TRAINING UPDATE

Lab Location:	GEC	**Date Distributed:**	1/10/2019
Department:	Core Lab	**Due Date:**	1/31/2019
		Implementation:	**2/1/2019**

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:
Maintenance, Siemens Dimension® Xpand GEC.C07 v8
Description of change(s):
Updated title (removed "Startup") Section 5: Re-arranged order of steps to match practice and logs, updated reference guide sections This revised SOP will be implemented on February 1, 2019

Document your compliance with this training update by taking the quiz in the MTS system.

Non-Technical SOP

Title	**Maintenance, Siemens Dimension® Xpand**	
Prepared by	Leslie Barrett	Date: 8/10/2009
Owner	Robert SanLuis	Date: 6/8/2011

Laboratory Approval		
Print Name and Title	**Signature**	**Date**
Refer to the electronic signature page for approval and approval dates.		
Local Issue Date:	Local Effective Date:	

Review:		
Print Name	**Signature**	**Date**

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1. PURPOSE

To outline the maintenance procedure for the Siemens Dimension Xpand instruments and describe all other maintenance that must be performed as scheduled.

2. SCOPE

This procedure applies to all Core Laboratory personnel working with the Siemens Dimension Xpand instruments.

3. RESPONSIBILITY

Core Laboratory personnel are responsible for performing and complying with this procedure.
The Technical Supervisor is responsible for content and review of this procedure.

4. DEFINITIONS

None

5. PROCEDURE

A. General Information and Schedule

1. Maintenance schedule:

Instrument	Xpand 1	Xpand 2
Daily maintenance	Day shift	Night shift
Weekly maintenance	Night shift	Night shift
Monthly maintenance	Night shift	Night shift

2. The daily monitoring of the instrument waste will be performed on all three shifts.

3. The Core Laboratory Group Leads are responsible for the weekly review of maintenance logs.

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4. The Core Laboratory Supervisor, Lab Services Director or designee is responsible for the monthly review of maintenance.

5. A check off log is provided on each instrument for the technologist to sign. The required checkpoints must be completed as scheduled. A technologist on each shift must initial that they have completed the required checkpoints.

6. Documentation - After **any** maintenance is completed the following must be performed.
   a. Run QC.
   b. Do not release any patient result until the QC successfully passes.
   c. Document function check on the maintenance Log Sheet.

B. Daily Maintenance

1. Run System Check:
   a. The instrument is preprogrammed at a specific time (Expand#1 at 0700 and Expand#2 at Midnight) to run a system check automatically on a daily basis.
      - Ensure there is a CHK Flex on the instrument prior to the system Check running.
      - The instrument will flag if there is not enough CHK Flex reagent in the inventory.

   b. At any time the operator has the ability to run the system check manually to verify instrument performance by accessing the Daily Maintenance Program. From the Operating Menu:
      - Press F4: System Prep
      - Press F8: Daily Maintenance
      - Enter your initial, then press F1:Start

   c. Record System Check results on the Dimension Xpand Daily System Check log.
      Note: Unacceptable System Check results appear on the print out in white letters on a black background. An asterisk on the report indicates that the cuvette had a processing problem. If the System Check Printout indicates that your results are not acceptable, then refer to System Check Trouble shooting in the Operators Guide.

2. Verify and record the cuvette, reagent and HM temperatures on the Maintenance Log. Acceptable temperature ranges are shown below:

Cuvette System	36.8 - 37.2C
Reagent System	2 - 8C
HM System	42 - 44C

3. Clean the sample area and empty cuvette waste
   a. With the instrument in Standby, press **Pause** to stop the sampler systems from moving.

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b. Raise the sample and reagent lids and remove all segments from the sample area.
c. Clean the inside of the sample with a damp cloth.
d. Close the sample and reagent lids.
e. Press **Pause** to restart the sampler system.
f. Open the right cabinet door and cut the cuvette string about 12 inches down from the instrument. Be sure to cut the between two cuvettes to prevent spilling fluids from a sealed cuvette.
g. Empty the accumulated cuvette waste.

4. Check/replenish reagents, IMT and HM inventory:
   a. To access the System Counter screen, press:
      1) F4: System Prep
      2) F6: System Counters
      Items where the cycle field exceeds the *clean at* or *replace at* field appear in red. Those items should be cleaned or replaced now or at your earliest opportunity.
      Then press:
      3) F6: HM counters
   This shows the status of consumable items for the HM module. Any items appearing in red or whose fill level is <5% must be replaced before running any HM tests.

   b. For reagent inventory, press Alt/I.
   c. For IMT, from the Operating Menu, press:
      1) F4: System Prep
      2) F3: IMT
      3) F1: Change Consumables

   Every 5 days, replace IMT Sensor, Run Dilution Check and Condition Sensor. The instrument will give a reminder. Record results on the Dimension Quiklyte Results log.
   For step by step procedure see the IMT Info section in the Dimension Quick Reference Guide or the Operator's Guide 2-57.

5. Process Quality Control according to Laboratory procedures.

C. Weekly Maintenance

1. Clean HM Wash Probes and the R2 reagents Probe
   a. With the system in Stand by, go to the HM Pump Prime screen
   b. Raise the sample and regent lids.
   c. Dip a clean cotton swab in water and, beginning at the top of the probe, wipe down the outside of both wash station probes.
   d. Turn the splined shaft on the R2 reagent arm until the R2 probe comes up out of the R2 reagent drain. Then move the arm until you can easily access the R2 probe.

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e. Dip a clean cotton swab in 0.1N sodium hydroxide (reagent probe cleaner) and scrub the nut at the top of the probe tube. Then, beginning at the top, wipe down the outside of the R2 reagent probe.
Note: If a bottle of reagent probe cleaner is used as source of 0.1N sodium hydroxide, then only use that particular bottle for weekly R2 probe cleaning. Do NOT use that bottle on the instrument.
f. Press F1: HM Wash Pump to prime the HM wash pump.
g. Document the cleaning on the Weekly Log Sheet.

2. Clean Windows according to the Dimension Xpand Maintenance Log.
All the windows are cleaned the first week.
Only the dirty windows are cleaned the rest of the month.
See the Dimension Quick Reference Guide or the Operator's Guide 3-36

D. Monthly Maintenance

1. Siemens Dimension
a. Replace IMT Pump Tubing
b. Replace / Clean Air Filters
c. Replace HM Pump Heads
For step by step procedure see the Operator's Guide 3-23.
d. Stylette the HM Wash Probes
e. IMT System Clean (The instrument will give a reminder)
For step by step procedure see the IMT Info section in the Dimension Quick Reference Guide or the Operator's Guide 3-17.

2. Millipore (performed by day shift)
a. Culture Millipore Water. Clean tip with alcohol pads first. Then pour a 1:10 bleach/water solution over the tip and let sit for a minimum of 15 minutes. Let water flow into the basin until half full and then culture the water.
b. Replace Chlorine Tablet as needed by the indicator light on the Millipore. Refer to Millipore (AFS – Analyzer Feed System) procedure for step-by-step instructions.

E. Non-scheduled or 'As Needed' Maintenance (performed by any shift)
Note: not limited to those listed below
1. Sample probe change before or at 30,000 cycles.
2. Reagent probes (R1 and R2) change before or at 30,000 cycles.
3. Source lamp changed (3-130)
4. Cuvette Cartridge and Diaphragm change 12,000 cycles
5. Sample probe and Drain cleaning 20,000 cycles
6. Any scheduled maintenance that is performed off-cycle

6. RELATED DOCUMENTS

Millipore (AFS – Analyzer Feed System), Siemens Dimension® Xpand, Chemistry procedure
The Dimension Quick Reference Guide
Dimension Xpand Maintenance Log (AG.F179)

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Dimension Xpand Daily System Check (AG.F290)
Dimension Xpand QuikLYTE Results (AG.F291)

7. REFERENCES

Dimension Xpand Clinical Chemistry Operators' Guide, 09/2008

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SOP C041.002		
000	2/11/11	Update owner and title page Section 5: item A.8 relocated from end of section, item F added	W. McMillan	Dr Cacciabeve
001	6/8/11	Update owner Section 5: change Stylette HM wash probes and clean windows to weekly maintenance, remove monthly monopump maintenance Section 9: add maintenance form	L Barrett	Dr Cacciabeve
002	1/29/12	Section 5: Items B.5 and F.1&2 - add frequency for change before or at 30,000 cycles. Section 9: edit log sheets to reflect cycle count for probe changes.	J Buss	Dr Cacciabeve
003	8/14/12	Sections 1 & 2: add analyzer name Section 5: remove instructions specific to SGAH and/or WAH; change IMT System clean, Stylette HM wash probe & Millipore to monthly frequency, add HM pump heads Section 9: remove RXL log, add Xpand log	L Barrett, A Chini	R SanLuis
004	7/15/14	Section 5: Item B.6 changed to automatic process Section 6: Update logs Section 9: Log moved to section 6 Footer: version # leading zero's dropped due to new EDCS in use as of 10/7/13.	L Barrett, A Chini	R SanLuis
5	9/16/14	Section 5: Item B.6 clarified, add option for manual process. Item C.3specified frequency	H Genser	R SanLuis
6	11/17/16	Section 5: Item A.1 updated schedule, B.1 removed deleting segment positions, C.1 added note for probe cleaner	U Iyoho, L Barrett	R SanLuis
7	12/21/18	Updated title Section 5: Re-arranged order of steps to match practice and logs, updated reference guide sections	R Bridges	R SanLuis

9. ADDENDA AND APPENDICES

None

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