RADCHEM 48hrGA

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
ON-SITE LABORATORY EVALUATION
GROSS ALPHA – NJ 48 HOUR

V2 01/31/2023

Lab Name: _____ Lab ID: _____

Auditor: _____ Date: _____

Analyst Interviewed: _____ SOPs present: Y / N

General

	Reference	Yes	No	NA	Comments or Observations
1. Make/Model of instrument					
2. Equipment in good repair?	6.6(c)6				

Rapid Gross Alpha 48 Hour – ECLS-R-GA Rev. 8

	Reference	Yes	No	NA	Comments or Observations
3. Make/Model of instrument					
4. TDS < 500 mg/L use Evaporation method	NJ 14				
Evaporation Procedure - ICAL					
5. Determine mg load of dissolved solids in pre-weighted beaker with known quantity of water. Evaporate to complete dryness and re-weigh. Create increments from 0-120 mg residue mass.	NJ 13.1.5.1-2				
6. Tare empty 20 mL weighting boat and measure 1.00 mL of radioactive spike. Record mass. Repeat until all spikes have been created.	NJ 13.1.5.3-4				
7. Determine total dpm by multiplying the spike transferred by the expected dpm/g of spike.	NJ 13.1.5.6				
8. Evaporate until 5-10 mL is left in beaker	NJ 13.1.5.7				
9. Add sample to pre-weighted (to 0.1 mg) planchette. Rinse beaker with 5 mL of HNO3 and add to planchette. Evaporate to dryness and flame for	NJ 13.1.5.8-16				

	Reference	Yes	No	NA	Comments or Observations
3 minutes. Cool and re-weigh. Count until minimum of 20,000 counts are accumulate. Fit curve.					
10. Use 3 from original batch to re-verify curve annually.	NJ 13.2				Weight +/-5%; Original result within 95% CI of reverification result.
Evaporation Sample Preparation					
11. Shake sample and weight 200 g (or less if indicated by DLE calculator)	NJ 14.2.2				
12. Evaporate on hot plate @ 100°C until 2-5 mL remain. Convert chloride salts to nitrate salts as needed.	NJ 14.2.4				
13. Transfer to planchette. Rinse beaker and transfer residue to planchet.	NJ 14.2.5-6				
14. Evaporate to dryness and flame over Fisher burner for 3 minutes.	NJ 14.2.7-8				
15. Weight plancheted sample (to 0.1 mg) and record weight. *Note: If mass exceeds 100 mg limit, then use lower aliquot*	NJ 14.2.10				

Additional Questions – Reagents, Standards and Records

	Reference	Yes	No	NA	Comments or Observations
16. Are the date and time of calibration and the initials of the analyst recorded?	6.7(d)				
17. Is all calibration and sample analysis data maintained for a minimum of 5 years? Is at least 1 year of data on-site?	6.7(a) – (b)				
18. For labs using their own equipment is a maintenance log for equipment kept?	6.6(c)				

Additional Questions – Quality Control

	Reference	Yes	No	NA	Comments or Observations
19. NIST traceable certified Th230 run daily on each detector	NJ 12.1				±2 σ and ±3 σ warning limits.
20. Background checks daily?	NJ 12.2				±2 σ and ±3 σ warning limits.
21. Duplicates - one per 10 samples.	NJ 12.3				± 20% RPD
22. LRB in each batch	NJ 12.4				Cannot exceed ± 3 σ limit from control chart
23. LFB in each batch of 20	NJ 12.5				± 20% of spiked value
24. LFM in each batch	NJ 12.6				± 30% of spiked value
25. Were PTs analyzed in the same manner as routine samples?	2.13(h)1				
26. Detection Limits	40 CFR 141.25				Gross Alpha = 3 pCi/L Gross Beta = 4 pCi/L
27. Chain of Custody forms	6.7(c)				