IDT Oligos—Essential Tools to Find New Species

Although natural gas is clean and produces far less carbon dioxide (CO₂) than other fossil fuels, it primarily consists of methane, a potent greenhouse gas that is 20 times stronger than CO₂ at increasing the temperature of our planet. Burning natural gas is not an issue. The real problem is natural gas leaks. These can be small, seeping from aging pipes throughout our older cities. Or, they can be extremely large, billowing from production and storage facilities.

One example of this occurred in a storage facility in Los Angeles, California that leaked 97,100 metric tons of methane from October 2015 to February 2016. This leak has the same effect on the atmosphere as burning 917 million gallons of gas and is the largest leak of methane in the history of the U.S.

Dr. Patricia Tavorina is a modern-day explorer hunting for new species of life, particularly one’s that can degrade methane. But unlike a traditional explorer, Dr. Tavorina is not searching for something that can be seen. Methane eating lifeforms are invisible to the naked eye.

IDT products make this possible. IDT’s custom-made oligos are carefully designed to recognize the unique genetic code from genes essential for degrading methane. Although she doesn’t isolate the living organism, these genes tell us so much about the lifeform. The code for the particular gene can identify what species and type of lifeform was in the sample, and if the code has never been seen before, it means a new species of life exists in that location. Dr. Tavorina and her colleagues have successfully done just that task—they have identified new species of bacteria that can degrade methane, a new species that can potentially be used to mitigate methane leaks before they cause global warming.