head down, walking in a crouch.
    - Never walk under the tail end of a helicopter
    - Never walk downhill towards a helicopter
    - Always stay in full view of the pilot when approaching or leaving a helicopter
    - Never carry material on your shoulder or overhead when approaching a helicopter
- All side loads must be properly placed as directed by the pilot
- Lineman gloves are to be worn on helicopter hook-up to avoid shock from static electricity
- Cargo nets, slings, chokers and load lines must all be inspected prior to every use
- All personnel should stand well clear of areas where the helicopter is landing sling loads
- Stay well away from suspended loads while helicopter is in motion
- When helicopter departing on a hill. Move 30 feet away in a crouch position and stay there until the machine lifts off
- Proper signals must be used to signal the pilot. Always confirm signals with the pilot
- Always follow instructions given by the pilot or engineer
- Never turn your back to an incoming load
- Allow the load to settle before removing chokers or slings
- Long objects that need to be loaded into or attached to the helicopter should always be kept horizontal
- Never carry anything over your shoulder or over your head. Hold on to all light weight items as they could blow away
- If an item does get blown away, do not chase it. It is not worth your life
- Never throw anything away from or around the helicopter
- Never shine bright lights at the helicopter, this is dangerous and illegal

Doc #	Version	Creation Date	Last Revision
039-SWP- Boat Safety	1	29.09.2014	30.12.2014

BOAT SAFETY

In adherence with section 41(2) of the Occupational Health and Safety Regulations, all Logan Drilling Group personnel shall observe the following:

- The Small Vessel Regulations made pursuant to the Canada Shipping Act and those amendments which apply to boats used to transfer workers
- Details of maximum load and horsepower for safe operations when a boat is used to transfer workers. It is the employee's responsibility to post these details in a conspicuous location on the boat. The boat shall not be operated in excess of these limits
- When adverse weather and/or water conditions prevail, that may endanger workers, the supervisor or boat operator must exercise caution by decreasing the speed of the boat, adjusting the load on the boat of taking other appropriate actions including delaying or canceling sailing plans
- A personal flotation device (PFD) is intended to help save your life in the event you should find yourself in the water. Keep the following points in mind:
  - Put on the PFD and familiarize yourself with its fasteners or tape arrangements
  - If you have to swim while wearing a PFD us a back or side stroke
  - Do not abuse a PFD by using it as a seat cushion, boat fender or kneeling pad
  - When a PFD is dry, stow it in a well-ventilated, cool area. When wet, hang it up to dry in well-ventilated area away from radiators or other sources of direct heat
  - Do not use a PFD that shows signs of heaviness and wetness

Overloading is dangerous. Common sense has to be applied to loading of a small craft. The following is a rough guide:

- All passengers must be issued and wear a DOT/Canadian Coast Guard approved personal floatation device (PFD) during adverse weather or water conditions or other conditions that could create a hazardous situation or when workers are transported in open boats or on rafts, barges or similar equipment
- When working in cold waters, passengers must wear a DOT/Canadian Coast Guard approved floatation suit
- All watercraft must be inspected prior to use
- All personnel operating a watercraft must have received small craft safety training by a recognized service provider such as the Canadian Red Cross
- Only properly trained and certified personnel shall operate the watercrafts
- Small power boats should be equipped with oars or paddles and a bailer
- Any power driven boats must be equipped with an easily accessible and appropriate Fire Extinguisher
- Canoes should only be used as a last resort and be equipped with extra paddles
- All personnel have current standard first aid and CPR training
- A travel plan must be established and left with the supervisor or project office prior to departure. This travel plan should include departure and anticipated time of arrival. The holder of the travel plan must be contacted upon return and at any other established time
- Always check the weather forecast prior to departure

Doc #	Version	Creation Date	Last Revision
040-SWP- Helicopters – In Flight	1	07.11..2014	30.12.2014

HELICOPTERS-IN FLIGHT

When in-flight in a helicopter:

- Do not disturb the pilot
- Keep seat belts fastened
- Do not leave your seat on landing until the pilot indicates it is safe to do so. Frequently it is necessary for the pilot to re-position the helicopter after initial touchdown
- Emergency exit release handles are painted red – learn where they are – and be careful not to accidentally release them
- Do not throw any object from a helicopter in flight

Doc #	Version	Creation Date	Last Revision
041-SWP- Helicopters Boarding & Exiting	1	07.11..2014	30.12.2014

HELICOPTERS – BOARDING & EXITING

When boarding and exiting a helicopter

- Never approach the helicopter without the pilot's permission
- The tail rotor is not visible due to the high RPM
- Always approach the helicopter from a down slope
- When approaching the helicopter, remember to keep low to avoid the main rotor. Wind can cause the rotor to flex down
- Keep your seatbelt buckled until the pilot has given you permission to remove it
- Before departing, be sure your seatbelt is inside the helicopter and is not hanging out the door
- Always leave the exit clear and accessible

WORKING OVER WATER

The Nova Scotia Construction Association Safety Regulations, section 332, regarding working over water (barges, boats & bridges) states:

1. *Where there is water at a project into which a workman might fall with risk of drowning, the employer shall provide the rescue equipment prescribed by subsection (2), ready for use.*
2. *The rescue equipment shall consist of a combination of one or more of the following measures as approved by the inspector.*
    a. *A boat in operating condition and equipped with:*
        i. *A ring buoy attached to fifty fee of three eights of an inch manila or equal rope and*
        ii. *A boat hook*
    b. *A line across the water to which there is attached*
        i. *Floating planks at close intervals, or*
        ii. *Other floating objects capable of providing support for a person in the water.*
    c. *A life vest for each workman exposed to the hazard of falling in the water.*

The Canadian Coast Guard (part of the Federal Department of Transportation) has specific minimum requirements for safety equipment on board vessels of various lengths. The requirements are outline in the Safe Boating Guide, which should be distributed to all Logan Drilling Group personnel working over water.

For Logan Drilling Group investigations, the minimum safety requirements for working over water are:

1. A boat in operating condition (for both logistics and safety), containing at least the minimum safety equipment.
2. A ring buoy attached to fifty feet of rope and mounted on the work vessel or platform, if other than a boat.
3. A personal floatation device for all personnel working in any area where they could fall in the water, this includes any subcontractors.
4. Floater suits or jackets will be available upon request.
5. Cellular phone and/or VHF radio communication system will be available for work on board a vessel.

Logan drilling Group will conform with the Nova Scotia Construction Safety Association Regulations section 333 regarding working on a bridge over water:

1. *A safety belt or life net shall be provided for the use of a workman employed on a bridge more than 50 feet above water or land where:*
    a. *There is danger or the workman falling from the structure.*
    b. *No scaffolding or similar device is provided to prevent his falling from the working position.*
2. *Subsection 1 does not apply where the work of placing structural members prevents the use of such protective measures.*

Doc #	Version	Creation Date	Last Revision
043 SWP-Noise Exposure	1	30.09.2014	29.12.2014

NOISE EXPOSURE

In the drilling industry, during many occasions, personnel will be exposed to varying noise levels. Hearing protection is designed to reduce the level of sound energy reaching the inner ear. To ensure the best protection to personnel's hear the following should always be followed:

- The noise levels are to be measured and documented at any Logan Drilling Group work site if it is expected that the noise levels exceed 80 dBA or there is a change in noise levels.
- All personnel are required to wear at minimum 110 earmuffs that clip to the hard hat at all time when the drill rig is in operation
- Earplugs may be worn in addition to the earmuffs should it be required
- Any exposure to sounds above 80dBA requires hearing protection. Hearing lost can occur gradually over an extended period of time.
- As a "rule of thumb" use hearing protection when you are not able to carry on a conversation at a normal volume of voice when you are three feet apart
- When possible engineering controls should be put in place to lower the noise levels
- Hearing protection is to be worn at all time when the drill rig is in operation
- When new equipment is received, sound levels should be tested to ensure that proper hearing protection is used when using it

Doc #	Version	Creation Date	Last Revision
044 SWP-Living Onboard a Vessel	1	29.09.2014	29.12.2014

LIVING ONBOARD A VESSEL

Personnel may be required to work and/or live onboard a vessel. While staying and working onboard a vessel, Logan Drilling Group personnel shall comply with all vessel safety procedures established by the Captain. Personnel shall:

- Never challenge the Captain on matters related to safety or the operation of the vessel
- Observe and comply with the vessel's standing orders
- Attend all onboard orientations provided by the Captain or his designate
- Be aware of their surroundings and ask for orientation of the vessel if one is not provided
- Never enter into restricted areas on the vessel
- Smoke only in designated areas and never smoke in restricted areas
- Note all emergency exits, understand all emergency procedures and participate in all emergency drills
- Use personal floatation devices as required by the supervisor or the Captain
- Use all required personal protection devices as directed by Logan Drilling Group policies and/or the Captain

Doc #	Version	Creation Date	Last Revision
045 SWP- Moving Parts	1	30.09.2014	29.12.2014

MOVING PARTS

In the drilling industry, during many occasion personnel will be required to work in proximity of moving parts. The following are safe work practices that should be followed at all times.

- Enough space must be available around equipment with moving parts to allow personnel to move, work, operate, clean and maintain the equipment
- No equipment shall be operated without the use of the guards around moving parts
- Guards shall not be tampered with, modified or removed from the equipment
- Personnel shall complete a pre-use inspection on all equipment prior to use, this includes ensuring that all guards are in place and in proper working order. Any deficiencies must be addressed, repaired and/or replaced
- Jewelry (chains & rings) should always be removed to avoid catching or tangling with equipment and/other moving parts
- Personnel should only wear snug fitting clothing or properly fitting coveralls when working around equipment with moving parts
- HiVis, Type 2 Class 2 coveralls should be worn while drilling as opposed to tear away safety vests. Safety vests tend to become unfasten and get caught in moving parts
- Personnel with shoulder length hair or longer must tie hair back to ensure it does not become caught in moving parts

Doc #	Version	Creation Date	Last Revision
046 SWP-General Maintenance	1	01.10.2014	29.12.2014

GENERAL MAINTENANCE

Good and effective preventative maintenance is key in making drilling operations safer. Maintenance should always be carried out by a competent, trained and certified individual in the safest manner possible. The following are general practices that should always be followed.

- Always wear all required PPE when doing maintenance including, but not limited to, eye protection, gloves and coveralls
- Follow proper lock out/tag out procedures when doing repairs/maintenance on any powered equipment
- Always reduce the equipment to a “zero energy state” prior to starting maintenance
- Always block/chock the wheel and/or lower the leveling jacks or both and set the emergency brake before working under a drill or vehicle
- Release all pressure on the hydraulic system, drilling fluid system and air pressure system, when appropriate, prior to performing maintenance
- Use extra care when opening drain plugs, radiator caps and other pressurized plugs and caps
- Never touch an engine or exhaust system following its operation until it has had time to cool
- Never climb the mast (tower) of the drill to do maintenance or repairs. Always lower the mast, stop the engine and de-energize the rig before starting repairs or maintenance on the mast
- Never cut or weld on or near the fuel tanks
- Do not use gasoline or other volatile flammable liquids as a cleaning agent on or around the drill rig or other equipment
- Follow the manufacturer’s recommendations for applying the proper quantity and quality of lubricant, hydraulic oils and/coolants
- Replace all caps, filler plugs, protective guards or panels and pressure hose clamps and chains or cables that have been removed for maintenance before returning the drill or other equipment back to service

Doc #	Version	Creation Date	Last Revision
SWP-Use of Axes	1	01.10.2014	29.12.2014

USE OF AXES

- Axes should always be properly sharpened, fitted with a good handle and maintained in good condition
- Axes must always be stored and hung properly
- Axes should always be carried by the side with the handle gripped close to the head and the cutting edge turned away from the body
- Ensure that the working area is cleared of brush, branches and any other tripping hazards
- Keep your axe strokes under control. The strokes must be aimed away and clear of the body
- Axes must never be used to pull on logs or push over any standing trees
- Axes should be sheathed when stored and during transportation
- All personnel using axes must wear appropriate PPE

Doc #	Version	Creation Date	Last Revision
048 SWP-Aircraft Safety	1	01.10.2014	30.12.2014

AIRCRAFT SAFETY

Some of the work completed by Logan Drilling Group requires the use of aircrafts to transport both personnel and equipment to and from remote locations. The following are general safe work practices should always be followed when working in proximity and loading and unloading any aircrafts.

- Stand clear of the propeller or jet engines at all time. Even when the aircraft is turned off
- No smoking within 100 feet of any aircraft
- Always wear your safety belt or any other safety restraints as directed by the pilot in an aircraft
- Be familiar with the carrying capacity of the aircraft. The pilot is responsible for the loading arrangements
- When loading, and using a ramp of any kind, make sure the aircraft is tied tightly to the ground, dock or shore
- The shore end of the ramp must be solidly secured. If a ramp were to slip, the load could severely damage the float or other parts of the plane
- All heavy objects should be tied securely in the aircraft to avoid shifting of the load
- When clearing a docking or landing area, make sure that there is plenty of clearance for the length of the wing to overhang the shore. The approach and exit path must also be clear
- If building a dock, make sure it is fastened securely to the shore and with no sharp object projecting from the front
- If standing on the shore keep well back and be clear of approaching aircraft and propellers
- If on an aircraft, never walk ahead on the float until the pilot signals the all clear
- All external loads must be placed and secured under the supervision of the pilot
- There are proper procedures to use when signaling the pilot. All personal, working around the aircraft, should have received proper training regarding signaling aircrafts
- Observe any other safety procedures or rules in place by the airline, pilot or site regarding aircraft safety

Doc #	Version	Creation Date	Last Revision
049 SWP-Elevated Derrick Platforms	1	01.10.2014	29.12.2014

ELEVATED DERRICK PLATFORM

Working on an elevated derrick platforms presents a number of risks and hazards. Whenever possible, the derrick (mast) should always be lowered if work is required on the derrick. In the event that it is not possible to lower the derrick to complete the maintenance or repair work, the following practices should always be followed.

- Always use certified fall arrest equipment (including harness and a lanyard with shock absorber).
- When climbing to a derrick platform that is higher than 20ft (6m), a safety climbing device should be used
- When personnel is on the derrick platform, the lanyard should be fastened to the derrick just above the derrick platform to a structural anchor point that is not attached to the platform or to other lines or cables supporting the platform
- Upon arrival on the derrick platform, the platform must be inspected for any breaks, loose connections or loose tools or any other loose materials
- All tools and material should be securely attached to the platform with a safety line. Do not attach a tool to a line attached to your body
- When you are working on a derrick platform, do not guide drill rods or pipe into racks or other support by taking hold of a moving hoist line or a traveling block
- Loose tools and similar items are never to be let on the derrick platform or any other structural members of the derrick
- A derrick platform over 4ft above the ground should have a toe board and a safety railing that are in good condition
- Workers on the ground or the drilling floors should avoid being under workers on the elevated platforms

Doc #	Version	Creation Date	Last Revision
SWP-Hydraulic Safety	1	01.10.2014	29.12.2014

HYDRAULIC SAFETY

The use of high pressure hydraulics is common for diamond drilling machinery. Accidents due to hydraulic failure are usually serious, at times fatal and for the most part preventable. To ensure the safety of all personnel and equipment please follow the outlined safe work practices.

- Pressure should never exceed the manufacturer's recommendations
- All hydraulic systems should be inspected prior to use. Pay close attention for any leaks, wear marks on hoses, worn or damaged cylinder rods, loose hose connections, improper mounting of components etc. Any discrepancies are to be noted and repairs or replacements to be completed prior to start of work
- Any worn or failed hoses should be replaced with pressure rated hoses
- Ensure that any replacement components are rated correctly
- Always install hoses in a manner that prevents sharp bends, stretching of hose or rubbing against objects or other hoses
- All applicable safety guards must be in place, in good working order, and used accordingly
- The hydraulic components and reservoir should always be warmed prior to start especially during cold temperatures
- Follow the start-up procedure as set out in the operating manual or as directed by authorized personnel
- Always try to operate machinery smoothly. This will prevent pressure spikes that could cause premature failures
- Maximum oil operating temperature should never be exceeded
- Follow all maintenance guidelines as set out in the manufacturer's manual and the Logan Drilling Group's maintenance program
- Stop operations when unusual noise is heard. Find the source of the noise and repair prior to continuing operations
- If equipment will be shut down for an extended period of time, always set down the load prior to turning off the equipment. This will relieve pressure from the cylinders, components and hoses
- Do not leave tightly capped oil filled cylinders exposed to heat. The rising temperature will expand the oil, causing the pressure to increase uncontrolled
- Never expose bare flesh to hydraulic leak. Should there be a pinhole leak, the fluid escaping under extreme pressure, can pierce the skin (like a sliver). This results in severe injury and possibly death

Doc #	Version	Creation Date	Last Revision
051-SWP- Adverse Weather	1	27.09.2014	

ADVERSE WEATHER

Adverse weather can, at times, occur with very little warning. Personnel should always be prepared for adverse weather conditions.

- All personnel should be equipped with appropriate clothing and gear to protect themselves against the element (hot or cold)
- During rainy season, always have rain gear accessible and have extra dry, clean clothing
- When working in cold climates and temperature, dress in layers and have extra gloves, socks, clean dry clothing available in the event clothing gets wet.
- During thunder storms all personnel shall seek safe shelter away from the drill. Drilling operations shall only resume 30 minutes after the last lightning/thunder strike.

Doc #	Version	Creation Date	Last Revision
052 - SWP-Heat/Cold Exposure	1	30.09.2014	30.12.2014

HEAT/COLD EXPOSURE

Due to the nature of the work undertaken by Logan Drilling Group the personnel may be exposed to hot or cold temperatures for extended periods of time. In order to minimize the hazards of such exposure the following safe work practices should be followed.

- Personnel should be trained to recognize the signs and symptoms of exposure to both heat and cold and be aware of the proper treatment of such exposure.
- At any time that temperatures are extreme, the safety supervisor in conjunction with the client may determine to delay or temporarily halt work until conditions become more tempered.

HEAT

- When working in hot/humid temperature, ensure to take breaks as needed and cool down in a shaded area
- When possible, personnel should be provided with a cool shaded area for breaks and lunch time
- Have sufficient water available at the site for personnel to stay hydrated during the day.
- Personnel should wear lighter colored clothing in breathable materials
- Personnel should monitor each other and watch for signs of heat exposure such as heat cramps, fainting or weakness or heat exhaustion

COLD

- A warming shelter/area should be available for personnel, working outside during cold temperatures, to be able to warm up during breaks and lunch time
- Personnel should always have extra clothing, socks and gloves available in the event they become wet or temperatures gets colder
- Layers should be worn, allowing layers to be removed as personnel/temperatures warms up and layers to be added as the temperature cools
- Sufficient breaks should be taken during adverse weather to ensure that personnel remains as warm and dry as possible
- Personnel should monitor each other and watch for any signs or symptoms of cold exposure such as frost bites or hypothermia

TRAVELING/WORKING OVER ICE

In some occasions personnel will be required to move or work over ice covered surfaces. The main danger to both personnel and equipment is breaking through the ice and falling in frigid waters. It is vital to determine the thickness of the ice prior to starting any move or work. To ensure the safest conditions when working or moving over ice the following should always be followed.

- Measure ice thickness at varying distance from solid ground. Ensure that ice thickness is sufficient throughout
- Use extreme caution when moving/working over fast flowing streams as the ice thickness may vary from one area to the next
- The distance of the sloop from the tractor should never be less than 30 feet (9.14 meters)
- Always attach to both the tractor and the sloop the longest timber available, 25 feet (7.6 meters), to each vehicle's back and front
- As part of the equipment, a length of cable should be attached to the tractor in order to assist in the recovery should the tractor go through the ice
- Never attempt crossing any ice covered stream or body of water when working alone
- Always maintain communication with the operator of any equipment crossing on the ice

Please see below for minimum ice thickness for varying loads.

Load	Weight	Ice Thickness (inches)
Man on Skis	220 lbs.	2"
Man on Foot	220 lbs.	2.75"
Loaded Sled	353 lbs.	3.5"
Ski-doo	1 100 lbs.	5"
Horse	1 700 lbs.	8"
Tractor on Wheels (small)	2 400 lbs.	9"
Snow Personnel Carrier	5 500 lbs.	11"
Automobile	4 000 lbs.	12"
Muskeg	5 000 lbs.	12"
Farm Tractor	6 000 lbs.	12"
Skidder	10 000 lbs.	15"
D-6 Dozer	24 000 lbs.	23"
D-7 Dozer	30 000 lbs.	25"
D-8 Dozer	35 000 lbs.	27"
20 Ton Truck	44 000 lbs.	30"
35 Ton Truck	77 000 lbs.	39"
50 Ton Truck	110 000 lbs.	47"

Doc #	Version	Creation Date	Last Revision
054 SWP 054 -General Drilling Safety	1	01.10.2014	29.12.2014

GENERAL DRILLING SAFETY

Drilling is a high risk activity that encompasses numerous hazards and risks. To ensure the safety of all personnel and equipment please follow the outlined safe work practices.

- All equipment and site inspections must be completed as outlined. Any deficiencies must be noted and repairs or attention must be paid to those items prior to starting operations whenever possible.
- All personnel working in the field must wear the required PPE, including but not limited to:
    - Hard hat with earmuffs
    - Protective eyewear
    - HiVis Coveralls or long sleeved HiVis shirt
    - Gloves
    - Steel toed boots with min 6" ankle protection.
- All injuries and incidents and near misses must be reported to the site safety supervisor and the appropriate documentation must be completed
- Make sure that any cables used are in proper condition and wound evenly on the drum of the hoist prior to use
- When lowering rods, the driller must wait for the signal from the helper
- The work area should have proper lighting at all time. Especially when servicing or doing repairs on equipment (never use an open light)
- The floor of the drill shack should always be well washed down and clear of any obstructions and debris
- Special care should be taken around "mud mixing tank" to ensure that any splashes or spills of additives are promptly and properly cleaned
- Keep working area clean and free from garbage. All garbage is to be placed into containers with lids and removed from site on a regular basis
- When drilling, secure the water swivel hose. Do not use the machine to remove the water swivel, use your hands
- Always ensure that all rods or other tools have been removed from the rod/casing before starting to drill
- Core barrels and rods should be stood in a safe place away from the drill
- When lining up chuck jaws use a screwdriver, not your fingers
- Use caution when loosening stuck rods
- All personnel are responsible for the safe operation of the equipment
- Never use a spike or wire on cable clevis, always use cotter pins
- Good communication is key between the driller and helper during drilling operations
- Personnel must stand clear when lowering or raising the hoisting plug. The plug must be inserted fully into the rods before hoisting or lowering and secured to the last rod with wrenches
- Stand squarely on both feet and well clear of the crank when cranking the engine. Do not take a round hand grip, but have thumbs and fingers on the same side
- There must be and appropriate guard, in proper working order, used at all times to protect against moving parts
- All drill enclosures must have two exits
- Do not move drill from hole to hole with the mast in the raised position

- Before raising the mast, always look up to check for any overhead obstructions
- Before raising the mast, all personnel and visitors must clear from the areas to the rear and to the side of the mast
- Raise and lower the mast only when the leveling jacks are down and the rig is leveled
- Before starting drilling operations, secure/lock the mast in accordance to the manufacturer's recommendations
- Do not stand on the elevated deck of a truck-mount or all terrain-mounted drill while it is in operation unless necessary for a special task and the driller has been notified
- The operator of the drill rig should only operate the drill from the position of the controls
- If the drill operator must leave the control area, the operator must place the transmission controlling the rotary drive in neutral and place the feed lever in neutral. Before leaving the vicinity of the drill, shut down the drill engine
- Throwing or dropping of tools and equipment is not permitted. Carefully pass tools by hand between personnel or use a hoist line
- Do not consume alcoholic beverages, other depressants, or chemical stimulants prior to starting work on a drill rig or while on a job site
- If it is necessary to drill within an enclosed area, make certain that exhaust fumes are conducted out of the area
- Clean mud and grease from boots before stepping on a drill platform and use hand holds and railings. Watch for slippery ground when stepping down from the platform
- During freezing weather, do not touch any metal parts of the drill with exposed flesh. Freezing moist skin to metal can occur almost instantaneously
- Drain all air and water lines and pumps when not in use if freezing weather is expected
- Adequately cover or protect all unattended boreholes to prevent drill rig personnel, site, visitors or animals from stepping or falling into the hole. Cover, protect or backfill all open boreholes according to local or provincial regulations on completion of the drilling project
- "Horseplay" is not permitted in the vicinity of the drill rig and tool supply storage area, even when the drill is shut down
- When using a ladder on a drill rig, always face the ladder and grasp either the side rail or the rungs with both hands while ascending or descending

Doc #	Version	Creation Date	Last Revision
055 SWP-Respiratory Equipment	1	22.09.2014	29.12.2014

RESPIRATOY EQUIPMENT

Due to the nature of the work undertaken by Logan Drilling Group, the personnel may be exposed to situations where the use of respiratory equipment is necessary. The primary method of controlling respiratory hazards should always be proper and effective ventilation. In cases where proper ventilation is not practicable or enough to correct the hazards, then the use of Air Purifying Respirators or SCBA will be required.

In Logan Drilling Group's case Air Purifying Respirators (ARPs) are the type mostly used. Should a self-contained breathing apparatus (SCBA) be required additional information and expert training will be needed. The following safe work practices should be followed at all time when using ARPs.

ARPs are limited to areas where there is enough oxygen to support life. ARPs do not supply oxygen.

- All personnel using respiratory equipment, ARPs or SCBA, must be properly trained in the selection of the appropriate apparatus and filters to be used, their proper use and care
- Refresher training should be done prior to use of any type of respiratory equipment. Especially for those who have not used such equipment during the previous 3months.
- Personnel using respiratory equipment should be properly fitted for their equipment
- Personnel should always properly clean and disinfect their respirator after each shift as per the manufactures' instructions
- A proper seal is essential for APRs in order to be able to properly filter out contaminants
- Facial hair can prevent a proper fit and seal of an ARP. Personnel must be clean shaven daily when working in areas where ARPs may be needed.
- Always check MSDS sheets for information regarding the type of respirator required
- Personnel must be familiar with any site specific requirements regarding respiratory equipment
- Dispose of any exhausted cartridges and masks in sealed bags or containers
- Keep new, unused filters separate from old, used filters
- Replace filters when breathing becomes difficult
- ARPs should not be used for protection against materials that are toxic even is small amounts.
- ARPs do not provide visor or face protection. Do not use as protection against materials that are highly irritating to the eyes
- Do not use for gases that can't be detected by odor or throat irritation
- Do not use any respiratory equipment that serviceability is questionable or in doubt

Doc #	Version	Creation Date	Last Revision
056 SWP-Drill Tower Erection	1	01.10.2014	29.12.2014

DRILL TOWER ERECTION

Logan Drilling Group operates a number of different types and models of drills. The following safety practices may not be applicable to all drills. Personnel should always ensure that they are following the practices and procedures set out for the equipment and tools that they are working with.

- Fall arrest equipment, including harness and lanyard with shock absorbers, must be worn at all times when working around the tower
- Fall arrest systems must be in use when the tower is being erected
- The tower must be secured by guy lines
- Signaling devices and lighting must be in place on all towers
- During the erection process proper working platforms must be used
- All tools used in the tower construction must be secured
- A gin pole of sufficient strength to pull any required load safely must be attached to the tower leg
- All materials being raised on the tower must be tied securely so that there is no danger of ropes becoming undone or objects falling
- All materials should be laid out in an orderly manner to provide for an efficient and safe operation

Doc #	Version	Creation Date	Last Revision
057 - Working with Augers	1	05.11.2014	29.12.2014

WORKING WITH AUGERS

Any drilling activity can pose numerous hazards. When working with augers it is the responsibility of the operator and the tools handler to follow the established systems and procedures. The following are additional safe work practices to minimize the hazards for all personnel involved:

- The driller must ensure that the helper, and any other personnel are well away from the auger column and that the auger fork has been removed before starting rotation
- Stay clear of the rotating augers and any other rotating components
- Never reach behind or around a rotating auger for any reason
- Ensure that all guards are in place and used properly
- Only use manufacturer's recommended method of securing the auger to the power coupling. Do no use an over length pin or bolt
- Do not touch the coupling of the auger with hands, wrench or any other tool during rotation
- Whenever possible, use the tool hoist to handle auger section
- Never place hands or fingers under the bottom of an auger section when hoisting the auger of the top of the auger section that is in the ground or other hard surfaces
- Never allow your feet to get under the auger section that is being hoisted
- Use a long-handled shovel to move auger cuttings away from the auger. Never use your hands or feet to move the cuttings away from the auger
- Do not attempt to remove dirt/cuttings from rotating augers. Augers should be cleaned only when the drill rig is in neutral and the augers are stopped from rotating

Doc #	Version	Creation Date	Last Revision
058 SWP-Wood Stoves	1	05.11.2014	30.12.2014

WOOD STOVES

Wood stoves are widely used to produce economic and efficient heating. Proper care and use of a wood stove is vital for safe and effective use.

- Always ensure that the chimney and other exhaust systems for the wood stove have been cleaned, inspected and maintained properly
- Never pour flammable liquid into any stove or onto a fire area that is still warm. The immediate fuming of the liquid will result in an explosive vapors
- When starting a wood stove, a small piece of burning paper placed directly under the stove pipe will create a column of heated air in the pipe. When the tinder and kindling are lighted, there will already be a favorable draft
- Ensure that the stove is a safe distance, as per the manufacturer's requirements, from the shack wall. Ensure that a wall shield is properly in place
- All wood stove must have a spark arrester

Doc #	Version	Creation Date	Last Revision
059 SWP-Propane Refrigerators	1	05.11.2014	30.12.2014

PROPANE REFRIGERATORS

Propane refrigerators are great assets, especially when working in remote location where electrical power is limited. However if not maintained and operated properly they can pose risks. The following practices should always be used when using propane refrigerators.

- Always transport refrigerators in an upright position
- Install the refrigerator in a location where it will be level, preventing any rocking
- Never operate the propane or the refrigerator without a proper regulator at the propane outlet
- Check the feed line joints with soapy water for any leaks before lighting the pilot
- Threads at the shut-off valve and the regulator are left handed
- When not in use, remove all contents from the refrigerator, wash thoroughly and leave the door ajar
- Always shut off the propane at the propane cylinder
- A propane refrigerator which runs inefficiently do to dirty exhaust may produce dangerous carbon monoxide gas
- Ensure to clean refrigerator and all attachments and the exhaust system regularly

Doc #	Version	Creation Date	Last Revision
060 SWP-Working Alone	1	30.09.2014	30.12.2014

WORKING ALONE

At Logan Drilling Group, it is very rare that personnel will be required to work alone. The general practice is that everyone works in a pairs and working alone is avoided. However some occasions present themselves where personnel is required to work alone. The following safe work practices should be followed when working alone.

- If possible, electronic means should be used to monitor the activities of any personnel working alone
- Specific tasks and locations must be identified and contact details must be left with a supervisor or project manager
- A risk assessment should be completed for the tasks and location where work is to be completed
- Specific controls must be identified and put in place for the work to be completed before the work is to be started
- Personnel working alone must always have a means of communication with the supervisor or project manager (cell phone, sat phone or two way radio)
- A check-in schedule, with a supervisor or project manager, is to be put in place and used
- If any check in time is missed the supervisor or project manager should attempt to contact the individual within 5 minutes of missed check in time
- All personnel will be trained in the proper procedures and practices to be followed when working alone
- Supervisors and managers will also be trained in the working alone procedures and practices as well as their specific role to supervising workers that are working alone
- Appropriate method statements and safe work practices should be reviewed prior to working alone
- When working alone, personnel should not attempt any additional tasks or move to a new location without clearing it with their supervisor

Doc #	Version	Creation Date	Last Revision
061 SWP-Working on Secured/Locked Site	1	02.09.2014	29.12.2014

WORKING ON SECURED/LOCKED SITE

On some occasions, drilling activities may take place within a locked or secured site. To ensure the safety of Logan Drilling Group personnel and the security of the site, the following are general guidelines to be followed:

- When there is a gate or secured entrance with personnel available to control access,
  - Site personnel is to stay at the entrance point until all Logan Drilling Personnel have left the property for the day.
  - A method of communication must be established and maintained at all time (cell phone, two way radios or sat phones).
- When the gate or entrance is secured with the use of a combination lock, Logan Drilling Group personnel must have access to the combination, or the combination lock be substituted for a keyed lock for the duration of the drilling program.
- When the gate or entrance is secured with a keyed lock, a key should be kept in a lock box (similar to those used by real-estate agents), and attached to the gate/entrance.
- No work should be taking place on a site where there is no easy access in or out.
- Personnel should never be “locked-in” on site.
- Personnel should never be working alone.
- Always review the site specific emergency response plan prior to starting work.
- Site emergency contact number should be made available to all Logan Drilling Personnel.

Doc #	Version	Creation Date	Last Revision
062 SWP-General Company Rules	1	02.02.2015	02.02.2005

GENERAL COMPANY RULES

The health and safety of all workers is paramount here at Logan Drilling Group. The following general company rules should be followed at all time. Additional safe work practices for specific tasks and areas can be found in the Logan Drilling Group Health & Safety Manual.

- Accidents, Injuries or Near Misses, regardless of their nature, shall be promptly reported to your supervisor and the health & safety manager.
- Approved PPE shall be worn on the job by all personnel.
- Clothing shall be appropriate to the duties being performed. Long pants, long sleeved shirt and steel toed boots are the minimum requirements. No tank tops, shorts or tennis shoes permitted.
- Smoking is permitted only in designated areas. “Strike Anywhere” matches are prohibited.
- No smoking permitted in any company buildings or vehicles.
- Running is not permitted except in extreme emergencies.
- Safety glasses. Goggles and/or face shields must be worn when breaking concrete, chipping metal, welding, grinding and for any other tasks where eye protection is required.
- Hand tools shall not be used for any purpose other than that intended.
- Any damaged or worn parts on tools shall be promptly repaired or replaced.
- Power tools she be operated only by authorized personnel, with guards furnished by the manufacturers in place.
- Guards, barriers or any other safety mechanism shall not be removed or tampered with
- All electrical hand tools she be grounded or double insulated.
- Explosive/power actuated tools shall be used only by persons who have been instructed and trained in their safe use.
- Compressed gas cylinders shall be secured in an upright position.
- Possession or use, on the job, of intoxicating substances or unauthorized drugs (prescription or not) is strictly forbidden and constitutes grounds for dismissal.
- Riding on equipment is prohibited. No person shall ride any hook, hoist or other material handling equipment. This equipment is designed strictly for handling material and not to carry riders.
- Welding and burning operations shall be carried out only by authorized personnel with appropriate personal protective equipment.
- Horseplay, fighting, gambling and possession of firearms are strictly forbidden on the job and constitute grounds for dismissal.

METHOD STATEMENTS SECTION

Table of Content

Doc #	Version	Creation Date	Last Revision
001 MS-Manual Lifting	1	15.10.2014	30.12.2014

MANUAL LIFTING

Work Activity: Manual lifting of equipment and supplies.

Objective: Safe and effective manual lifting of equipment and supplies.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent)
2. All machinery and equipment must be in good working order
3. All manual handling load must be assessed prior to lifting
4. All work shall be completed under suitable management supervision

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Assess the load to be lifted and ensure the load is well balanced.
   Note: If the load is odd shaped or too heavy to lift alone get help or use mechanical aid for lifting.
2. Bend at the knees, keeping your back as straight as possible
3. Grip the load with the palm of the hand and fingers.
4. Keep the arms and elbows close to the body
5. Use your body weight to start moving the load. Then lift by pushing up with the legs.
6. Always look in the direction you want to go/are going.
7. When lowering the load, bend the knees, keeping the back as straight as possible. Do not stop mid-way down.

Doc #	Version	Creation Date	Last Revision
002 MS-Auger Drilling	1	07.10.2014	09.01.2015

AUGER DRILLING

Work Activity: Auger Drilling

Objective: Safe and effective drilling using augers.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

Tools & Equipment:

- Hammer
- Drive Pin
- Hollow Stem Bolts
- 1¼ Socket with Ratchet

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all daily inspections have been completed.
2. Ensure that the drill rig is level and that the tower is raised and locked in the vertical position.
3. Augers must be properly assembled.
4. Place the auger puller onto the top of the drive cap.
5. Remove the heavy winch cable from the staging area.
6. Have the helper put out the winch cable as the winch lever is engaged. Once enough cable has been released, disengage the winch lever by placing it in the neutral position.
7. Hook the safety swivel latch hook to the auger puller and have additional personnel move to the designated safe area.
8. Once given the ok from the helper, pick up the auger slowly and only enough to skim the top of the ground. The helper will help guide the auger to position.
9. Once the auger is in place, remove the safety swivel latch hook and place it back in the staging area.
10. Have the helper steady the auger by placing flat hands on either side of the auger while the extension collar is being attached to the auger.
11. Raise the head and line up the extension collar with the auger pin.
12. Lower the head until the collar and pin are connected.
13. Attach the collar and pin together with the drive pin.
14. Lift the auger assembly with the head until the desired height is reached.
15. Align the auger with the pre-determined hole location.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

16. Ensure that the guard is lowered, that the transmission in low gear and the engine running on low RMP.
17. Apply adequate amount of down pressure to push down the hollow stem auger 6”-8” into the soil.
18. Ensure that all personnel and equipment are well clear of the augers.
19. Slowly engage the clutch or rotation control and start the rotations. Increase the throttle to the appropriate setting.
20. If the auger head slides out of alignment, disengage the clutch or the hydraulic rotation control, raise the head, realign the auger and start from step 17.
21. Drill to the desired/predetermined depth.
22. Once the depth is reached clean out the hole by increasing the throttle and raising and lowering the augers while in rotation.
23. Raise the guard to the staged position.
24. Turn off drill and signal the helper to shovel away the cuttings to the designated area.

Doc #	Version	Creation Date	Last Revision
003 MS-Calcium Hardness Test	1	15.10.2014	13.01.2015

CALCIUM HARNESS TEST

Work Activity: Conduct a calcium hardness test.

Objective: Conduct a safe and effective calcium hardness test.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Filtrate 1cc of drilling mud.
2. Add 50 cc of distilled water.
3. Add 1 squirt of strong buffer.
4. Add 2 to 6 drops of hardness indicator (will turn the sample red wine color).
5. Titrate with EDTA solutions (standard versatate) from red to blue color.
6. Calculate the amount of titrating solution used and plug the number into the formula.

$$\frac{400 \times (\#cc \text{ of standard Versatate})}{\#\ cc \text{ volume of sample}} = \text{Calcium Content in PPM}$$

NOTE: To get cuttings to efficiently flow out of mud a calcium content great than 600PPM is necessary. The higher the calcium content the lower the yield of polymers

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
004 MS – Coring	1	08.10.2014	09.01.2015

CORING

Work Activity: Coring

Objective: Safe and effective start and continued coring activities.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. After the last rod is connected and the drill string is held by the foot clamp, disconnect the hoisting plug.
2. Connect the water swivel to the rod and connect the hoist to the water swivel ball.
3. Raise the rod string high enough to remove the foot clamp.
4. Lower the drill string to within a few inches of the bottom of the hole.
5. Tighten the chuck on the drill head to the drill string.
6. Start the water pump and the drill. But do not advance the drill string into the hole until the water pressure rise is indicated on the pressure gauge or until water is returning from the hole. Water must be circulating around the diamond bit before cutting begins.
7. Water pressure of 50-100psi is sufficient water pressure to start advancing the rotating drill head into the hole and to start coring. As the hole deepens, the water pressure will gradually rise to the higher operating pressures.
8. In most cases, above normal water pressure reading denotes the core barrel may be full of core or a core block has occurred in the bit or inner tube.

Doc #	Version	Creation Date	Last Revision
005 MS- Dropping Inner Tube Assembly	1	15.10.2014	09.01.2015

DROPPING INNER TUBE ASSEMBLY

Work Activity: Dropping the inner tube assembly during a coring cycle.

Objective: Safe and effective dropping of the inner tube assembly during a coring cycle.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Attach the inner tube spearhead to the overshot assembly. The “AQ” inner tube can be hand-carried.
2. Hoist the inner tube assembly above the rod opening.
3. Release the inner tube so it falls freely, providing there is at least 20 feet of fluid in the drill hole.
4. Add the necessary rod.
5. Attach the water swivel to the rods.
6. Circulate the water while the inner tube is dropping. If rock particles are on the inside of the bit, they will be washed away so the inner tube has the necessary clearance to land.
7. Rotate the drill string while the inner tube is falling, but do not lower the rod string into the drilling position. In deep holes, there is always a chance that the drill string may “stick” in the hole if it is stationary for any period of time.
8. If for some reason, the drill string cannot be rotated, then raise and lower the drill string with the hydraulic head or the hoist until the inner tube reaches its coring position.
9. When the inner tube strikes the landing ring, contact is always audible by placing a chuck wrench against the rods and listening for the contact sound.
10. When the inner tube is seated in the coring position, lower the drill string with the bit rotating.
11. Measure or mark the “stick-up” to be sure that the drill string has bottomed in the hole. If the hole is shallow, less than 500 feet, the drill string can rest on the bottom of the hole. If the hole is deep, more than 500 feet, it is necessary to support the drill string with the hoist.
12. Stop the drill and recheck the full hydraulic head grip and restart the drill.

Doc #	Version	Creation Date	Last Revision
006 MS-Generator Initial Start-Up	1	15.10.2014	08.01.2015

GENERATOR INITIAL START-UP

Work Activity: Initial start-up of a generator

Objective: Safe and effective initial start-up of a generator

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that the pre-use inspection has been completed.
2. Ensure that the exhaust system, piping, hangers, rain cap, muffler, fuel lines, battery cables, anchor bolts, drip pans and all fluid levels have been checked/inspected.
3. Check and tighten all electrical connections after disconnecting the power source.
4. Consult the operator & maintenance manuals.
5. Manually operate the transfer switch controls.
6. Start and test the run power unit only (engine).
7. Check the phase rotation of the building and the generator.
8. Receive proper authorization to transfer the power to the emergency load after advising all the personnel involved.
9. Check and record all readings.
10. Record if the unit is left in auto or off.

Doc #	Version	Creation Date	Last Revision
007 MS-Generator Testing & Repairs	1	15.10.2014	08.01.2015

GENERATOR TESTING & REPAIRS

Work Activity: Conducting generator testing and repairs.

Objective: Safe and effective testing and repair of a generator.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all pre-use inspections and checks are completed.
2. Check all fluid levels.
3. Check that all guards are in place.
4. It the unit has a breaker installed, inspect for any internal loose/bare wiring.
5. If the generator is running indoors, ensure that the exhaust pipe to outdoors is connected and that the ventilation fan is turned on.
6. Ground the unit to and existing breaker or ground rod.
7. Check and record all required readings.
8. If repairs are required ensure to follow the lock-out/tag-out procedure.
9. Record any problems, repairs and test runs performed.
10. Tag the unit with the date, repairs and the name of the person who completed the repairs.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
008 MS-Handling Additives	1	21.10.2014	13.01.2015

HANDLING ADDITIVES

Work Activity: Handling various drilling additives.

Objective: Safe and effective handling of various drilling additives.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all personnel are wearing the required PPE. Have masks available if particularly windy conditions or MSDS requires them.
2. Ensure that all additive containers have the appropriate labels and that they are clean and legible.
3. Absorbent matting and spill kits must be available at the drill site.
4. The helper shall retrieve the additive from the containment area. All additives must be stored in a secondary location with absorbent matting placed under the containers.
5. Add the required amount of additives to the appropriate tank.
6. After use, replace the additive in the containment area.
7. Ensure that the additive is mixed thoroughly prior to commencing drilling.
8. Ensure that absorbent matting is replaced when needed and that all spills are contained and cleaned immediately.
9. In the event of a spill all personnel must follow the proper spill reporting and containment procedures.

All additives being used on site must be non-toxic and present minimal to no danger to humans, animals or the environment. MSDS information must be available on site at all time.

Doc #	Version	Creation Date	Last Revision
009 MS-Inner Tube Fails to Release (QU)	1	08.10.2014	09.01.2015

INNER TUBE FAILS TO RELEASE (QU)

Work Activity: Removing the inner tube when it fails to release.

Objective: Safe and effective removal of inner tube when it fails to release.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Pull the cable taut and increase the fluid pressure to the overshot and the inner tube downward to release the latching mechanism.
2. Pull the cable until the wireline hoist until the shear pin (1) in the overshot assembly fails.
3. Reel up the wireline cable.
4. In order to remove the core barrel form the hole, all the rods must be removed from the hole.
5. Before disassembling the inner tube assembly from the core barrel, try to determine why the inner tube assembly fail to release.
6. Remove the core from the inner tube.
7. Service and repair both the inner tube assembly and the outer tube assembly.
8. Replace the shear pin from the overshot.

Doc #	Version	Creation Date	Last Revision
010 MS-Leveling the Drill	1	10.10.2014	09.01.2015

LEVELING THE DRILL

Work Activity: Leveling the drill rig.

Objective: Safe and effective leveling of the drill rig.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all daily inspections have been completed and that all personnel are wearing the required PPE.
2. Walk around the drill to ensure that the area is clear of any objects, personnel and equipment. Look up, down, under and around.
3. Ensure that the tower is down and is resting position.
4. If required, place 6" x 6" leveling blocks under each jack leg.
5. When possible have designated spotter. Before starting make sure that you have visual contact with your spotter.
6. Start by lowering the front jacks until you feel the machine rise slightly. If using blocking, maintain visual contact with the spotter for signal that jack leg have hit the blocks.
7. Repeat the same procedure for the back jack legs.
8. Now that all jacks are down and in contact with the blocks (if applicable), using a 3 foot level on a side of the drill, determine which jack has to be raised to level the drill. Never raise 1 side of the drill so high as to risk a tipping situation.
9. Once the drill is level, put blocking in place (if necessary). The levers for the jack legs must be locked-out while blocking is taking place.
10. After the blocking has been put in place, the leveling jacks may be retracted. The levers will then be locked-out and the pressure valve to the jacks turn off and locked-out in the off position.
11. Turn off the engine or proceed with work as discussed.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
011 MS - Lock-Out/Tag-Out	1	15.10.2014	30.12.2014

LOCK-OUT/TAG-OUT

Work Activity: Lock-out/Tag-out of equipment for repairs or maintenance.

Objective: Safe and effective locking-out and tagging-out of equipment and tools.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent)
2. All machinery and equipment must be in good working order
3. All manual handling load must be assessed prior to lifting
4. All work shall be completed under suitable management supervision

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Inform the supervisor/foreman which piece of equipment will be locked out
2. Ensure that equipment is not in use
3. Turn off the equipment's main electrical breaker/energizing switch
4. Install the lock on the locking device with the completed tags. Lock out Tags, Signage and Locks are available from the Supervisor/Foreman and/or purchasing.
    a. Any electrical panel shall have lock and a warning tag attached to the operating lever.
    b. Equipment with multiple start location must have the keys removed and the positive connector of the battery disconnected along with warning tags placed at all starting points.
    c. Vehicles shall have the keys removed and warning tag placed at start location.
    d. If there is more than one individual on site a safety lock has to be used.
5. The start button or energizing switch is to be switched on to ensure that there is no power to the equipment then switched back off.
6. Conduct required maintenance and or repairs.
7. Once work has been completed, advise the supervisor/foreman.
8. Supervisor/foreman will open the Lock out Box and provide the keys for the lock.
9. Remove all locks from the equipment and re-engage energy to the equipment/machinery. Only the individual who signed off on the Lock out Tags shall remove the locks and keys.
10. Under no circumstance shall any equipment that has been tagged out be returned to operation without maintenance or repairs completed.
11. Should a lock have to be removed, and the worker who installed it is not capable to remove it or cannot be located; it will be ensured that the repairs/maintenance have been completed.
12. A supervisor/foreman will sign off on the lock out tag and unlock the equipment/machinery and return it to operation.
13. Dispose of used Lock out Tags.
14. In the event that a lock is removed by someone other than the personnel who placed the lock and tag on the equipment or machinery, the tag will be signed by the individual removing the tag and attached to the required maintenance log.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request. Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
012 MS-Lowering Core Barrel & Rods	1	07.10.2014	09.012015

LOWERING CORE BARREL & RODS

Work Activity: Lowering core barrel and rods into hole.

Objective: Safe and effective lowering of core barrel and drill rods.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that the core barrel and core tube are clean.
2. Attach the core barrel to the drill rod and tighten.
3. Attach the hoisting plug to the core barrel & drill rod.
4. With the helper guiding the string, slowly lift the starting core barrel string with the hoist.
5. Attach the jaws to the rods.
6. Ensure that the lowering iron handle has enough clearance.
7. Hold lowering rod handle firmly.
8. Holding the rods with the foot clamp, the helper will detach the hoisting plug.
9. Brake and stop rod with a smooth motion.
10. Ensuring that the brakes are well adjusted, hold the rods with the foot clamp.
11. The helper will attach another rod while the hoisting plug is free.
12. The hoist plug will then be attached to the new rod.
13. Once given the signal from the helper, place your foot on the foot clamp pedal.
14. Hoist the rods enough to free the foot clamp jaw holding with the hoist brake keeping the clamp open with the pressure from the foot.
15. Lower the rods using the hoisting brake.
16. Attach the cable to the hoisting swivel and rod.
17. Hoist the rod to a position above the closed head.
18. Lower the rod carefully through the drill head.
19. If the rod does not go through the chuck jaws, spread the jaws with a wrench handle or screwdriver. Do not use fingers.
20. Attach the rod to the string of rods that are in the hole.
21. Chuck the drill rods

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Method statement shall be reviewed in ToolBox Meeting prior to work activity.

22. Pump water through the rods until a good return is observed.
23. Lower the rods with the cable to the desired depth
24. Chuck rods firmly
25. Remove holding device
26. Commence drilling

Doc #	Version	Creation Date	Last Revision
013 MS-Lowering Drill Rods with Jaws	1	07.10.2014	09.01.2015

LOWERING DRILL RODS WITH JAWS

Work Activity: Lowering Drill Rods with Jaws

Objective: Safe and effective lowering of drill rods with the use of jaws.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that the core barrel and core tube are clean.
2. Attach the bit and shell firmly.
3. Attach the core barrel to the drill rod and tighten.
4. Lower core barrel and first section of drill rods into the hole.
5. Hold core barrel in position with the hoist break.
6. Tighten the jaw to the rods.
7. Ensure that the lowering iron handle has enough clearance.
8. Hold the lowering rod handle firmly.
9. The helper will detach the hoisting plug from the rods.
10. Brake and stop rods with a smooth motion.
11. The helper will attach the next rod.
12. Close the drill head and secure.
13. Attach the cable to the hoisting swivel and rod.

Doc #	Version	Creation Date	Last Revision
014 MS- Lowering of Inner Tube in Dry Hole	1	20.10.2014	09.01.2015

LOWERING OF INNER TUBE IN DRY HOLE

Work Activity: Lowering of the inner tube assembly in a hole with less than 20 feet of water.

Objective: Safe and effective lowering of the inner tube assembly in a hole with 20 feet of water or less.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

NOTE: The inner tube assembly cannot be dropped down a "dry hole" (with 20 feet of water or less). The inner tube assembly must be attached to the overshot assembly and both are lowered in as one unit down the hole.

1. Assemble the dry hole lowering locking sleeve to the overshot (used only for this operation).
2. The cable slips through the longitudinal spiral slot. The locking sleeve sets on the back end of the lifting dog legs during the lowering operation.
3. To keep the locking sleeve from sliding up the cable during the lowering operation, install a fillister head screw into the slotted locking sleeve.
4. Attach the overshot to the spearhead of the inner tube.
5. Check the dry hole lowering release by pushing the overshot on the conical spearhead so the lifting dogs spread. The locking sleeve slips over the ends of the lifting dog and holds them in the open position releasing the overshot from the inner tube spearhead.
6. Reattach the overshot to the inner tube assembly and set the locking sleeve to rest on the lifting dog ends.
7. Insert both the inner tube assembly and the overshot into the drill hole.
8. Control the hoist at a moderate speed. High speed lowering may cause a premature release of the inner tube assembly resulting in damaging both the inner tube and the bit.
9. When the inner tube assembly lands within the outer tube assembly, the inertia of the overshot assembly will drive the lifting dog over the spearhead cone spreading the lifting dog apart. This action will release the overshot from the inner tube assembly.
10. If the overshot is not released, pull the cable by hand so it is taut, then release it quickly. The sliding weight on the overshot jar staff will act like a hammer and drive the lifting dog over the spearhead to release the overshot.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

11. Hoist the overshot assembly to the surface, keeping the cable spooked evenly on the drum.
12. Remove the locking sleeve from the overshot.

Caution: Use the locking sleeve only on the dry hole lowering the inner tube assembly in the hole. Remove the locking sleeve from the overshot when retrieving the inner tube from the hole. The locking sleeve will prevent the overshot from picking up the inner tube in a routine retrieving operation.

Doc #	Version	Creation Date	Last Revision
015 MS-Lowering the Tower	1	10.10.2014	09.01.2015

LOWERING OF THE TOWER

Work Activity: Lower the tower/mast

Objective: Safe and effective lowering of the tower.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all daily inspections have been completed and that the drill has been leveled and blocked.
2. Slide the base out.
3. Loosen and remove the tower locking bolt.
4. Detach the kelly bar coupler.
5. Slide the base in.
6. Ensure that the head is down in the resting position (approximately 4” above the kelly bar coupler).
7. The main guard must be removed or lowered to the resting position.
8. Ensure that all the cables are detached and are placed behind the main guard.
9. Increase the throttle.
10. Ensure that the path of travel of the tower is clear of object and personnel.
11. Slowly and at a steady pace, lower the tower until it is in the horizontal resting position.
12. Remove the kelly bar coupler and the locking pin and place it in the staging area.
13. Turn of the engine or proceed with work as discussed.

Doc #	Version	Creation Date	Last Revision
016 MS- Maintenance Core Barrel After Use	1	20.10.2014	13.01.2015

MAINTENANCE CORE BARREL AFTER SERVICE

Work Activity: Inspection and maintenance of the core barrel assembly after service.

Objective: Safe and effective inspection and maintenance of the core barrel assembly after service.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. After the inner tube assembly and the outer tube assembly have been serviced, clean and lightly oil the surface of the inner tube.
2. Install the inner tube assembly into the outer tube so the landing shoulder is firmly seated on the landing ring.
3. The gap/distance between the inside slope of the bit and the outside slope of the core lifter case should be of 1/16th of an inch (1.6mm), Make the necessary correcting adjustments if the gap setting is not correct.
4. This gap adjustment should be checked by hoisting the core barrel assembly in a vertical position. A visual check can be made through the open bottom end of the bit.
5. Make the necessary adjustments to all inner tube assemblies to be used as companions with a particular outer tube assembly.

Doc #	Version	Creation Date	Last Revision
017 MS- Maintenance Inner Tube Head Assembly After Service	1	20.10.2014	09.01.2015

MAINTENANCE INNER TUBE HEAD ASSEMBLY AFTER SERVICE

Work Activity: Inner tube inspection and maintenance of inner tube assembly after service.

Objective: Safe and effective inspection and maintenance of the inner tube assembly after service.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Disassemble the inner tube form the head assembly. Always use a Longyear inner tube wrench on the inner tube and an open-end wrench on the head assembly.
2. Remove the core lifter case from the inner tube.
3. Wash out the core lifter and core lifter case.
4. Check the grip action of the core lifter by inserting a section of the core and pulling it so the core lifter grips onto the core. If the core slides out, replace the core lifter.
5. To replace core lifter, remove the stop ring from within the core lifter case by prying it loose and inserting a thin screw driver blade under the relief at the split of the ring.
6. Remove both the stop ring and the old core lifter.
7. Inspect both the stop ring and core lifter case for wear.
8. Apply cup grease inside the core lifter case. Install the new core lifter.
9. Install the stop ring – snap it into place. Check to be sure the ring stop is properly seated in the grooved recess of the core lifter case.
10. Clean the inside bore of the inner tube by pushing a cloth swabbing patch through it until the bore is clean.
11. Inspect the inner tube for dents, nicks and tears on both the inside and the outside surfaces. Serious dents cause core blocks. Unless the dents are close to one end, replace the inner tube. The “Q” inner tube is reversible. Connect the core lifter case to the smoother bore end of the inner tube.
12. Remove the inner tube cap from the spindle bearing and wash out the grease within the cup.
13. Clean the grease from the compression spring and the bearing about the spindle shaft.
14. Check both ball bearings to see if cages are broken or if the races are spinning free.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
018 MS- Maintenance of Inner Tube Between Core Runs	1	15.10.2014	13.01.2015

MAINTENANCE OF INNER TUBE BETWEEN CORE RUNS

Work Activity: Perform regular maintenance to the inner tube head assembly between core runs.

Objective: Safe and effective maintenance of the inner tube head assembly between core runs.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Wash the head assembly in clear water to remove drilling mud and grit.
2. Inspect the action of the latches and the latch retracting case. Both should work freely.
3. Check the movement of the spindle bearings. They should spin freely and there should be no end play. If end play exist, the head assembly may need further repairs.
4. Check the rubber shut-off valve for shredding. At this point, a determination should be made on positioning the rubber shut-off valves.
5. If the rubber shut-off valve is to be rearranged, it is necessary to remove the inner tube cap, lock nut, compression spring and the three bearings. Make the necessary changes with the rubber valves. Install the bearings in the same position as originally assembled. Do not reverse either ball bearing. Assemble the lower end and tighten the lock nut, to remove the free play, but do not reload the compression spring.
6. If no parts have been replaced and the bearings are in good condition, apply cup grease to the latches and the latch-retracting case.
7. Pump “Taxeco Multifak No.2” or equivalent grease into the grease fitting until clean grease exudes out of the top thrust bearings.
8. Rejoin the head assembly to the inner tube.

Doc #	Version	Creation Date	Last Revision
019 MS- Maintenance – Inner Tube	1	15.10.2014	09.01.2015

MAINTENANCE – INNER TUBE

Work Activity: Perform regular maintenance to the inner tube between core runs.

Objective: Safe and effective maintenance of the inner tube between core runs.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. After the core has been removed, run clean water down the inner tube to wash out any sand particles and grit.
2. Inspect the inner tube to see if any particles are lodged on the smooth inside surface.
3. Check the core lifter case, stop ring and core lifter. The core lifter should be checked by inserting a short section of core into the core lifter and pulling it out to see if the core lifter will grip the core. If the core slips, the core lifter should be replaced.
4. If the core lifter grips the core, then apply a small amount of cup grease just above the core lifter in the core lifter case and connect it to the inner tube.

Doc #	Version	Creation Date	Last Revision
020 MS- Maintenance Outer Tube Head Assembly After Service	1	20.10.2014	09.01.2015

MAINTENANCE OUTER TUBE HEAD ASSEMBLY AFTER SERVICE

Work Activity: Outer tube inspection and maintenance of outer tube head assembly after service.

Objective: Safe and effective inspection and maintenance of the outer tube head assembly after service.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. The general condition of the outer tube assembly should be checked each time it is pulled from the hole. A dented or crooked outer tube causes premature core blocking.
2. Remove the locking coupling. Note the welded hard face strips. If the hard surfacing shows excessive wear so the base material is worn, this part should he replaced. Check the inside shoulder and the condition of the driving lug. Drilling through heavy core blocks may cause latch dents on the locking coupling. When this damage is noted, the locking coupling needs to be replaced.
3. Remove the adapter coupling from the outer rube and inspect the condition of the shoulders above the threads for wear.
4. Remove the landing ring from the counterbore of the outer tube.
5. Clean both the landing ring and outer tube counterbore.
6. Check the landing ring for wear. If the landing ring is worn or chipped, reverse it and reinstall. Otherwise, use the same landing shoulder side. Replace if both sides are worn.
7. Apply cup grease to both the ring and the counterbore before reinstalling.
8. Remove the reaming shell form the outer tube. The stabilizing ring is located in the counterbore of the reaming shell.
9. Remove the stabilizing ring, clean it and the reaming shell counterbore.
10. Examine the stabilizing ring for wear by fitting it over the inner tube O.D. If there is more than .030 looseness, the ring is worn. The stabilizing ring remains in the hole with the reaming shell and is accessible only when the entire drill string is pulled.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

11. Reassemble the outer tube replacing all worn parts.
12. Clean each threaded connection and apply “Texaco Threadtex” or equivalent grease to each joint.
13. Tighten each thread joint securely.
14. If the rubber shut-off valve or any of the bearings of the compression spring need replacing, then move the lock nut and strip the spindle shaft of all parts, keeping the bearings together as a group. Check the spindle assembly shaft for wear and straightness. Replace the shaft is galls or grooves are visible.
15. Thread lock nut to spindle. Tighten the lock nut so the bearing spins feely. The compression spring is not preloaded and there is no bearing end play.
16. Reassemble the inner tube cap to the spindle bearings.
17. Check the action of the latching mechanism. Apply cup grease to the latches and the latch retracting case.
18. If the latches show excessive wear, remove the old latches by knocking out both the spring pin holding the latch retractor case to the latch body and the short pin holding the latches.
19. Pump Texaco Multifak No.2 or equivalent grease until it flows up through the thrust bearings.
20. Check the spearhead, if damaged, it is replaced by knocking out the pin spring. This pin is reusable.
21. Attach the inner tube to the head assembly
22. Before the inner tube assembly is ready or coring, the gap setting between the core liter case and the bit must be checked. This inspection is especially important if any parts have been replaced on either the inner tube assembler or the outer tube assembly.
23. Record all spare parts used from stock. Order future replacement parts by their proper name and part number.

Doc #	Version	Creation Date	Last Revision
021 MS- Maintenance Rods After Use	1	20.10.2014	13.01.2015

MAINTENANCE RODS AFTER SERVICE

Work Activity: Inspection and maintenance of the rods after service.

Objective: Safe and effective inspection and maintenance of the rods assembly after service.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Pin and box threads and shoulders should be thoroughly cleaned and permitted to dry.
2. After cleaning, inspect the threads and shoulder carefully. Check for dents, gall spots or bruises around the threads and shoulder.
3. Slight dents can be straightened out by gently tapping out the dents with a ball pien hammer and bucking the inner surface with a round steel surface used as an anvil.
4. Gall spots and bruises should be filed smooth. Any pins or boxes which have wobbled or leaked can be repaired only by reworking in a machine shop. It should be remembered that such damage always occurs in both members and that both must be repaired.
5. When rods are not in use for short periods of time they should be coated with diesel fuel and stacked on steel racks or on heavy timers in a location where they cannot accidentally bumped. For longer periods of time, coat with heavier oil and cover the rods if they are to be exposed to weather.
6. When stacking rods on the drill platform, they should stand on a clean, hardwood, heavy plank or timber, which has no nails or other metal objects exposed.
7. Since machined box and pin ends will not withstand abuse, appropriate precautions must be taken when transporting rods from one job site to another.

Doc #	Version	Creation Date	Last Revision
022 MS- New Feed Stroke	1	20.10.2014	09.01.2015

NEW FEED STROKE

Work Activity: New feed stroke

Objective: Safe and effective completion of a new feed stroke.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Before a new core run is started, be sure that the water is returning from the hole or that the water pressure gauge is showing pressure between 50 and 100 psi.
2. Begin to advance the bit to complete a new stroke.
3. At the end of each stroke, recheck for a new bit.
4. While the drill head is penetrating new rock, be careful that the hoist cable has some slack in it so that it is not restraining the feeding head.
5. Continue coring until a core block occurs of the inner tube becomes full of core.

Doc #	Version	Creation Date	Last Revision
023 MS-Operating Waterline Heater	1	10.10.2014	09.01.2015

OPERATING WATERLINE HEATER

Work Activity: Operating the waterline heater.

Objective: Safe and effective operation of the waterline heater.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that the fire box is set up away from the motor end of the pump.
2. Ensure that four stove pipes are used for the smoke stack.
3. Ensure that the burner end of the coil is at least 1" higher than the back end.
4. Before lighting the burner, start the pump.
5. Get water circulating through the pump, not through the coil.
6. Heat up the fire pot on the coil with either a propane torch or a small amount of fuel in the burner.
7. When the fire pot is hot, open the fuel valve, making sure there is enough fire in the burner to ignite. This is usually done by making a torch with and oil soaked rag on a stick and inserting it into the burner.
8. Connect the exhaust and start circulating the water through the coil.
9. Wait until the fire is going good and that the water is coming out warm before connecting the waterline.
10. If the pump stops, ensure to shut down the fire as quickly as possible to avoid overheating the copper coil.
11. When shutting down the coil, first make sure that the fire is nearly out before shutting down the pump. If the coil is dirty, it may burn for a considerable time after the oil is shut off.
12. Adjust the amount of oil going into the burner so that there is no smoke coming out of the smoke stack. If it is smoking, the coil is being dirtied. This will insulate the coil and keep it from absorbing the heat. Unburned fuel may leak out of the heater, thus creating a fire hazard.

Doc #	Version	Creation Date	Last Revision
024 MS-Potassium Test	1	14.10.2014	13.01.2015

POTASSIUM TEST

Work Activity: Conduct a potassium test.

Objective: Conduct a safe and effective potassium test.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Fill a bottle with 50ml of distilled water.
2. Add 1ml of mud then agitate.
3. Dip the indicator stick in the bottle and shake off the excess mud on the stick.
4. Dip the indicator stick in the indicator fluid for 1 minute.
5. Remove the indicator stick and compare the indicator color to the color chart on the tube.
6. The Potassium content should be between 700-1000 to give adequate inhibition or rock. The indicator solution if .05% nitric acid.

Doc #	Version	Creation Date	Last Revision
025 MS-Pulling Augers	1	21.10.2014	09.01.2015

PULLING AUGERS

Work Activity: Pull augers from the ground.

Objective: Safe and effective pulling of augers from the ground.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Place the auger puller over the top of the auger. Attach it with the drive pins.
2. Remove the large winch from the staging area.
3. Secure the safety hook on the auger puller.
4. Increasing the throttle accordingly lift the augers using the large winch to pull the augers out of the soil.
5. Ensure that the auger fork is placed lower than the break between the augers.
6. Dis-assemble the auger string by removing the removing the drive pins.
7. Place the auger back in its proper staging area.
8. Repeat steps 1 to 6 until all the augers are removed.
9. Remove the auger puller from the safety hook and replace the large winch cable in its staging area.
10. Lower the main guard.
11. Turn off the engine or proceed with work as discussed.

NOTE: When pulling augers always ensure proper connections and that the tower is free of obstacles.

Doc #	Version	Creation Date	Last Revision
026 MS-Raising the Tower	1	10.10.2014	09.01.2015

RAISING OF THE TOWER

Work Activity: Raising the tower/mast

Objective: Safe and effective raising of the tower.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all daily inspections have been completed and that the drill has been leveled and blocked.
2. Ensure that all cables are unhooked and resting behind the guard and that the guard is down in the resting position.
3. Ensure that the path of travel of the tower is clear of obstacles (overhead lines, trees …)
4. Ensure that all personnel are standing well clear.
5. Ensure that the head is down. The tower will not rise if the head is not in the resting position.
6. The kelly bar coupler must be in place.
7. Increase the throttle to the appropriate setting, slowly and steadily raise the tower until it is fully erect, or to the desired position.
8. Raise the guard.
9. Place the cables in the rest position.
10. Attach the tower locking bolt and tighten.
11. Attach kelly bar coupler.
12. Shut down the engine or proceed as per discussed.

Doc #	Version	Creation Date	Last Revision
027 MS-Removing Core from Inner Tube	1	08.10.2014	09.01.2015

REMOVING CORE FROM INNER TUBE

Work Activity: Removing the core from inner tube.

Objective: Safe and effective removal of the core from the inner tube.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Always empty core from the top end of the inner tube.
2. Before removing the core, slip the steel “protective sleeve” over the inner tube.
3. Using a ball pien hammer, jar the core loose from the inner tube by taping on the inner tube. The “protective sleeve” will absorb the shock of the tapping.
4. Check the inner tube to be sure that all the core has been removed.
5. All core samples should be placed in core boxes and labeled accordingly.

Doc #	Version	Creation Date	Last Revision
028 MS-Removing Inner Tube (QU)	1	08.10.2014	09.01.2015

REMOVING INNER TUBE (QU)

Work Activity: Removing the core from inner tube (QU).

Objective: Safe and effective removal of the core from the inner tube (QU).

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Paint a five-foot section of wireline cable about 30 feet above the overshot. The painted section will help signal the approach of the overshot when it is being retrieved from the hole.
2. Disconnect the water hose and remove the water swivel. Install the overshot into the drill rod.
3. Install the wireline stuffing box into the rod adapter. Install with water line open. Fluid leaking around the cable can be corrected by tightening the packing adjusting nut (2) on the loading chamber assembly.
4. Attach the water pressure line and start the water pump. Pump in the overshot, unreeling the wireline cable. When the overshot contacts the inner tube spearhead, tie a string marker to the wireline cable a few feet above the point of contact. On successive runs, this string marker will help warn the drill operator when the overshot approaches the inner tube spearhead. Move this marker up after each run.
5. After the overshot has been pumped in and latched to the inner tube, maintain a pressure on the pump and pull or hoist the cable out of the hole. Slowly release the pressure with the valve on the loading chamber to allow the hoist to pull out the inner tube.
6. Put the hoist to full throttle and release the fluid valve so the inner tube assembly is easily pulled, but control the speed of the cable and the water pressure so the inner tube does not come out faster than the cable. Back water pressure in the hole could cause the inner tube to overrun the cable causing kinks and knots in the cable.
7. When the paint marker comes into view, throttle down the wireline hoist and open the water release valve all the way. Then unscrew the stuffing box.
8. As the inner tube comes out. Stop the hoist and grasp and hold the inner tube. Disengage the overshot and extract the inner tube form the drill rod. This operation should be done quickly, otherwise the flow from the hole will build up behind the inner tube and force the tube out. Never stand in front of the inner tube spear head when it is coming out of the hole.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
029 MS-Removing Inner Tube	1	08.10.2014	09.01.2015

REMOVING INNER TUBE

Work Activity: Removing the inner tube from the core barrel.

Objective: Safe and effective retrieval of the inner tube from the core barrel.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Above normal water pressure reading denotes the core barrel may be full of core or a core block has occurred in the bit or inner tube. For either reason, the inner tube must be removed from the hole and inspected to avoid unnecessary damage to the bit or barrel.
2. The rod string should be pulled back far enough to break or separate the core.
3. Wash the hole for several minutes before retrieving the inner tube.
4. Paint a 5 foot section of the wireline cable, about 30 feet above the overshot. The painted section will help to signal the approach of the overshot when it is being retrieved from the hole.
5. Insert the overshot into the drill string and lower it into the rods without over-running the cable.
6. As the overshot approaches the inner tube, slow its speed until the overshot is latched onto the inner tube spearhead assembly.
7. When the overshot assembly has connected the inner tube spearhead, tie a string marker to the wireline cable a few feet above the point of contact. This string marker will help warn the drill operator when the overshot approaches the inner tube spear head on future runs. Move this marker up after each core run.
8. Slow the overshot when the string marker appears, then ease the overshot over the inner tube spearhead.
9. To check if the overshot has properly latched over the inner tube assembly spearhead, take up the cable slack so the cable is tight and then by pulling the taut cable by hand, it will be noted that the combined weight of the core filer inner tube and the overshot is great than the overshot alone.
10. Hoist the overshot and the inner tube assembly from the hole. As the overshot assembly approaches the surface, the painted marker will appear. Reduce the speed of the hoist.
11. Lift the inner tube assembly until it is out of the hole.
12. Carefully lower the core laden inner tube assembly so the overshot can be removed.
13. Disengage the overshot from the inner tube and place the inner tube on a pair of wooden work horses or a bench.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

14. Unscrew the inner tube form the head assembly using an open end wrench on the head assembly and an inner tube wrench on the inner tube.
15. Before coring runs, always inspect the inner tube assembly for wear. Set the head assembly aside for servicing between fore runs.
16. Move the core laden inner tube to the core removal area.

Doc #	Version	Creation Date	Last Revision
030 MS-Shut-In Procedure - Drilling	1	10.10.2014	13.01.2015

SHUT-IN PROCEEDURE - DRILLING

Work Activity: Shutting in procedure while drilling with no gas to surface.

Objective: Safe and effective shutting-in while drilling with no gas to the surface.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Call the Alert.
2. Stop rotary
3. Shut the pump off
4. Open HCR to open choke to flare the pit.
5. Close the Annular Preventer.
6. Slowly close the choke. Do not exceed the maximum allowable casing pressure.
7. Ensure that the well is shut-in.
8. Read and record the shut-in casing pressure and shut-in drill pipe while the pressure stabilizes.

Doc #	Version	Creation Date	Last Revision
031 MS-Shut-In Procedure – On Bottom	1	10.10.2014	13.01.2015

SHUT-IN PROCEEDURE – ON BOTTOM

Work Activity: Shutting-in procedure while on bottom of hole.

Objective: Safe and effective shutting-in while on bottom of hole.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Call Alert.
2. Stop rotation and pull the closest joint to the top of the head.
3. Shut the pumps off.
4. Close the annular BOP and adjust the closing pressure.
5. Open the choke line failsafe valves to the closed choke.
6. Read and record the shut-in drill pipe pressure and the shut-in casing pressure every minute until pressure stabilizes (three consecutive identical readings).
7. Record the pit again.
8. Proceed to well control operations as directed.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
032 MS-Shut-In Procedure – Out of Hole	1	10.10.2014	13.01.2015

SHUT-IN PROCEEDURE – OUT OF HOLE

Work Activity: Shutting-in procedure when out of hole.

Objective: Safe and effective shutting-in when out of hole.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Call the Alert.
2. Open the HCR through open choke to flare the pit.
3. Close the blind rams.
4. Slowly close the choke, do not exceed the maximum allowable casing pressure.
5. Read and record the shut-in casing pressure and the shut-in drill pipe pressure while pressures stabilize.

Doc #	Version	Creation Date	Last Revision
033 MS-Shut-In Procedure – Pulling Core	1	10.10.2014	13.01.2015

SHUT-IN PROCEEDURE – PULLING CORE

Work Activity: Shutting-in procedure while pulling core tube to surface.

Objective: Safe and effective shutting-in while pulling core tube to surface.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Stop hoisting core tube.
2. Close wire line B.O.P.
3. Open HRC to open choke to flare pit.
4. Close the annular preventer.
5. Install the circulating line.
6. Open the circulating valve.
7. Slowly close the choke. Ensure that the Maximum Allowable Casing Pressure is not exceeded.
8. If it is possible to shut-in well, read and record the shut-in casing pressure and the shut-in drill pipe pressure.

Doc #	Version	Creation Date	Last Revision
034 MS-Shut-In Procedure - Tripping	1	10.10.2014	13.01.2015

SHUT-IN PROCEEDURE - TRIPPING

Work Activity: Shutting-in procedure while tripping with safety hold down on the foot clamp.

Objective: Safe and effective shutting-in while tripping with safety hold down on the foot clamp.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Call the Alert.
2. Position upper tool joint above the foot clamp.
3. Close the foot clamp
4. Install stabling valve in the open position and close the valve after installation.
5. Open HCR to open choke to flare pit.
6. Close the annular preventer.
7. Slowly close choke, do not exceed the maximum allowable casing pressure.
8. Ensure the well is shut-in.
9. Put the water swivel on.
10. Open the stabling valve.
11. Read and record the shut-in casing pressure and the shut-in drill pipe pressure while pressures stabilize.

Doc #	Version	Creation Date	Last Revision
035 MS-Split Spoon Sampling	1	21.10.2014	13.01.2015

SPLIT SPOON SAMPLING

Work Activity: Conduct split spoon sampling.

Objective: Safe and effective split spoon sampling.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all personnel are in the designated safe area.
2. Lower/place the main guard.
3. Drill to the desired depth.
4. Raise/remove the main guard.
5. Detach the drive cap from the auger (if applicable).
6. Remove the AW rod drive cap adaptor (if applicable).
7. Pull AW rods out of the hole as per method statement.
8. Remove the center plug (if applicable).
9. Attach the split spoon assembly.
10. Lower the AW rods with the split spoon assembly.
11. Remove the safety stopper and the ring plate.
12. Attach the anvil to the top of the string.
13. Engage the auto hammer.
14. Have the auto hammer complete the required number of blows.
15. Remove the auto hammer.
16. Remove the anvil.
17. Place the ring plate over the rods and attach the safety stopper. Pull the rods.
18. Remove the split spoon.
19. Continue with drilling activities as discussed.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
036 MS-Unloading Drill/Carrier	1	21.10.2014	09.01.2015

UNLOADING DRILL/CARRIER

Work Activity: Unloading the drill and carrier from the trailer.

Objective: Safe and effective unloading of the drill/carrier from the trailer.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all personnel are wearing the required PPE and that all daily inspection/pre-use inspection are completed.
2. The unloading area must be have firm and level ground.
3. Ensure that the unloading area is large enough for the unloading process and clear of any and all obstacles and other equipment.
4. Make sure to check for any overhead lines, trees or obstructions.
5. Ensure that the trailer brakes have been applied. The truck must remain connected to the trailer at all times during unloading.
6. Chock the wheels of the trailer to ensure that it stays in place.
7. Check the path of the ramps to make sure that the area is clear before lowering ramps.
8. Ensure the parking break is engaged and the transmission is in gear on the carrier. The engine of the carrier must be shut off.
9. Remove all chains and binders from the carrier and the trailer
10. Remove the locking pins from the trailer.
11. Have a spotter/helper in an area where the operator can see them and that the spotter can see the full machine and any ongoing traffic that may be around the drill and unloading area.
12. The operator will start he carrier. When given the signal from the spotter, the operator will place the transmission into reverse.
13. The operator will slowly reverse the carrier off the trailer following the spotter's signals.
14. Once the carrier is completely off the trailer, the operator will park it in the safe designated area and shut down the carrier.
15. Once all equipment has been unloaded, personnel with proceed with work as discussed.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
037 MS-Un-leveling the Drill	1	10.10.2014	09.01.2015

UN-LEVELING THE DRILL

Work Activity: Un-leveling the drill rig.

Objective: Safe and effective un-leveling of the drill rig.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all daily inspections have been completed and that all personnel are wearing the required PPE.
2. Walk around the drill to ensure that the area is clear of any objects, personnel and equipment. Look up, down, under and around.
3. Ensure that the tower is down and is resting position.
4. If required, place 6" x 6" leveling blocks under each jack leg.
5. When possible have designated spotter. Before starting make sure that you have visual contact with your spotter.
6. Start by lowering the front jacks until you feel the machine rise slightly. If using blocking, maintain visual contact with the spotter for signal that jack leg have hit the blocks.
7. Repeat the same procedure for the back jack legs.
8. Now that all jacks are down and in contact with the blocks (if applicable), and that the drill rig is raised of the blocking, carefully remove the blocking (if applicable)
9. Start with the jack leg that is extended the most and slowly retract the jack leg by about 6". Then move to the next jack leg repeating the same until all jack legs have been fully retracted.
10. Never lower the jack leg too much at once as to cause a tipping hazard.
11. Turn off the engine or proceed with work as discussed.

Doc #	Version	Creation Date	Last Revision
038 MS-Use of a Fire Extinguisher	1	10.10.2014	08.01.2015

USE OF FIRE EXTINGUISHER

Work Activity: Use of a fire extinguisher.

Objective: Safe and effective use of a fire extinguisher.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Stand 6 to 8 feet away from the fire.
2. Pull the pin
3. Aim low, at the base of the fire.
4. Squeeze the lever bellow the handle. This will discharge the extinguishing agent.
5. Sweep, at the base of the fire, from side to side.
6. Move towards the fire, keeping aim at the fire's base sweeping back and forth until the fire is extinguished.
7. If the fire does not begin to go out immediately, leave the area at once and call the fire department.

Doc #	Version	Creation Date	Last Revision
039 MS-Well Control Procedure – Low Choke	1	14.10.2014	13.01.2015

WELL CONTROL PROCEEDURE – LOW CHOKE

Work Activity: Controlling the well pressure during shut-in with low choke.

Objective: Safe and effective control well pressure during shut-in with low choke.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Record the kick data.
2. Do not exceed the maximum allowable casing pressure.
3. Start the pump at or near the drilling rate.
4. Hold the maximum allowable casing pressure by choke adjustments.
5. Mix Calcium Carbonate (CaC1z) as fast as possible for one circulation.
6. Continue to circulate for one more circulation to condition mud.
7. Stop the pump.
8. Attempt to shut-in well without exceeding the maximum allowable casing pressure.
9. If well cannot be shut-in repeat steps 4-8.
10. If the well can be shut-in, consider another method of well control.

Doc #	Version	Creation Date	Last Revision
040 MS-Well Control Procedure – Pipe out of hole	1	14.10.2014	13.01.2015

WELL CONTROL PROCEEDURE – PIPE OUT OF HOLE

Work Activity: Controlling the well pressure during shut-in when the pipes are out of the hole.

Objective: Safe and effective control well pressure during shut-in when the pipes are out of the hole.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Record the pressure and tank volume initially and throughout the operation.
2. The capability to accurately measure fluid return is essential when using this method of well control.
3. Calculate the pressure equivalent exerted by $1m^3$ of drilling fluid in the hole or annulus, whichever is the case.
4. Allow the calculated pressure to increase to 700-1400kPa above the initial shut-in casing pressure as he overkills the pressure.
5. As the calculated pressure increases, bleed off the pressure equivalent of $1m^3$ of drilling fluid in the hole (calculated in step 3). Initially the calculated pressure will increase slowly, but as the gas influx nears surface, pressure will rise more quickly.
6. Continue to bleed off increments until the gas is to surface.
7. When gas reaches surface the Top Kill operation should commence.

Doc #	Version	Creation Date	Last Revision
041 MS-Well Control Procedure	1	14.10.2014	13.01.2015

WELL CONTROL PROCEEDURE

Work Activity: Controlling the well pressure during shut-in.

Objective: Safe and effective control of well pressure during shut-in.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Check the alignment of the manifold.
2. Crack open the choke to initiate the flow.
3. Start the pump, bring to reduced speed holding casing pressure at shut-in reading plus over kill until pressure stabilize.
4. Read and record the drill pipe pressure.
5. Ensure that the maximum allowable casing pressure is not exceeded.
6. Hold the drill pip pressure constant until the invading fluid is circulated out or bottoms up has expired whichever is longer.
7. Stop the pump.
8. Close the choke trapping the over kill.
9. Confirm the original shut-in drill pipe pressure reading.
10. Read and record the shut-in drill pipe pressure and the shut-in casing pressure.

Doc #	Version	Creation Date	Last Revision
042 MS-Lighting Coleman Lamp	1	05.11.2014	13.01.2015

LIGHTING COLEMAN LAMP

Work Activity: Lighting a Coleman type lamp.

Objective: Safe and effective lighting of a Coleman type lamp.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Wipe off any excess fuel that may have spilled during refuelling.
2. Pump the fuel tank to the recommended pressure.
3. Hold the flame under the burner.
4. Let the mantle and the burner tube heat up gradually.
5. Open the fuel valve gradually until the mantle lights, before opening the valve wide.
6. If the lamp runs dry, let it cool off before opening.
7. Lamps must be kept away from fuel drums, cans or tanks that contain or have contained flammable liquids.

Doc #	Version	Creation Date	Last Revision
044 MS-Lighting Propane Tiger Torch	1	05.11.2014	13.01.2015

LIGHTING PROPANE TIGER TORCH

Work Activity: Lighting a propane tiger torch.

Objective: Safe and effective lighting of a propane tiger torch

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Secure the propane cylinder upright outside the drill shack.
2. Connect the hose from the torch to the regulator of the cylinder.
3. Open the shut-off valve on the propane cylinder.
4. Check for any leaks at the joints and fittings.
5. Open the valve a quarter of a turn and light the torch.

Doc #	Version	Creation Date	Last Revision
045 MS-Lighting Propane Block Heathers	1	05.11.2014	13.01.2015

LIGHTING PROPANE BLOCK HEATERS

Work Activity: Lighting a propane block heater.

Objective: Safe and effective lighting of a propane block heater.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Secure the propane cylinder upright beside the mobile unit.
2. Connect the hose from the block heater to the regulator.
3. Connect the water hoses from the block heater to the quick couplers on the mobile unit.
4. Open the shut-off valve a quarter of a turn on the propane cylinder and light the heater.
5. Be aware of air locks. Disconnect the top hose, pushing down on the valve in the quick coupler to remove air.
6. Feel the hose periodically for circulation and temperature. Open the propane cylinder valve as required.
7. Never circulate cold water through a hot water heater.
8. One half hour to one hour should be sufficient for heating the block

Doc #	Version	Creation Date	Last Revision
MS 048-Unloading of Equipment	1	03.15.2016	0318.2016

UNLOADING OF EQUIPMENT

Work Activity: Unloading equipment from the trailer.

Objective: Safe and effective unloading of equipment from the trailer with the use of a dozer.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all personnel are wearing the required PPE and that all daily inspection/pre-use inspection are completed.
2. The unloading area must have firm and level ground.
3. Ensure that the unloading area is large enough for the unloading process and clear of any and all obstacles and other equipment.
4. Make sure to check for any overhead lines, trees or obstructions.
5. Ensure that the trailer brakes have been applied.
6. Check the path of the ramps to make sure that the area is clear before lowering ramps.
7. Remove all chains and binders from equipment
8. Have a spotter/helper in an area where the dozer operator can see them and that the spotter can see the full machine and any ongoing traffic that may be around unloading area.
9. The operator, with the assistance of the spotter, will start the dozer. When given the signal from the spotter, the operator will line it up directly behind the trailer and equipment.
10. While maintaining a constant sight of the spotter the dozer operator will slowly drive onto the trailer as close to the equipment as possible.
11. Using properly rated cable and clevises will attach the equipment to the dozer.
12. Following the spotter's signals the operator will slowly proceed off the trailer pulling the equipment

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Doc #	Version	Creation Date	Last Revision
MS 049-Loading Equipment	1	03.15.2016	0318.2016

LOADING EQUIPMENT

Work Activity: Loading equipment on to the trailer.

Objective: Safe and effective loading of equipment on to the trailer with the use of a dozer.

First Aid: Identify First Aid qualified personnel and first aid kit locations prior to start of work activity.

Emergencies: Mobile phones will be available to assist in contacting emergency personnel. Nearest hospital or muster point will be reviewed during Toolbox Meeting prior to the start of the work activity. Established procedure shall be followed.

Reducing Risk:

1. All persons will use/wear PPE to the relevant local safety standard or company standard (most stringent).
2. All machinery and equipment must be in good working order.
3. All manual handling load must be assessed prior to lifting.
4. All work shall be completed under suitable management supervision.

Supervision: This work activity will be supervised by the driller and/or foreman

Training: All technical work will be carried out by trained staff; all helpers will have suitable training for the task.

PEE:

- Hard Hat
- Hearing Protection
- Safety Glasses
- Coveralls or HiVis Long Sleeve Shirt
- HiVis Gloves
- Steel Toed Boots

Work Procedure:

1. Ensure that all personnel are wearing the required PPE and that all daily inspection/pre-use inspection are completed.
2. The loading area must have firm and level ground.
3. Ensure that the unloading area is large enough for the unloading process and clear of any and all obstacles and other equipment.
4. Make sure to check for any overhead lines, trees or obstructions.
5. Ensure that the trailer brakes have been applied.
6. Check the path of the ramps to make sure that the area is clear before lowering ramps.
7. Have a spotter/helper on each side of the trailer in an area where the dozer operator can see them and that the spotter can see the full machine and any ongoing traffic that may be around loading area.
8. The operator will start the dozer. When given the signal from the spotter, the operator will line up the equipment and dozer directly behind the trailer.
9. While maintaining a constant sight of the spotters and following their directions; the dozer operator will slowly push the equipment onto the trailer using the blade.
10. Once at the desired location on the trailer, following the spotter's signals, the operator will slowly reverse off the trailer.
11. Once the equipment has been positioned on the trailer, it will be secured to the trailer.

This Method Statement is to be reviewed and modified as required by job site/ location or contractor's request.
Method statement shall be reviewed in ToolBox Meeting prior to work activity.

Table of Contents

1. INTRODUCTION

1.1. Scope

No Job is so important so as to compromise of the safety of our on-site operations and personnel. At Logan Drilling Group, we all have a part to play in the prevention of unsafe working habits, accidents or conditions.

This manual applies to all employees of Logan Drilling Group, contractors and their employees while under contract with Logan Drilling Group. The safety rules, specialized work rules and regulations contained in this document pertain to the minimum standards that must be maintained. Conditions not specifically mentioned in this safety document shall be addressed and subject to the direction of the on-site Safety Supervisors and/or Site Foreman.

All personnel will also be governed by industry standard practices, method statements, safe work procedures, Occupation Health and Safety Acts & Regulations, etc. which are supplementary to this program.

Disregard of these safety rules will result in workers being subject to disciplinary actions as per Logan Drilling Group's Disciplinary Policy which could lead to dismissal.

1.2. Exceptions

In case of an emergency involving immediate danger to life, the outlined safety rules may be modified or temporarily suspend if it is considered necessary to permit proper handling of the specific emergency.

1.3. Application

It is the responsibility of all personnel and contractor to know and understand safety and specialized work rules applicable to their duties.

If an employee is required to complete work which he/she has reasonable grounds to believe is dangerous to his/her health and safety, he/she shall bring the matter to the attention of his/her Supervisor before starting the work, and is not required to complete this work until he/she is satisfied that it safe, or that the concerns have been investigated and found to be safe or that corrective action has been taken.

1.4. Employees' Responsibility for Safety

Before the start of a job, it is the workers responsibility to ensure that they understand the work to be done, know their role in the work to be carried out, are familiar with the safety and specialized work rules which apply and are confident that they can perform the tasks assigned.

1.5. Supervisors' Responsibility for Safety

Supervisor shall be responsible for the safety standards. It is his/her duty to do all those things which can be done to safeguard workers and the public. The supervisor must be fully satisfied that all reasonable precautions to prevent accidents have been taken prior to the start of work.

The Supervisor is responsible to ensure that safe work practices, thorough knowledge and understanding of all applicable safety and specialized work rules, codes and measures is promoted amongst all workers and contractors under his/her supervision.

1.6. Safety Meetings

Safety Meetings shall be held at the Project Site with all the personnel at least once a month. Minutes of all Safety Meetings shall be prepared and forwarded to the HS&E Manager who will review all minutes and take appropriate action where necessary. Safety meetings may include discussion of the following (where applicable):

- Selected sections of Logan Drilling Group's Safety Manual.
- Selected sections of the applicable OH&S Code.
- Selected First Aid topics.
- Unsafe practices and how to overcome them.
- Near misses, accidents (including personal injuries and vehicle), incidents.
- Reviews of new or revised safety and specialized work rules and related regulations
- Any other topic pertinent to health and safety.

1.7.Personal Conduct

All personnel and contractors hall conduct themselves in a professional, serious and safety conscious manner. Workers shall not "take chances" or "cut corners' while performing any work activity.

1.8. The Right to Refuse

Personnel may refuse to carry out any work operate any equipment, tool or appliance that he/she has reasonable cause to believe unsafe or endanger the safety or well-being of themselves or co-workers.

If work is refused on the grounds that it is unsafe or unfit, the refusal and the unsafe or unfit work conditions is to be reported to the Supervisor immediately.

To be protected by the Canada Labour Code when exercising the right to refuse dangerous work, it is vital to follow the proper procedures and be familiar with the procedures as outlined in section 128 of the Canada Labour Code so that one can comprehend the limitations of the right to refuse dangerous work.

1.9. Personal Conduct & Appearance

- Horseplay is strictly forbidden.
- Clean and professional appearance shall be maintained at all times.
- Only snug fitting clothing shall be worn.
- Hair that is longer than shoulder length shall be pulled back. This is to ensure it does not become entangled in operating machinery or obscure vision.
- All employees and contractors shall be clean-shaven (within 24 hours) when working or entering onto an operating lease potentially containing sour gas. This rule is to ensure the employee can maintain an airtight seal with breathing apparatus.
- Oil soaked and contaminated clothing shall be removed as quickly as possible and disposed of appropriately so as to prevent health or fire hazards. This includes fire retardant clothing as garment is now compromised.

1.10. Firearms

- Firearms, except flare guns, are not permitted on any Logan Drilling Group Sites unless approved by management.
- In the event of problems with wildlife, one designated person may be authorized to carry a firearm. The designated person must hold current and valid training certification and permits.

1.11. Security

- Ensure all company property is protected from theft, vandalism etc. lock company vehicles, offices, yards and shops when leaving.
- Logan Drilling Group is not responsible for any personal property, tools or equipment left at the site or in the vehicles.
- The removal of any equipment, tools or materials must be approved by management.
- It is prohibited to remove any drawings or take any pictures of the company's operating facilities without consent from management.

2. OFFICE SAFETY

Office safety is as important to a successful operation as is safety for drilling operations. Office work is commonly considered a non-hazardous occupation, which may be true to personnel who understand and know the safe work procedures and practices to follow and work in an office where specific and constant attention is given to eliminate the physical conditions that cause many accidents.

2.1 Physical Conditions & Employee Actions Associated with Office Incidents

The following list indicates some of the physical conditions and employee actions often associated

with office accident and their corrective actions:

- Office Furniture/Equipment
  - Desks and work stations should be configured specifically to the user.
  - Office furniture/equipment and electrical appliances should be arranged to obtain the maximum safe utilization of the installed equipment such as overhead lighting, wall outlets, telephones, etc.
  - Desk, file cabinets and work areas should be arranged so that chairs will not be pushed in the walkways or isles. The drawers should not open into aisles or walkways and should never be left open.
  - Distribute weight in file cabinets so the top drawer is not disproportionately heavy. Avoid having more than one file drawer open at one time.
  - Any splintered or other faulty conditions desks, chairs or other office equipment should be promptly corrected.
  - Desks, work areas, walkways and stairways should be well lit
  - Repairs or adjustments of office equipment should be done by authorized personnel only.
- Aisles and Floors
  - The width of an aisle should be a minimum width to allow two-way traffic.
  - Aisles should provide unobstructed access to all parts of the office. Wastebaskets, briefcases, or any other objects should never be left in aisles or other places where a tripping hazard may occur.
  - Floors should be kept clean, dry and clear of any objects.
  - Electrical or phone cords on the floor should not be stretched across any aisle, and be protected by arrangement of furniture or other means to prevent a tripping hazard.
  - Carpeting that is torn, badly worn of has curled edges should be replaced of fastened down.
  - Suitable hand-rails must be installed in stairwells.
  - Fans should not be handled until power is turned off and the blades have stopped turning
  - Worn electrical cords, plugs or loose outlet plates/connection should be promptly replaced.
  - Exposed metal parts of electrical office equipment or appliances should be electrically grounded.
- General Office Safety
  - Windows that are hard to open should have corrective adjustments made by maintenance personnel.
  - Good housekeeping should be maintained to minimize incident exposure.
  - Employees should be instructed to pay attention to their surroundings when going around corners, into open doors and to approach closed doors with caution.

- If it is necessary for office employees to lift manually, they should be instructed in safe lifting practices. Employees should not try to move furniture or lift heavy objects without help.

3. INCIDENT PREVENTION

The Logan Drilling Group is concerned for the well-being of its employees and considers safety and accident prevention the top priority at each job site.

Accidents can be prevented and property damage arising from accidents minimized. Incident prevention is a good business for both employers and employees. Accordingly, compliance with the company's safety policy, rules, regulation and program is mandatory for all. The prevention of accidents are provision of safe working conditions is the responsibility of bother employees and management and should be at the front of everyone's mind.

Logan Drilling Group has put in place a number of tasks to ensure that the incident prevention program is as effective as possible. They are as follow:

- Incident prevention on-site through the collaboration between managers, supervisors, drillers, and helpers on a daily basis.
- By safety supervisors ensure that the safety practices and procedures are followed.
- By completing incidents reports, follow-up and corrective action.
- Through education of all employees and managers regarding all aspects of safety.

4. INCIDENT/HAZARD INVESTIGAVTION REPORTING

4.1 Introduction

Reporting and investigating all incidents and near misses serves as a measurement and learning tool. It is difficult to correct hazardous or possible hazardous conditions and/or practices if incidents or loss is not reported.

Logan Drilling Group is committed to identifying the cause of an incident or near miss and controlling or eliminating the root causes to prevent a reoccurrence, and to use this system as a learning experience and not a fault finding mission to ultimately create a safe and healthy working environment for all personnel and contractors.

4.2 Responsibilities

All employees and contractors are responsible for:

- Ensuring all incidents and near misses are verbally reported to the safety supervisor and/or their manager.
- Completing a preliminary incident report, giving a detailed description of incident or near miss.
- Ensure that the report is given to management before the end of the next working day. This

information is key to the prevention of further occurrence.

Management is responsible for:

- Collecting descriptions of the event from all persons involved.
- Determining whether a full investigation is required.
- Coordinating and ensuring an investigation is completed in a timely manner should a full investigation be required.
- Ensuring that remedial actions are completed by specific dates.
- Reviewing all reports to ensure their correctness and completeness.
- Distributing the reports to the applicable persons and the Joint Health & Safety Committee.

4.3 Investigation

Prior to conducting an investigation it is important to understand and keep in mind that:

- Incidents and other problems are rarely, if ever the result of one single cause. Several causes should be identified during an investigation.
- Even though several causes are identified during an investigation, usually only a few are critical and require the most attention.

4.4 Follow-Up

The management must assign responsibility for the implementation of required preventive/corrective actions and controls. An expected completion date must also be assigned and management is responsible for ensuring that the actions are completed by the specified date.

5. COMPANY RULES

5.1 General Safety Rules

In order to ensure that all personnel, from the front line employees to upper management, Logan Drilling Group has established some general company rules to be followed by all.

- All incidents, injuries and near misses, regardless of their nature, shall be reported to supervisors.
- All required PPE shall be worn by all employees and management.
- Clothing shall be appropriate for the duties being performed. Long pants and long sleeve shirts are the minimum requirements. No “muscles shirts” or running shoes.
- Professional appearance and demeanor shall be maintained at all time.
- Smoking is permitted only in designated areas. All cigarette butts shall be disposed of accordingly.
- Hand tools shall not be used for any purpose other than that intended. All damaged or worn pats shall be promptly repaired or replaced.

- Power tools shall be operated only by authorized personnel.
- All guards must be in place and shall not be removed or altered.
- Compressed gas cylinder shall be secured in an upright position.
- Possession or use of any unauthorized drugs (illegal or not) or alcohol, on any job sites, is strictly prohibited and may be grounds for dismissal.
- Riding on equipment not designed to carry a rider. No person shall ride on any hook, hoist lifts or any other material handling equipment
- Welding and burning operations shall be carried out only by trained and authorized personnel.
- All specialized PPE must worn in accordance to the task at hand.
- Horseplay, fighting, gambling and possession of a firearm, on any Logan Drilling Group worksite, are strictly forbidden.

5.2 Diamond Drilling

- All diamond drill, both surface and underground, shall be:
  - Equipped with guards to protect the entire length of any rotating parts.
  - Equipped with emergency shut off switches.
- Where drilling is taking place, either underground or in an enclosed area on surface, an area where methane or other hazardous gas is known to occur a ventilation system must be installed.
- Where methane is known to be present
  - Regular tests for methane shall be done and recorded
  - The ventilation fan shall be electronically interlocked with the drill so that power cannot be supplied to the drill unless the fan is operating and has been operating for some time to ensure at least two air changes in the diamond drill station.
- Where flow of flammable gas is encountered in a drill hole underground or in an enclosed building housing a diamond drill hole on surface:
  - The affected area shall be evacuated.
  - Precautions shell be taken to prevent inadvertent entry of a person into the area.
  - Supervisor or foreman shall be notified.
  - The air in the area shell be tested by a competent person
  - Measure shall be taken which will protect any person who enter the area from toxic gases or flammable concentrations.
  - The area shall be designated a fire hazard area.
- In mines or drill sites where flammable gas is known to occur, workers and drillers on surface or underground should be advised:
  - The probability of encountering a flow of such gas
  - The measures and procedures to follow

6. DRILLER'S ROLE & RESPONSIBILITY

The driller is a key person in the operation. He/she must put into motion the well control operations and take the appropriate actions to ensure that a safe working environment is established and maintained. In order to succeed the driller must have the assistance of a well-trained crew.

At all-time the crew will have the assistance of the driller and the site foreman who will be available to answer any questions or assist in with any of the items below.

- Maintain constant communication with the helper and other crew members.
- Ensure that all personnel on drilling site is wearing the required PPE.
- Ensure that all safety guidelines are followed.
- Continuously check the mud tank levels both while drilling and tripping.
- All mud "losses" or "gains" are recorded, including the depth at which they start and stop and the rate of loss.
- Ensure that the mud weight is checked every 3 meter drilling interval.
- Keeping the hole full on all trips.
- Check for swabbing on tripping out.
- Ensure the hole is filled with mud after every 10 strands are pulled.
- Keeping the entire unit including valves, frame, piping, pump and regulator clean.
- Check the accumulator valve's position each tour.
- Check the choke manifold and BOP valve position each tour.
- Ensure that proper housekeeping in maintained at all time.

7. HOUSEKEEPING

Good housekeeping habits cannot be overemphasised in safe and productive operations. Equipment and tools must be returned to their proper place to prevent accidents and hazards. An unclean and unorganized work area is an accident and fire hazard waiting to happen.

7.1 Work Area, Floors and Platforms

- Keep work area, floors and platforms free from garbage and clutter to reduce tripping and fire hazards.
- Keep the floors and platforms washed down and free from muds, grease and oil. In winter months keep free from ice and snow.

7.2 Tools and Materials

- Keep tools clean and stored in a neat and tidy fashion. Pay attention and identify any wear and damage.
- When not in use, always return tools and materials to their proper storage area. This increases efficiency, reduces trip hazards and prevents loss and damage to the tools and

materials.
- All unused water hoses must be immediately coiled and stored in their proper area until needed.

7.3 Equipment

- Always keep equipment free from mud, dirt, grease, oil and ice. This makes it easier to identify and deficiencies in the equipment.
- Always report worn or damaged equipment. Follow the Lock out/Tag out procedure as needed.

7.4 Waste

- Store any waste that cannot be reused or recycled in a suitable container or bag for removal to an approved disposal area.
- Cardboard, metal or lumber may be reused for other purposes or recycled.
- Take care not to crush or otherwise damage pails. Empty mud and oil pails can often be used for other purposes.

7.5 Oil Changes

- Take extra caution to avoid spillage onto the ground, ice/snow.
- Transfer the waste oil into a suitable container and immediately secure the cover.
- Label the container "WASTE OIL" (or whatever other product is in the container).
- Do not throw the filter into the pail, dispose of it in the garbage.
- Return the labelled container for appropriate disposal.

8. SECURITY

- Ensure all company property is protected from theft, vandalism, etc. Please remember to lock company vehicles, offices, yards and shops when left unattended for prolonged periods. Leave yard lights on, where applicable, to reduce the potential for loss.
- The company will not be responsible for personal property left at the worksite or in any company vehicle.
- Management must approve the removal of any company tools, equipment or materials.
- Be sure not to remove any drawings, or take pictures of any of the company's operating facilities without written consent.

9. TOOLS AND EQUIPMENT

9.1 General

- Workers shall use tools and equipment which are suitable for the job and shall only use

those which are in safe working order.

- Each worker is responsible for the maintenance of his/her personal tools and personal protective equipment.
- Tools and equipment supplied by Logan Drilling Group which have become defective or unsafe for use shall be identified to your supervisor who will insure that the defective and unsafe tools and equipment are tagged, taken out of service and repaired.
- **Guards** provide a physical barrier that prevent access to hazardous areas. They should be secure and strong and workers are not to bypass, remove or tamper with them. Guards should not however obstruct the operator's view or prevent personnel from working.

10.PERSONAL PROTECTIVE EQUIPMENT

10.1 Purpose

This section specifies the responsibilities and establishes the specific requirements regarding protective equipment and clothing.

10.2 Head Protection

Safety head wear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals and harmful substances, and contact with energized objects and equipment.

- All personnel shall wear a Type 2 Class E CSA approved hard hat.
- Approved hard hats shall be worn by all personnel and manager at all shops, yards and jobs sites.
- The hard hat must be kept clean.
- Any hard hat that is cracked, weather-worn or otherwise damaged shall be replaced.

Inspection and Maintenance

Proper care is required for any headgear to perform efficiently. The service life is affected by many factors including temperature, chemicals, sunlight and ultraviolet radiation from welding. The usual maintenance for hard hats is simply washing it with mild soap (hand soap) and rinsing thoroughly. Hard hats must be inspected regularly for any cracks or damages.

DO:

- Replace protective headgear that is pitted, cracked or brittle.
- Replace protective headgear that has been subjected to a blow even though damage cannot be seen.
- Replace headgear and components according to manufacturer's instructions.
- Consult with the Department of Labour or your supplier for any additional information regarding protective headgear.

DON'T

- Drill, remove peaks or alter the shell or suspension in any way.
- Use solvents or paints on the shell or any other part of the hard hat.
- Use any liner that contains metal or conductive materials.
- Carry anything in the hard hat while wearing it.
- Never wear a hood or other hats under your hard hat.

10.3 Foot Protection

Safety footwear is designed to protect the foot against hazards in the workplace. Safety footwear protects against compression, impact and puncture injuries.

- All personnel must wear CSA, Grade 1 Safety Boots (green triangle), minimum of 6" high at the ankle providing ankle support.
- Workers and managers shall wear appropriate approved safety footwear at all time in the shops, yards and job sites.

DO:

- Lace up boot and tie laces securely. Boots don't protect if they are a tripping hazard or fall off.
- Use a protective boot dressing to provide greater water resistance and help boot last longer.
- If wearing rubber boots, ensure that they are CSA approved, steel toed boot.
- After use, always clean and dry boots

DON'T

- Wear defective or worn safety boots (exposed steel toe cap, tears or cuts)
- Under protect or modify your safety footwear in anyway.

10.4 Limbs and Body Protection

Due to the nature of the workplace and the number of different hazards in the workplaces, it is vital to ensure that body and limb protection worn is suitable for the job.

Personal Protective Equipment in this category would be items such as:

- Leg, arm, chin, and belly guard.
- Specialty hand pads, grips and gloves.
- Leather aprons and leg grips
- Full body suites and coveralls
- Flame and chemical resistant clothing

With all PPE, following the manufacturer's instructions on its use, care and cleaning is critical and will help get the full service life from specialty PPE.

- It is the responsibility of each worker to wear clothing that suitable for the task to be performed.
- Loose sleeves or loose clothing shall not be worn.
- Rings, necklaces or bracelets must not be worn when performing any type of mechanical, electrical or other type of work where the wearing such items could be a hazard.
- Workers shall wear appropriate gloves suitable for the work being performed.
- Chainsaw pants shall be worn at all time when working with a chainsaw.
- Type 2 retro reflective markings must be on all coveralls or clothing worn.

DO:

- Inspect PPE prior to use for any defects or worn areas.
- Wash all chemicals and fluids off gloves before removing them.
- Ensure that all PPE fits properly.
- Use the proper limb protection for the job.
- Follow the manufacturer's instruction for care and use.
- Ensure that exposed skin is covered (no gaps between the sleeve and the hand)

DON'T

- Wear or use protective wear that is worn or defective.
- Wear any protective wear with metal parts near electrical equipment.

10.5 Eye and Face Protection

Hardened glass prescription lens and sport glasses are no substitute for proper, certified, industrial safety eye protection.

Comfort and fit are very important in the selection of safety eyewear. Lens coating, venting or fitting may be needed to prevent fogging or to fit with regular prescription eyeglasses.

Contact lenses should not be won at the work-site. Contact lens may trap and absorb particles or gases causing eye irritation or blindness hard contact lens may break into the eye when hit.

Basic eye protection should always be worn with a face shield. Face shields alone often are not enough to fully protect the eyes from work hazards. When eye and face protection are required, advice from MSDS or the supplier will help in the selection.

Eye protection is designed to protect the worker from such hazards as:

- Flying objects and particles
- Molten metals

- Splashing liquids
- Ultraviolet, infrared and visible radiation (welding)

Safety glasses with side shields, full cover goggles and/or face shields must be worn when doing the following work activities:

- Safety glasses must be worn by all personnel in the shops, yards and drilling site.
- Drilling or chipping stone, brick or concrete.
- Approved colored lenses shall be worn when flame welding, cutting or burning.
- Drilling with hand or electric drill.
- Line or brush cutting.
- Working in area where flying debris, particles or dust is being created.
- Full goggles and/or face shields must be worn when using a power grinder, performing air or sandblasting.

DO:

- Ensure that eye protection fits properly
- Clean safety eyewear as needed.
- Store eye and face protection in a safe, clean, dry place when not in use.
- Replace pitted, scratched, bent and poorly fitted eye and face protection.

DON'T

- Modify or alter eye/face protection.
- Uses non-CSA approved eye/face protection.

10.6 Personal Floatation Devices

Persons working near water or on water where the possibility of drowning exists must wear a DOT approved Personal Flotation Device or vest or must wear appropriate fall protection equipment.

- Any oil, grease and mud should be cleaned off the personal floatation devices after use.
- PFDs must be hung in a dry area when not in use.

10.7 Hearing Protection

Hearing protection is designed to reduce the level of sound energy reaching the inner ear.

The general rule of thumb for hearing protection is: use hearing protection when you can't carry on a conversation at a normal volume of voice when you are three feet apart. Any sounds over 80 dba requires hearing protection. Hearing loss can be very gradual, usually happening over a number of years.

The most common type of hearing protection are ear plugs and earmuffs. Some site may require

personnel to wear both.

- All personnel must wear CSA approved 110 earmuffs that clip on to the hard hat.
- Hearing protection must be worn at all time when drill or other equipment is operating.

If hearing protection does not take the sharp edge off the noise, or if workers have ringing, pain, headaches or discomfort in the wear, the advice of an expert may be required.

10.8 Respiratory Protection

There are two major types of air purifying respirators.

Air Purifying Respirator which are particle/dust chemical cartridges but do not have visor plates.

- Disposable fiber type respirator (without charcoal or chemical filter)
- Reusable rubber face mask with disposable or rechargeable cartridges.

APR's are limited to areas where there is enough oxygen to support life. APR's do not supply or make oxygen.

Facial hair can prevent a good seal and fit of an APR, one to three days growth is the worst. Always follow the manufacturer's instructions to the letter regarding the mask, filters, cartridges and other components. Workers who must use respiratory protection should be clean shaven.

An APR is only as good as its seal and its ability to filter out the contaminants it was designed to filter.

Combination Respirators

This type of APR combines separate chemical and mechanical filters. This allows for the change of the different filters when one of them becomes plugged or exhausted before the other filter (usually the dust filter plugs before the chemical filter).

DO:

- Train workers very carefully in the APR's use, care and limitations.
- Ensure that respirators are properly cleaned and disinfected after each shift/use, according to the manufacturer's instructions.
- Dispose of exhausted cartridges and masks in sealed bags or containers.
- Keep new, unused filters separate from old, used filters.
- Monitor APR use. They are useless just hung around the neck.
- Replace filters when breathing becomes difficult.

DON'T

- Use for protection against materials which are toxic in small amounts.

- Use materials that are highly irritating to the eyes
- Use with gases that can't be detected by odour or throat irritation.
- Use with gases not effectively halted by chemical cartridges regardless of the concentration.
- Use respirator or mask if it is worn or defective.

10.9 Fall Protection

All persons working at a height of 3 meters (10 ft.) or more, provided he or she is not on a proper work platform with guardrails must wear a full body harness and attached lanyard. The lanyards with a shock absorber and shall be no more than 1.5 meters (5 ft.) long. The free end shall be securely attached to a structure that is able to withstand any impact it may be exposed to.

All fall arrest equipment shall be inspected routinely and kept in a clean and usable condition. Any fraying of threads or straps that affect more than 20% of the total strap width shall be repaired or the harness replaced. Safety belts may be used in situations where a fall is not possible but access is restricted (such as working on a platform without guard rails or on a roof). In such cases, the lanyard must be attached to restrict the worker's access to the edge of the structure.

DO:

- Ensure that personnel are trained and current in fall arrest.
- Use webbing type of harnesses instead of leather harnesses.
- Use only the manufacturer's components to replacement parts
- Have fall arrest equipment inspected regularly by a competent inspector.
- Inspect before each use.
- Ensure proper fit of equipment
- Always follow Manufacturer's instructions regarding care and use.
- Use only properly safety rated fastening systems.

DON'T

- Modify, change or alter any of parts of the harnesses, lanyards or hardware.
- Use the system for any other purpose that it's intended one.
- Use a life line as a service line.
- Apply paint, maker, oil or any "protective coating" to the harness or lanyard.

11.HELICOPTER SAFETY

11.1 Landing Area

- Be sure the landing zone is clear of all debris, such as plywood, sample bags, twigs or other articles which can become airborne and fly up into the main or tail rotor.
- If the helipad is being built using logs, be sure the logs are secured in place and cannot roll when the helicopter lands.

11.2 Emergency Equipment

- Pay close attention during the pilot's familiarization. The location and operating instructions of the Emergency Locator Beacon, Emergency Kit and the Fire Extinguisher. These may save your life.

11.3 Bear Spray

Bear sprays may not be carried on with you in the cabin area. Bear spray must always be carried in a sealed container to avoid accidental discharge. Discharge in the cabin will incapacitate the pilot and all passengers. Check with the pilot or helicopter operator for acceptable options.

STATISTICS SECTION

Table of Content

Doc #	Version	Creation Date	Last Revision
002 STAT-Monthly Injury Summary	1	09.19.2014	13.01.2015

MONTHLY INJURY SUMMARY

MONTH: _____ YEAR: _____

TOTAL HOURS WORKED CANADA (D): _____ TOTAL EMPLOYEES CANADA: _____

TOTAL HOURS WORKED TO DATE : _____

	Personal Injury Cases						Frequencies					
	Medical Aid Injury (A)		Lost Time Injuries (B)		Number of Lost Days (C)		Medical Aid		Lost Time		Severity	
Description	This Month	To Date	This Month	To Date	This Month	To Date	This Month	To Date	This Month	To Date	This Month	To Date
TOTAL												

Medical Aid Frequency
A x 200 000 = Y/D

Lost Time Frequency
B x 200 000 = Y/D

Severity Frequency
C x 200 000 = Y/D

Severity Average
C/B

M Y

Doc #	Version	Creation Date	Last Revision
STAT-Quarterly Safety Summary	1	01.18.2014	13.01.2015

QUARTERLY SAFETY SUMMARY

GENERAL INFORMATION

Supervisor/Manager	Location	Quarter

	Month 1	Month 2	Month 3
Month:			
No. Workers Hired:			
No. Completed Orientations:			
No. Tool Box Meetings Conducted:			
No. Formal Inspections Completed:			
No. Unsafe Conditions/Acts Identified:			
No. Corrected:			
No. Outstanding:			
No. Incidents:			
Damage only:			
Injury only:			
Injury and Damage:			
Near Miss:			
No. Investigations completed			
Outstanding:			
No. Recommendations made			
Complete:			
Outstanding			
Managers Initials:			

Managers Signature:_____ Quarter:_____

Doc #	Version	Creation Date	Last Revision
005 STAT-Quarterly Injury Summary	1	09.19.2014	13.01.2015

QUARTERLY INJURY SUMMARY

QUARTER: _____ YEAR: _____

TOTAL HOURS WORKED CANADA: _____ TOTAL EMPLOYEES CANADA: _____

TOTAL HOURS WORKED IN US: _____

TOTAL HOURS WORKED TO DATE: _____

	Personal Injury Cases						Frequencies					
	Medical Aid Injury (A)		Lost Time Injuries (B)		Number of Lost Days (C)		Medical Aid		Lost Time		Severity	
Month	This Month	To Date	This Month	To Date	This Month	To Date	This Month	To Date	This Month	To Date	This Month	To Date
TOTAL												

Medical Aid Frequency
A x 200 000 = Y/D

Lost Time Frequency
B x 200 000 = Y/D

Severity Frequency
C x 200 000 = Y/D

Severity Average
C/B

M Y

Doc #	Version	Creation Date	Last Revision
008 STAT-Year End Injury Summary	1	09.19.2014	13.01.2015

YEAR END INJURY SUMMARY

YEAR: _____

TOTAL HOURS WORKED CANADA: _____ TOTAL EMPLOYEES CANADA: _____

TOTAL HOURS WORKED IN US: _____

TOTAL HOURS WORKED: _____

	Personal Injury Cases			Frequencies		
	Medical Aid Injury (A)	**Lost Time Injuries (B)**	**Number of Lost Days (C)**	**Medical Aid**	**Lost Time**	**Severity**
QUARTER 1						
QUARTER 2						
QUARTER 3						
QUARTER 4						
TOTAL						

Medical Aid Frequency
A x 200 000 = Y/D

Lost Time Frequency
B x 200 000 = Y/D

Severity Frequency
C x 200 000 = Y/D

Severity Average
C/B

__Q__ __Y__

ENVIRONMENT SECTION

Table of Content

Environmental Management Plan

Logan Drilling Group realizes that the protection of our environment is crucial. The Environmental Management Plan takes into account the major areas of concern and some of the process in place to ensure a minimal disturbance to our environment while on-site.

The following have been identified as potential environmental concerns requiring management plans based on the potential impacts.

- Air Quality
- Energy Management
- Noise & Vibration
- Waste Management
- Water Quality

Air Quality Management

The main source of pollution to be managed from the drilling machines and support equipment is that of air pollution.

Objective:

To minimize the environmental and air quality impact of our operations.

Management Strategies

Where feasible, utilize improved technologies and methodologies to reduce emissions. To evaluate the effects of the emissions when appropriate. Maintain all equipment and machinery in proper working order through regular maintenance and inspections.

Tasks

The Environmental Management Plan awareness training will be included in the new employee orientation and subsequently reviewed during the annual refresher/training days. All machinery and equipment is to be maintained and repaired as per the manufacturer's specifications.

Responsibility

Logan Drilling Group upper management has the responsibility of maintaining and developing the Environmental Management Plan. The implementation of the management plan is the responsibility of the management, foremen and employees.

Monitoring and Reporting

Any complaints regarding the air quality on site will be directed to the director of Logan Drilling Group as soon as possible. Complaints, actions and corrections arising from such complaints will be recorded by the site safety supervisor and forwarded to the daily report distribution list.

Corrective Actions

All machinery and equipment will be maintained and updated.

Energy Management

The energy management plan is aimed at minimizing the use of electrical energy for site equipment and lighting.

Performance Objective

To minimize the electricity usage on site and make use of renewable sources of energy when feasible.

Management Strategies

Monitor the energy usage to determine the high-use area and establishing wastage areas. Install energy management systems where it is economically feasible. When purchasing new machinery and equipment be conscientious of the energy ratings.

Tasks

The Environmental Management Plan awareness training will be included in the new employee orientation and subsequently reviewed during the annual refresher/training days. An energy control system will be implemented on equipment and machinery when possible.

Responsibility

Logan Drilling Group upper management has the responsibility of maintaining and developing the Environmental Management Plan. The implementation of the management plan is the responsibility of the management, foremen and employees.

Monitoring and Reporting

Any complaints regarding the air quality on site will be directed to the director of Logan Drilling Group as soon as possible. Complaints, actions and corrections arising from such complaints will be recorded by the site safety supervisor and forwarded to the daily report distribution list.

Corrective Actions

Having energy monitoring systems in place and establishing where and how increased usage in electrical energy has occurred. Come up with strategies to reduce the consumption of electrical energy.

Noise and Vibration Management

The potential sources of noise and vibration pollution are the equipment and machinery on the drilling site.

Performance Objective

To avoid and reduce the amount of nuisance noise and vibration to nearby residents and personnel.

Management Strategies

Operations and activities that produce excessive noise and vibration are to be restricted, when possible, to specific time frames. On-site machinery, equipment and noise reducing equipment is to be maintained as per manufacture's specifications. When possible monitoring of the noise and

vibration level.

Tasks

The Environmental Management Plan awareness training will be included in the new employee orientation and subsequently reviewed during the annual refresher/training days. Site surveys will be conducted and noise cancelation equipment will be used when feasible.

Responsibility

Logan Drilling Group upper management has the responsibility of maintaining and developing the Environmental Management Plan. The implementation of the management plan is the responsibility of the management, foremen and employees.

Monitoring and Reporting

Any complaints regarding the air quality on site will be directed to the director of Logan Drilling Group as soon as possible. Complaints, actions and corrections arising from such complaints will be recorded by the site safety supervisor and forwarded to the daily report distribution list.

Corrective Actions

Immediate shutdown of noisy activities and conduct investigation of the complaint. Undertake noise and vibration level monitoring when possible and introduce noise and vibration reduction strategies.

Waste Management

The main types of waste produced on-site are slurry, rubble, drill cuttings and domestic waste products.

Performance Objective

To minimize the waste generation by developing strategies for the management and disposal of all waste produced in accordance with the principals of avoidance, reuse, recycle and disposal of waste. To manage waste in a manner that is sustainable and sensitive to the environment.

Management Strategies

Components of the waste streams will be separated at the source when and where possible to minimize contamination and maximize potential for reuse and recycling materials. Waste will not be stored on areas where it could contribute to the generation of contaminated runoff. All domestic waste will be removed on a regular basis. Waste storage on-site will generally be organized by the head contractor. The waste management procedures will be part of the on-site induction process.

Tasks

The Environmental Management Plan awareness training will be included in the new employee orientation and subsequently reviewed during the annual refresher/training days. Regular inspections and audits of the waste storage location will be conducted to ensure that the strategies are met.

Responsibility

Logan Drilling Group upper management has the responsibility of maintaining and developing the Environmental Management Plan. The implementation of the management plan is the responsibility of the management, foremen and employees.

Monitoring and Reporting

Any complaints regarding the air quality on site will be directed to the director of Logan Drilling Group as soon as possible. Complaints, actions and corrections arising from such complaints will be recorded by the site safety supervisor and forwarded to the daily report distribution list.

Corrective Actions

Monitor the amount of waste produced and the disposal methods in place and where and when there is an increase in waste. Strategies will be developed to reduce the waste being produce when possible.

Water Management

The water management plan is designed to manage the sediment produced and the process the water usage and disposal.

Performance Objective

To collect all the cuttings possible and to divert return water into berms when feasible.

Management Strategies

Divert clean storm water runoff from the site to prevent it entering the operations area. Collect runoff from the process area. Ensure that waste storage is located in an area which will not contaminate surface water runoff. Ensure that discharge of process water meets the trade/industry waste requirements.

Tasks

The Environmental Management Plan awareness training will be included in the new employee orientation and subsequently reviewed during the annual refresher/training days. Monitor discharge water to ensure that the trade waste conditions are being met.

Responsibility

Logan Drilling Group upper management has the responsibility of maintaining and developing the Environmental Management Plan. The implementation of the management plan is the responsibility of the management, foremen and employees.

Monitoring and Reporting

Any complaints regarding the air quality on site will be directed to the director of Logan Drilling Group as soon as possible. Complaints, actions and corrections arising from such complaints will be recorded by the site safety supervisor and forwarded to the daily report distribution list.

Corrective Actions

Investigate any non-complying runoff. Ensure that all processing equipment and machinery is in

proper working order and maintained as per the manufacture's specifications. Berms and other collections methods are in place when required.

Spill Reporting & Clean-Up

What is a spill?

Any release or discharge into the environment may be considered to be a spill, except where that release is permitted by law, through special approval, control order or some other statutory provision. A spill may either be an accidental incident or a slow leak. Prohibition against the discharge of contaminants into the air and water are covered by general pollution prevention provisions in the environmental statues in every province. Most have also promulgated specific spill regulations that set out reporting requirements. In addition each province has enacted legislation for the transportation of dangerous goods that addresses any spills that may occur during the off-site shipment of controlled products. Most jurisdiction have passed regulations that deal with the storage of gasoline products, including the actions that must be taken in the event of a spill.

New Brunswick

The province has promulgated no specific statues to cover chemical spills or spill reporting, except those under the Transportation of Dangerous Goods Act. General pollution control provisions under the Clean Environment Act and Clean Water Act may apply.

In the event of an environmental spill or occurrence contact the 24-hrs service of the ***Maritime Regional Office Canadian Coast Guard – 1-800-565-1633 or 902-426-6030.***

Nova Scotia

Under Section 8 of the Province's Dangerous Goods and Hazardous Waste Management Act, the person responsible for the spill material must immediately notify the Minister of the Environment of any "unlawful or accidental discharge, emission, escape or spill" and take measures (as directed by the Department of the Environment) to "repair, remedy and confine the effects of and remove" the spilled materials so as to protect human life, health and environment.

In the event of an environmental spill or occurrence contact the 24-hrs service of the ***Maritime Regional Office Canadian Coast Guard – 1-800-565-1633 or 902-426-6030.***

Prince Edward Island

Under Section 20-21 of P.E.I's Environmental Protection Act, every person who without permission, discharges a contaminant into the environment (or who owns or has control of said contaminant) "shall notify the Department (of the Environment) and take such remedial measures as the Minister may direct"

In the event of an environmental spill or occurrence contact the 24-hrs service of the ***Maritime Regional Office Canadian Coast Guard – 1-800-565-1633 or 902-426-6030.***

Newfoundland

For all environmental emergencies in Newfoundland and Labrador, the spill or occurrence must be reported to the Canadian Coast Guard spill line who will in turn contact the appropriate federal and provincial agencies on call.

Newfoundland & Labrador Regional Office Coast Guard 1-800-563-9089 or 709-772-2083

National

The Federal Transportation of Dangerous Good Act and it's regulations provide for the mandatory reporting of hazardous good spill using the Dangerous Occurrence Report (DOR), which must be submitted within 30 days of an incident to the Transport Dangerous Good Directorate ***1-613-992-1624.***

Emergency Assistance

Local police, fire departments and provincial police or RCMP detachments can provide immediate assistance in the event of a spill and should be notified as a matter of course. Other governmental and industry specific organizations may be able to offer specialized containment and clean-up assistance.

Environment Canada's Environmental
Emergency Co-coordinators Atlantic Region ***1-902-426-6200***

Transport Canada Information & Emergency Center	***1-613-996-6666***
Transport Emergency Assistance Plan	***1-613-237-6215***
Chlorine Emergency Plan	***1-613-966-6666***

Environmental Guidelines & Contingency Planning

Introduction

It is Logan Drilling Group's responsibility to ascertain and familiarize itself with all Federal, Provincial, Municipal and Client Rules and Regulations regarding the environment and spill reporting and clean-up. Logan Drilling Group shall establish a contingency plan for each project.

The contingency plan should provide for the following:

1. Permits
2. Regulations
3. Site Access
4. Site Preparation
5. Spill & Leak Procedures
6. Emergency Preparedness
7. Waste Management & Transportation
8. Site Abandonment & Reclamation

Permits

Ensure that all necessary permits have been obtained

- Work Permit
- Environmental Permit
- Septic System Approval
- Waste Disposal Authorization
- Reclamation Permits
- Water Course Alteration
- Water Taking Permit

Regulations

Logan Drilling Group's responsibilities under Federal, Provincial, Municipal and Client's Rule & Regulations regarding environmental concerns which pertain directly to the project will be identified on a project to project basis.

Site Access

- Comply with all local regulations
- Where practical, following existing roads.
- When creating new access road, minimize environmental impact.
- Pre-plan access to avoid swamps, rivers, streams and lakes, unless they can be crossed to standards.

- Refrain from over-cutting, pushing, or dumping debris material into water courses.
- Remove all foreign debris below the high water mark and use proper bridging techniques.
- Where practical, avoid recreational and historical sites, plantations, fish, wildlife and their habitats.

Site Preparation

- Refrain from unnecessary stripping or grubbing of vegetation.
- When necessary, neatly stockpile disturbed overburden for reclamation purpose.
- Maintain proper distance from all water bodies and courses.
- Sewage must be handled in an approved septic or sewage system. The method of containment and location must be documented and records kept for the period specified by local regulations.
- Ensure that the campsite design conforms to regulations and safety practices with respect to structure, spacing, noise, abatement fire control, etc.

Spill and Leak Procedures

- All petroleum products must be contained in suitable closed containers. Extreme Caution must be exercised in their handling to prevent escape to the environment.
- Particular care should be taken when traveling and working over ice and open water.
- Fuel oils must be transported, transferred, and stored in closed systems. Transfer hoses must be drained into containers.
- Ensure proper spill handling and control equipment is in place. Drip pans should be sufficient capacity to hold advertent leaks or spills.
- All chemicals and mud additives must be stored and handled with every precautions to prevent loss.
- Return water may not be discharged to surface waters unless it has been treated for solids removal.
- Ensure that sumps for process are adequate size and capacity.
- In the event of leaks or spills, the operation must be immediately halted. The spill must be contained and absorbed along with any contaminated soil, and processed according to Logan Drilling Group's spill handling procedures.
- In the event of a reportable leak or spill (as defined by the company's spill handling procedures), the Provincial Environmental Spills Action Center must be notified.
- Control all emissions and noises at all times. Extra precautions must be taken when working in proximity of commercial, industrial and residential areas.

Emergency Preparedness

In the specific context of these guidelines, the emergency plan for the site must outline the necessary actions to be taken to mitigate the effects of environmental accidents such as fire, spill, burs dam etc.

Waste Management & Transportation

- Minimize the generation of waste.
- All process water must be collected and/or processed following approved and recognized methods and procedures.
- All chemical and hydrocarbon waste must be disposed of according to the Federal, Provincial and Municipal Regulations such as the Transportation of Dangerous Goods Act.

Site Abandonment & Reclamation

- All artesian well, produced by the contractor, must be stopped or capped according to acceptable practices.
- Groundwater courses intersected must be controlled to minimized erosion.
- Sumps must be restored to original ground condition as soon as the equipment has been removed from each individual drill site.

Conclusion

The above guidelines have been prepared to assist in preparing a personal detailed environmental contingency plan. However, specific regulations may vary from province to province. All employees should receive basic training on the principles of environmental protection.

Spill Handling & Reporting Procedure

For all Petroleum Products and Process Water Spill

In the event of an environmental spill tentatively defined as:

a. On land – greater than 5 liters
b. In water – any detectable quantity

1. Immediately follow the Spill Reporting Procedure.
2. Stop the source of the spill if possible. If the liquid is flammable remove all sources of ignition.
3. Contain the spill using appropriate materials (e.g. sand, sandbags, oil absorbing booms, absorbent matting, etc.).
4. Pump large spills into a tank or barrel.
5. Absorb smaller spills using Olcansorb or matting material contained in the spill kit.
6. Remove all contaminated absorbent and associated materials to barrels, ensure that barrels are covered.
7. Label all barrels, tanks, bags with the date, location, material spilled and a contact person.
8. Upon completion of clean-up, store contaminated spill materials on-shore in secure, low traffic area.
9. Contact the Environmental Services Department for disposal instructions.
10. All spills must be recorded on Daily Time Reports and included with the Weekly Report submitted to the office

***NOTE: It is an offence to dispose of spill clean-up materials in unauthorized manner or areas. ***

Spill Reporting Procedure

For all Petroleum Products and Process Water Spill

Notify the Site Supervisor/ Representative
Immediately Contacts
↓

Respective Manager
Immediately Contacts
↓

Starsky Young
Operations Manager

Immediately Contacts
↓

Steve Mundle
President

NOTE: *Ensure to follow the site specific notification procedure as well.*
For any major spills also contact the appropriate provincial environmental emergency authorities found in Spill Reporting & Clean-up.

EMERGENCY PREPAREDNESS SECTION

Table of Content

EMERGENCY PLAN

In the event of an emergency call: 911

- Take control of the situation.
- Provide **all** the required information to the 911 dispatcher
- Do not leave the site.

Always follow the procedure established for the site during orientation

Contact your Supervisor or Manager

Office (Stewiacke) 1-902-639-2311
Office (Moncton) 1-506-858-9977

Steve Mundle (President) 1-902-483-2299
Starsky Young (Operations Manager) 1-709-639-2337
Matt MacAuley (Branch Manager Stewiacke) 1-902-890-8698
George Cooper (General Manager Geotech) 1-902-890-5775
Kevin Everill (Salisbury Branch Manager) 1-506-852-0732
Erika LeBlanc (HSE Manager) 1-506-852-1697

Environmental Spill Reporting

In the event of an environmental emergency or spill please contact the Regional Office of the Canadian Coast Guard:

New Brunswick 1-800-565-1633
Newfoundland 1-800-563-9089
Nova Scotia 1-800-565-1633

EMERGENCY COMMUNICATION PLAN

In the event of an emergency call: 911

8 Galloway St, Moncton, NB

(Cross street – Frenette Ave & Greenock St)

506 858 9977

- Take control of the situation.
- Provide **all** the required information to the 911 dispatcher
- Have someone meet the emergency response personnel outside
- Do not leave the shop

Always follow the procedure established for the shop

Contact your Supervisor or Manager

Office (Stewiacke) …… 1-800-565-2311
…… 1-902-639-2311

Steve Mundle (President) …… 1-902-483-2299
Matt MacAuley (Branch Manager Stewiacke) …… 1-902-890-8698
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Environmental Spill Reporting

In the event of an environmental emergency or spill please contact the Regional Office of the Canadian Coast Guard:

New Brunswick …… 1-800-565-1633

EMERGENCY COMMUNICATION PLAN

In the event of an emergency call: 911

37 Commo Road, Stewiacke, NS

902 639 2311

- Take control of the situation.
- Provide **all** the required information to the 911 dispatcher
- Have someone meet the emergency response personnel outside
- Do not leave the shop

Always follow the procedure established for the shop

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Environmental Spill Reporting

In the event of an environmental emergency or spill please contact the Regional Office of the Canadian Coast Guard:

Nova Scotia 1-800-565-1633

Emergency Response Plan

Due to the nature of the work undertaken by Logan Drilling Group and that much of the work is completed in isolated or hard to reach areas, an effective and thorough Emergency Response Plan is required. The following Emergency Response Plan will address various emergencies that may occur on Logan Drilling Group sites.

Prior to the start of any project, in coordination with the client, the Emergency Response Plan should be reviewed and any site specific issues or concerns addressed.

The Emergency Response Plan must be reviewed prior to the start of work, and must be posted in a central area and easily accessible.

Unless otherwise specified by the client or the site, the main contact in case of emergency is: **911**

What is an Emergency?

An emergency is considered as any serious injury, fatality, serious environmental incident, fire, natural disaster, missing persons or animal attack.

Emergency Communication Procedure

The emergency communication procedure will be posted in a clearly visible area near the telephone or other communication devices used to call during an emergency. The communication procedure will contain the following information.

a. Up to date contact information for:
    i. Police
    ii. Fire
    iii. Ambulance
    iv. Poison control
    v. Environmental spills
    vi. Management
b. The exact civic address or coordinates to your location.
c. Contact number to your location
d. Any special site access information
e. Any specific meeting points

Should any family members need to be notified of an emergency, the notification will be done by Logan Drilling Group management.

First Aid Provider

Shop/Office

A list of designated first aid providers will be posted along with the emergency communication procedure. A minimum of 1 first aid provider must be on site at all times.

Work Sites

All personnel working in the field shall have valid standard first aid training. All personnel in the field are designated first aid providers.

Any and all injuries or illness must be reported to the management as soon as possible. All first aid provider must complete a first aid report any time first aid treatment is given. The report must content the following:

a. Name of the first aid provider
b. Name of the injured/ill person
c. Date & time of the injury
d. Location (on the person's body) and description of the injury
e. Time when first aid treatment was given
f. Description of the treatment and care
g. The name of the person to whom the injury was reported

Emergency Transportation.

Shop/Office or Work Sites

During any pre-hospital emergency (life threatening injuries/illnesses) 911(ambulance) will be contacted and the injured/ill person will be transported to the hospital by ambulance.

For any other injuries or illnesses, appropriate first aid is to be given on site. Should the injured/ill person require medical attention, management will transport the injured/ill person to the nearest medical facility to seek medical attention. Should the injured person require continued first aid treatment while being transported to a medical facility, a first aid attendant shall accompany him or her.

Isolated or Remote Location Sites

Site specific evacuation plans will be developed for any isolated/remote locations or any site that may present difficulties for emergency transport. The use of snowmobiles, ATVs, UTVs or helicopters may be necessary. A supervisor or site manager must accompany injured/ill personnel (if possible) during any emergency transportation. A method of communication must be available at all time.

During any pre-hospital emergency (life threatening injuries/illnesses), personnel must always

follow the developed, site specific emergency evacuation plan. First aid treatment is to be given to the injured or ill person until medical help arrives. All instructions given by the dispatchers are to be followed.

For any other injuries or illnesses, appropriate first aid/treatment is to be given. Personnel must follow the developed, site specific emergency evacuation plan. . All instructions given by the dispatchers are to be followed.

Notification to the Commission

Similarly to the NS Occupational Health and Safety Act, section 43(1) of the NB Occupational Health and Safety Act the Commission must be notified immediate "*if an employee suffers and injury resulting in*

a) *a loss of consciousness,*
b) *an amputation,*
c) *a fracture other than a fractured finger or toe,*
d) *a burn that requires medical attention,*
e) *a loss of vision in one or both eyes,*
f) *a deep laceration,*
g) *admission to a hospital facility as an in-patient, or*
h) *death*

In addition the Commission must also be notified immediately as per section 43(4)

a) *an accidental explosion of an accidental exposure to a biological, chemical or physical agent occurs at a place of employment, whether or not a person is injured, or*
b) *a catastrophic event or catastrophic equipment failure that occurs at a place of employment that results or could have resulted, in an injury.*

Procedure in Case of a General Emergency

1. Stop all work, rectify the hazard and secure the area.
2. Follow the notification procedure as set out by the site/client (when applicable)
3. Notify the safety supervisor and site supervisor.
4. Divide and assign responsibility to all able personnel
5. If personnel is seriously injured, provide first aid treatment and attempt to stabilize their condition if possible.
6. Ensure that head office has been notified of the situation and keep them updated with any progress.

Specific Emergency Response Plan

- ✓ Follow the emergency specific checklist
- ✓ Do no skip steps and note when a step has been completed.
- ✓ Know your exact location (civic Address or Coordinates). When possible have someone meet emergency personnel at a specific location.
- ✓ Know where to find First Aid Equipment.
- ✓ Know the designated muster points/meeting points
- ✓ Ensure that all communication systems are in order (cell phone, sat phone, two-way radio).
- ✓ Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.
- ✓ Always ensure that the hazard has been rectified to prevent any further injuries.

Fatality

1. Stop work, ensure that the hazard has been rectified to prevent any further injuries and secure the area.
2. 911 or site specific emergency dispatch center.
    a. Provide the dispatcher with all the required information
    b. Follow the instructions provided by the dispatcher
    c. Stay on the line if required
3. Make arrangements for transportation/evacuation of body (if required)
4. Appoint a person to accompany the body (if possible).
5. Notify the proper authorities/agencies (Workers Compensation Board, Head Office, Police, lawyer etc.).
6. Maintain complete and detailed notes and documentation (photos, recordings, drawings, statements) of all the events.

Serious Injury (pre-hospital emergency/life threatening)

1. Stop work, ensure that the hazard has been rectified to prevent any further injuries and secure the area.
2. 911 or site specific emergency dispatch center.
    a. Provide the dispatcher with all the required information
    b. Follow the instructions provided by the dispatcher
    c. Stay on the line if required
3. Give appropriate first aid treatment until the EMS arrive.
4. Make arrangements for the evacuation of injured personnel (if required).
5. Appoint a person to travel with the injured person (if possible)
6. Notify the proper authorities if required (Workers Compensation Board, Head Office, Police, lawyer, etc.)
7. Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.

Minor Injuries

1. Stop work, ensure that the hazard has been rectified to prevent any further injuries and secure the area.
2. Treat injury with appropriate first aid treatment.
3. Seek medical attention from physician (if required)
4. Make arrangement for the evacuation of the injured person (if required)
5. Appoint a person to travel with the injured person (if required)
6. Notify the proper authorities if required (safety supervisor, Head Office, etc.)
7. Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.

Missing Person

- Does the person have communication device? What kind?
- Are they known for any medical conditions or medications?

1. 911 or site specific emergency dispatch center.
   a Provide the dispatcher with all the required information
   b Follow the instructions provided by the dispatcher
   c Stay on the line if required
2. Notify the proper authorities if required (Police, Search & Rescue, safety supervisor, Head Office, etc.)
3. Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.

Do not attempt ground search unless it is considered safe project manager, the ground search crew is properly equipped and trained.

Environmental Emergency

- Know the location of spill kits and environmental emergency equipment is located.

1. Stop work, ensure that the cause of the spill has been rectified to prevent any further contamination and secure the area.
2. Prevent the spill from spreading.
3. Contact the appropriate provincial spill reporting agency or site specific emergency dispatch center.
   a Provide the dispatcher with all the required information
   b Follow the instructions provided by the dispatcher
4. Start the environmental spill management plan
5. Make arrangements for the removal of spilled product (if required).
6. Notify the proper authorities if required (Workers Compensation Board, Head Office, Police, lawyer, etc.)
7. Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.

Fire

- Know the location where the firefighting equipment is located.
- Ensure that all personnel are aware of evacuation routes and muster points.
- No personnel is to return in a fire area

1. Stop work, secure the area.
2. If possible, attempt putting out the fire using a fire extinguisher.
3. 911 or site specific emergency dispatch center.
   a Provide the dispatcher with all the required information
   b Follow the instructions provided by the dispatcher
   b. Stay on the line if required
4. Ensure that all personnel are at the muster/emergency meeting point
5. Notify the proper authorities if required (Police, Fire, Forestry Services, Head Office, etc.)
6. Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.

Natural Disasters

- Natural disasters may include electrical storms, floods, earthquakes and tornadoes. The emergency response for any of the above will be the same:

1. Ensure the safety of all personnel at the rig. Send someone to ensure the safety of personnel at the camp.
2. Secure the well. Shut down equipment as required.
3. Notify the proper authorities of the type of disaster.
4. Evacuate to a place of safety until it is safe to return to the location.

Post Incident Report/Follow-Up

- Complete a site visit of the specific location.
- Interview employees, contractor and any other personnel involved.
- Complete an investigation of the incident and produce a written report including supporting documentation.
- Make recommendations within the written report
- Review and revise the Emergency Response Plan if needed.
- Contact and cooperate with the appropriate agencies as required (Workers Compensation Board, Head Office, Police, Lawyer etc.).
- Ensure that the written report is reviewed by management and the JOHS committee and that comments and follow up is completed.

Emergency Preparedness

Although it is impossible to predict and prepare for all emergencies and situation that can occur, the following outlines tips and guidelines to follow in more common emergency type situations.

Forest Fires

Wildfire Notice

A Fire Notice is for information only and is an advisory that a wildfire is currently burning in your area and presents a risk to your life and property. Know the three stages of evacuation: Alert, Order, All Clear and monitor news sources for evacuation messages.

Evacuation Alert

An Evacuation Alert is issued to advise anyone in the area of the potential for loss of life or property from fire. When an alert is issued, you should be prepared for worsening conditions. You may be required to leave the area with minimal notification of an evacuation order being issued. Monitor news sources and keep your phone free for incoming calls. Every attempt will be made to provide as much advance notice as possible, however due to changeable wind/weather conditions; you may be required to leave with little advance notice.

1. Ensure that all communication systems are in order (cell phone, sat phone, two-way radio).
2. Maintain complete notes and documentation (photos, recordings, drawings, statements) of all the events.
3. Maintain constant communication with authorities and other agencies.
4. Notify local agencies of your exact location and when you are arriving at site and leaving.
5. Follow all directives and orders given.

Hail Storm

- Continuously monitor weather conditions.
- In Building: Stay away from windows and glass doors. Be alert for signs of high winds or tornado (especially if hail is large) and follow tornado precautions as necessary.
- Outside: Seek cover, face away from wind and protect your head. Be alert for signs of high winds or tornado (especially if hail is large) and follow tornado precautions as necessary.
- In Vehicle: Keep face and head away from windows. Be alert for signs of high winds or tornado (especially if hail is large)

Blizzard

During winter storms with heavy snowfall and/or high winds the following actions are to be taken:

- Monitor the rate of snowfall and wind chill to determine if conditions permit continuation of operations.
- Alert field personnel to stop all outdoor work when the wind chill factor drops to a hazardous level or if blowing snow reduces visibility significantly.
- Assemble all field personnel in a heated enclosure to wait out the storm.
- Conduct a head count to ensure all personnel are accounted for.

- If a worker is missing in poor visibility conditions, a search party must be organized and sent out only when visibility improves to allow a search to proceed safely. Notify local police or search and rescue organizations for assistance.
- Secure all materials or objects that may be dislodged in high winds.
- Where conditions permit continuation of operations, considerations must also be made for regular breaks to warm-up.
- Properly insulated clothing including boots, gloves/mitts and parkas are necessary PPE in winter conditions. All exposed areas have to be covered.
- Adopt the "buddy" system where personnel frequently check each other for frostbite and signs of hypothermia.
- Administer first aid for any frostbite or hypothermia and summon medical services if required.
- If a serious injury or fatality has occurred, follow the relevant procedures.
- If driving a vehicle in a blizzard, pull off the road safely with four-way flashers on and wait out the storm.
- Stay in your vehicle. Trying to dig your way out of a ditch or attempting to walk back to town/camp can be fatal. Do not leave your vehicle.
- Call 911 or local authorities to let them know your exact location and predicament.
- Do not leave the engine running. If it is extremely cold, idle your engine for a few minutes at a time – but only after ensuring the exhaust system is not damaged and the tail pipe is clear of snow and debris. Carbon monoxide can sneak up on you without warning.
- Put on layers of warm clothing and wrap yourself in a blanket or sleeping bag.
- Ventilate the car by opening a downwind window (the side away from the wind and blowing snow (approximately ½ inch).
- Use your water sparingly (you should keep 2 large bottles in your kit), but do not let yourself get dehydrated.

Lightning

- During a lightning storm, immediately shut off all equipment.
- Seek shelter inside a vehicle or building and avoid water and objects that conduct electricity.
- Do not stay in open spaces or under a tree.
- All operations must be stopped for 30 min from the last lightning strike.

Vehicle Fire Safety

Most vehicle fires resulted from mechanical or electrical failures or malfunctions.

- Ensure vehicle has been inspected at least annually by a trained, professional technician.
- Watch for fluid leaks under vehicles, cracked or blistered hoses, or wiring that is loose, has exposed metal or has cracked insulation. Have any of these conditions inspected and repaired as soon as possible.
- Be alert to changes in the way your vehicle sounds when running, or to a visible plume of exhaust coming from the tailpipe. A louder than usual exhaust tone, smoke coming from the

tailpipe or a backfiring exhaust could mean problems or damage to the high-temperature exhaust and emission control system on the vehicle.

If a vehicle fire occurs:

- Stop – If possible, pull to the side of the road and turn off the ignition. Keep the hood closed because more oxygen can make the fire larger.
- Get Out – Make sure everyone gets out of the vehicle. Then move at least 100 feet away.

Call for Help. Never return to the vehicle to attempt to fight the fire yourself. Vehicle fires can be tricky.

Outdoor & Wilderness Survival

The advances in the development of outdoor clothing, equipment, emergency food and techniques have been growing rapidly in recent years. For those beginners interested in using the outdoors there is unlimited information available. However, experience is the best teacher in any outdoor situation and your reaction in a survival situation depends on your education. Always keep in mind that it can happen to you. Those who are mentally and physically prepared to survive are more likely to do so. To deal with an emergency situation one must be able to make decisions, improvise and remain calm.

Fear – for anyone faced with an emergency situation, fear is a normal reaction. Unless an emergency situation has been anticipated, fear is generally followed by panic then pain, cold, thirst, hunger, fatigue, boredom and loneliness. It is extremely important to calmly assess the situation and not allow these seven enemies to interfere with your survival.

Pain – Pain may often be ignored in a panic situation. Remember to deal with injuries immediately before they become even more serious.

Cold – Cold lowers the ability to think, numbing the body and reducing the will to survive. Never allow yourself to stop moving or to fall asleep unless adequately sheltered.

Thirst – Dehydration is a common enemy in an emergency situation and must not be ignored. It can dull your mind, causing you to overlook important survival information.

Hunger – Hunger is dangerous but seldom deadly. It may reduce your ability to think logically and increase your susceptibility to the effects of cold, pain and fear.

Fatigue – Fatigue is unavoidable in any situation so it is best to keep in mind that it can and will lower your mental ability. Remember that in an emergency situation this is often the body's way of escaping a difficult situation.

Boredom & Loneliness – These enemies are quite often anticipated and may lower the mind's ability to deal with the situation.

How To:

Build a Fire – Building a fire is the most important task when dealing with survival in the wilderness. Be sure to build yours in a sandy or rocky area or near a supply of sand and water as to avoid forest fires. The most common mistakes made by those attempting to build a fire are: choosing poor tinder, failing to shield precious matches from the wind and smothering the flames with too large pieces of fuel. The four most information factors when starting a fire are spark – tinder – fuel – oxygen.

The most common ways to create spark are:

1. Waterproof, strike-anywhere matches are your best bet. Matches may be waterproofed by dipping them in nail polish. Store your matches in a waterproof container.
2. A cigarette lighter is also a good way to produce a spark, with or without fuel.
3. The flint and steel method is one of the oldest and most reliable methods in fire starting. Aim the sparks at the pile of dry tinder to produce a fire.
4. The electric spark produced from a battery will ignite a gasoline dampened rag.

Dry grass, paper or cloth lint, gasoline soaked rags and dry barks are all forms of tinder. Place your tinder in a small pile resembling a tepee with the driest pieces at the bottom. Use a fire starter or strip of pitch if it is available.

It is important to keep in mind that smaller pieces of kindling such as twigs, bark, shavings, and gasoline are necessary when trying to ignite larger pieces of fuel. Gather fuel before attempting to start your fire. Obviously dry wood burns better and wet or pitchy wood with create more smoke. Dense, dry wood will burn slow and hot. A well ventilated fire will burn best.

How to:

Build a Shelter – A small shelter which is insulated from the bottom, protected from wind and snow and contains a fire is extremely important in survival. Before building your shelter, be sure that the surrounding area provides the materials needed to build a good fire, a good water source, and shelter from the wind.

Wilderness shelters may include:

1. Natural shelters such as caves and overhanging cliffs. When exploring a possible shelter, tie a piece of string to the outer mouth of the cave to ensure you will be able to find your way out. Keep in mind that these caves may be occupied. If you do use a cave for shelter, build your fire near its mouth to prevent any animals from entering.
2. Enlarge the natural pit under a fallen tree and line it with bark or tree boughs.
3. Near a rocky coastal area, build a rock shelter in the shape of a U, covering the roof with driftwood and a tarp or even seaweed for protection.
4. A lean-to made with poles or fallen trees and a covering of plastic, boughs, thick grasses or bark is effective to shelter you from wind, rain and snow.

5. A wigwam may be constructed using three long poles. Tie the tops of the poles together and upright them in an appropriate spot. Cover the sides with a tarp, boughs, raingear or other suitable materials. Build a fire in the center of the wigwam, making a draft channel in the wall and small hole in the top to allow smoke to escape.
6. If you find yourself in open terrain, a snow cave will provide good shelter. Find a drift and burrow a tunnel into the side for about 60 cm (24 in) then build your chamber. The entrance of the tunnel should lead to the lowest level of your chamber where the cooking and storage of equipment will be. A minimum of two ventilating holes are necessary, preferably one in the roof and one in the door.

Clothing & Equipment

Clothing – Clothing must provide warmth and offer protection from the elements. Layers of light, natural fibers are best. Hats are a must, as they offer protection from both the heat and cold. Waterproof outer layers are necessary.

Equipment – Equipment must be easily manageable and promote survival in any situation. Items to carry in your pockets may include a fire starter, waterproof matches and/or lighter, a pocket knife, goggles, compass, small first aid kit and some sort of trail food.

Survival Kit – Items should be packed in a waterproof container that can double as a cooking pot and water receptacle and be attached to your belt.

Backpack – A good, comfortable backpack is mandatory. Loads of about 18 kg (40 lbs.) are average. Items to include are: flashlight, extra jacket, socks and mittens, a pocket saw, gas camp stove, first-aid kit, emergency food, and a tent and fly.

Checklist

Useful items to include are:

1. A map and compass.
2. A large, bright plastic bag will be useful as a shelter, signaling device or in lieu of rain gear.
3. A flashlight with extra batteries.
4. Extra water and food.
5. Extra clothing such as raingear, a toque and gloves, a sweater and pants.
6. Sun protection such as sunglasses, sunscreen, a hat and long sleeved clothing.
7. A sharp pocket knife.
8. Waterproof matches, a lighter and/or a flint.
9. Candles and fire starter.
10. A First Aid Kit
11. A whistle, flares, a tarp.

Before venturing into the wilderness check weather forecasts and hazards.

Insect Bites & Stings

In more persons, an insect bite or sting causes only some painful swelling with redness and itching. Bee and wasp stings, however, may cause severe allergic reactions in some people.

Allergic reactions are recognized by the following:

- Hives and swelling
- Vomiting
- Breathing difficulties
- Complaints of nausea

When these signs/symptoms occur, it is vital to obtain medical help urgently.

In the event of a severe allergic reaction, if the person takes any prescribed medication, assist them it taking them only as directed (this includes EpiPens). Never give any prescription medication to someone it does not belong to.

Leeches & Ticks

Leeches can be found in swamps, ponds, and stagnant water. They attach themselves to the human body by making a tine hole in the skin. Forcefully removing a leech may cause injury to the skin and infection.

To remove a leech:

- Remove the leech by applying salt or a lighted match to its body.
- Do not pull or scrape it off the skin.
- Wash the area around the bite
- Apply a weak solution of baking soda or ammonia to relieve the irritation.

Ticks can be found in the brush and tall grass at the edge of the woods and in the forest. These then fall onto animals and humans. They bite through the skin and attach themselves by burrowing their head under the skin. Infections from ticks may be harmful.

When working in a known tick area:

- Wear high boots or tuck in your pants into your socks.
- Make sure to brush yourself and your clothes off thoroughly after work.
- Conduct a body check to ensure there are no ticks, take close look around the ankles, behind the knees, under arms, groin area, along the hair line and around the wrist area.

To remove a tick

- Wear gloves
- Grasp the tick with tweezers as close to the skin as possible.
- Pull the tick away from the skin with an even, steady pull.
- Avoid squashing a tick when removing, infected blood may spurt.

- Clean the area around the bite with soap and water.
- Wash your hands.
- Place the tick in a plastic bag or container for identification or testing
- See a physician to ensure the tick did not transmit Lyme disease or other infections.

Snake Bite

Although venomous snakes and snake bites are not common in Canada, they may be a threat when working abroad.

Snake bite may be recognized by the following:

- Two tiny holes in the skin.
- Swelling and discoloration, especially around the bite area.
- Burning and severe pain around the bite area.
- Chills and sweating
- Vomiting
- Breathing difficulties
- General weakness.

In the event of a snake bite, make sure that the snake is gone or no longer a threat. Never try to suck out or cut out the bite area. Flush the bite area with soapy water. Snake bites/venom is generally time sensitive, seek immediate medical attention.

Animal Encounters

The following precautions must be taken when working in an area known to be inhabited by potentially dangerous animals.

- Delegate a person to watch for dangerous animals.
- Select a route that is open and well cleared when possible.
- Be aware of the wind direction and walk with the wind when possible. Do not investigate bad or strong odors.
- Have binoculars readily available to help spot animals from a safe distance.

When designating a camp or rest spot

- Avoid sites with a history or wildlife encounters/problems. Check with the Wildlife Officer and local residents to obtain details and advise.
- Keep all sleeping tents together and ensure that they are situated away from the kitchen, food storage and garbage collection or disposal areas.

Animal Bites

Animal and human bites that break the skin may cause serious infections.

If you suspect that a bite was caused by and animal is infected with rabies, act quickly and obtain medical help immediately. The infection can be prevented by immediate immunization.

Protect yourself:

- Wear gloves when giving first aid or handling infected animals.
- Scrub your hand thoroughly with soap and water after these procedures.

When treating an animal/human bite:

- Allow moderate bleeding to cleanse the wound.
- Control the bleeding
- Wash the wound with an antiseptic soap or detergent.
- Apply a dressing and bandage.
- Obtain medical help as soon as possible. Any bite that breaks the skin should get checked out by a medical physician.

Bear Encounters

Bears normally avoid encounters with humans. However, there is always a possibility you may surprise a bear at close range or meet a bear who is not afraid of people. There is not guaranteed method for reacting to a bear encounter because each encounter is different. However, the following guidelines can help minimize the risks:

- Assess the situation and thing about your surrounding before you react.
- Try to stay calm and keep the bear in sight at all time.
- If traveling in a group, stay close together.
- Do not run unless you are reasonably sure you can reach a sage place before the bear catches you. Running may invite the bear to chase you and a bear can run faster than a human.
- Continue to walk slowly in the opposite direction from the bear.
- In close confrontations, the bear is likely to feel threatened. Its natural tendency is to remove the threat. Try to act as non-threatening as possible, particularly if it is an adult bear or female with cubs.
- Do not make direct eye contact.
- Give the bear the opportunity to leave, making sure it has an escape route.

Bodily Injuries

Severe Bleeding

A wound is any break in the continuity of the soft tissues of the body. A wound usually results in bleeding. Depending on the location of the wound if may be either Internal or External Bleeding. Depending on the blood vessel that is damaged the bleeding can be either Arterial or Venous bleeding.

The signs of external bleeding is the appearance of blood. Blood is not immediately visible with internal bleeding. General signs and symptoms of bleeding may vary widely, depending on the amount of blood loss. Severe blood loss will result in the display of the following:

- Pale, cold and clammy skin

- Rapid pulse, gradually becoming weaker
- Faintness and dizziness
- Thirst and nausea
- Restlessness and apprehension
- Shallow breathing, yawning, sighing and gasping for air.

These signs may also indicate shock.

Internal bleeding may not be easily recognized. Internal bleeding should be suspected when the injured has:

- Received a severe blow or penetrating injury to the chest, neck, abdomen or groin.
- Major limb fracture or a hip or pelvic fracture.

Internal bleeding may remain hidden or be recognized by one or more of the following.

Blood may be:

- Discharged from the ear canal, the nose or it may appear as a bloodshot or black eye.
- Red and frothy when coughed up.
- Seen in vomit either as bright red, brown or like coffee ground material.
- Appearing in the stools as black and tarry or red.
- Seen in the urine as red or smoky brown.

Bone & Joint Injuries

Fractures

Fractures are any breaks or cracks in the bone. A fracture may be closed or open. A closed fracture is when the skin is not broken. An open fracture is when the skin is broken and bone ends may protrude.

A fracture may be caused by:

- Direct Force – Hard blow or kick.
- Indirect Force – fracture occurs at a distant point from the point of impact.
- Twisting – abnormal turning or twisting of the joint.

Joint Injury

A joint is formed where two or more bones come together. Joints allow for body movement. The bones of a joint are held in place by supporting tissue called ligaments.

Joint injuries happen when the bones and surrounding tissues are forced to move beyond their normal range.

Two common joint injuries:

- Sprain – a complete or partial tearing or stretching of the ligaments around a joint.
- Dislocation – a displacement of one or more bone ends at a joint so that their surfaces are no longer in proper contact.

In the event of a bone of joint injury you may see:

- Swelling and discoloration
- Deformity and irregularity
- Protruding bone ends
- Inability to use limb
- Guarding and tensing of the muscles around the injured area
- Grating noise that can be heard as the bone ends rub together
- Signs of shock, increasing with the severity of the injury
- Pain may increase with movement
- Tenderness to the touch

Muscles Strains

A muscle strain is an injury that occurs when a muscle is stretched beyond its normal limits. This may be caused by:

- Sudden pulling or twisting of the muscle
- Poor body mechanism during lifting
- Failure to condition muscles before physical activity
- Repetitive, long term overuse.

A strain can be recognized by:

- Swelling of the muscle
- Discoloration
- Sudden sharp pain
- Severe cramping
- Stiffness

At times these signs and symptoms may only appear after some time or when the area has been at rest for a period of time.

Repetitive Strain Injury (RSI) is a term that refers to a number of injuries, including back injuries, joint injuries, tennis elbows and bursitis. It is caused by long-term overuse of some joints, muscles and supporting tissue.

Preventing muscle strains and overuse can be done through work breaks, relaxation techniques, proper posture and use of PPE.

JOINT OCCUPATIONAL HEALTH & SAFETY COMMITTEE SECTION

Table of Content

Logan Drilling Group Joint Occupational Health & Safety Committee
Terms of Reference

OH&S Committee's Name

The official name of this OH&S committee is:

Logan Drilling Group JOH&S Committee, Logan Drilling Group,
37 Commo Rd, Stewiacke
Nova Scotia

Purpose of the OH&S Committee

The OH&S committee has a responsibility to monitor the health, safety and welfare of the workers at this workplace. It will carry out this legislative responsibility by monitoring all aspects of the OH&S program. Our aim is to go beyond the minimum requirements of the legislation. We will work closely with the employer (or employer designate) to monitor OH&S in the workplace.

Members of the OH&S committee will encourage all staff in the workplace to forward their OH&S concerns to their immediate supervisor as the first step in resolving OH&S concerns. The aim is to encourage a positive OH&S culture where all workers take responsibility for their own health and safety while at work and the health and safety of their co-workers.

Make-up of the OH&S Committee

The OH&S committee will consist of equal number of employer members and worker members:

- employer members are to be appointed by the employer
- employee members will be appointed by the employees and consist of at least one (1) field representative (if available) and at least one (1) workshop representative (if no field representative is available, the committee will be include two (2) members from the workshop)

If the number of workers at the workplace significantly changes, the "make up" of the OH&S committee will be reviewed to maintain proportional representation as prescribed in the Occupational Health & Safety Act.

Duties of Co-chairs

The employer and worker members will elect a co-chair from their respective groups to perform the following duties.

Co-chairs will take turns chairing committee meetings and will perform the following duties:

a. Schedule meetings and distribute agenda two days prior to the meeting
b. Encourage participation of all members
c. Involve members in problem solving and decision making
d. Send recommendations, with supporting documents, to the employer
e. Assign members of the OH&S committee to follow-up on recommendations
f. Review incident and near misses and other statistics

g. Invite special guests to attend meetings when appropriate
h. Sign minutes
i. Ensure minutes are distributed appropriately
j. Take part in work refusals where appropriate
k. Other duties appropriate to monitoring the OH&S program at the workplace

Duties of the OH&S Committee Secretary

The secretary will be responsible for providing all secretarial support to the OH&S committee. The secretary is not considered a member of the OH&S committee and will have no role in discussions or decision making during OH&S committee meetings.

The secretary will perform the following duties:

a. Maintain accurate records of the proceedings
b. Prepare the agenda developed by the co-chairs
c. Distribute the agenda to OH&S committee members a day before the meeting
d. Take minutes of OH&S committee meetings
e. Ensure minutes are signed by co-chairs
f. Within one week of the OH&S committee meeting, distribute minutes to the Commission, the employer, the OH&S committee members
g. Within one week of the OH&S committee meeting post the minutes on the bulletin boards in each of the lunch room
h. Prepare and distribute other correspondence as required by the committee

If the secretary is not available to take minutes, the co-chair will appoint a member of the OH&S committee to take the minutes and forward them to the secretary for processing.

Length of Time to be Served on the OH&S Committee

- Maximum of four consecutive years for worker members
- Maximum of four consecutive years for employer members
- Co-chairs may hold that office for a maximum of two consecutive years

Responsibilities of OH&S Committee Members

The members of the OH&S committee will:

- Attend committee meetings
- Monitor the elements of the OH&S program in the workplace
- Promote activities that reflect a healthy and safe culture in the workplace
- Receive complaints from other workers [Occupational Health & Safety Act, subsection 31(c)]
- Communicate regularly to workers on the progress of their issues [OH&S Act , subsection 31(g)]
- Lead by example follow safe work practices and procedures
- Investigate work refusals [OH&S Act , paragraph 43(b)]
- Participate in making recommendations
- Follow-up on recommendations as required

- Consult with the employer about the scheduling of workplace inspections section
- Participate in workplace inspections (OH&S Act, section 33(d))
- Participate in accident/incident investigations
- Review OH&S documents such as workplace inspection reports, accident/incident investigation reports, the Commission's quarterly injury notification reports, safe work practices and procedures, etc.
- Make recommendations to the employer or others in the workplace

Role in Work Refusals

The OH&S committee will document its involvement in all work refusals. When a worker approaches a member of the OH&S committee and advises that member that he/she has exercised the right to refuse unsafe work:

a. Confirm the worker reported the unsafe condition to the supervisor [OH&S Act, paragraph 43(2)(a)] (if the worker did not report to the supervisor, advise him/her to do so immediately)
b. Ask the supervisor if the work refusal was investigated and if so, ask the supervisor for the results of the investigation
c. Investigate the work refusal [OH&S Act, paragraph 43(3)] by conducting a physical inspection of the hazard with the worker and asking the worker to explain what is unsafe or unhealthy
d. Bring the findings to the OH&S committee members
e. If all members find that the work is safe and healthy, advise the worker to return to work
f. If one or more of the members find the work is unsafe or unhealthy, make a recommendation to the employer to implement corrective action
g. If the hazard is controlled to the satisfaction of the OH&S committee members, advise the worker to return to work
h. In situations where:
    i The OH&S committee members cannot reach a unanimous decision to advise the worker to return to work, or
    ii The work situation is not resolved to the worker's satisfaction advise the worker to report the work refusal either in writing or orally to the Occupational Health and Safety Branch, Department of Government Services

An officer from the OH&S Branch will investigate the work refusal. The OH&S committee should cooperate with officers by providing them with documentation concerning the work refusal. The worker involved and a member from the OH&S committee will accompany officers when they investigate the work refusal. If officers find the work situation to be safe and healthy, they will advise the worker to return to work. If officers find the work to be unsafe or unhealthy, they may issue a "stop work order" or a "directive."

Monitoring the OH&S Program

The OH&S committee continually monitors the OH&S program in a formal manner and on an ongoing basis and communicates its status to the employer.

Making Recommendations

If it is found that there are parts of the OH&S program not developed, implemented or evaluated, the OH&S committee will make appropriate recommendations to the employer. Decisions regarding recommendations for corrective action are to be reached through consensus and not by majority vote. When making decisions, the following process will be followed:

- Identify the OH&S issue
- Review supporting information
- Generate alternate solutions
- Decide upon recommendation
- Forward recommendations to appropriate person (include all supporting information)

Recommendations will be forwarded to the appropriate people, the employer, a supervisor or a manager. All recommendations will include the rationale for the recommendation and be in writing and dated.

Follow-up of Recommendations

Members of the OH&S committee will be given responsibility for following up on recommendations for corrective action. Follow-up includes:

- Reviewing the employer's written response to recommendations within 30 days after forwarding the recommendations
- Following up with the employer on recommendations where a written response is not received within 30 days
- Following up on recommendations forwarded to supervisors or managers within 30 days
- Reviewing written updates from the employer on the implementation of recommendations accepted by the employer until the implementation is complete
- Monitoring the implementation of recommendations forwarded to supervisors or managers every 30 days until the implementation is complete
- Reporting the progress of recommendations at regular OH&S committee meetings
- Ensure this hazard is added to the workplace inspection checklist so that the corrective action can be monitored for effectiveness
- Items should stay on the agenda until such time as the recommendations are implemented and checked for effectiveness.

All follow-up on recommendations should be documented and should include a completion date.

Evaluating the OH&S Committee

In December of every year, the OH&S committee will use "OH&S Committee Evaluation Form" to evaluate its own effectiveness. A copy of the completed evaluation form is to be sent to the employer by December 31 of each year.

Reviewing the Terms of Reference

The terms of reference will be reviewed and revised if necessary at the January meeting each year. If there are revisions to the terms of reference, the employer and both co-chairs will sign and date the new document. At the time of development and revisions, the terms of reference will be signed and dated by the employer, or the employer designate at the workplace, and the two co-chairs.

Schedule of Meetings

The OH&S committee will meet on the First Thursday of every second month in the conference room at the head office in Stewiacke NS. Should the need arises, a supplemental meeting may be called as necessary.

Meeting Agenda

The agenda will be prepared by the co-chairs. They will ensure the OH&S committee members and other staff are asked for their OH&S concerns. The agenda will be used to keep the meeting on track. The co-chairs will ensure the agenda is distributed to OH&S committee members at least two days prior to meetings. The items on the agenda will reflect OH&S issues; and each item will link in some way with the OH&S program at the workplace. If the agenda item does not link to the OH&S program, then it may be taken off the agenda and sent to the appropriate group within the workplace.

The following items should be forwarded to the agenda of the next meeting:

- Items where action is required
- Items where follow-up is required
- Unfinished items

OH&S committee members who were assigned action items, follow-up on items, or follow-up on recommendations are responsible to provide a status report at the following meeting.

Quorum

The OH&S committee considers a quorum to exist when at least two employer members and at least two worker members are present at an OH&S committee meeting. Meetings will take place only if a quorum is present. If there is not a quorum at an OH&S committee meeting, the meeting will be rescheduled for one week from the regular meeting time.
Co-chairs are to ensure all members are notified about:

a. The postponed meeting
b. The importance of attending the rescheduled meeting
c. The time, date and place of the rescheduled meeting

Records to be Reviewed at Meetings

The OH&S committee will maintain records pertaining to OH&S and will review the following records during each regularly scheduled meeting:

- Workplace inspection reports

- Workplace near miss
- Incident investigation reports (All information pertaining to workers should be removed from the incident investigation reports before being brought to the OH&S committee. This information is used to identify OH&S trends.)
- The quarterly statistics from the Health & Safety Manager
- Workers' concerns about OH&S
- Hazard recognition, evaluation and control reports
- Documentation of employer's response to recommendations
- Number of work refusals involving the OH&S committee
- Other reports related to the OH&S program at the workplace

Employer Co-chair signature: _____ date: _____

Worker Co-chair signature: _____ date: _____

Employer signature: _____ date: _____

Doc #	Version	Creation Date	Last Revision
001 FF-JOHS Meeting Agenda	1	09.19.2014	14.01.2015

JOHS MEETING AGENDA

GENERAL INFORMATION

Meeting Location	Date
Person Leading the Meeting	Number in Attendance

ATTENDANCE

Name	Signature

AGENDA

1. Opening Remarks
2. Review of Action/Follow Up Sheet
3. Review of Incidents
4. Review of Near Misses
5. Review of Health & Safety Statistics
6. Review of new Safe Work Practices
   - _____
   - _____
7. Review of new Job Procedures
   - _____
   - _____
8. Review of Company Policies
   - _____
   - _____
9. Review of Weekly Inspections
10. Review of Monthly Site Inspections
11. New Business
12. Closing Remarks

Doc #	Version	Creation Date	Last Revision
SF-JHSC Monthly Office/Site Inspection	1	08.21.2014	14.01.2015

MONTHLY JOHS OFFICE/SHOP INSPECTION

GENERAL INFORMATION

Inspection Conducted By	Position
Location	Date of Inspection

NOTE: *Any identified hazards or area of concerns must be entered on the Action Follow-Up Sheet.*

OFFICE AREA

HALLWAYS & STAIRCASES	YES	NO	NOTES
Free of objects, cables and other tripping hazards?			
Free of rocks, liquid, snow or other slip hazards?			
Mats and boot brushes are in place where applicable?			
Mats are flat to floor where applicable?			
Stair rails are in place and sturdy?			
Doors and exits are unblocked and open with ease?			
Entrances, hallways and staircases are well lit?			
Fire extinguishers are accessible and have current tags?			

OFFICE & WORKSTATIONS	YES	NO	NOTES
Chairs and desks are in good condition?			
Drawers and cabinets open and close with ease?			
Workspaces are tidy?			
Floors are free of objects, slip and trip hazards?			
Stacked boxes or items are sturdy and not leaning?			
Workstations are free of overhead hazards?			
Lighting fixtures and tiles are in place?			
Tiles are appear free of damp spots, leaks or mold?			
Lighting and temperature are adequate?			
Noise level is moderate?			
Office equipment and tools are in good conditions?			
Washrooms are clean and tidy?			
Emergency Evacuation Plan is posted?			
Workers are practicing good ergonomics?			

Lunchroom	YES	NO	NOTES

The area is clean and tidy?			
First Aid Kit is present and fully stocked?			
Lunchroom Fire extinguishers is accessible and has current tags?			
Emergency Evacuation Plan is posted?			

SHOP AREA

FLOORS & STAIRS	YES	NO	NOTES
Free of objects, cables and other tripping hazards?			
Free of rocks, liquid, snow or other slipping hazards?			
Adequate walking space around larger equipment & tools?			
Mats present and flat to the floor, where applicable?			
Walking areas are free of protruding objects?			
Entrances, walkways, work area and staircases are well lit?			
Stair rails are in place and sturdy?			

EMERGENCY PREPAREDNESS	YES	NO	NOTES
Emergency eyewash stations are clean & ready to use?			
Emergency eyewash station has current tags?			
Emergency eyewash instructions are posted?			
Emergency contact numbers are posted?			
Fire Extinguishers are accessible and have current tags?			
Exits are unblocked?			
Doors open and shut properly?			
First Aid Kit is accessible and fully stocked?			
Fire alarms and hoses are accessible, if applicable?			
Fire Evacuation Plan is posted?			
Muster point is identified?			
Signs directing people to the muster point are present?			
Current employee list is available at the muster point?			
TOOLS & EQIPMENT	**YES**	**NO**	**NOTES**

Extension cords, tools and equipment cords are in good condition without any frays or tears?			
Tools and equipment are in good condition, with no visible parts, guards or corrosion?			
Tools and equipment are working properly, not requiring “special” procedures or unusual force to use them?			

GENERAL WORKING CONDITION	YES	NO	NOTES
Adequate ventilation. The air is generally clear and free of exhaust?			
The temperature is adequate?			
Personnel are following Safe Work Procedures and are using safety guards and equipment?			
Fuel and hazardous products are stored and handled properly?			
All working areas are well lit?			

PERSONAL PROTECTIVE EQUIPMENT	YES	NO	NOTES
Workers are wearing safety glasses with side shields?			
Workers are wearing hard hats, as applicable?			
Workers are wearing hearing protection, as applicable?			
Workers are wearing steel toed boots (6” min)?			
Workers are wearing gloves?			
Workers wearing proper snug fitting, HiVis clothing?			
Workers are wearing Logan Drilling Group coveralls?			
Worker is wearing face shield or welding shield, as applicable?			

GENERAL	YES	NO	NOTES
Updated company safety manual is available?			
Updated MSDS available?			
Updated provincial OHS legislation available?			
Pre use inspections have been completed and documented?			
Toolbox meeting and Site Hazard Assessment have been completed and documented?			

STOCK ROOM

FLOORS & HALLWAYS	YES	NO	NOTES

Free of slip and trip hazards?			
Stacked items are sturdy and not leaning?			
Overhead items are stowed properly?			
Walking space is free of protruding objects?			

GROUNDS

GENERAL	YES	NO	NOTES
Grounds are free of unnecessary tools or items?			
Slippery or icy conditions are controlled, as much as possible?			
Adequate walking space around equipment and other large items?			
Walking spaces are free of protruding objects?			
Vehicles are parked facing out (backed in)?			
Vehicles and equipment are not impeding the other driver's view of workers in the yard?			
Authorized Personnel and PPE Signage is posted and adhered to?			
Forklifts and other mobile equipment are parked with blades/buckets to the ground?			
Equipment operators have proper training and certifications?			
Personnel are handling suspended loads properly?			
Garbage and litter is properly disposed?			

WAREHOUSE & STORAGE

	YES	NO	NOTES
Is housekeeping in good order?			
Floors and walkways are free of slip and trip hazards?			
Overhead items are stored properly?			
Walking area is free of protruding objects?			
Adequate walking space around equipment, shelving and other large objects?			
Yard area around and behind the warehouse is tidy and free of potential dangers to personnel and the environment?			

NOTES

Inspector's Signature:

_____ **Date:** _____

Management Signature:

_____ **Date:** _____

DIRECTIONS

This form is to be completed fully and forwarded Management of Logan Drilling Group upon completion of review, management will sign and date form, and place in Outbox for appropriate filing in the Joint Health and Safety Committee Inspections file.

DATE RECEIVED STAMP

CHEMICAL HAZARD COMMUNICATION SECTION

Table of Content

Hazard Communication Program

Purpose

The purpose of this document is to provide detailed safety guidelines and instructions for the use and storage of chemicals at Logan Drilling Group jobsites by its personnel and subcontractors. It is our goal to provide all affected personnel with the tools, knowledge and information necessary to protect themselves and co-workers from chemical and other hazards found in the workplace.

Scope

The management of Logan Drilling Group is committed to preventing accidents and ensuring the safety and health of our employees. We will comply with all applicable federal and state health and safety rules and provide a safe, healthful environment for all our employees. This written hazard communication plan is available for review by personnel in the Health and Safety Manual as well as the OHS Information Board.

Policy

Managers shall have full authority and responsibility for implementation and execution within their areas of control and Foreman shall have full authority and responsibility for implementation and execution within their areas of control.

- All affected personnel shall receive Hazard Communication and Chemical Safety Program training. In addition, personnel shall receive training and information regarding hazardous chemicals and safety precautions specific to their assigned work sites.
- Employees shall not handle potentially hazardous chemicals unless they have been properly trained and instructed to do so.
- Employees shall immediately alert the Foreman in the event that a substance of unknown origin is spotted.
- Employees shall immediately report all chemical spills, releases or exposures to their immediate supervisor.
- Each job-site must have an emergency response and evacuation plans as per company Emergency Preparedness Program.
- All containers must have the appropriate label, tag or marking displayed that indicates the identity, safety and health hazards.
- Each job-site will have a copy of the Material Safety Data Sheet (MSDS) for all the hazardous chemical present.

Responsibilities

Logan Drilling Group Management

Managers have full authority and responsibility for the implementation and execution of this Hazard Communication and Chemical Safety Program, within his or her area of control.

- Ensure compliance with this program.
- Conduct immediate corrective action for deficiencies found in the program.
- Maintain an effective Hazard Communication training program.
- Make this plan available to employees or their designated representative.
- Obtain, from the manufacturer, MSDS for chemicals purchased from retail sources.

Project Foreman of Site Safety Supervisor

Project Foreman or Site Safety Supervisor has full authority and responsibility for the implementation and execution of this Hazard Communication and Chemical Safety Program.

- Develop and maintain a list of hazardous chemicals using the identity that is referenced on the MSDS
- Monitor the effectiveness of the program
- Monitor employee training to ensure effectiveness
- Keep management informed of necessary changes
- Monitor jobsites for proper use, storage and labeling of chemicals
- Comply with all specific requirements of the program
- Provide specific chemical safety training for assigned employees
- Ensure chemicals are properly used stored and labeled
- Ensure only the minimum amount necessary is kept at worksite
- Ensure up to date MSDS are readily accessible to all employees on all shifts

Employees

- Comply with chemical safety requirements of this program
- Report any problems with storage or use of chemicals
- Immediately report spills of suspected spills of chemicals
- Ensure all received containers are properly labeled and that labels are not removed or defaced.
- Use only those chemicals for which they have been trained
- Use chemicals only for specific assigned tasks in the proper manner

Subcontractors

- Comply with all aspects of this program
- Coordinate information with the Management
- Ensure Subcontractor employees are properly trained
- Notify the appropriate parties before bringing any chemicals into client's property
- Monitor and ensure proper storage and use of chemicals by subcontractor employees

Training

Job Specific Training

Employees shall receive on the job training from their supervisor. This training shall cover the proper use, inspection, and storage of necessary personal protective equipment and chemical safety training for the specific chemicals they will be using or will be working around.

Personnel Training

All company personnel shall be trained in Hazard Communication and Chemical Safety Awareness.

Training Frequency

Hazard Communication and Chemical Safety Program training and re-training shall be provided as follows:

Initially - During the new employee orientation, new employees, will be receive training in Logan Drilling Group's Hazard Communication Program.

Annually - . Any employees exposed to hazardous chemicals must attend the annual hazard communication refresher training

Upon changes - in the Hazard Communication and Chemical Safety Program, introduction of new hazards - Whenever a new chemical, physical, or health hazard is introduced to the work site that have not been effectively covered by previous training.

Immediate - On-the-Spot Training - This training shall be conducted by Foremen for any employee that requests additional information or exhibits a lack of understanding of the safety requirements.

The training shall cover the following topics:

- An overview of the requirements in hazard communication rules.
- Hazardous chemicals present in their workplace.
- Any operations in their work area where hazardous chemicals are used.

- The location of the written hazard communication plan and where it may be reviewed.
- How to understand and use the information on labels and in Material Safety Data Sheets.
- Physical and health hazards of the chemicals in their work areas.
- Methods used to detect the presence or release of hazardous chemicals in the work area.
- Steps we have taken to prevent or reduce exposure to these chemicals.
- How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/work practices and personal protective equipment.
- An explanation of any special labeling present in the workplace.
- Emergency procedures to follow if an employee is exposed to these chemicals.

Special Tasks

Before employees perform special (non-routine) tasks that may expose them to hazardous chemicals, the supervisors will inform them of the chemicals' hazards. The supervisors also will review the methods to control exposure and emergency procedures. The hazard for such non-routine tasks will be evaluated and appropriate controls will be put in place including Personal Protective Equipment and all additional training as required.

Contract Employees & Other Workers

If contract employees or other workers may be exposed to hazardous chemicals at a Logan Drilling Group site (for example, employees of a construction contractor working on-site), it is the responsibility of HSE Manager to provide contractors and their employees with the following information:

- The identity of the chemicals, how to review our Material Safety Data Sheets, and an explanation of the container labeling system.
- Safe work practices to prevent exposure.

The HSE Manager will also obtain a Material Safety Data Sheet for any hazardous chemical a contractor brings into the workplace.

Identifying Hazardous Chemical

A list is included in this section identifying all hazardous chemicals with a potential for employee exposure at Logan Drilling Group work places (including the shop). Detailed information about the physical, health, and other hazards of each chemical is included in the Safety Data Sheet (MSDS); the product identifier for each chemical on the list matches and can be easily be cross-referenced with the product identifier on its label and on its safety data sheet.

Identifying Containers

All hazardous chemical containers used at Logan Drilling Group workplace will have either the

original manufacturer's label (that includes a product identifier, an appropriate signal word, hazard statement(s), pictogram(s), precautionary statement(s) and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party) OR a label with the appropriate label elements just described; OR workplace labeling that includes the product identifier and words, pictures, symbols, or combination that provide at least general information regarding the hazards of the chemicals.

Management, supervisors and safety supervisors will ensure that all containers are appropriately labeled. No container will be released for use until this information is verified. Workplace labels must be legible and in English. Information in other languages is available at: Logan Drilling Group main office upon request.

Material Safety Data Sheets

Safety Data Sheets are readily available to all employees. Personnel can review Safety Data Sheets for all hazardous chemicals used at Logan Drilling Group work sites. Safety Data Sheets are located HSE manager's office, in shops, trucks, work containers and drilling rigs.

The Safety Data Sheets will be updated and managed by the HSE Manager. If a Safety Data Sheet is not immediately available for a hazardous chemical, employees are to notify the HSE Manager as soon as possible. These can be obtained the required information from the HSE Manager.

Fire Prevention

Safety Data Sheets (SDS) and chemical labels provide important fire prevention information. Always review the SDS before working with a chemical. It will tell you how easily the substance can catch fire.

Before you move, handle, or open a chemical container, read its label. Chemical labels often indicate a fire hazard by the color red combined with a number. The number tells you the degree of the hazard:

- 4 Severe hazard
- 3 Serious hazard
- 2 Moderate hazard
- 1 Slight hazard
- 0 Minimum hazard

If a chemical is red labeled with a Flammable sticker, remember, it must be stored in a flammable chemical cabinet when not in use. Ensure all the flammable chemicals are in a cabinet. Also, make sure the cabinet is closed . . . an open cabinet doesn't do anyone any good.

WHMIS/GHS Review Program

WHMIS Review

This WHMIS/GHS Review Program is primarily a tool to assist in ensuring that all employees dealing with hazardous chemicals are aware and able to recognize elements such as, product warning labels and material safety data sheets. The details in the sections that follow provide useful tools and knowledge enabling employees to identify hazardous chemicals in the work place.

Definitions

Acute Exposure — A single exposure that a substance or multiple exposures occurring within a short time, usually 24hours or less.

Chemical — Any element, chemical compound, or mixture of elements or compounds.

Chronic Exposure — Repeated exposure to a substance over a relatively long period of time, typically more than 10% of lifetime.

Combustible liquid — Any liquid having a flash point at or above 100 deg. F (37.8 deg. C), but below 200 deg. F (93.3 deg. C), except any mixture having components with flash points of 200 deg. F (93.3 deg. C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

Compressed gas — Any compound that exhibits:

- A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psig at 70 deg. F.
- A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psig at 130 deg. F. regardless of the pressure at 70 deg. F.
- A liquid having a vapor pressure exceeding 40 psig at 100 deg. F.

Container — Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Employee — A worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

Explosive — A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Exposure or exposed An employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (incidental or possible) exposure. Subjected in terms of health hazards includes any route of entry (for example, inhalation or ingestion)

General Chemical Safety

Assume all chemicals are hazardous. The number of hazardous chemicals and the number of reactions between them is so large that prior knowledge of all potential hazards cannot be assumed. Use chemicals in as small quantities as possible to minimize exposure and reduce possible harmful effects. The following general safety rules must always be observed when working with chemicals:

- Read and understand the Safety Data Sheets.
- Keep the work area clean and orderly.
- Use the necessary safety equipment.
- Carefully label every container with the identity of its contents and appropriate hazard warnings.
- Store incompatible chemicals in separate areas.
- Substitute less toxic materials whenever possible.
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods.
- Provide means of containing the material if equipment or containers should break or spill their contents.

Chemical Storage

The separation of chemicals (solids or liquids) during storage is necessary to reduce the possibility of unwanted chemical reactions caused by incidental mixing. Explosives should be stored separately outdoors. Use either distance or barriers (trays) to isolate chemicals into the following groups:

- Flammable Liquids - store in approved flammable storage lockers.
- Acids - treat as flammable liquids
- Bases - do not store bases with acids or any other material
- Other liquids - ensure other liquids are not incompatible with any other chemical in the same storage location.
- Restraints and Containment - Lips, strips, or bars are to be installed across the width of storage shelves to restrain the chemicals in case of earthquake or unexpected shock.
- Chemicals shall not be stored in the same refrigerator used for food storage. Refrigerators used for storing chemicals must be appropriately identified by a label on the door.

Container Labels

It is extremely important that all containers of chemicals are properly labeled. This includes every type of container from a 5000 gallon storage tank to a spray bottle of degreaser. The following requirements apply:

- All containers shall have the appropriate label, tag or marking prominently displayed that indicates the identity, safety, and health hazards. The name and address of the manufacturer or importer must also be provided.
- Portable containers which contain a small amount of chemical should still be labeled even if they are used immediately that shift. The label should at least include the product identifier (name), the Hazards, the Supplier Identification and reference to the SDS.
- All warning labels, tags, and markings must be maintained in a legible condition and not be defaced or removed. Weekly inspections shall check for compliance of this rule.

Incoming chemicals are to be checked for proper labeling. The symbol below is an example of labeling used to rate the hazard of products in storage tanks. Each square contains a number based upon the accompanying table.

Housekeeping

Housekeeping is a fundamental part of all safety programs but caution must be exercised not to create additional or more serious hazards by improperly handling, storing, and disposing of chemicals in the interest of housekeeping. The following housekeeping rules shall apply with regard to hazardous chemicals:

- Maintain the smallest possible inventory of chemicals to meet immediate needs.
- Periodically review stock of chemicals on hand.
- Ensure that storage areas, or equipment containing large quantities of chemicals, are secure from incidental spills.
- Rinse emptied bottles that contain acids or inflammable solvents before disposal.
- DO NOT Place hazardous chemicals in salvage or garbage receptacles.
- DO NOT Pour chemicals onto the ground.
- DO NOT Dispose of chemicals through the storm drain system.
- DO NOT Dispose of highly toxic, malodorous chemicals down sinks or sewer drains.

Multiple Jobsites

Each jobsite must have a copy of the Hazard Communication Program, a list of all hazardous chemicals present at site and a SDS for each of those chemicals. In the event that crews are working in various locations, a primary location shall be designated for the location of the hazardous chemical information. In the event multiple jobsites are too remote to designate a primary location and still have timely and effective access to the information, a copy shall be carried with the crew. The onsite Foreman/safety supervisor is responsible for notifying the client and other contractors of the particular hazardous chemicals used in Logan Drilling Group's scope of work and obtaining

the information from the client and other contractors regarding the hazardous chemicals that may be encountered in the work area.

Identification of Hazardous Materials

Some chemicals are explosive, corrosive, flammable, or toxic. Other chemicals are relatively safe to use and store but may become dangerous when they interact with other substances. To avoid injury and property damage, persons who handle chemicals in any area must understand the hazardous properties of the chemicals. Before using a specific chemical, safe handling methods and health hazards must always be reviewed. Foreman/safety supervisors are responsible for ensuring that the equipment needed to work safely with chemicals is accessible and maintained for all employees on all shifts.

Product Warning Labels

There are numerous types of labeling schemes in use. Most combine symbols with text to communicate the hazards involved. Some even identify specific PPE requirements, body organs at risk if exposed, and emergency procedures.

Chemical Information List and Material Safety Data Sheets

Chemical information List (CIL) is the list of all hazardous substances in a specific location. Every substance on site shall have a Material Safety Data Sheet (SDS) on file at the jobsite or local project/business unit office. Each foreman/safety supervisor is required to maintain a list such as this and forward copies of the added product SDS to the Head Office for addition to the master Chemical Information List.

Safety Data Sheet (SDS) Information

Safety Data Sheets (previously Material Safety Data Sheet, MSDS) is a document that provides information on chemicals. There should be an SDS for every hazardous chemical found in the workplace and workers should know where they are located and how to use them.

SDS now consist of 16 well defined sections. Section 1 through 8 contain general information about the product:

1. Identification of substance and supplier
2. Hazard identification
3. Composition/ingredients
4. First Aid
5. Fire-fighting
6. Accidental release
7. Handling and storage
8. PPE/exposure control

The remaining eight sections, 9 through to 16, contain other technical and scientific information such as:

9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transportation information
15. Regular information
16. other

Classification

Hazardous products are divided into three major groups. Within each of these groups are classes and categories

HEALTH HAZARDS GROUP	PHYSICAL HAZARD GROUP	ENVIRONMENTAL HAZARDS GROUP
Acute Toxicity	Explosive	Hazardous to Aquatic Environment (acute exposure)
Skin Corrosion/Irritation	Flammable Gases	Hazardous to Aquatic Environment (chronic exposure)
Serious Eye Damage/Eye Irritation	Aerosols	
Respiratory or Skin Sensitization	Oxidizing Gases	
Germ Cell Mutagenicity	Gasses under Pressure	
Carcinogenicity	Flammable Liquids	
Biohazard Infectious Materials	Flammable Solids	
Reproductive Toxicity	Self-Reacting Substances and Mixtures	
Specific Target Organ Toxicity (single exposure)	Pyrophoric Liquids	
Specific Target Organ Toxicity (repeat exposure)	Pyrophoric Solids	
Aspiration Hazard	Self-Heating Substance and Mixtures	
Health Hazard not Otherwise Classified	Oxidizing Liquids	
	Substance & Mixtures which, in contact with water, emit flammable gases	
	Oxidizing Solids	
	Organic Peroxides	
	Corrosive to Metals	
	Combustible Dust	
	Physical Hazard not Otherwise Classified	

A controlled product is a product that falls into one or more of the hazard classes described below. Manufacturers and suppliers classify these products and assign one or more of the appropriate hazard symbols. There are ten WHMIS/GHS hazard symbols. Employers must train workers to recognize these symbols and to know what they mean.

WHMIS HAZARD SYMBOLS

FLAMMABLES

Appears on substances that are flammable, self-reactive, pyrophoric, self-heating, emitters of flammables gas and organic peroxides

OXIDIZING GASES, LIQUIDS, SOLIDS

This symbols means that the substance is an oxidizer. Oxidizers may cause a fire by increasing the concentration of oxygen in the air.

EXPLOSIVE SUBSTANCES

Appears on substances that are explosive, self-reacting, or organic peroxide.

ACUTE TOXICITY – ORAL, DEERMAL, INHILATION

Acute toxicity means that exposure to a single dose of the chemical may be toxic or fatal if inhaled or swallowed or if it comes in contact with your skin.

GAS UNDER PRESSURE

The substance is a compressed, liquefied or dissolved gas under pressure at 29 pounds per square inch or more

HEALTH HAZARD

These substance present the following health hazards: irritant, carcinogen, respiratory sensitizer, skin sensitizer, reproductive toxicity, target organ toxicity, mutagenicity, and aspiration toxicity.

SKIN/EYE CORROSION AND CORROSIVE TO METAL

Means that the substance causes skin burns, eye damage or destroys metals

ACUTE TOXICITY IRRITATION AND SENSITIZATION

Used for the following classes and categories: acute toxicity (cat.4), skin corrosion/irritation (cat.2), serious eye damage/eye irritation (cat.2 & 2a), respiratory or skin sensitization (cat.1, 1a & 1b) and specific target organ toxicity (cat.3)

ENVIRONMENTAL – AQUATIC TOXICITY

Not mandatory, optional for supplier to include. Hazard to aquatic environment

CLASS D: POISONOUS AND INFECTIOUS MATERIAL
Division 3: Biohazardous Infectious MATERIAL

These materials contain an organism that has been shown to cause disease or to be a probable cause of disease in persons or animals

WHMIS Supplier Label

When a supplier ships a product, it will generally be transported in a single container, in a multi-container, or in bulk. If the product is in a single container, the supplier must apply the supplier label. If a number of inner containers are packaged into a multi-container shipment (such as a box or wrapped pallet), the supplier must apply labels on both the inner and outer containers unless there is a written agreement that the purchaser will apply the supplier labels to the inner containers. For bulk shipments, the supplier must send to the purchaser either a supplier label or the information required on a supplier label.

Supplier Labels must contain the following information:

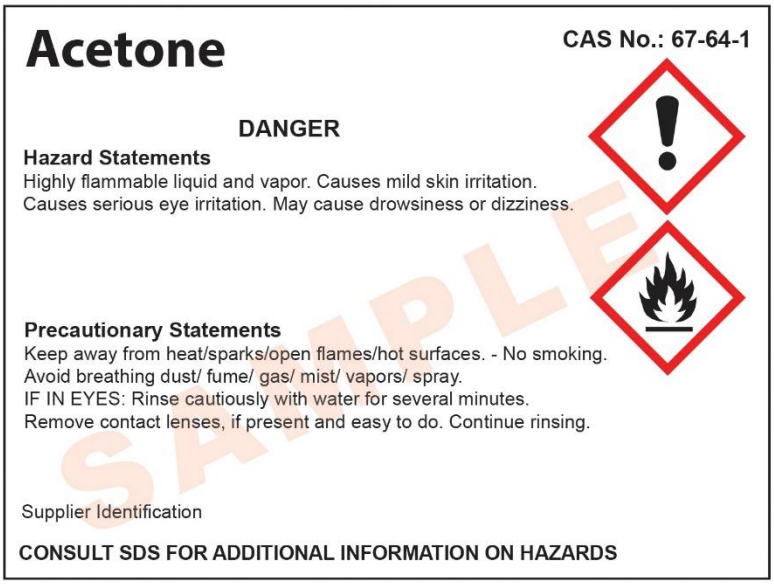
- **Product Identifier** – This can be (but not limited to) the chemical name, code number or batch number. The same product identifier must be both on the label and section 1 of the SDS
- **Signal Word** – indicates the degree of severity of a hazard.
- **Hazard Statement(s)** – Phrases assigned to a hazard class and category that describe the nature of the hazard(s) of a chemical, including, when appropriate, the degree of hazard.
- **Precautionary Statement(s)** – describe the recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling.
- **First Aid Information** – describes first aid treatment to be given.
- **Supplier Information** – name, address and telephone number of the chemical manufacturer, supplier or distributer of the substance or mixture.
- **Hazard Pictograms/Symbol** – include the GHS and other graphic elements used to convey health, physical and environmental hazard information.

WHMIS Workplace Label

Workplace labels are required on containers for each controlled product produced and used on-site, on secondary containers after a product has been transferred from the original container, and on containers where the supplier label is missing or not readable.

Workplace Labels must contain the following information:

- **Product Identifier** – Must be identical to that found on the SDS
- **Signal word**
- **Hazard Statements**
- **Precautionary Statements**
- **Hazard Pictograms/symbols (optional)**
- **Directive to consult the SDS for additional information**



Safety Data Sheets (SDS)

A Safety Data Sheet is a technical bulletin that provides specific hazard information, safe handling information, and emergency procedures for a controlled product. Since the SDS contains detailed health and safety information specific to each controlled product, it should be used as a key source of information for developing training programs and safe work procedures.

Reporting and Recordkeeping

Training - All training shall be recorded.

Reports - All exposure incidents shall be reported.

- Incident/Accident Report
- All exposure events resulting in injury, illness or loss of consciousness of an employee shall be recorded as Incidents on an Incident/Accident Report.

Spills

- Spills or releases that meet the following criteria shall be recorded as Incidents on an Incident/Accident Report
- Oil based fluids spilled on land or water in excess of five (5) gallons
- Chemical based fluids or products spilled on land or water in excess of (5) gallons or five (50) pounds whichever is less.

Near Miss Reports

Any failures in containment, control methods, or isolation, not resulting in employee injury, illness, or exposure, shall be recorded as near miss events on a Near Miss Report. All Near Misses are to be reported to the HSE Manager.

Record Control and Retention

Records associated with this program shall be handled in the following manner:

Custodian – Logan Drilling Group management shall handle all original files, training documents, and personal information

Incident records - shall be handled as per the Incident Reporting procedure.

Availability - A copy of this plan shall be made available, upon request, to all by the employee, and the required officials.

WHMIS/GHS

The Workplace Hazardous Materials Information System (WHMIS)/Global Harmonized System provides information about the hazardous materials used in the workplace. WHMIS/GHS calls these hazardous materials controlled products. Under WHMIS/GHS, workers have the right to receive information about each controlled product they use---its identity, hazards, and safety precautions.

It is Logan Drilling Group's policy that all personnel working with or near controlled products have completed WHMIS/GHS training and is familiar with the hazard communication and chemical safety program.

WHMIS/GHS GHS has developed a classification system made up of two groups and further broken down into a number of classes. These classes are depicted by ten hazard symbols that identify the specific hazards of controlled products. After a controlled product has been classified, the following three WHMIS/GHS elements are used to communicate health and safety information:

- WHMIS/GHS labels
- Safety Data Sheets (SDSs)
- WHMIS/GHS education and training programs

WHMIS legislation exists at both the federal and provincial levels. Federal legislation establishes which products are controlled under WHMIS and deals with either the importation and/or sale of these materials.

Provincial legislation covers the use of hazardous materials in the workplace and identifies employers' responsibilities. Workers who work with or near controlled products must know how to handle them safely.

WHMIS/GHS Supplier Label

When a supplier ships a product, it is generally transported in a single container, in a multi-container, or in bulk. If the product is in a single container, the supplier must apply the supplier label. If a number of inner containers are packaged into a multi-container shipment (such as a box or wrapped pallet), the supplier must apply labels on both the inner and outer containers.

A supplier label must be on all original containers. If the supplier label is damaged, un-readable or missing it must be replaced with a workplace label. All containers must be labeled.

WHMIS/GHS Workplace Label

Workplace labels are required on secondary containers after a product has been transferred from the original container. Workplace labels can also be used containers where the supplier label is missing or not readable.

Material Safety Data Sheets (SDS)

A Safety Data Sheet is a technical sheet that provides specific hazard information, safe handling information, and emergency procedures for a controlled product. Since the SDS contains detailed health and safety information specific to each controlled product, it should be used as a key source of information for developing training programs and safe work procedures.

SDS must be available for all controlled products at the worksite. A Binder containing all the SDS must easily accessible to all personnel on the job site or at the shop. All SDS must be up to date and no more than 3 years old.

Hazard Chemical Product List

	Product	Supplier
1	565 Thread Sealant PST/Pipe Sealant	Loctite
2	Acetylene	Air Liquide
3	Aeroshell Flight Jacket Interior Conditioner	Shell Canada
4	Aeroshell Flight Jacket Oil & Exhaust Remover	Shell Canada
5	Anderol UBS	Irving
6	Barite	MI-LLC
7	BLUESHIELD	Air Liquide
8	Brake & Parts Cleaner 408gr	Würth
9	Calcium Carbonate	Science Lab
10	Carbon Dioxide	Air Liquide
11	Carbon Steel Flux-Cored Wires, Self-Shielded	Air Liquide
12	Caustic Soda	MI-LLC
13	Citric Acid	Science Lab
14	Citric Acid	Univar
15	CR-650	AMC
16	Cylinder Oil - All	Irving
17	DD-1200	Control Chemicals
18	DD-955	Control Chemicals
19	DD-Xpand	Control Chemicals
20	Deck Britener	Bebbington Industries
21	Defoam X	MI-LLC
22	Dolomtic Hydrated Lime	Graymont
23	Eveready/Energizer Battery	Energizer
24	Exon Univis Bio 40	Imperial
25	Federal Gel	Federal
26	Flo-Vis L	MI-LLC
27	Fluid Film Aerosol	Eurika Chemicals
28	Fluid Film Non-Aerosol	Eurika Chemicals
29	Form A Core	Control Chemicals
30	HHS Fluid 500ml	Würth
31	HR-4L	Haliburton
32	Husquavarna Two Cycle Engine Oil with Fuel Stabilizer	Husquavarna
33	Hydraulic -All	Irving
34	IDO Premium	Irving
35	IDO Premium Plus	Irving

36	Ironclad	Zep
37	KD40 Corrosion Inhibitor	Baker Petrolite
38	Lindseed Soap	AMC
39	Liqui-pol	AMC
40	Low-Allow Steel Flux-Cored Wires, Self-Shielded	Air Liquide
41	Low-Alloy Electrode	Air Liquide
42	Lubex EP	Irving
43	Lubex FG	Irving
44	MAPAC	Control Chemicals
45	Methyl Hydrate	Irving
46	Middle Distillate	Imperial
47	Muriate of Potash (MOP)-Potassium Chloride	IMC USA
48	NDFX 233	Newpark Drilling Fluids
49	NDFX 242	Newpark Drilling Fluids
50	New PHPA	Newpark Drilling Fluids
51	Nitrogen/Aligal	Air Liquide
52	Nut Plug	MI-LLC
53	Oxygen/Aligal	Air Liquide
54	Pel- Plug	PDS Co
55	Penetrol Xtra	AMC
56	Poly-Drill Liqui-Pol	Chemwatch
57	Polypac R	MI-LLC
58	Poly-Plus	MI-LLC
59	Portland Cement	Laforge
60	Propane	Air Liquide
61	Puregold Medium Chips - Bentonit Hole Plug	CETCO
62	Pure-Vis	AMC
63	RDO 302 ES MW	Control Chemicals
64	Regular Gasoline	Irving
65	Robco-Bio DDR	Robco
66	Rod Coat B700	MI-LLC
67	Rost Off 300ml	Würth
68	Sand-Drill	Control Chemicals
69	SAPP-Sodium Acid Pyrophosphate	MI-LLC
70	Silica Sand	Shaw Resources
71	Soda Ash 58% Light	Univar
72	Sodium Bicarbonate - Baking Soda	Fisher Scientific
73	Super-Lube	AMC

74	Swepco 121 Tri-Plex Universal Grease	Swepco
75	Swepco 201 Multi-purpose Gear Lube	Swepco
76	Swepco 306 Supreme Formula Engine Oil	Swepco
77	Swepco 714 Hydraulic Transmission Fluid	Swepco
78	Swepco 802 Open Gear Lube -Aerosol	Swepco
79	Torqueless	Control Chemicals
80	Tractor Hydraulic	Irving
81	Ultra Low Sulphur Diesel	Irving
82	Ultrahib	MI-LLC
83	Universal Antifreeze	Irving
84	Unleaded Gasoline	Imperial
85	Vitrified Bench Grinder Wheels	Flexovit USA
86	White Lithium Grease 300gr	Würth
87	Würth Film	Würth
88	Zep 2000 - Aerosol	Zep
89	Zep 40	Zep
90	Zep Formula 940	Zep
91	Zep Super Penetrant	Zep

Doc #	Version	Creation Date	Last Revision
Legislation	1	22.04.2015	

LEGISLATION

Provincial and federal government put in place legislation to ensure that specific guidelines, procedure and/laws are followed. In order to ensure that all personnel has access to all the provincial Acts and Regulations, these have been posted on the Logan Drill Group website under safety.

Below is listed the links to access the various acts and regulations directly online.

First Aid: http://laws.gnb.ca/en/showfulldoc/cr/2004-130//20150422
WHMIS: http://laws.gnb.ca/en/showfulldoc/cr/88-221//20150422
Working Alone: http://laws.gnb.ca/en/showfulldoc/cr/92-133//20150422

New Brunswick
Act: http://laws.gnb.ca/en/showfulldoc/cs/O-0.2//20150422
Regulation: http://laws.gnb.ca/en/showfulldoc/cr/91-191//20150422

Nova Scotia
Act: http://nslegislature.ca/legc/statutes/occph_s.htm
Regulation: http://www.novascotia.ca/just/regulations/regs/ohsgensf.htm

Newfoundland
Act: http://www.assembly.nl.ca/legislation/sr/statutes/o03.htm
Regulation: http://www.assembly.nl.ca/legislation/sr/regulations/rc120005.htm

A hard copy of these can be found either in the Health and Safety Office or by the Health and Safety board.

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