



CASE STUDY - POWER POLE STABILIZATION USING DEEP FOAMJECTION™

Canada

A power company faced ongoing maintenance challenges with a series of leaning power poles installed along a drainage ditch in an area with a consistently high water table. The utility company required a solution to restore pole alignment and improve soil support while maintaining strict safety requirements and minimizing service disruption.

HMI partnered with a specialty contractor to implement a polyurethane foam soil improvement approach to stabilize the poles and strengthen weak, saturated soils.



THE PROBLEM

The affected poles were gradually leaning due to weak, moisture-impacted soils and erosion along the ditch line. Because of safety requirements, the power company's crews needed to bring the poles back to plumb using their approved equipment and procedures. The challenge was ensuring that the restored alignment would be maintained over time in a high groundwater environment.

Power company crews noted that their conventional remediation method typically required significant labor and equipment time. The conventional method included:

- A truck fitted with slings to winch the pole back to plumb
- A hydro vac truck to remove soil on the high side prior to straightening
- Manual replacement of the void using soil and 3/4-inch crushed rock
- Hand tamping during backfill to restore support

This approach typically took approximately four hours per pole.





THE SOLUTION

HMI supported a polyurethane foam soil improvement process that complemented the power company's pole-straightening procedures. After the power company's crews restored each pole to plumb, foam was injected to:

- Fill voids created during hydro-excavation
- Densify and strengthen weak soils surrounding the pole
- Improve long-term resistance to movement in saturated conditions

Solution particulars (average per pole):

- Polyurethane material used: 227.08 lbs (HF 402)
- Time on site per pole (completion): approximately 1 hour
- Total poles stabilized: 15



THE RESULTS & SUMMARY

A total of 15 power poles were straightened and stabilized using this approach. The site team noted that the combined process reduced completion time from approximately four hours per pole to roughly one hour per pole. The average cost per pole was reduced by over 37% compared to conventional manual backfill methods, while installation time was reduced by approximately 75%, and the quality and long-term durability of the surrounding soil support were improved.

In high water table conditions where weak soils can compromise pole alignment, polyurethane foam soil improvement provides an efficient, minimally disruptive option to enhance long-term stability. By pairing the power company's pole-straightening procedures with targeted foam injection, HMI and its contractor partner helped restore alignment, reinforce surrounding soils, and deliver measurable time and cost savings compared to conventional manual backfill methods.

