DRAFT

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Recommended QC Protocols for California Regulated Synthetic Organic Chemicals

The QC protocols have two components (A and B): Component A may be applied to all SOC methods and analytes and should be performed with every batch of samples to demonstrate calibration accuracy at or near the DLR. Component B should be applied to the method and SOC combinations (see Table 1) that they may perform marginally at or near the DLR. Component G should be performed at the frequency described in the protocol below.

Component A – Calibration Verification at or Near the DLR:

A DLR calibration check standard containing the California regulated SOC(s) at the DLR level(s) or lower should be analyzed at the beginning of each day of analysis. For an instrument run that continues beyond a 24-hour period, the DLR calibration check standard should be analyzed at least once every 24 hours. For methods employing procedural standards calibration, the DLR calibration check standard should be prepared as a procedural standard. The acceptable accuracy is:

Measured concentration = true concentration ± 50%.

The ability to pass this test helps to demonstrate that calibration accuracy is in control at or near the DLR level. Failure to meet this test may indicate a systematic problem with the technique used to construct the calibration curve. Remedial action may include the use of weighted linear regression, or limiting the upper concentration range of the calibration curve.

Component B – Method Recovery Verification at or Near the DLR:

For California regulated SOCs, the laboratory should demonstrate that the MDLs achieved in the laboratory meet the criterion, 3 x MDL < DLR, before using the method for compliance monitoring purposes. Failure to meet the MDL criterion for a given method and SOC combination suggests that the selected method lacks the necessary sensitivity to quantitate at the DLR level and that an alternate method, which can meet the sensitivity criterion, should be selected instead.

For an ongoing demonstration of SOCs method recovery at or near the DLR level, the laboratory should process and analyze a low-level LFB at least once per month or once per batch, if the analysis is not conducted on a monthly basis. The low-level LFB should be fortified at the DLR level or lower. For methods that utilize procedural standards calibration, the low-level LFB is equivalent to the DLR calibration check standard in Component A and the result from Component A may be used in the evaluation of this section. The acceptable recovery for the low-level LFB is:

Measure concentration = fortified concentration ± 50%

In addition, the regulated SOC concentration measured in the laboratory reagent blank (LRB) should be < 50% of the DLR concentration.

If the recovery criterion is not met, the laboratory should not proceed with sample analysis until it can demonstrate acceptable recovery. Frequent failure to meet the recovery criterion suggests that the selected method cannot reliably quantitate at the DLR level and that an alternate method, which can consistently meet the recovery criterion, should instead be used.

Table 1. USEPA Approved Methods and Regulated SOCs Combinations that Do Not Meet the Criterion: 3 x MDL ≤ DLR

EPA Approved Method	SOC	EPA MDL (µg/L)	Value of 3 x EPA MDL (µg/L)	Title 22 DLR (µg/L)	Title 22 MCL (µg/L)
504.1, Rev. 1.1 (95)	DBCP	0.01	0.03	0.01	0.2
	EDB	0.01	0.03	0.02	0.05
505, Rev. 2.1 (95)	Atrazine	2.4	7.2	1	3
	Chlordane, Total	0.14	0.42	0.1	0.1
	Endrin	0.063	~0.19	0.1	2
	Simazine	6.8	~20	1	4
	Toxaphene	1.0	3	1	3
506, Rev. 1.1 (95)	Di(2-ethylhexyl)adipate	11.8	~35	5	400
	Di(2-ethylhexyl)phthalate	2.3	6.9	3	4
508, Rev. 3.1 (95)	Heptachlor Epoxide	0.006	0.018	0.01	0.01
508.1, Rev. 2.0 (95)	Heptachlor	0.005	0.015	0.01	0.01
515.2, Rev. 1.1 (95)	Pentachlorophenol	0.16	0.48	0.2	1
	Pentachlorophenol	0.085	~0.26	0.2	1
	Picloram	1.0	3	1	500
525.2, Rev. 2.0 (95)	Benzo(a)pyrene	0.16	0.48	0.1	0.2
	Endrin	0.16	0.48	0.1	2
	Heptachlor	0.059	~0.18	0.01	0.01
	Pentachlorophenol	1.0	3	0.2	1
	Toxaphene	1.0	3	1	3
551.1, Rev. 1.0 (95)	DBCP	0.009	0.027	0.01	0.2
	Heptachlor	0.081	~0.24	0.01	0.01
555, Rev. 1.0 (92)	Pentachlorophenol	0.15	0.45	0.2	1
	Picloram	0.5	1.5	1	500
1613, Rev. B (10/94) *	2,3,7,8-TCDD (Dioxin)	4.4E-06	~1.3E-5	5.E-06	3.E-05
508A, Rev. 1.0 (89)	Aroclor 1232 as DCP	0.23	0.69	0.5	0.5
	Aroclor 1242 as DCP	0.21	0.63	0.5	0.5

* Note: Alternate USEPA approved method is not available.