



Factsheet - Seismic Survey

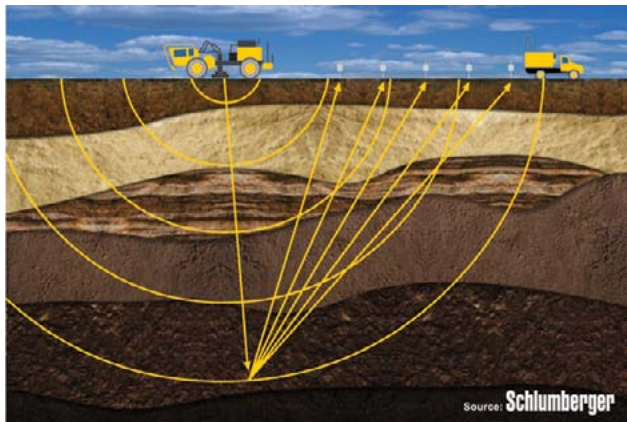
Introduction

One of the early activities of the project is a seismic survey. The data from the seismic survey will be used to help determine well locations and also for geologic analysis and modeling. The seismic survey will be conducted by Vecta Oil and Gas Ltd. They are obtaining surface and mineral owner access permission for the seismic shoot and will perform all activities on the ground.

A portion of the project area will be surveyed in the fall of 2011, and a larger area will be surveyed in the summer and fall of 2012. This document explains more about the seismic survey and related activities.

What is a seismic survey?

A seismic survey is a technique that uses sound waves to develop images of the rock layers belowground. It can be compared to an ultrasound, which uses a specific frequency of sound to reveal the size and structure of internal organs, muscles and bones in the medical field.



The seismic survey will help researchers understand the thickness and depth of rock layers beneath the surface and reveal any faults or fractures in the layers.

Collection and processing of the data will allow the creation of three-dimensional images and models of the subsurface that are critical for conducting a carbon storage project.

How is a seismic survey conducted?

Receivers or sensors, will be temporarily installed at the surface to record echoes from the rock layers. The deployed sensors are cylindrical, about 3 inches in diameter and 8 inches long. One sensor will be deployed at each receiver location and will be planted in the ground, usually using a hand drill to create a hole slightly smaller than the sensor itself.

Once the geophones are placed, vibration trucks will move in tandem in a grid pattern, lowering their vibration pads onto the surface at regular intervals to create sound waves that penetrate the earth's surface. The waves travel deep underground, and as



they encounter changes in the rock structure and density, are reflected back to the surface. These reflections are picked up by the sensors and transmitted to a recording truck that captures the data for computer processing and analysis. Depths are determined based on the time a sound wave takes to travel to the rock layer and back to the receiver, and an image of the subsurface is formed.

At the end of the survey the receivers are removed and the trucks are driven away, leaving little impact on the area.

Questions

If you have any questions or would like additional information, please contact Lindsey Tollefson with the Big Sky Carbon Sequestration Partnership at 406.994.3755 or ltollefson@montana.edu.

Additional information may also be found on our website at www.bigskyco2.org.