

3.15. EXPERIENCE OF OPERATION OF INSTRUMENTS FOR LEAK DETECTION WITHIN WATER SUPPLY NETWORK OF MGUP “MOSVODOKANAL”

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Instruments for detection of damaged points in pipelines are used in MGUP “Mosvodokanal” for more than 30 years. Firstly, acoustic leak detectors were used. Then, instruments of new class – correlation leak detectors – appeared. They made it possible to improve accuracy of the damaged point detection from 70% to 90%.

Complex application of several methods allows damaged point to be detected accurately (with accuracy of more than 95%) and quickly. Namely such an approach is implemented in the Technical Diagnostics Center of MGUP “Mosvodokanal”.

The complete set of detection equipment for damaged points is installed on the “Gazel” cars and includes:

- acoustic leak detectors HL4000 or HL5000 (“Seba KMT”, Germany);
- correlation leak detectors “Korshun-8”, “Korshun-9” (DISIT Company, Ukraine) or Correlux P1 (“Seba KMT”, Germany);
- line locators RD4000 (“Radiodetection”, Great Britain) or I5000 (“Seba KMT”, Germany);
- metal detector “VM 901” (“Sfinks”, Russia).

Search for damaged points consists of the following steps:

- examination of documentation and its comparison with information obtained from the water-supply network database;
- routing of the water pipeline section by line locator and measurement of its length by odometer;
- location of the correlation device sensor at edges of the damaged water pipeline section; performance of correlation within different frequency ranges;
- in the event of a result received from correlation device, damaged point is verified and detailed by acoustic leak detector; when there is no result from correlation device, acoustic leak detector is used along the whole length of damaged section;
- results of performed works are executed in the form of log-book and certificate-sketch and are entered into the computer database.

For search of small leaks not detected by acoustic and correlation leak detectors, the set GOK A-10 (“Seba KMT”, Germany) is applied successfully. It consists of fiberglass cable with piezoelectric microphone located at its end. Microphone is pushed through a gate into pipe under pressure until the leak noise becomes maximal. In this case, microphone will be located directly in the place of leak.

For search of damaged points in pipelines of VCShG (high-strength cast iron with globular graphite) with small leaks due to the lack tightness in spigot-and-socket joints or, vice versa, with considerable outflow through the damaged pipeline wall, TV diagnostic sets of different companies like “Taris” (Russia), “Seba KMT”, Germany, or RICO (Germany) are used in MGUP “Mosvodokanal”.