

A proper geotechnical instrumentation program requires several critical considerations to be successful.

Here are the 5 critical criteria to be fulfilled to have a successful monitoring program:

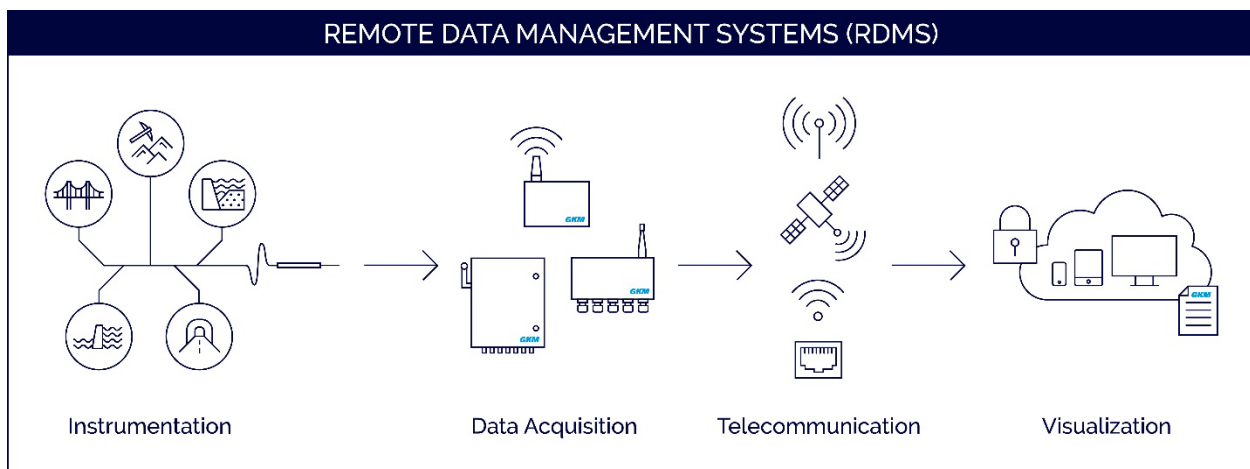
- 1. Identifying the correct instruments to use for your project.** A proper monitoring program requires the proper instruments to get the job done as well as a well thought-out design. You need to understand the challenges you're facing and how to overcome them, you'll need to research the best products on the market and their compatibility, discuss with other experts in the industry to learn from their experiences, and put together the right instrumentation recipe for success. This is true whether it's an open-pit, underground mine, or a tailings facility.
- 2. Proper installation and setup of your instrumentation.** You want your instrumentation to be useful and provide meaningful and actionable data. It happens all too often that the instrumentation may have been chosen correctly, but not installed using best practices, and there are numerous reasons this can happen. The quality of your installation is critical. You need to ensure that the instruments that you purchased will be installed and configured correctly, and in the safest way possible. Common mistakes during installation are to overlook the necessary protection for your instruments from the environment or to forget to identify them correctly.
- 3. Taking initial readings and setting valid alarm thresholds.** Most geotechnical instrumentation is designed to work on a 'point-forward' manner. This simply means that in most cases, any changes that may have occurred prior to their installation cannot be measured. This makes taking 'initial readings' so very important for their proper functionality. Ensure that the proper initial readings, and baseline measurements, are taken after installation so that all change or movement is measured relative to that point. From the baseline measurements, you can then determine valid alarm thresholds, or 'actionable' amounts of change for your program.
- 4. Configuring loggers, software, email alerts, and SMS messages.** Now that your instruments are installed properly, your baseline measurements are taken, and you have set some thresholds, it's time to setup your software for sending alerts to appropriate people or teams. Setup your software with appropriate maps or drawings place locations of instruments and configure alerts and reports to key team members who need to be aware of changes on the instruments. It's important to ensure that alerts are configured appropriately so that only required people are notified when something occurs, so they can take the necessary actions. If too many people become bombarded with email or text notifications, they may become complacent, and ignore the alarms.

5. **Ongoing monitoring, maintenance and report generation.** It's now time for the monitoring program, which can be ongoing for many years. One thing that can be a detriment to this is employee turnover. You need to mitigate the risk to your operation if a critical person happens to leave your site. Our team will be here for you now and for years to come to ensure that nothing is missed, and your data keeps flowing so you can stay focused on analyzing your data, rather than collecting it.

GKM is 'The Right Partner' to help.

Our team of professionals have many years of experience putting together instrumentation programs ranging from a few simple sensors that are manually read, to a complicated program involving multiple locations, multiple instrument types and various data acquisition systems that feed into near real-time cloud hosted data solutions.

In times like today, we understand the importance of remote monitoring. Your infrastructure is not on standby while we are experiencing unusual circumstances. They need to be monitored to prevent a disaster, while keeping your staff safe.



For further discussion about your geotechnical monitoring projects and how GKM can help, please reach out to a member of our sales team at info@gkmconsultants.com.