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ABCA2 Maintenance Report

Job Number:	SE0786		
Customer:	UZ Leuven		
Instrument Serial #	20601-200734	Gas Box Serial #	10602/2019/252310
ASX 7400 Serial #	071404A7400HR	Software Version	V600.0.122
Contact:	Gertjan Gysembergt		
Date of Visit:	16 Nov 2026	Days:	3
Engineer:	Henry Cooke		

Pre Maintenance Checks

Initial Tuning Parameters:

HT: 2673	IR: -7.0
Focus: 87	eV: -85
HP: -5	Trap: 150
Emission: 420	
Vacuum: $1.0e^{-8}$	

Initial Performance Evaluation

Peak Shape: Good	Sheet Number 1
Stability: Good	Sheet Number 2
Ref Gas Precision: 0.04	Sheet Number 3
Linearity: 1.2	Sheet Number 4
Breath Precision: 0.17	Sheet Number 5

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Maintenance Checklist		
Filament Change	Initial: HC	Date: 16 Nov 26
Oil Change	Initial: HC	Date: 16 Nov 26
Filament Condition	Initial: HC	Date: 16 Nov 26
Tune Optimisation	Initial: HC	Date: 17 Nov 26
Replace Syringe O Rings	Initial: HC	Date: 16 Nov 26
Gas Flow Check and Optimisation	Initial: HC	Date: 16 Nov 26
Magnet Position Optimisation (If Applicable)	Initial: N/A	Date: N/A
System Leak Check	Initial: HC	Date: 16 Nov 26

Final Performance Evaluation

HT: 2678	IR: -7.0
Focus: 87	eV: -85
HP: -25	Trap: 200
Emission: ~600	
Vacuum: 1.7E-08	

Final Performance Evaluation

Peak Shape: Good	Sheet Number 6
Stability: Good	Sheet Number 7
Ref Gas Precision: 0.02	Sheet Number 8
In Tube Precision: 0.03	Sheet number 9
Sensitivity: 14.0 nA	Sheet Number 10
Linearity n=5 (1%-8%): 0.11	Sheet Number 11
Linearity n=6 (0.5%-8%): 0.24	Sheet Number 12
Breath Precision: 0.02	Sheet Number 13

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Notes:

Day 1:

- Arrived to a system getting no peaks at all. Opened the gas box to find no plunger in the syringe
- Old plunger found in very dirty state. Cleaned with methanol, given new o-rings and grease before adding to the system. Peaks now present
- Pre specs ran, results seen above. Loud hissing when valco turns suggests large compressed air leak.
- Red light on CETAC still shows communication problems
- System switched off, with pumps crash venting as usual. Filament changed, no obvious issues in source.
- Rotary pump is leaky, as is typical for an old pump. Old oil looked very dark, replaced with new oil
- Pumps switched back on and system leak checked, no leaks found in gas box or syringe
- Vacuum reached 2.3E-7 after ~2.5 hours, filament conditioned as normal

Day 2

- Arrived to a vacuum of 5.8E-08
- Peak shape found and a variety of source tunings were tested
- Precision improved from pre spec but only with tunings of lower sensitivity, so trap increased to 200
- Best precision and linearity results found when reducing integration window by 5 seconds and increasing runoff time by the same amount
- Post spec results seen above

Day 3

- Arrived to a vacuum of 1.7E-08
- Customer ran some of their own QC samples, with worse results of 0.20. My breath / ref still gave good results similar to Day 2
- Ref value changed to match new CO2 cylinder and QC samples reran, giving 0.05. Customer mentions that the system typically doesn't work well for the first few samples of the day, likely since the He and CO2 are switched off overnight, and it takes a few samples to clear the lines of potential overnight contamination
- Customer runs patient samples, all looks typical

Follow Up:			
If CETAC problems (communications and compressed air leak) get worse, please contact us for a quote for a new VerSA Please email service@sercongroup.com with any questions you may have			
Engineer:	Henry Connell Cooke	Date:	18 Nov 26
Signed:	Henry Connell Cooke		
Customer:	Gertjan Oyserbergh	Date:	18/11/26
Signed:			