REPUBLIC OF KENYA
MINISTRY OF MINING, BLUE ECONOMY & MARITIME AFFAIRS
STATE DEPARTMENT FOR MINING

TENDER NO. MMBE&MA/SDM/003/2023-2024; SUPPLY AND DELIVERY OF LABORATORY EQUIPMENT (OPEN NATIONAL TENDER).

ADDENDUM 1.

Expunge the following Specification from the tender document.

TECHNICAL SPECIFICATIONS FOR A MINERAL LABORATORY INFORMATION MANAGEMENT SYSTEM

The Proposed Laboratory Information Management System (LIMS) is aimed automate the tests request and the process involved in delivering the results to the concerned department/client. The LIMS starts with receiving online request for tests from dealers/clients and also allows Laboratory personnel to generate requests. The system must support the performance of various mineral. Tests are grouped under various sections and sample type (specimen). Based on the request the user can input the sample and generate the sample number. Results can be entered based on the sample type either to one test or multiple tests. If the test result requires approval, the supervisor has to approve the result and it is made available to concerned client. The following are its specifications:

FUNCTIONAL DESCRIPTIONS

No.	Functional Requirement
1.	**General Requirements**
1.1.	The laboratory information management system (LIMS) must be commercial- off-the-shelf (COTS) solution designed for small to large scale Laboratory testing operations, and must be configurable, scalable and adaptable to changes over time, modular allowing addition of functions, and capable of meeting the current and the changing needs of the Mining, Inspection and Testing Centre.
1.2.	The system must allow remote accesses using portable devices, including telephones, tablets, laptops and desktops
1.3.	The system must support login security, periodic password changes, and electronic signature
1.4.	The application software must be fully developed standard product with a proven track record of use in testing laboratories serving large public/Private sector organizations with offices dispersed at various locations within the country

No.	Functional Requirement
1.5.	The laboratory information management system must provide for sample test ordering at the remote sample collection site, and ability to accesses laboratory data and reports from anywhere using personal computers, mobile and any device using web browsers.
1.6.	The scope of work must include an evaluation of process flow and activities to establish requirements, software installation and configuration, system verification and validation, staff training on the system operation and administration, and maintenance.
1.7.	The Laboratory Information Management System (LIMS) processing functions must cover the laboratory processing phases, but not limited to the following: 1) Sample reception and registration. 2) Billing and Payment processing 3) Assignment of tests, scheduling of work and tracking of sample. 4) Quality control of the sample, solutions and instruments. 5) Recording, processing and storage of data. 6) Review and approval of sample analysis results, and reporting.
1.8.	The LIMS must facilitate efficient laboratory operations in producing timely and accurate analytical data and reports, and provision of validated data to all relevant parties. The key features must include, but not limited to the following: 1) Sample log-in 2) Sample identification 3) Barcode labelling 4) Sample distribution 5) Sample tracking 6) Chain of custody and audit trail 7) Assigning work 8) Status monitoring 9) Data entry and storage 10) Electronic data transfer 11) Data import and export 12) Calculations 13) Quality control 14) Data analysis 15) Data validation 16) Review and approval of results 17) Reporting results 18) Data queries 19) Document management 20) Personnel Management 21) Inventory management 22) Customer relationship management 23) Billing for laboratory services 24) Regulatory compliance
2.	**Sample Collection and Registration**
2.1.	The system must allow single and multiple registration of a set of samples in a single operation, and assign unique sample identification number to each sample in the batch
2.2.	Sample acceptance is done when the specimen is in required quantity and parameters; if the sample falls short of the required parameters the sample is recollected.
2.3.	The System should support Sample acceptance when the specimen is in required quantity and parameters; if the sample falls short of the required parameters the sample is recollected. Collected sample is allocated the unique bar code. The bar code slip is pasted on the container
2.4.	The system must automatically assign unique identification number to each sample. In the case where a sample is split or sub-divided, the system must assign and associate subsequent identification numbers with the original sample

No.	Functional Requirement
2.5.	The system must capture and store information including sampling, purpose for analysis, sample comments, and requesting address. The system must support digital picture and document uploading and attachment, and associate with the sample.
2.6.	The system must update sample due date based on receiving date and sample holding time
2.7.	The system must be capable of receiving sample analysis requests from remote locations using the web and thirdparty software.
2.8.	The system must update sample due date based on receiving date and sample holding time.
2.9.	The system must have ability to follow the sample processing status through the laboratory
2.10.	The system must produce chain of custody documents for each sample collected, and maintain a complete history of sample transfers from receipt to disposal.
2.11.	The system must maintain records of changes, when the change was made, who made the change, and why it was changed.
2.12.	The system must allow for the selection and assignment of tests to analysts and laboratory sections.
2.13.	The system must associate appropriate procedures with tests required for specific type of sample.
2.14.	Each test must be uniquely identified with a code, and association of multiple test components with the test code.
2.15.	The system must identify the laboratory analyst who performed the test, and who entered the results.
2.16.	The following information is captured during this process: ➢ Customer Registration Number ➢ The source which placed the order ➢ Requesting Person ➢ Urgency of request (routine / stat) ➢ Whether a specimen is collected ➢ Details of the tests required ➢ Specimen type indicator for type of collection container ➢ A unique access number is generated for each order, or set of orders ➢ Mode of Payment
2.17.	The system would alert the user if a repeat test order is being placed within the same day, to prevent duplication of orders.
	Sample collection and acceptance
1.	The system would generate a bar-coded specimen label at the source of the test order, indicating the accession number and dealer/client details. The format of this label should be customizable by the user.
2.	The collection list can be printed based on user-defined criteria. This would be based on time period / types of test. The lists are printed in the order of location and date to facilitate collections in a streamlined manner.
3.	Sample acceptance is done when the specimen is in required quantity and parameters; if the sample falls short of the required parameters the sample is recollected. Collected sample is allocated the unique bar code. The bar code slip is pasted on the container.
	Work list generation

No.	Functional Requirement
4.	The system should be able to generate work lists to assist the Laboratory technicians to organize their work by grouping together tests that are carried out together on the same equipment
5.	The work list format should be user-definable including the tests that form part of the work list and formatting rules. Work lists must be formatted for each individual test or group and numbers of samples on each format.
6.	Work lists should be individually created, with a unique number and would include the appropriate set of outstanding test orders
7.	The option to print the work list should be there. The user can select the different filter condition and take the print of the same
	Result Entry and verification
8.	Upon processing of test the Result Entry must be entered manually. All result entry / modification is logged with details of date / time and operator who made the entry / modification
9.	In manual entry, the results must be entered via any one of the following methods ➢ By request number ➢ By work list (Waiting for Result)
10.	The results verification has to be done once the results are entered. This must be done by the HOD / Technician to approve the results.
11.	The system would come with a database of results and the reference ranges of the results for each common test
12.	There is automatic validation of test results based on related reference range checks.
13.	If the results value is beyond tolerable range, an auto SMS or E-Mail alert must shoot to the respective technician's mobile / E-Mail account
14.	All result entry / modification is logged with details of date / time and operator who made the entry / modification
15.	Once the test is done and results are entered by the user, the system requires the verification of the result values by HOD / Technicians which must enable the results to be accessed by the client / requester online.
16.	Verification authority must have the system to redirect the test in case the values seems to be unusual
	Reports Delivery
17.	Results are automatically made Available in the LMS upon verification of the result, either by the system or a supervisor.
18.	If there is a requirement for a signed copy of the results, for example for referrals, the results are printed in the Laboratory in a batch mode. The format of these reports is customizable by the user.
19.	There should be an option to provide interim results for a set of tests, provided all essential test have been completed
20.	There should be a user-defined option to archive completed requests and results. The archived data is restorable if and when required.
	Charging
21.	The system would automatically create a charge in the Clients bill for any procedure that is carried out.
22.	There should be flexibility in determining the point where client would be charged.

No.	Functional Requirement
	Scenarios: ➢ Client would be charged once test order is raised ➢ Client would be charged once the result entry is done
23.	There should be option for reversing the charges, provision for which should be available with Supervisor
	Laboratory Reports
24.	On-line result inquiries by ➢ Client Mobile no or Registration Number ➢ Request number ➢ Requested by ➢ Source (Investor / Mines and Geological Department/ Police/Government Chemist/University or Tertiary Institution/ Mineral Dealer/Mineral Trader/) ➢ Test Name/code
25.	Client's / Source Order Report by ➢ Date range ➢ Test
26.	Outstanding Results Report by ➢ Date range ➢ Department ➢ Report category
27.	Statistics ➢ Test statistics ➢ Workload statistics
28.	Number and type of tests performed /done per day Number of tests from Clients (Investor / Mines and Geological Department/ Police/Government Chemist/University or Tertiary Institution/ Mineral Dealer/Mineral Trader/) Number of tests performed by the Laboratory Average number of tests per Client Number of errors in the results Number of repeated tests due to errors **Supplies management** Number and type of test kits Number of tests per kit vs tests performed Wastage/breakages Supplies management **Financials** Income per month. Cash Corporate Schemes Expenses
3.	**Training**
3.1.	Provide course outlines for user and administrator training.

No.	Functional Requirement
3.2.	The training must include provision of training manuals, workbooks, Administrator training guides, training aids, and technical manuals.
3.3.	Initial training must be conducted on-site at the Ministry (Madini laboratory)
3.4.	Follow-up training must be provided on-site
3.5.	Provide training on proper installation, configuration, system administration and maintenance of the system.
4.	**Functional and Acceptance Testing**
4.1.	System testing must be tested after installation to demonstrate operation of the components, performance and functionality of the system and all the features.
4.2.	The acceptance test must run for 30 days or specified number of days, to test stability and completeness over time. The users must be trained and start using the system in day- to-day operations, with assistance.
4.3.	Final acceptance must be upon successful testing and completion of the test period.

All other terms and conditions remain the same.

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