

Pipestone Development Program

NuVista is an oil and natural gas company actively engaged in the exploration for, and the development and production of, oil and natural gas reserves in the Western Canadian Sedimentary Basin.

NuVista's primary focus is on the condensate-rich Montney formation in the Wapiti area of the Alberta Deep Basin. We are an organization in which operational and technical excellence are encouraged in a culture that emphasizes accountability and performance.

Project Overview

NuVista Energy Ltd is proposing to expand its operations in the Wembley area. These expanded operations are being called the Pipestone Development Program. The proposed program includes plans to drill approximately 100 sour gas wells north of the Wapiti River. We will use pad drilling to minimize the surface impact. There will be less than 15 pad sites and drilling will be spread over a span of up to 15 years.

The Wapiti operating area, located both North and South of the Wapiti River, has significant potential due to the high-value condensate that can be produced along with the natural gas. Our team has become very proficient in identifying opportunities and improving economics for production in this region. By focusing our efforts in this area and using multi-well sites, we can recover this resource efficiently while minimizing our environmental footprint. The Pipestone Development Program is designed to ensure the resource is produced in a safe and environmentally responsible manner and with respect for the local residents and landowners.

Current Operations

The Wapiti area has seen a lot of drilling activity in recent years due to the liquids-rich natural gas in the Montney formation. NuVista has been operating in the area since 2008. Our current operations include:

- Mineral rights to approximately 200 sections of land south of the Wapiti River
- 100 wells on both single well and multi-well pad sites; 80 wells are currently on production
- Production of approximately 24,600 BOE per day (2016)
- Roughly 180 km of pipeline which gathers the gas and produced liquids
- A strong environmental and safety record throughout our ongoing operations

Proposed Development

The proposed Pipestone Development Program calls for a variety of construction and drilling activities to be carried out over the next 10 to 15 years. These activities will commence with a comprehensive stakeholder consultation program. NuVista sees stakeholder engagement as critical to the success of the Pipestone Development Program. Input from residents in the Wembley area is especially important to the project. Stakeholder contact and notification will be on-going throughout the life of the development program.

Mission

NuVista is a Canadian oil and gas resource company with a mission to deliver maximum shareholder value.

Vision

Our vision is to be known and respected for our:

- entrepreneurial spirit and disciplined delivery
- focused investment on profitable, repeatable plays
- production and share value growth of 10% to 20% per year over the next five years
- multi-year inventory of projects across the maturity spectrum
- strong safety, health and environmental commitment

At NuVista we've created a unique, compelling culture through living our values every day.

We always aspire to be a respected community partner and be known by our employees as the best place they've ever worked.

Values

Honesty and Integrity

- We act ethically and speak the truth, even if it is uncomfortable.
- Our actions are congruent with our words.

Excellence

- We have a clear sense of destination and what success looks like.
- We play to our strengths and manage weaknesses.
- We deliver through superior skills, hard work and dedication.
- We find the right balance between analysis, planning and execution.

Respect

- We treat everyone with dignity, regard and are open to different opinions and out of the box thinking.
- We have fun at work and value a work/life balance.

Empowerment and Accountability

- We are all owners; we take initiative.
- We demonstrate leadership at all levels.
- We deliver on our promises.

Safety

- No issue is more important than the safety and health of our employees, contractors, and the public.
- If a conflict ever arises between safety and production, we will choose safety.

Well Pad Construction

Once regulatory licenses have been obtained, well pad construction will commence. Plans call for multi-well pads to be constructed which will minimize our environmental footprint. While the wells will be drilled in phases, the initial design for the well pads will accommodate all the wells planned for each location. This approach will allow us to work with landowners to obtain the surface leases necessary for all phases.

Drilling

NuVista uses state-of-the-art horizontal drilling technology. This technology allows for multiple wells to be drilled from one site, rather than individual sites. NuVista's drilling operations will be conducted in a manner that places safety and environmental protection as our top priorities.

NuVista has received regulatory approval to drill its first Pipestone well in 2017. This well is being drilled and tested in order to maintain mineral rights. However, the well will not be put into production until other phases of the Pipestone program have been completed. Pending necessary approvals, additional wells in the program are scheduled to be drilled in 2018/2019, with 10 to 20 wells being proposed for this phase. After this initial phase, the pace of drilling will be slowed down to match the capacity available at various processing facilities.

The Pipestone wells are considered to be development wells. This means they are being drilled near a proven part of a natural gas pool. As each well is drilled, more information is gathered on the pool. This new information will be used to re-evaluate and refine drilling plans.

Completion & Testing

Typical industry operations after drilling include completion and flow testing of the wells. Completion refers to all the technical operations needed to finish the well and allow it to produce hydrocarbons. Flow testing helps the company understand the quality and capability of the gas reservoir.

Ground water is a critical resource and numerous measures are in place to protect ground water during completion activities. In the Pipestone wells, gas will be produced from the Montney formation. This formation is about 2000 metres below the formations that contain the ground water aquifers used for domestic water supply.

Every gas well has two barriers to protect the ground water. The first is surface casing. This is a large diameter steel pipe, cemented in place to protect any sources of drinking water from completion or production fluids. The second barrier is the production casing. This is a string of smaller diameter steel pipe that runs through the surface casing to the bottom of the well. It is also cemented in place and further prevents the flow of fluids that might harm the drinking water.

NuVista will use multi-stage hydraulic fracturing to stimulate the wells. Multi-stage fracturing allows for multiple points along the horizontal wellbore to be stimulated. This is an efficient and effective means to recover more of the hydrocarbons from the formation with fewer wells.

The hydraulic fracturing will be a very controlled operation that pumps fluids, predominantly water and a propping agent such as sand down the wellbore under high pressure into specific targeted zones within the formation. This process will create passages for the gas to flow more easily into the wellbore. NuVista will closely monitor each

fracturing operation. Any flow of fluids into non-targeted areas would result in a sudden loss of pressure and operations would be halted. This loss of fluid outside of the zone of interest almost never occurs.

In order to complete and flow test the wells, some flaring will be required. This involves the burning of the natural gas and is governed by regulations. NuVista will not only adhere to these requirements but commits to minimizing the amount of flaring. We will provide notifications in advance to those residents who are in proximity to our locations where flaring is required. Once area pipelines are in place, it is possible to flow test many of the wells through the pipelines instead of flaring. NuVista's goal is to flow test "in line" whenever possible.

Pipelines

A number of pipelines are needed both for the completion operations and for the production of natural gas. Plans call for pipelines to supply water and transport produced water back to a central site. By supplying water through this pipeline system, NuVista can minimize the number of trucks on the road, though some trucks will still be necessary. This design would also see numerous pipelines in a single right-of-way, in order to reduce surface disturbance. Where possible, the right-of-ways will follow natural boundary lines such as fences and roadways.

Production Facility

The Pipestone program will include a production facility located on the north side of Wapiti River. This facility, to be built by NuVista or a partner, will process the hydrocarbons and fluids from the Pipestone wells. The facility will separate the produced water, condensate and sour natural gas. The produced water will be stored in sealed tanks on site and then transported by pipeline or trucks to approved disposal sites. This design will reduce the total number of trucks that are on the road. Produced condensate will be processed and stored in sealed tanks on location and ready for pipeline transport. Sour natural gas will be separated and dehydrated on site. It will then be compressed for transportation in pipelines to a sour gas processing facility far south of the river. The Pipestone production facility will require regulatory approval and will be built in stages.

Gas Processing

Gas from the Pipestone production facility will be processed at a sour gas plant currently under construction south of the Wapiti River. This plant is owned by Calgary-based SemCAMS U.L.C., a gathering and processing or "midstream" business. The Pipestone gas will be transported to the plant through a pipeline that SemCAMS proposes to build across the Wapiti River.

In addition to the plant south of the river, midstream companies are also in preliminary discussions with area petroleum exploration and production companies about building additional sour gas processing facilities north of the Wapiti River.

Phase One Timelines and Activities

Spring to Fall 2017	<ul style="list-style-type: none"> Initial landowner consultation and notification Locate sites for water source and disposal wells and obtain surface leases Apply for licenses for produced water deep disposal wells Pending regulatory approval, drill source water and deep disposal wells Drill, complete and test first Pipestone well (to hold mineral rights). This license has already been obtained.
Fall 2017 to Winter 2018	<ul style="list-style-type: none"> Project Open House Landowner consultation and acquisition of leases for between two and five initial pad sites
Spring to Fall 2018	<ul style="list-style-type: none"> Pending regulatory approval, construct initial pad sites Drill 10 to 20 wells on the initial pad sites Pending regulatory approval, construct first stage of the production facility
Fall 2018 to Winter 2019	<ul style="list-style-type: none"> Complete construction of the production facility and construct pipelines Complete and test initial wells Initial wells brought into production



Here is what one neighbour had to say about NuVista:



NuVista has been a standout company out here and you deserve to know that. Make sure that your crew that are out here on the ground know that we recognize how they are bending over backwards to be good neighbours. Please continue your face-to-face visits with people in our community. And please continue to do what you are doing.



If a conflict arises between safety and production or costs, we will choose safety.

Excerpt from NuVista's Health, Safety & Environment Policy

Benefits to the Community

NuVista is pleased to contribute to communities in the regions where we operate through employment and other economic benefits. We hire local contractors and suppliers and use hotels, restaurants and other business within the community. We also make financial donations to various charitable and other organizations including the First Nation communities with whom we interact. NuVista seeks to work together with communities to help build a sustainable future. We believe that by continuing to build our valuable natural gas resource safely and responsibly for the long-term, we will provide substantial benefits to our neighbouring communities for many years to come.

Reducing Impacts

NuVista Energy is committed to minimizing the impacts of the Pipestone Development Program. Specific initiatives include:

- **Dust and Noise** – NuVista will aim to minimize truck traffic and will consult with the County on specific dust suppression initiatives.
- **Traffic Speed** – NuVista will seek County approval to post special reduced speed limit signs that will govern NuVista personnel including all service providers.
- **School Bus Routes** – NuVista will work with the local school districts to better understand school bus routes and times. NuVista will work towards limiting our heavy traffic during these school bus times.
- **Reducing Fresh Water Usage** – NuVista is currently reviewing and testing methods, technology and alternative sources to reduce the amount of fresh water used in well completions.

Health, Safety & Environment

NuVista is committed to conducting its activities in a manner that protects the health and safety of its workers and the public while minimizing the Company's impact on the environment. We believe that our outstanding performance in the areas of health, safety and environment (HSE) is essential to meeting the needs of our stakeholders while fulfilling our business goals.

Personnel at every level of the organization, including contractors, are required to comply with all company HSE policies and government regulations. Accountability for managing the safety of our operations is shared by all personnel.

NuVista has developed and maintains a Corporate Emergency Response Plan (ERP) for sour gas operations that meets or exceeds the requirements of *AER Directive 71: Emergency Preparedness and Response Requirements for the Upstream Oil and Gas Industry*. NuVista conducts emergency response training exercises based on its operations. Full scale exercises, spanning from worker deployment to mock emergency scenarios, are held annually.

Building Relationships

The Pipestone Development Program will allow NuVista an excellent opportunity to use our extensive expertise and technology to develop a world class project. It will also allow us to continue to build and foster positive, long-term relationships in the communities in which we operate and reinforce our desire to be viewed as a good corporate neighbour.

CONTACT US

NuVista is committed to on-going stakeholder communication for the lifespan of our operations. NuVista is a member of the Wapiti Area Synergy Partnership and will continue to be an active member. We welcome any comments, suggestions or questions you may have.

For further information or to discuss the Pipestone Development Program, please contact:

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