



# Guided Wave Applications

## **Soil to Air Interface Inspection**

There has recently been an industry initiative to inspect soil to air interfaces. After years of services, coatings can begin to fail and this can cause serious damage to the pipe due to moisture ingress. Most inspection methods require excavations at the pipes point of entry which can be costly to your facility, until now. Amerapex has designed an inspection program that allows an inspection to be performed without the large cost associated with excavations. Due to the small near field effect of Amerapex's guided wave system (as little as 2 inches) we are able to inspect as much as 40 feet underground with little to no soil removal

## **Underground Pipe Inspection**

There has been an increasing amount of pipeline explosions due to undetected damage. In order to inspect an entire pipeline without the astronomical price associated with excavating the line, the Amerapex guided wave system is the only solution. Amerapex can inspect up to 40 feet in each direction which allows for small excavation locations every 80 feet. This can drastically reduce the cost of achieving 100% inspection coverage of your underground pipeline.

Above ground pipeline inspection using guided wave

Don't be fooled by new paint or visually appealing external conditions because internal damage could be happening to your pipeline. Amerapex's guided wave system can inspect up to 200 feet in each direction (400 feet of coverage from a single location.) This inspection can be done without interruption of service and will give you 100% inspection coverage of your pipeline.

## **Pipe Support Inspection using Guided Wave**

Checking for damage at pipe supports is now easier than ever. Amerapex can scan large sections of pipe from a single testing location and can identify damage that is occurring at pipe supports. Damage can happen at supports but may be concealed from the naked eye due to insulation covering the damage. With Amerapex's guided wave system, we can perform this inspection without having to remove insulation at the pipe supports, saving you time and money on craft support.

## **CML/TML Relocation Process**

The patent pending CML/TML relocation process takes the guesswork out of finding corrosion and pitting for efficient and accurate CML/TML placements in API 570 Piping Inspection Code. This is the wave of the future for safety and reliability in refining, petrochemical, pipelines and oil & gas facilities.

Undetected rust, pitting or corrosion in any pipeline, piping circuit, or structural member involved in production or transport can cause leakage, fire, explosion and disaster.

Until now, the only methods of testing for and identifying these problems have been hit-or-miss techniques that are both labor intensive and costly.

Now a patent pending process from Amerapex Corporation promises a revolution in NDT testing of refining, petrochemical, pipelines and oil & gas facilities and structures.

The Amerapex Guided Wave System exactly pinpoints problem areas, acting like an industrial MRI to take the guess work out of finding and remediating corrosion and pitting. This new technology can detect the smallest flaw (2% or less variation of the cross-sectional area) in up to several hundred feet from a single testing location. The Labor cost savings in testing processes alone amount to millions of dollars. The savings from finding problems before they cause a catastrophe is incalculable.

One major refiner estimates that the Amerapex Guided Wave System CML/TML Location Process can result in a 10 year labor cost savings of over \$1 billion dollars in their multiple refineries. This savings estimate does not include the approximate \$5 million-plus daily downtime costs that can result from repairs not being identified in a sufficient amount of time to allow a planned repair time period.

## **High Temperature Guided Wave**

High Temperature Guided Wave testing has been unattainable by other systems until now. Amerapex is the first company to make investments into the new method of High Temp testing.

The MsS Sensors are designed for guided wave inspection of pipes having temperature of up to 960° F.

Due to the negative effect of high temperature on the ultrasonic couplant, these sensors are designed to transmit GW as a dry couplant.

The sensors can be installed permanently on a specific pipe for frequent inspection at different periods in time.

## **Heater and Boiler Tube Inspection using Guided Wave**

Amerapex's guided wave system can quickly and accurately identify internal and external damage on heater and boiler tubes saving companies up to 80% over traditional methods. Scanning has generally been done mechanically using "smart pig" self-propelled instruments that can cost up to \$100,000 per heater inspection. Next time your heater is shut-down, don't skip the opportunity to perform 100% inspection coverage.

## **General Piping Circuit Inspection using Guided Wave**

There could be a large number of damaged pipes hiding in your facility. Previous inspection methods were performed by thickness measurements at pre-determined locations. The major problem with this particular method is the damage could be inches away from your inspection area and it may never be identified. Amerapex can inspect for internal and external damage on up to several hundred feet from a single testing location. There is minimal craft support associated with guided wave inspection while maintaining 100% inspection coverage.