

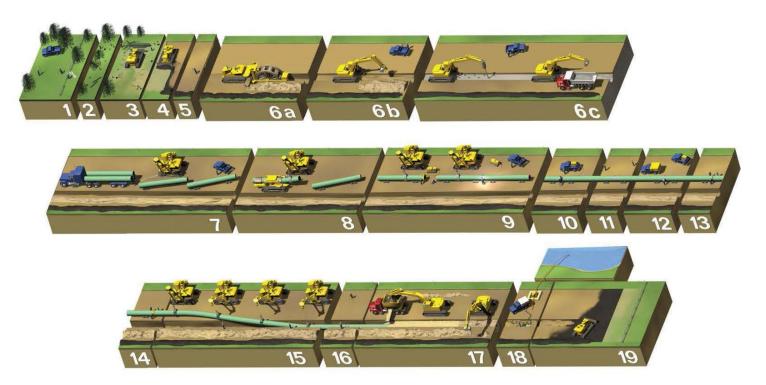
Pipeline Construction

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uilding the pipeline safely and in an environmentally responsible manner is our top priority. Before construction began, we spent years developing a route with the least impact on landowners and the environment. We adjusted the route hundreds of times to avoid environmentally sensitive areas, cultural and historic resources and other features of the land. We've selected the most experienced contractors in the industry, and we've adopted some of the most protective methods ever used in pipeline construction.

Pipeline construction is very similar to a moving assembly line, with specialized teams performing each step in the process. Once each team completes its task, another team moves in to complete the next phase. The entire process is closely monitored by more than 1,300 environmental and safety inspectors, in addition to state and federal agencies.

The pipeline is built in individual sections, or spreads, with multiple spreads under construction at the same time and each with their own dedicated crews. The basic steps in the construction process are described below.



Construction Sequence

- 1-5. **Right of Way (ROW) Preparation**: Crews clear trees and debris from the ROW, grade the surface to provide a level workspace, segregate top soil where necessary and re-stake the centerline of the route.
- **6a-c. Trenching**: This team digs the trench for the pipeline using a wheel trencher, backhoe or rock trencher depending on the terrain.
- **7-8. Stringing and Bending**: The stringing crew uses specialized equipment to move the pipe from the pipe yard to the ROW. When necessary, pipes are bent to conform to the topography and to follow the curves of the route.
- **9-13. Welding and Coating:** These teams connect sections of pipe together to form one continuous length. Welds are visually inspected multiple times and at least once using x-ray technology. Each weld is also coated to inhibit corrosion.

- 14-16. Lowering: Highly skilled operators lift the pipe and lower it into the trench.
- 17. Backfilling and Final Grading: Teams return the soil to the trench in reverse order so the top soil remains on top and then grade the ROW to the final contour.
- **18. Hydrostatic Testing:** Before the pipeline is put in service, crews pressure test the entire length using water.
- 19. ROW Restoration: This team is responsible for stabilizing the soil, cleaning up the ROW and returning the land as closely as possible to pre-construction conditions.

Horizontal Directional Drilling (HDD): A specially-trained team drills a tunnel under a river, trail or other site-specific, unique land area. The pipe is pulled through the underground tunnel to minimize surface impacts.

