

SEISMIC SURVEY ACQUISITION

1. Overview

This procedure addresses the safety, health, and environmental considerations for conducting a seismic survey using wireless seismic nodes and vibratory trucks and weight drop techniques on public and private roads and lands in Minnesota, specifically in Lake and St. Louis Counties. The project is executed by a Controlling Employer with multiple contractors.

2. Objectives

1. Ensure the safety and health of all workers and the public involved in or potentially affected by the seismic survey.
2. Minimize environmental impact during the survey operations.
3. Comply with all relevant local, state, and federal regulations.

3. Scope of Work

1. Deployment and retrieval of wireless seismic nodes.
2. Operation of vibratory trucks and weight drops on designated roads and lands.
3. Coordination with landowners and relevant authorities for access and permissions.

4. Safety Health & Environment (SHE) Protocols

4.1 Site Assessment and Planning

1. Conduct a pre-survey assessment to identify potential hazards and sensitive environmental areas.
2. Develop a site-specific safety and environmental management plan.

4.2 Training and Orientation

3. 1. As a Controlling Employer exercising reasonable care, Pulsar Helium requires all contracting companies to complete a Contractor Safety Health and Environment (SHE) Assessment located at <https://safehe.com/>.
4. All contracting company employees working on Pulsar Helium-controlled sites are required to complete the Pulsar Helium Field Worker Orientation in person with a Pulsar Helium Representative. Additionally, they must complete the registration at <https://safehe.com/>.

4.3 Personal Protective Equipment (PPE)

1. Ensure all workers are equipped with appropriate PPE, which may include, but is not limited to, high-visibility clothing, hard hats, safety boots, eye protection, and hearing protection.

4.4 Traffic Management

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1. Implement traffic control measures to ensure the safe operation of vibratory trucks on public and private roads.
2. Use signage, barriers, and flaggers where necessary to direct traffic and protect workers.

4.5 Environmental Protection

1. Minimize ground disturbance and ensure controlled drop zones for weight drops
2. Protect vegetation and wildlife habitats.
3. Implement spill prevention and response plans to handle any potential spills of fuels or other hazardous materials.
4. Use designated routes and access points to reduce environmental impact.

4.6 Communication and Coordination

1. Establish clear communication channels among all stakeholders, including workers, contractors, landowners, and regulatory authorities.
2. Conduct daily briefings and toolbox talks to review safety and operational procedures.

4.7 Emergency Response

1. Develop and communicate an emergency response plan, including procedures for medical emergencies, fire, and environmental incidents.
2. Ensure all workers are trained in emergency response protocols and know the locations of emergency equipment and contact numbers.

4.8 Monitoring and Reporting

1. Conduct regular inspections and audits to ensure compliance with safety and environmental standards.
2. Document and report all incidents, near-misses, and any non-compliance issues.

4.9 Regulatory Compliance

1. Adhere to all relevant regulations, including OSHA standards, environmental protection laws, and local ordinances.
2. Obtain all necessary permits and approvals before commencing operations.

5. Federal, State, and Local Regulations

5.1 Federal Regulations

1. OSHA Standards: Ensure compliance with OSHA regulations for worker safety, particularly those relevant to seismic survey operations and equipment use.
2. EPA Regulations: Compliance with regulations related to air and water quality and waste management.

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5.2 State Regulations

1. Minnesota Department of Natural Resources (DNR) Permits: Required for activities affecting public waters, shoreland, and floodplain management. Specific permits may include:
 - a. Public Waters Work Permit: For work in or near public waters.
 - b. Water Appropriation Permit: For significant water use or diversion.
 - c. Wetlands Conservation Act: Regulations to protect and manage wetlands.
2. Minnesota Pollution Control Agency (MPCA): Permits and compliance for air and water quality standards.

5.3 Local Regulations (Lake and St. Louis Counties)

1. County Permits and Ordinances: Compliance with local zoning, land use, and environmental regulations. This includes permits for road use, land access, and any construction activities.
2. Watershed District Permits: Although specific watershed districts may not be present in all areas, activities affecting water resources may still require permits or coordination with local water planners.

6. Responsibilities

6.1 Controlling Employer

1. Site Safety Management: The controlling employer must oversee and coordinate safety efforts among all employers on the site to ensure a cohesive approach to safety.
2. Regulatory Compliance: Ensuring that all activities on the site comply with applicable federal, state, and local regulations, such as OSHA standards.
3. Hazard Identification and Mitigation: Identifying potential hazards on the site and implementing measures to mitigate or eliminate these risks.
4. Communication and Coordination: Facilitating clear and effective communication among all employers on site regarding safety protocols, hazards, and procedures.
5. Monitoring and Enforcement: Regularly monitoring the site to ensure compliance with safety protocols and taking corrective action if necessary.
6. Training and Orientation: Ensuring that all workers, including those employed by subcontractors, receive appropriate safety training and orientation specific to the site.
7. Documentation: Keeping accurate records of safety inspections, incident reports, training sessions, and compliance efforts.

6.2 Contractors

1. Complete Pulsar Helium's Contractor SHE Assessment.
2. Ensure their employees complete the Pulsar Helium Field Worker Orientation.

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3. Compliance with Regulations: Adhering to all applicable federal, state, and local regulations, including OSHA standards and site-specific safety protocols.
4. Hazard Recognition and Mitigation: Identifying potential hazards related to their specific tasks and implementing measures to mitigate or eliminate these risks.
5. Training and Certification: Ensuring that their employees are adequately trained and certified for the tasks they are performing and that they are aware of site-specific safety requirements.
6. Safety Planning: Developing and implementing safety plans that address the specific risks associated with their work activities.
7. Communication: Maintaining clear and effective communication with the controlling employer and other contractors on site regarding safety issues, hazards, and procedural changes.
8. Personal Protective Equipment (PPE): Providing appropriate PPE to their employees and ensuring it is used correctly.
9. Supervision and Enforcement: Supervising their employees to ensure compliance with safety protocols and taking corrective action when necessary.
10. Incident Reporting: Promptly reporting any accidents, injuries, or near-misses to the controlling employer and complete or participate in any subsequent investigations.
11. Documentation: Keeping accurate records of safety training, inspections, incidents, and any corrective actions taken.
12. Coordination with Other Contractors: Working collaboratively with other contractors and the controlling employer to ensure overall site safety and address any overlapping hazards or tasks.

6.3 Contractor Employees

1. Compliance with Safety Rules:
 - a. Adhere to all applicable safety regulations, site-specific safety protocols, and company policies.
2. Use of Personal Protective Equipment (PPE):
 - a. Properly use and maintain all required PPE.
 - b. Report any issues with PPE to their supervisor.
3. Participation in Training:
 - a. Attend all required safety training sessions and site-specific orientations.
 - b. Understand and follow the training received.
4. Hazard Awareness:
 - a. Be aware of the hazards associated with their tasks and the worksite.
 - b. Report any new or unidentified hazards to their supervisor immediately.
5. Safe Work Practices:
 - a. Follow safe work practices and procedures at all times.
 - b. Avoid taking shortcuts that could compromise safety.
6. Incident Reporting:
 - a. Report any accidents, injuries, or near-misses to their supervisor immediately.

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- b. Participate in incident investigations if required.
- 7. Communication:
 - a. Communicate effectively with supervisors and coworkers about safety concerns.
 - b. Inform supervisors of any unsafe conditions or behaviors.
- 8. Housekeeping:
 - a. Maintain a clean and organized work area to prevent accidents and injuries.
- 9. Emergency Procedures:
 - a. Familiarize themselves with the emergency procedures and evacuation routes.
 - b. Participate in emergency drills and respond appropriately in actual emergencies.
- 10. Fit for Duty:
 - a. Report to work in a fit condition, free from the influence of drugs or alcohol.
 - b. Inform their supervisor if they are unfit for duty due to illness or other reasons.

7. Emergency Response Plan

- 1. Emergency Contacts:
 - Provide a comprehensive list of emergency contacts, including local emergency services, the forest service, and company representatives.
- 2. Evacuation Procedures:
 - Clearly define evacuation routes and assembly points for different survey locations to ensure orderly and safe evacuations.
- 3. First Aid and Medical Support:
 - Ensure the availability of first aid kits and trained personnel at all survey sites. Establish arrangements with local medical facilities for emergency care when needed.
- 4. Incident Reporting and Investigation:
 - Implement procedures for reporting incidents, near-misses, and injuries. Develop investigation protocols to identify root causes and implement corrective actions.

8. Communication

Effective communication is crucial for ensuring the safety of all personnel involved in seismic survey operations. Different scenarios may require various communication methods:

- 1. Two-Way Radios:

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- Scenario: In case of a sudden severe weather event, use two-way radios to quickly inform all teams, instruct them to seek shelter, and confirm their safety.
- 2. Mobile Phones:
 - Scenario: During a medical emergency requiring immediate evacuation, use mobile phones to coordinate with medical facilities, emergency services, and onsite personnel.
- 3. Satellite Phones:
 - Scenario: In remote areas with limited or no cellular coverage, satellite phones are essential for maintaining communication with headquarters, emergency responders, and field teams, especially during critical incidents.
- 4. Verbal Face-to-Face Communication:
 - Scenario: When electronic communication is not feasible, direct verbal communication is crucial. For example, during a fire evacuation, team leaders should use face-to-face communication to provide clear instructions and ensure immediate action.
- 5. Signal Flags and Visual Signs:
 - Scenario: In noisy environments or where electronic communication is ineffective, use signal flags or visual signs to convey immediate instructions, such as indicating safe zones or hazardous areas.
- 6. Emergency Notification Systems:
 - Scenario: Use automated emergency notification systems to send alerts via SMS, email, or loudspeakers, providing real-time updates and instructions during events such as natural disasters or security threats.

Redundant communication methods should be established, and all personnel should be trained in their use and the protocols for each scenario. Regular drills and training sessions should include these communication tools to ensure preparedness.

9. Training and Awareness

1. Safety Training: Mandatory safety training for all personnel involved in the survey. Specific training on equipment use, environmental awareness, and emergency response.
2. Safety Meetings: Regular safety meetings to discuss ongoing risks, incidents, and safety improvements.
3. Safety Signage and Information: Adequate signage to inform and warn about potential hazards. Distribution of safety information and updates to all personnel.

10. Monitoring and Review

1. Regular Inspections: Conduct regular safety inspections and audits to ensure compliance and identify new risks.
2. Performance Metrics: Track safety performance metrics such as incident rates, near-miss reports, and compliance levels.

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3. Continuous Improvement: Implement a feedback loop to continuously improve safety procedures based on lessons learned and best practices.

11. Conclusion

This safety health and environment procedure provides a framework for safe and environmentally responsible seismic acquisition using wireless nodes, vibratory trucks, and weight drop techniques. By adhering to these guidelines and ensuring thorough training and communication, the project can be executed effectively while protecting the health and safety of workers and minimizing environmental impact.