Minimum Essential Characteristics (MEC)
Sequencing System and Supplies

1. Vendor shall provide Vela Diagnostics sequencing system to include all required sub-system components, maintenance and repair, and operational supplies and consumable products. The sequencing system shall support the following specifications:
   - Automated next-generation sequencing (NGS) instrument (Sentosa SQ301) for the targeted sequencing of human and viral DNA that is FDA approved vendor for HIV-1 genotype assay
   - Instrument supports NGS assays and customer-developed assays.
   - Server: a hardware and software system that controls the instrument and collects sequencing data.
   - Automated pipetting system (Sentosa SX101) for nucleic acid extraction and polymerase chain reaction (PCR) set-up.
   - Preventative and emergency maintenance shall be performed to ensure the provided instruments meet and maintain College of American Pathology (CAP) standards for clinical testing operations. The vendor shall respond to equipment failures within 48-72 hours. Vendor staff shall have real ID to ensure access to military installations to perform maintenance.

2. Listed below are the specified annual requirements.

Product Name (KITS)	**Item Number**	**Quantity**
Sentosa SQ HIV Genotyping Reagents v2.0 (4x24) (IVD)	300731	13
Sentosa SQ Virus Testing Solutions (4x24) (IVD)	300732	13
Sentosa SQ HIV Positive Control (8) (IVD)	300800	8
Sentosa SX Virus TNA Plus Kit (4x24) (IVD)	300395	13
Sentosa SX IA Reactions Kit (4) (IVD)	300733	13
Sentosa SX IA Reagents Kit (8) (IVD)	300734	7
Sentosa SX IA Solution Kit (8) (IVD)	300735	7
Sentosa SQ Sequencing Supplies (IVD)	300306	7
Sentosa SQ Sequencing Reagents (IVD)	300313	7
Sentosa SQ Sequencing Solutions IVD	300316	7
Sentosa SQ 318 Chip Kit (IVD)	300300	7

Product Name (Consumables)		
Sentosa SX Barcoded PCR Plate 96 (50)	400100	3
Sentosa SX Non-Partition 50µL Filter Tips (960)	400224	31
Sentosa SX Non-Partition 1000µL Filter Tips (960)	400223	21

Sentosa SX Deepwell Plate 96/2000uL (20)	400068	3
Sentosa SX 100ml Reservoir (50)	400027	2
Sentosa SX 30 ml Reservoir (50)	400028	8
Sentosa SX Biohazard bag (100)	400033	2
Sentosa SX Safe-Lock Tubes(1000)	400031	2

Product Name (Instruments)		
Sentosa SX101 Basic Set	400089	2
Sentosa SX NGS Starter Kit	400105	2
Sentosa SQ301 Sequencer	400103	2
Sentosa SQ301 Minicentrifuge 120V	400122	1

Product Name (Servers & Software)		
Sentosa SQ301 Server T430	400225	1
Sentosa SQ Reporter Server T440	400133	1
Sentosa SQ Reporter v2.3	480187	1
Sentosa SX Software	460018	2

Product Name (Labware)		
Sentosa SX Magnetic Plate	400090	2
Sentosa SX 318 Metal Chip Rack	400251	2

Product Name (Non-Vela Items)		
Bio-Rad PX1 PCR Plate Sealer	1814000	1
Bio-Rad Pierceable Foil Heat Seal (100)	400257	1
Vacuum/Pressure Pump 15.5LPM		1

- Reagents shall be delivered with at least a one-year shelf life and any positive controls shall have a four-month or longer shelf life.
- Reagents shall be delivered within 60-90 days of requesting.