Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: OCTOBER **Year:** 2015

Maintenance	Frequency	Date Completed																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use								[illegible]	[illegible]			[illegible]														[illegible]	[illegible]		AB		
Swap He tank	As needed																															
Check/fill H2 generator water	Weekly												[illegible]							[illegible]							[illegible]					
Check/empty compressor drain tank	Weekly												[illegible]							[illegible]							[illegible]					
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually				N/A	[illegible]																										
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Change GC inlet septum	Every 200 injections																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

NOT FOR CASEWORK; VALIDATION USE ONLY. [illegible] 10/27/15

NOT IN SERVICE FOR CASEWORK PRIOR TO 10/7/15 [illegible] 11/5/15

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: November **Year:** 2015

Maintenance	Frequency	Date Completed																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use		DJ	DJ	DJ					DJ		DJ	DJ	DJ			DJ		DJ	DJ	DJ											
Swap He tank	As needed			DJ							DJ 11/12/15																					
Check/fill H2 generator water	Weekly			DJ										DJ							DJ					DJ					DJ	
Check/empty compressor drain tank	Weekly			DJ										DJ							DJ					DJ					DJ	
Check/clean FID collector/cap	Monthly					DJ																										
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Change GC inlet septum	Every 200 injections																DJ															☆ DJ 11/30/15
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

☆ GC INLET SEPTUM CHANGE UNNECESSARY PER MAINTENANCE REPRESENTATIVE WHEN USED WITH HS AUTOSAMPLER/TRANSFER LINE DJ 11/30/15

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: December **Year:** 2015

Maintenance	Frequency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use																															
Swap He tank	As needed																															
Check/fill H2 generator water	Weekly																															
Check/empty compressor drain tank	Weekly																															
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Change GC inlet septum	Every 200 injections																															N/A
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

12/10 fixed air leak on + from compressor to H_2 generator

Dmb - Filled zero air generator w/ nano pure H_2O 12/4/15 (18.2 Mohms)

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: January **Year:** 2016

Maintenance	Frequency	Date Completed																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use				[illegible]		[illegible]					[illegible]				[illegible]						[illegible]					[illegible]	[illegible]	[illegible]	[illegible]		
Swap He tank	As needed															[illegible]																
Check/fill H2 generator water	Weekly				[illegible]							[illegible]										[illegible]					[illegible]			[illegible]		
Check/empty compressor drain tank	Weekly				[illegible]							[illegible]										[illegible]					[illegible]			[illegible]		
Check/clean FID collector/cap	Monthly																											[illegible]				
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Change GC inlet septum	Every 200 injections																															
Clean HS needle	Every 500 injections																											[illegible]				
Replace HS o-ring seals/check seal assembly	Every 1500 injections																													[illegible]		
Replace HS needle seal assembly	Every 2500 injections																															

[illegible] 1/4/16 N/A

Notes/other maintenance:

* PERKIN ELMER REP PRESENT FOR PREVENTATIVE MAINTENANCE - HS NEEDLE + O-RING REPLACED; LINER REPLACED; LEAK CHECK PERFORMED
[illegible] 1/29/16 - BAKED OUT
- SOME GHOST PEAKS/TAILING STILL PRESENT; SERVICE CALL REMAINS OPEN.

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: FEBRUARY Year: 2016

Maintenance	Frequency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		Date Completed																														
Check He carrier gas pressure	Day of use																															
Swap He tank	As needed																															
Check/fill H2 generator water	Weekly																															
Check/empty compressor drain tank	Weekly																															
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

* PERKIN ELMER MAINTENANCE CALL; HEADSPACE NEEDLE ASSEMBLY, TRAP, TRANSFER LINE REPLACED. 2/18/16

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: MARCH Year: 2016

Maintenance	Frequency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use				DS		DS			DS					DS		DS	DS	DS			DS	DS	DS	DS	DS			DS	DS		DS
Swap He tank	As needed																															DS
Check/fill H2 generator water	Weekly				DS							DS					DS	DS					DS							DS		DS
Check/empty compressor drain tank	Weekly				DS							DS					DS						DS									
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC Injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

4/1/16 DB

Notes/other maintenance:

Changed H_2 Generator Filter Daily DS 3/4/16

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: April **Year:** 2016

Maintenance	Frequency	Date Completed																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use	AB	AB				JSD					AB	AB	AB	AB	AB			AB	AB	AB	AB				AB	AB			AB		
Swap He tank	As needed	AB																														
Check/fill H2 generator water	Weekly	AB	AB				JSD					AB			AB						JSD					JSD						
Check/empty compressor drain tank	Weekly	AB					JSD					AB			AB						JSD					JSD						
Check/clean FID collector/cap	Monthly												AB																			
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: May **Year:** 2016

Maintenance	Frequency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use																															
Swap He tank	As needed																															
Check/fill H2 generator water	Weekly																															
Check/empty compressor drain tank	Weekly																															
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

5/3/16: PE SERVICE TECHNICIAN REPLACED APC CONTROL BOARD, APC ASSEMBLY, SOLENOID VALVES. 5/4/16

5/10/16: GC + HS TURNED OFF OVERNIGHT DUE TO POWER ISSUES IN BUILDING. COLUMNS BAKED @ 200C 5/11/16

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: June Year: 2016

Maintenance	Frequency	Date Completed																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Check He carrier gas pressure	Day of use																															
Swap He tank	As needed																															
Check/fill H2 generator water	Weekly																															
Check/empty compressor drain tank	Weekly																															
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

Perkin Elmer Clarus 580 / TurboMatrix 110 Maintenance Log

Month: July **Year:** 2016

Maintenance	Frequency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		Date Completed																														
Check He carrier gas pressure	Day of use							JSD				JSD							JSD	JSD	JSD		JSD			JSD			JSD			
Swap He tank	As needed							JSD																								
Check/fill H2 generator water	Weekly							JSD				JSD							JSD	JSD	JSD					JSD			JSD			
Check/empty compressor drain tank	Weekly							JSD				JSD							JSD	JSD	JSD					JSD			JSD			
Check/clean FID collector/cap	Monthly																															
Run reproducibility test	Semiannually																															
Clean magazine	Semiannually																															
Replace GC injector liner and o-ring	Annually																															
Replace FID o-ring	Annually																															
Clean HS needle	Every 500 injections																															
Replace HS o-ring seals/check seal assembly	Every 1500 injections																															
Replace HS needle seal assembly	Every 2500 injections																															

Notes/other maintenance:

7/26/16 JSD P.E. APM. Changed transfer line & O-rings, liner & o-ring replaced, performed leak checks.