



Katana Well Decommissioning Project Turner Valley, Alberta

**Orphan Well
Association**

Project Overview

The Orphan Well Association (OWA) has been managing the Katana Resources British Dominion Well #3 (Katana Well), located on the north-west edge of Turner Valley, Alberta, since 1997. This 90-year-old well was originally decommissioned in 1996. However, trace amounts of natural gas (methane) were found at the wellsite after the decommissioning. The OWA is undertaking the decommissioning of the well and reclamation of the wellsite.

There are two options for decommissioning the Katana Well, outlined on page two. The OWA is working with the Alberta Energy Regulator (AER) to determine which option is most suitable. The project is scheduled to begin in August 2021.

History of the Katana Well

The Katana Well is one of Alberta's historic wells. The well was drilled in April 1930 and was ready to produce gas in May 1931. The well was in production up until 1989.

In the late 1980s, Katana Resources lost its license to produce from the well. Katana was long defunct, so the well was ordered to be permanently shut down by the Energy Regulator (then the Energy Resources Conservation Board – ERCB) in 1994. In 1996 the ERCB re-entered the well to shut it down.

The Katana Well was turned over to the OWA in 1997 for environmental reclamation. During reclamation activities, the OWA discovered small amounts of natural gas leaking from the well. In 2010 the ERCB mandated the OWA to repair and close the well.



Fig. 1 - Aerial photo of well site near Country Meadows subdivision, Turner Valley, Alberta

Did you know? The Katana Well was on the original list of orphaned wells provided to the Orphan Well Association in 1997. Many of these were among Alberta's oldest wells dating as early as 1906!

How much natural gas is leaking?

Monitoring of the site has shown that the amount of natural gas leaking from the well has been steadily declining. In 2015, the well was releasing about 3.1 cubic metres of methane per day. Recent meter readings show the release rate is below 1 cubic metre per day. As a comparison, a typical gas barbeque (rated at 40,000 BTU's) uses about 27 cubic metres of gas per day to operate (if left on for the whole day). The amount of methane being released by the well would run an average barbeque for less than one hour.

The gas is being contained within the surface casing and leaking at the surface of the well only. No gas is evident in the surrounding soils.



Fig. 2 - Typical Rotary Rig on a Well in Turner Valley area (Glenbow Museum Archives ND-10-142)

Decommissioning Options

Decommissioning a historic well is tricky! Records dating back to the 1930s are often incomplete or vague, making it difficult to choose the best method. The OWA has been working with the AER to determine the most appropriate option for this project. The OWA and AER will use monitoring data to determine the best way to stop the flow of natural gas from the surface casing and permanently shut down the well.

The two possible options are detailed below.



Fig. 3 - Well Site

Option #1: Service Rig Operation

The OWA would use a small service rig to drill out the surface cement plug. This rig would be about the size of a large fire truck with an extended ladder. This would be followed by a cement plug operation, where liquid cement is pushed into the wellbore and surrounding formation and allowed to cure. This operation would last approximately 10 days (10-12 hours/day).

Onsite equipment would include the service rig, pump and tank. It could also include a wireline unit, an incinerator and cement pump unit, water and vacuum trucks.

Option #2: Cut and Cap of Wellbore

If the AER determines that the small amount of methane leaking from the well is diminishing and negligible, the well will be cut and capped. This is a short operation, typically lasting only 4-6 hours. The OWA would cut the well casing to a minimum of two metres below the surface and place a vented cap on top of the well casing.

Onsite equipment would include a jet cut unit, 1-3 small semi-trucks and two pick-up trucks.

What is Methane? Methane is colourless, odourless and is the main component of natural gas. It is emitted from human and natural sources, including oil and natural gas development and coal mining, industrial processes, electricity generation and livestock farming. It is often referred to as 'sweet gas.'

Project Impacts

The health and safety of residents and the community is the Orphan Well Association's guiding principle. We recognize that every project has impact on residents and the community at large, and we strive to minimize those impacts. We have developed best practices and ensure they are adhered to by all workers onsite.

Odour and Dust

Both Option #1 and #2 will produce some odour from diesel equipment exhaust. Wherever possible, the OWA will limit traffic and running engines to keep odour to a minimum.

Traffic on gravel roads when equipment is being moved may cause some dust. The OWA will take steps to minimize dust, including driving at slow speed and placing water on gravel roads to control the amount of dust (when necessary).

Noise

The OWA has developed best practices to keep noise to a minimum. These are discussed with all field crews on site to raise their awareness and enable their expert focus on minimizing noise.

Both decommissioning options will produce diesel engine noise. Average diesel engine noise at the site is roughly 100 decibels, which is about the level of a running lawnmower. This increase in noise will be intermittent and will greatly decrease with distance from the site. In Option #1, operations will be limited to 10-12 hour days to minimize noise impacts on residents. For Option #2, the entire operation will last only 4-6 hours.

Traffic

Keeping traffic to a minimum is always a priority. Option #1 will have daily traffic of about four pick-up trucks and 1-2 small semi-trucks per day. In addition, there will be two semi-trucks (one large and one small) at the beginning of operations and on the final day.

Option #2 will have minimal traffic involving one small semi-truck and two pick-up trucks in and out on the day of the operation.



Fig. 4 - Looking north to the well site

Schedule for Option #1

| Timing | Details |
|-----------|---|
| Day 1 & 2 | Prepare site, move in equipment and start drilling |
| Day 3 & 4 | Continue and complete drilling |
| Day 5 & 6 | Evaluate condition of the wellbore |
| Day 7 – 9 | Perforate wellbore and cement |
| Day 10 | Confirm success of cementing and move out equipment |

Next Steps

The OWA and AER expect to determine which option will be used by the end of July 2021. The decision and further project details will be posted online at www.orphanwell.ca/community. The OWA anticipates the project to take place during the month of August 2021.



**Orphan Well
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The Orphan Well Association

The Orphan Well Association (OWA) is an industry-funded collaboration among the Alberta Government, provincial regulators and oil and gas producers to work toward a common goal: protecting public safety and managing the environmental risks of oil and gas properties that do not have a legally or financially responsible party that can be held accountable. These properties are known as “orphans.” The mandate of the OWA is to safely decommission orphan oil and gas wells, pipelines and production facilities, and restore the land as close to its original state as possible.