

O&M Savings Opportunities with Picarro's Natural Gas Asset Management Solution

Executive Brief

Summary

Picarro's solution for holistic natural gas asset management has been shown to offer a number of quantified operational cost (O&M) savings opportunities in each of the use cases for which it is deployed. Three primary applications of the Picarro solution account for the majority of these *annual, recurring* savings opportunities:

1. Optimization of capital pipe replacement prioritization models
2. Regulatory compliance leak survey
3. Identification and repair prioritization of high-emitting leaks



Cost savings from pipe replacement model optimization

Picarro collected methane emissions data on 400 miles of high-risk gas mains that was prioritized for replacement by the DIMP (risk) model at a US utility with the goal of defining the top 200 miles to actually replace in 2020, optimizing to remediate the greatest number of leaks through replacement. Picarro's measurements and analytics determined the 400 miles averaged 2.5 leaks per mile, and further, that a 200-mile subset could be identified having 3.8 leaks per mile on average (1.5x more leaks). At a cost of \$4000 per below ground leak repaired, this represents a cost avoidance of \$1M annually or \$5000 per replacement mile *above* what is already avoided using a non-optimized risk model. Similar exercises at other utilities with nearly twice the per-leak repair cost and with higher (up to 2.75x) leak rate multiples, have cost savings numbers of nearly \$35k per mile. At a utility with 10k miles of pipeline that replaces 1% per year, this represents \$3.5M of potential avoided O&M annually.

Cost savings from compliance leak survey

At one US utility, odor calls declined 14% in one year, from 37% of leaks in 2017 to 23% of leaks in 2018, due to Picarro utilization across the network for compliance leak survey. The difference (2090 fewer calls) represents \$583k in savings at a cost of \$279 per call to respond. This reduction was primarily due to the use of the Picarro solution for compliance survey on approximately 75% of the network. Further reductions in odor calls are expected through the implementation of pipe

replacement optimization, described above, as well as through a program to target high-emitting leaks, described below.

Savings from remediation of high-emitting leaks

A US utility (PG&E) has deployed the Picarro solution to collect data over their entire network (43k pipeline miles) annually with the goal of identifying the highest-emitting leaks and prioritizing them for repair to achieve the utility's methane emissions reduction targets as mandated by the state of California. In 2018, this program, enabled by Picarro's solution, identified 210 leaks with 10 SCFH or greater emissions, accounting for 49.7 MMcf/yr of estimated emissions. Only 210 leaks account for 32% of PG&E's total distribution system emissions as measured by Picarro on assets covered by Picarro. As an additional safety benefit of this program, 74 Grade-1 leaks were remediated through the two-thirds of the system over which methane data was collected in this non-compliance, emissions-only effort. Assuming each of these 210 leaks creates one odor call every quarter, removing these leaks results in \$234k of *annual* savings in avoided odor calls associated with this annual program.