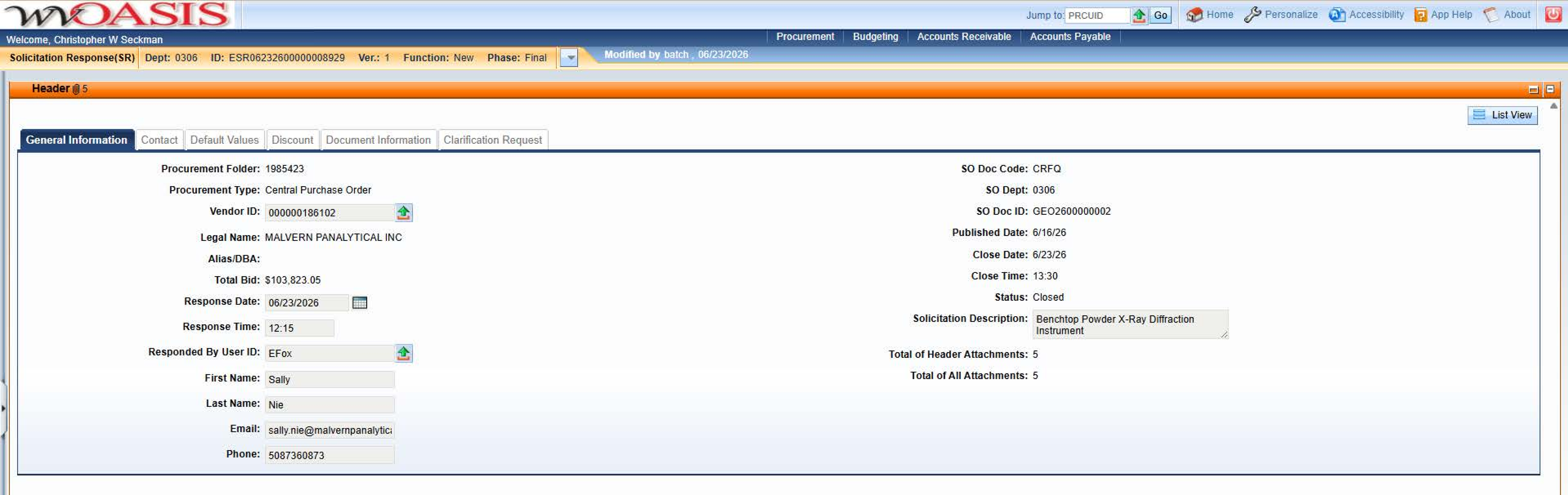
West Virginia
Purchasing Division

2019 Washington Street, East
Charleston, WV 25305
Telephone: 304-558-2306
General Fax: 304-558-6026
Bid Fax: 304-558-3970



Welcome, Christopher W Seckman

Solicitation Response(SR) Dept: 0306 ID: ESR06232600000008929 Ver.: 1 Function: New Phase: Final

Modified by batch , 06/23/2026

Header 5

Procurement Folder: 1985423

Procurement Type: Central Purchase Order

Vendor ID: 000000186102

Legal Name: MALVERN PANALYTICAL INC

Alias/DBA:

Total Bid: $103,823.05

Response Date: 06/23/2026

Response Time: 12:15

Responded By User ID: EFox

First Name: Sally

Last Name: Nie

Email: sally.nie@malvernpanalytic

Phone: 5087360873

SO Doc Code: CRFQ

SO Dept: 0306

SO Doc ID: GEO2600000002

Published Date: 6/16/26

Close Date: 6/23/26

Close Time: 13:30

Status: Closed

Solicitation Description: Benchtop Powder X-Ray Diffraction Instrument

Total of Header Attachments: 5

Total of All Attachments: 5

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder: 1985423

Solicitation Description: Benchtop Powder X-Ray Diffraction Instrument

Proc Type: Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2026-06-23 13:30	SR 0306 ESR06232600000008929	1

VENDOR
000000186102 MALVERN PANALYTICAL INC

Solicitation Number: CRFQ 0306 GEO2600000002

Total Bid: 103823.050000000000029103830456 **Response Date:** 2026-06-23 **Response Time:** 12:15:04

Comments: If we are awarded this bid, Malvern Panalytical hereby requests to add Limitation of Liability to the Terms and Conditions. As this tender response is strictly
governed by our group Spectris, in no way shall the submission of this bid waive Limitation of Liability to this Terms and Conditions.

FOR INFORMATION CONTACT THE BUYER
Larry D McDonnell
304-558-2063
larry.d.mcdonnell@wv.gov

Vendor Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Benchtop Powder XRD Instrument	1.00000	EA	103823.050000	103823.05

Comm Code	Manufacturer	Specification	Model #
41102704			

Commodity Line Comments: Please see our attached quotation Q-234624. As an alternative to the continuously variable slit requirement (Item #2), the Aeris XRD includes interchangeable fixed slits with an open, decoupled goniometer architecture that maintains a constant irradiated area throughout the scan range. This configuration provides effective control of the illuminated sample area.
Lead time is 84 days after receipt of a valid order.

Extended Description:

See attached documentation for further details.

Malvern Panalytical Inc.
2400 Computer Drive
Westborough, MA 01581

Ref.: Q-234624-1
Date: 6/23/2026

CRFQ GEO26 02 MalvenPanalytical Quote

Aeris

Larry D McDonnell - West Virginia Geological and Economic Survey

Malvern Panalytical Inc.
2400 Computer Drive
Westborough, MA 01581

Ref.: Q-234624-1
Date: 6/23/2026

West Virginia Geological and Economic Survey
Larry McDonnell

Malvern Panalytical Inc.
2400 Computer Drive
Westborough
Massachusetts
United States
01581

Quotation contact:

Chris Kleespies
Account Manager
Sales
@: chris.kleespies@malvernpanalytical.com

The **Aeris Compact XRD System** is a fully integrated, high-performance X-ray diffraction (XRD) platform designed to deliver laboratory-quality mineralogical and crystallographic analysis in a compact, user-friendly instrument. The system incorporates proven XRD technology derived from larger floor-standing diffractometers while offering simplified operation, reduced maintenance requirements, and lower infrastructure costs.

Safety and Operator Protection

The Aeris features a fully enclosed, radiation-safe design with an externally accessible sample-loading system. Samples can be loaded and exchanged without exposing operators to moving mechanical components or requiring access to the instrument's radiation enclosure. This design enhances user safety, minimizes contamination of internal components, and supports high-throughput operation while maintaining compliance with modern radiation and mechanical safety standards.

Superior Fluorescence Suppression and Data Quality

For complex geological and mineralogical samples, the Aeris incorporates advanced fluorescence suppression capabilities that improve signal-to-noise ratio and diffraction peak quality. Combined with high-performance optics, detector technology, and a focused X-ray beam, the system delivers excellent phase identification and quantitative analysis performance, even for challenging matrices containing iron-rich minerals and other fluorescence-inducing elements commonly encountered in geological surveys.

Rotating Sample Geometry for Representative Powder Analysis

Unlike systems that utilize a stationary, level sample during measurement, the Aeris employs a rotating sample stage that continuously changes particle orientation throughout the scan. This is particularly important for powder samples analyzed by organizations such as WVGES, where preferred orientation effects can significantly influence diffraction intensities and quantitative results. Continuous sample rotation improves particle statistics, reduces orientation bias, enhances reproducibility, and produces more representative diffraction data across a wide range of geological materials.

Overall Performance and Reliability

The Aeris delivers excellent angular accuracy, resolution, and long-term stability while maintaining rapid measurement times suitable for routine and research applications. The instrument supports qualitative phase identification, quantitative phase analysis (Rietveld refinement), mineralogical characterization, and crystallographic investigations with performance comparable to many larger laboratory systems. Its combination of safety, fluorescence suppression, rotating sample analysis, and proven XRD performance makes it particularly well suited for demanding geological and mineralogical applications where data quality, reproducibility, and operational efficiency are critical.

Comprehensive Warranty Coverage

To provide long-term confidence and minimize ownership risk, the Aeris includes a **full one-year factory warranty covering the complete instrument**, including parts and labor. In addition, the Aeris X-ray tube is backed by a **full two-year warranty**, providing industry-leading protection for one of the instrument's most critical components and helping ensure years of reliable operation with minimal unexpected maintenance costs.

best- Chris Kleespies
Account Manager 302 593 7070

Malvern Panalytical Inc.
2400 Computer Drive
Westborough, MA 01581

Ref.: Q-234624-1
Date: 6/23/2026

Quotation Summary

Description	Amount ($)
List Price	152,847.22
Discount	57,316.87
Net Price	95,530.35
Freight	2,200.00
Tariff Charge	6,092.70
Grand Total	**103,823.05**

Ref.: Q-234624-1
Date: 6/23/2026

Included items

Pos.	Quant.	Product Code	Description
1	1	9430 670 00011	**Aeris Research** Easy-to-use, upgradeable benchtop X-ray powder diffractometer for rapid phase analysis in a multi-user environment. The system is configured in Bragg-Brentano geometry with a radius of 145 mm. The unique combination of the 300 W high voltage generator operating at 40 kV / 7.5 mA, the Empyrean X-ray tube Cu LFF and the highly acclaimed PIXcel1D line detector makes the system fast and precise. The touch display and the external loading of samples makes the system extremely easy to operate. Included are beta-filters Ni; sample spinner for 51.5 mm sample holders; Soller slits 0.04 rad; fixed slit optics and a set of three powder sample holders. The system comes with the installed proprietary Aeris Instrument Suite for instrument control, data acquisition and data management, this software suite also includes RoboRiet for automated data analysis. With the system also the XRDMP creator software suite for creation and modification of XRDMP files is supplied.
2	1	9430 070 60001	**Speed & sensitivity pack** Speed and sensitivity pack for even faster analysis and improved detection of minor phases. With this upgrade the system can operate the X-ray tube at 600 W (40 kV / 15 mA)
3	1	9430 670 31062	**Sample changer pack** Expansion package with an external, easy-to-use, automatic sample changer for rapid, full-volume analysis of up to six standard 51.5 mm sample holders without interrupting ongoing measurements. This package replaces the manual sample platform with a Six-position sample changer.
4	1	10079895	**HighScore Pro Perpetual** HighScore Pro combines the full capabilities of HighScore with the advanced crystallographic and Rietveld analysis tools of the Plus option. It provides comprehensive XRD data treatment, phase identification, and quantitative analysis using a wide range of reference databases (ICDD PDF2/PDF4, COD). It is composed of a perpetual license for a single computer installation (via download). Core Features (HighScore): • Peak/profile#based search–match and auto#residue scoring • Diffractogram visualization and editing • Batch automation and command#line execution • Similarity (cluster) analysis (up to 50 scans) • RIR quantification, percent crystallinity, fast profile fitting • Microstructure and line#profile analysis • PLS modeling and extended Pascal scripting • Includes software updates (no upgrades) Plus Option Enhancements: • Full crystallographic suite: Rietveld, Pawley, LeBail, HKL fits • Automated Rietveld workflows (RoboRiet) • Unlimited cluster analysis

Pos.	Quant.	Product Code	Description
			• Unit cell indexing/refinement, space group testing • Structure review, charge#flipping structure solution • Mixed profile/structure/HKL fitting • Includes software updates and upgrades Includes software updates but not upgrades. HighScore is designed for Windows 10 (64-bit) and Windows 11 (64-bit) operating systems. The software might run under other Windows operating systems as well, but this is not officially supported.
5	1	10078951	**Aeris Inst - onsite lab**
6	1	9430 500 28891	**PDF-4/MINERALS LTU ED** The ICDD PDF-4/Minerals is a database for search-match (phase identification) and for structure fits (Rietveld method), concentrating on mineral phases using the IMA (International Mineralogical Association) designations. Ninety-seven percent of all known mineral types, as defined by IMA, are represented in the database, as well as many unclassified minerals. This database has all software capabilities and data mining possibilities as the much bigger PDF4+ database. The PDF-4/Minerals is licensed to one PC and has an annual subscription fee. Invoices will be sent by the ICDD to the end-user.This discounted version ("Academic Pricing") is only available for degree-granting institutes, see:http://www.icdd.com/products/pricing.htm
7	1	9430 018 11271	**SAMPLE HOLDER 27 mm** Set of 3 top plates that are part of the 2-piece powder sample holders designed to support both front-loading and back-loading techniques. Top plate has a 27mm diameter x 2.4mm thick cavity, along with a spacer that can be used if you only want to fill part of the cavity. This ring-shaped holder needs to be supported by the bottom plate, 9430 018 11001. Supports scans starting at 0 deg 2theta.
8	1	9500 020 00401	**Aeris** Aeris
9	2	CTI2000	**Classroom Training Included - 1 Seat** Classroom Training Included - 1 Seat A voucher for a single seat at one of our regularly scheduled training courses are included with your system purchase. Several courses are offered at regularly scheduled times throughout the year in different regions of the world in multiple languages. These courses provide a unique opportunity to better understand the techniques, theory and practical applications of your Malvern Panalytical Instrument and/or associated Software. Please check the Malvern Panalytical website for available user training events and inquire with our team for which course(s) would be most beneficial to you. Courses can be offered in remote (virtual) or "MP-Site" formats. For courses offered remotely, internet access is required with audio and visual capability for the best experience. For "MP-Site" courses offered at Malvern Panalytical application labs or partner locations, travel expenses are not included. Some meals may be provided during MP-Site course days.

Pos.	Quant.	Product Code	Description
			Course duration varies based on product, subject and format. The number quoted will be translated to a voucher with the number of seats at the course(s) of interest. The number quoted here is typical for a seat at courses relevant to the system offered. Additional seats to any one of Malvern Panalytical courses can be purchased separately referencing the associated CTA#000 part number. We reserve the right to cancel courses due to insufficient enrollment or unforeseen circumstances. Vouchers remain valid for 1 year after the date of installation. PLEASE NOTE: This item has no cash value and cannot be exchanged, refunded or returned.
10	2	RIAT0001	**XRD BT REMOTE Included App Training** XRD Benchtop REMOTE Included App Training This REMOTE Included Application Training comprises a Subject Matter Expert delivering an extended overview of the system's software and hardware that aims to provide best practice guidance. The specialist will also direct to the best resources available and how to use those resources to gain further confidence in utilizing your system towards meeting your needs. This is not applicable for Self-Installed systems. The training will be provided by Malvern Panalytical Subject Matter Expert. Internet access is required for the training, with audio and visual capability. A video camera directed at the sample/instrument is recommended to support guided practical sessions (course dependent). Requires internet access to the instrument PC to allow remote access for a Malvern Panalytical employee to conduct the training. During the training session(s), control of the software and desktop applications can be handed back and forth between the user and instructor to allow a truly interactive training session. REMOTE Initial Application Training purchases are valid for 6 months from installation. PLEASE NOTE: If left unused this item has no cash value and cannot be exchanged, refunded or returned. Malvern Panalytical offer a range of training opportunities based on the end user's requirements. These additional training options are based on a customer's specific requirements and could include e-learning (if available), classroom training, existing SOP-method training, new method development or consultative applications solution development. While these training opportunities are additional, a Malvern Panalytical customer will always have access to the high-quality Helpdesk technical support department that provides troubleshooting and/or general system/application guidance. This item is offered in one hour increments.

Optional items, not included in the total price

Pos.	Quant.	Product Code	Description	List price ($)
1	1.00	BDL4SEW	**AERIS EXTENDED WARRANTY - L**	16,600.00
			Extended Warranty coverage for AERIS beginning immediately following the end of the standard warranty period. Extended Warranty includes: - Complementary digital services: Customer Support portal, Malvern Panalytical Store and Knowledge Center; - Technical support via phone, e-mail, chat; - Remote technical support and corrective maintenance; PARTS: Includes spare parts for corrective maintenance. Consumable and third party components are not covered under this warranty. CORRECTIVE MAINTENANCE: Includes labor coverage for corrective maintenance PREVENTATIVE MAINTENANCE: 1 planned visit per year for Preventative Maintenance or Performace Verification. The full cost of the preventive maintenance parts kit is included. On-site response time does not apply to PM's. INITIAL RESPONSE: Calls will be answered during normal business days and hours ON-SITE RESPONSE: Best effort to respond in 4+ business days on-site during normal business days & hours for corrective maintenance (After initial remote validation from our technical experts) WEEKDAY AVAILABILITY: On-site & remote support from our technical experts is available during normal business days and hours HELP DESK: Help desk support available to answer technical questions during normal business days and hours	
2	1.00	9430 098 71993	**Computer DELL OPTIPLEX XE3**	1,930.00
			This state-of-the-art industrial-grade PC comes with the latest Microsoft Windows operating system. A wired keyboard and mouse are included in the package.	
3	1.00	9202 130 00136	**Scissor Lift - Std 2200 lbs. capacity**	1,160.00
4	1.00	9430 500 74151	**Monitor**	236.00
			A full HD widescreen PC monitor to provide sufficient, high-resolution work space for displaying the Instrument User Software.	

Ref.: Q-234624-1
Date: 6/23/2026

Commercial conditions

In our efforts to maximize each customer's satisfaction, Malvern Panalytical (MP) acquired Micromeritics (MIC) we are planning to unify operations on week commencing 6th July 2026. The move will bring together our service processes, systems and ways of working so our customers experience a joined-up service model, regardless of product and organization. From the go-live date, MP will become the main entity for quotes, orders, service delivery and invoicing, no new orders being processed within the local MIC entities. Please ensure that MP is set up as a supplier/vendor in your ordering system before 6th July 2026 to avoid any issues. If MP is already set up as a supplier, there is nothing for you to do: all orders will be actioned as usual as part of the existing process.

Delivery time
Shipment from factory will be approximately (status at the moment of generating the quotation): 12 weeks weeks after receipt of a valid order.

Payment terms
30 Days From Invoice Date.

INCOTERMS
CIP - Carriage and insurance paid to
Destination airport

Quotation currency
Prices on the quotation are in U.S. Dollar, unless stated otherwise.

Quotation validity
The validity of this quotation expires on 7/23/2026.

Pricing
Prices do not include any taxes, tariffs, customs duties, import or export charges, transport or insurance costs, or any other similar charges, unless listed as a separate line item on this Quotation. All such taxes and other charges may, at Supplier's discretion, be added to the price or invoiced separately and shall be paid by Buyer.

Billing address
West Virginia Geological and Economic Survey
1 Mont Chateau Road
Morgantown West Virginia 26508
United States

Shipping address
West Virginia Geological and Economic Survey
1 Mont Chateau Road
Morgantown West Virginia 26508
United States

Additional terms and conditions

Intellectual property
Regardless of any provisions stating the contrary, the performance of a contract or any delivery of any products or performance of any services shall in no event imply any transfer of intellectual property. All intellectual property related to and vested in the delivered products, accompanying items and documents as well in the provided services (whether or not created, produced or developed under or in the course of the execution of a contract) will be and remain the property of Supplier (or its suppliers, as the case may be).

Malvern Panalytical
a spectris company

AERIS
RESEARCH EDITION

REDEFINING BENCHTOP XRD

SURPRISINGLY **INTUITIVE**

Meet the Research edition of Aeris – Malvern Panalytical's easy-to-operate and user-friendly benchtop X-ray diffractometer. With its intuitive operation, Aeris makes X-ray diffraction so simple that it is accessible for everyone. The unique touch screen user interface lets you proceed effortlessly through the measurement process of your samples.

The Research edition of Aeris is your companion for quick scans in the laboratory. It can easily be placed on a desk, does not need much space and only a single-phase power supply. Even inexperienced students can easily get started with any X-ray diffraction analysis. They do not have to invest time in a lengthy introduction or wait for measurement time on an expensive instrument. What is more, Aeris' 2-dimensional X-ray diffraction capabilities are ideal for teaching the fundamentals of XRD.

AN **EASY** TOUCH

Place sample and enter sample information

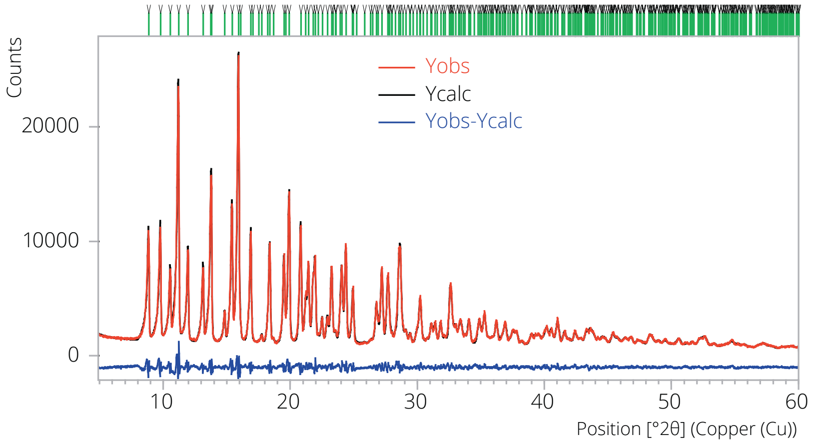
Select measurement program and hit start

OUTPERFORMING EXPECTATIONS

The Research edition of Aeris is your workhorse for rapid phase identification and Rietveld analysis of powder samples. The instrument provides fast, reliable and accurate materials analysis solutions for all your needs. Thanks to the incorporation of technologies that have already proven their benefits on Malvern Panalytical's high-end systems, the Research edition of Aeris delivers data quality that was previously only possible with a full-size floor-standing system.

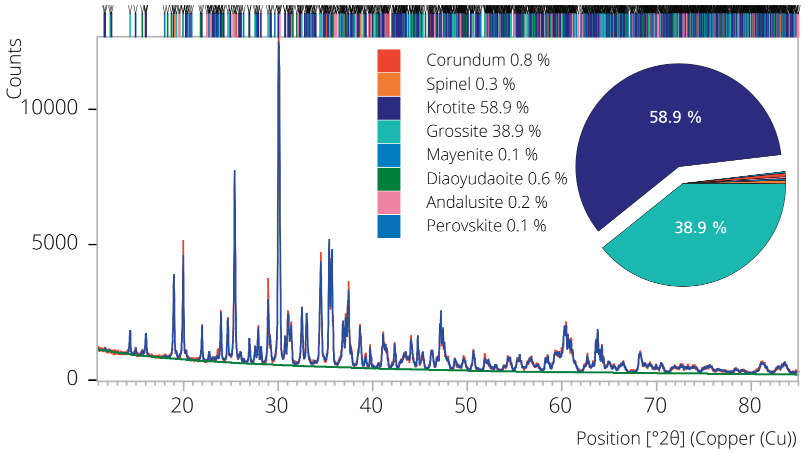
What about an achievable resolution of <0.04° 2θ on LaB_6? Or what about a 2θ linearity of well below ±0.02° 2θ? The Research edition of Aeris is very flexible and offers possibilities for all sorts of X-ray powder diffraction measurements. The instrument can accommodate various types of sample holders including non-ambient stages and sample changers. At the same time, the Research edition of Aeris is designed for low cost of ownership. The instrument does not need compressed air or cooling water, has low power consumption and it has a virtually unlimited lifetime of the X-ray tube.

Aeris can be used for Rietveld refinement on pharmaceuticals, for instance tetracycline hydrochloride



Rietveld refinement of tetracycline hydrochloride

Rietveld quantification of phase mixtures can be done reliably using Aeris.

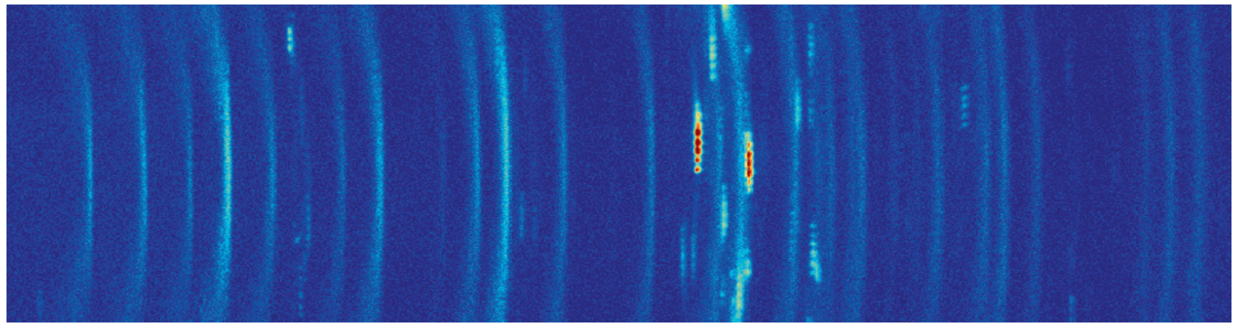


Rietveld refinement of high-temperature ceramic

2-DIMENSIONAL X-RAY DIFFRACTION

The Research edition of Aeris is the only benchtop X-ray diffractometer that can be delivered with an optional 2D Debye-Scherrer kit providing the possibility to perform basic 2D diffraction experiments. This kit is ideal for teaching the fundamentals of X-ray powder diffraction in a visual manner.

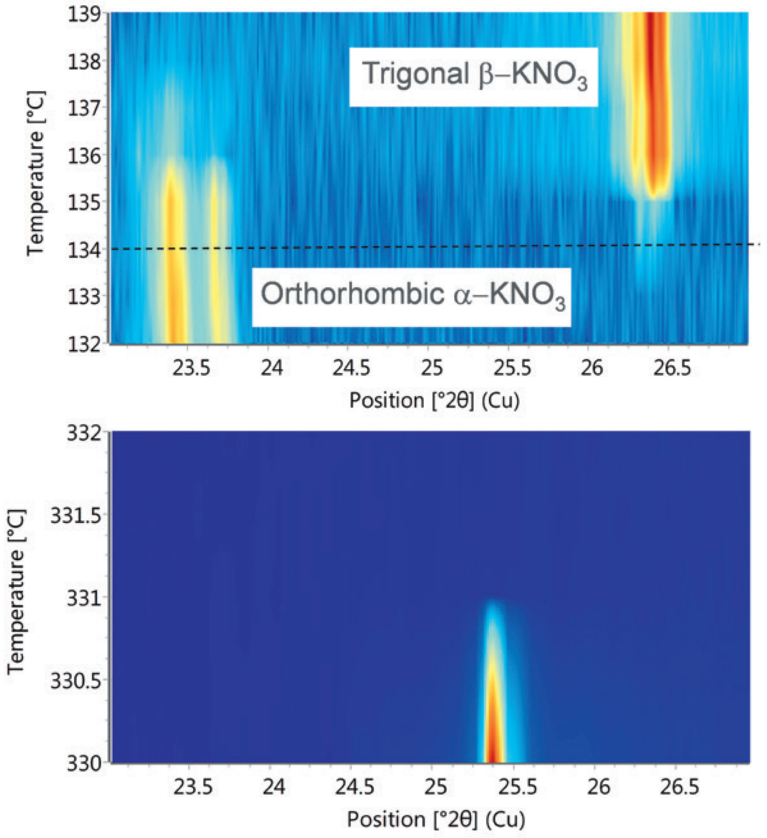
Furthermore, with the 2D Debye-Scherrer kit you can determine whether your sample contains randomly oriented crystallites (continuous rings), if it shows preferred orientation/texture or consists of larger crystallites resulting in bad particle statistics (spotty rings) during your diffraction measurement.



2D Debye-Scherrer rings of a mixture of silver behenate and tetracycline hydrochloride

NON-AMBIENT CAPABILITIES

With Aeris, *in situ* measurements as function of temperature are also available using BTS chambers from Anton Paar to study phase transitions.



(Top) Phase transformation from *α*- to *β*-polymorph of KNO_3 observed at ~ 134 °C
(Bottom) Melting of KNO_3 occurred at~ 331 °C
The data are courtesy of Anton Paar GmbH, Austria.

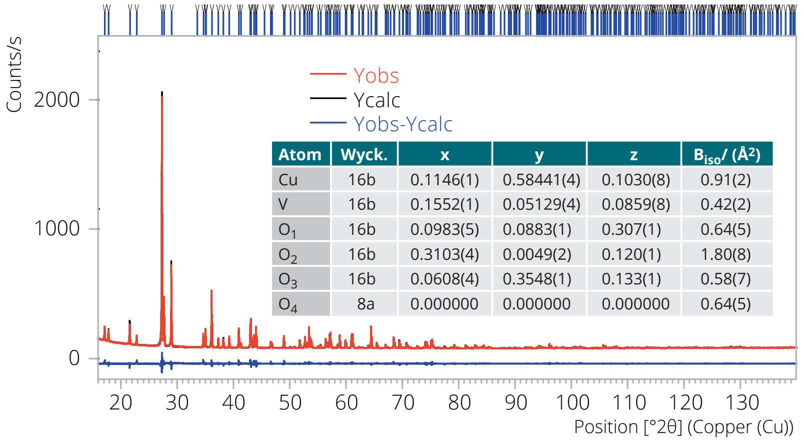
DATA FOR **YOUR RESEARCH**

Whatever project you are working on, the fast acquisition of phase information from your sample in question can be crucial for your research. Just collect X-ray diffraction data with Aeris and subsequently employ the HighScore suite to obtain a wealth of crystallographic information.

HighScore is Malvern Panalytical's most comprehensive powder diffraction software, supporting all known search-match databases for phase identification. This information can be used for:

- Polymorph screening
- Monitoring chemical reactions
- Easy identification of intermediates
- Geological exploration
- Monitoring of impurities
- Education

The HighScore Suite



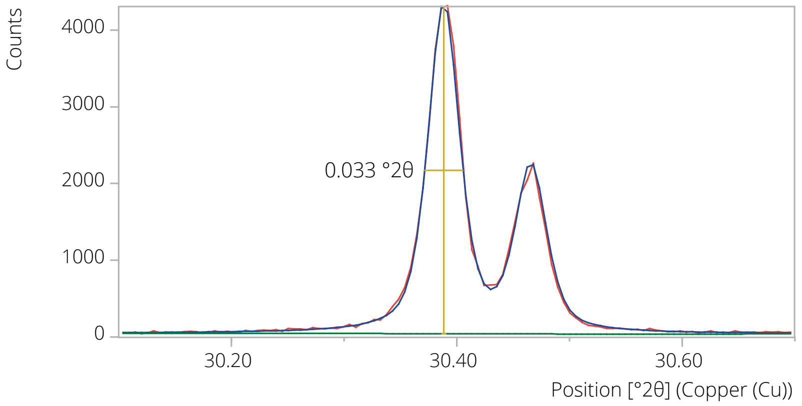
Atom	Wyck.	x	y	z	B_{iso}/ (Å^2)
Cu	16b	0.1146(1)	0.58441(4)	0.1030(8)	0.91(2)
V	16b	0.1552(1)	0.05129(4)	0.0859(8)	0.42(2)
O_1	16b	0.0983(5)	0.0883(1)	0.307(1)	0.64(5)
O_2	16b	0.3103(4)	0.0049(2)	0.120(1)	1.80(8)
O_3	16b	0.0608(4)	0.3548(1)	0.133(1)	0.58(7)
O_4	8a	0.000000	0.000000	0.000000	0.64(5)

The example of blossite shows the excellent capabilities of Aeris to extract structural parameters including B_{iso} parameters.

Rietveld refinement of blossite (α-$Cu_2V_2O_7$) collected on Aeris diffractometer

BEST-IN-CLASS PERFORMANCE

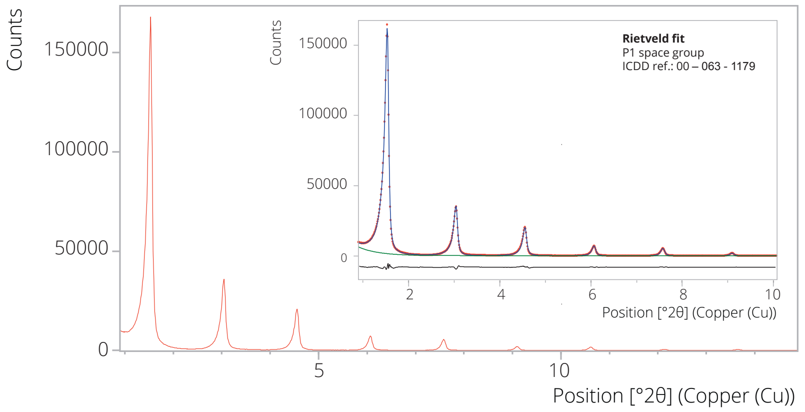
Resolution as never seen before on a benchtop X-ray diffractometer



LaB_6 measurement showing a full width half maximum value of <0.04° 2θ. These are values never seen on a benchtop XRD.

Diffraction measurement of LaB_6

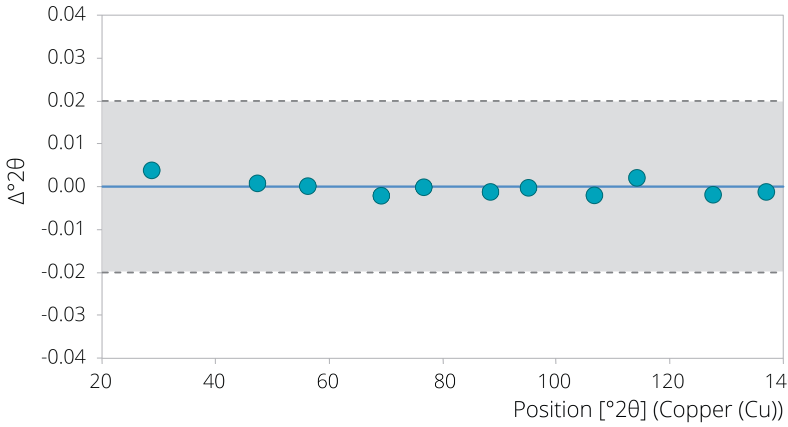
Excellent **low-angle performance**



Silver behenate showing the excellent low-angle performance of the system.

Diffractogram of silver behenate

Superior linearity



With a 2theta linearity well below ± 0.02° 2θ, the peak position accuracy of the Research edition of Aeris is the best on the XRD benchtop market.

2theta linearity graph of a silicon reference standard

Malvern
Panalytical
a spectris company

WHY CHOOSE
MALVERN PANALYTICAL?

We are global leaders in materials characterization, creating superior, customer-focused solutions and services which supply tangible economic impact through chemical, physical and structural analysis.

Our aim is to help you develop better quality products and get them to market faster. Our solutions support excellence in research, and help maximize productivity and process efficiency.

Malvern Panalytical is part of Spectris, the productivity-enhancing instrumentation and controls company.

www.spectris.com

SERVICE & **SUPPORT**

Malvern Panalytical provides the global training, service and support you need to continuously drive your analytical processes at the highest level. We help you increase the return on your investment with us, and ensure that as your laboratory and analytical needs grow, we are there to support you.

Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response and maximum instrument uptime.

- Local and remote support
- Full and flexible range of support agreements
- Compliance and validation support
- Onsite or classroom-based training courses
- e-Learning training courses and web seminars
- Sample and application consultancy

MALVERN PANALYTICAL

Grovewood Road, Malvern,
Worcestershire, WR14 1XZ,
United Kingdom

Tel. +44 1684 892456
Fax. +44 1684 892789

Lelyweg 1,
7602 EA Almelo,
The Netherlands

Tel. +31 546 534 444
Fax. +31 546 534 598

info@malvernpanalytical.com
www.malvernpanalytical.com

www.malvernpanalytical.com/aeris

Malvern Panalytical
a spectris company

AERIS
TECHNICAL SPECIFICATIONS

Sample handling	
Loading	External sample loading
Types of sample holders	• Circular sample holders (Ø 51.5 mm) including holders with zero background inserts, holders for air-sensitive samples, holders for solid samples with a thickness up to 6.5 mm, transmission holders, film holders • Sample holders for oddly shaped samples with a diameter up to 13.8 mm and a height up to 15 mm (option) • Circular sample holders (Ø 40 mm) (option)
Sample changing	• 6-position sample changer for 51.5 mm samples (option) • 6-position sample changer for 40 mm samples (option)
Automation	• Connection to belt automation (option)

X-ray generation	
Anode materials	Empyrean-type; Cu or Co
Focus size	0.4 mm x 12 mm (LFF)
Construction of X-ray tube	Ceramic insulation
Tube setting	• 40 kV and 7.5 mA @ 300 W • 40 kV and 15 mA @ 600 W (option) • 30 kV and 10 mA @ 300 W (option) • 30 kV and 15 mA @ 450 W (option)
Tube housing	The tube housing is Pb free. Patented design with CRISP* technology. CRISP* technology prevents corrosion in the incident beam path caused by X-ray induced ionized air. Patent no. US 8437451 B2

*Corrosion-resistant incident smart beam path

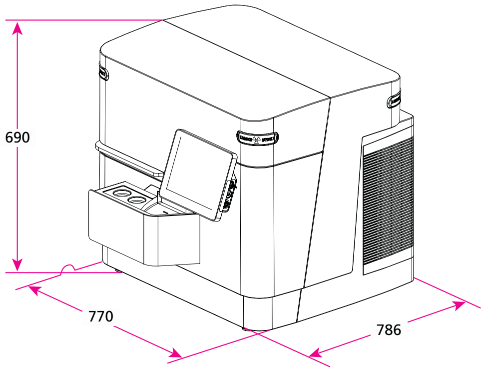
Goniometer	
Configuration	Vertical goniometer, coupled and decoupled θ-θ, samples always horizontal
Geometry	Bragg-Brentano, Transmission, Grazing Incidence
Radius	145 mm
Maximum 2θ range	-4° < 2θ ≤ 142° (with scanning detector and full active length)
Angle positioning	Direct optical position sensing (DOPS3) with lifetime positioning accuracy
Scan speed	Max 2.17°/s
Achievable resolution	< 0.04° 2θ on LaB_6 (with 0.01 rad Soller slits)
2θ linearity	< 0.04° 2θ
Smallest addressable increment	0.001 degree

Stages	
Spinning	• Sample spinner for 51.5 mm samples (standard) • Sample spinner for high or oddly shaped samples (alternative)
Non-ambient	Heating stage (up to 500 °C) (option)
Exchange of stages	Alignment-free PreFIX exchange of stages

Optics	
Divergence slit	Set of fixed slits; exchangeable by user
Width mask	Set of fixed masks; exchangeable by user
Anti-scatter slit	Fixed slit; not exchangeable
Soller slits	0.04 rad, 0.02 rad optional. Exchangeable by user. Others upon request
Filter	Beta filter is available for each X-ray tube
Detector	Ultrafast solid-state PIXcel^{1D} detector based on Medipix3 technology* with the following specification: • 256 channels (no dead channels) • 55 µm channel width • 0D, 1D modes Ultrafast solid-state PIXcel^{3D} detector based on Medipix3 technology* (option) with the following specification: • 256 x 256 pixels • 55 x 55 µm pixel size • 0D, 1D and 2D modes

*Co-developed with CERN

Specifications	
Dimensions (H x W x D)	690 mm x 770 mm x 786 mm/ 27 inch x 30 inch x 31 inch
Weight	180 kg / 397 lbs
X-ray safety	Less than 1 µSv/h at 10 cm distance from the outside surface of the enclosure
Safety standards	Compliant with Machine Directive 2006/42/EC and EMC Directive 2004/108/EC Compliant with UL/CSA 61010-1 and 61010-2-091
Dust protection	External sample loading with a door lock
External cooling water supply	Not needed
Compressed air supply	Not needed
Power supply	100 – 240 V, single phase
Power consumption	1.1 kW
System alignment	Delivered factory-aligned
Computer	Internal
Operation	Intuitive user interface with 10.4” touch screen
Interfaces	LAN, USB, HDMI



MALVERN PANALYTICAL

Grovewood Road, Malvern,
Worcestershire, WR14 1XZ,
United Kingdom

Tel. +44 1684 892456
Fax. +44 1684 892789

Lelyweg 1,
7602 EA Almelo,
The Netherlands

Tel. +31 546 534 444
Fax. +31 546 534 598

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Request for Quote
Laboratory

Proc Folder: 1985423

Doc Description: Benchtop Powder X-Ray Diffraction Instrument

Proc Type: Central Purchase Order

Reason for Modification:
Addendum No. 01

Date Issued	Solicitation Closes	Solicitation No	Version
2026-06-16	2026-06-23 13:30	CRFQ 0306 GEO2600000002	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code: 000000186102

Vendor Name : Malvern Panalytical, Inc.

Address : 2400 Computer Dr.

Street :

City : Westborough

State : MA **Country :** USA **Zip :** 01581

Principal Contact : Chris Kleespies

Vendor Contact Phone: 302-593-7070 **Extension:**

FOR INFORMATION CONTACT THE BUYER
Larry D McDonnell
304-558-2063
larry.d.mcdonnell@wv.gov

Please see our attached quotation Q-234624. As an alternative to the continuously variable slit requirement (Item #2), the Aeris XRD includes interchangeable fixed slits with an open, decoupled goniometer architecture that maintains a constant irradiated area throughout the scan range. This configuration provides effective control of the illuminated sample area.

If we are awarded this bid, Malvern Panalytical hereby requests to add Limitation of Liability to the Terms and Conditions. As this tender response is strictly governed by our group Spectris, in no way shall the submission of this bid waive Limitation of Liability to this Terms and Conditions.

Vendor Signature X **FEIN#** 04-2850945 **DATE** Jun 22, 2026

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

Addendum No. 01
To attach answers to vendor questions.

Bid opening date and time still remains 06/23/2026 at 1:30PM EST/EDT.

No other changes

INVOICE TO	**SHIP TO**
GEOLOGICAL & ECONOMIC SURVEY 1 MONT CHATEAU RD MORGANTOWN WV US	GEOLOGICAL & ECONOMIC SURVEY 1 MONT CHATEAU RD MORGANTOWN WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Benchtop Powder XRD Instrument	1.00000	EA	$103,823.05	$103,823.05

Comm Code	Manufacturer	Specification	Model #
41102704	Malvern Panalytical	Aeris Compact XRD System	9500 020 00401

Extended Description:
See attached documentation for further details.

SCHEDULE OF EVENTS

Line	Event	Event Date

SOLICITATION NUMBER: CRFQ GEO26*02

Addendum Number: 01

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[X] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

To attach answers to vendor questions.

Bid opening date and time still remains 06/23/2026 at 1:30PM EST/EDT.

No other changes

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

Vendor Answers from WV Geological Survey for CRFQ-0306-GEO2600000002:

Question: Under general requirements (3.1.1.3) "Benchtop X-Ray diffractometer must be covered under an extended warranty agreement for a minimum of one year." Is this a request of warranty beyond the one-year warranty period that is included with the instrument? Meaning, you are requesting 2 years of warranty?

Answer:

WV Geological Survey is seeking a warranty of at least one year.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ GEO26*02

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

[✓] Addendum No. 1
[ ] Addendum No. 2
[ ] Addendum No. 3
[ ] Addendum No. 4
[ ] Addendum No. 5
[ ] Addendum No. 6
[ ] Addendum No. 7
[ ] Addendum No. 8
[ ] Addendum No. 9
[ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Malvern Panalytical, Inc.

Company

Authorized Signature

June 22, 2026

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

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Vendor Signature X Chris Kleespies **FEIN#** 04-2850945 **DATE** June 22, 2026

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

Addendum No. 01
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No other changes

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GEOLOGICAL & ECONOMIC SURVEY		GEOLOGICAL & ECONOMIC SURVEY	
1 MONT CHATEAU RD		1 MONT CHATEAU RD	
MORGANTOWN	WV	MORGANTOWN	WV
US		US	

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SCHEDULE OF EVENTS

Line	Event	Event Date

	Document Phase	Document Description	Page 3
GEO2600000002	Final	Benchtop Powder X-Ray Diffraction Instrument	

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions