

Maine DEP Basic Data Review Checklist

Attachment A (from EPA New England Guidance and National Functional Guidelines-NFG and Modified for MEDEP EGAD Flagging Conventions)



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Organic – Blank Contamination Data Review Guidance

All blank sample results should be evaluated manually for contamination in accordance with the most recent NFG blank criteria. **Note:** This represents a change from previous EPA NE data validation guidance which included the application of a “5x or 10x” rule in accepting, qualifying or rejecting sample results based on blank contamination.

Apply the NFG criteria and actions based on the highest blank contamination associated with the samples. PES (Performance Evaluation Sample) contamination is not used to qualify data.

- In determining the highest blank contamination, evaluate all blanks including method, clean-up, instrument, storage, bottle, trip and equipment rinsate blanks.
- If the blank action for an analyte is determined using the concentration from an equipment, trip or bottle blank, then the positive values in the equipment, trip or bottle blank should be reported unqualified on the Data Summary Tables. However, if the blank action is determined from a laboratory blank (e.g., method, clean-up, storage, or instrument blank), then the positive values in the equipment, trip or bottle blanks should be qualified.
- For aqueous equipment, trip and bottle blanks, if an analyte is present in the non-aqueous sample and is also present in the associated aqueous equipment blank, trip blank or bottle blank, then flag that sample result (in the EGAD sample comments field) as B, to indicate to the end user that an indeterminate amount of sampling error has potentially impacted the sample results.

NFG criteria:

Table 1. Blank Actions for Low/Medium Volatiles Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Storage, Field, Trip, Instrument **	Detects	Not detected	No qualification
	< RL*	< RL*	Report RL value with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B”
		< RL*	Report RL value with a U

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	> RL*	> RL* and < blank	Report the blank concentration for the sample with a U or qualify the data as unusable R
		≥ RL* and ≥ blank concentration	Use professional judgment- Flag affected sample data with “B” qualifier
	= RL*	< RL*	Report RL value with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B”
	Gross	Detects	Qualify results as unusable R

* 2x the RL for methylene chloride, 2-butanone, and acetone.

** Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 µg/L.

Table 2. Blank Actions for Semivolatiles Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field	Detects	Not detected	No qualification
	< RL*	< RL*	Report RL value with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B” qualifier
	> RL*	< RL*	Report RL value with a U
		≥ RL* and < blank concentration	Report the blank concentration for the sample with a U or qualify the data as unusable R
		≥ RL* and ≥ blank	Use professional judgment- Flag affected sample data with

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	= RL*	< RL*	Report RL with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B” qualifier
	Gross contamination	Detects	Qualify results as unusable R
	TIC > 10 µg/L (for aqueous blanks) TIC > 330 µg/kg (for non-aqueous blanks)	Detects	Use professional judgment- Flag affected sample data with “B” qualifier

* 5x the RL for bis(2-ethylhexyl)phthalate for low-level non-aqueous and aqueous samples.

Table 3. Blank Actions for Pesticide Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Sulfur Cleanup, Instrument, Field	Detects	Not detected	No qualification
	< RL	< RL	Report RL value with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	> RL	< RL	Report RL value with a U
		≥ RL and < blank concentration	Report the blank concentration for the sample with a U, or qualify the data as unusable R
		≥ RL and ≥ blank concentration	Use professional judgment- Flag affected sample data with “B” qualifier

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	= RL	< RL	Report RL values with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	Gross	Detects	Qualify results as unusable R

Table 4. Blank Actions for Aroclor Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Sulfur Cleanup, Instrument, Field	Detects	Not detected	No qualification
	< RL	< RL	Report RL value with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	> RL	< RL	Report RL value with a U
		≥ RL and < blank concentration	Report the blank concentration for the sample with a U, or qualify the data as unusable R
		≥ RL and ≥ blank concentration	Use professional judgment- Flag affected sample data with “B” qualifier
	= RL	< RL	Report RL values with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	Gross	Detects	Qualify results as unusable R

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Inorganic – Blank Contamination Data Review Guidance

All blank sample results should be evaluated manually for contamination in accordance with the most recent NFG blank criteria. **Note:** This represents a change from previous EPA NE data validation guidance which recommended the application of a 5x rule in accepting, qualifying or rejecting sample results based on blank contamination.

Apply the NFG criteria and actions based on the highest blank contamination associated with each sample. PES (Performance Evaluation Sample) contamination is not used to qualify data.

- In determining the highest blank contamination, evaluate all blanks including preparation/method, calibration/instrument, bottle, and equipment rinsate blanks.

- Initial and continuing calibration blank contamination within an analytical sequence applies to all samples analyzed in that sequence. Use professional judgment- Flag affected sample data with “B” qualifier to apply contamination only to a specific subset of samples.

- If the blank action for an analyte is determined using the concentration from an equipment or bottle blank, then the positive values in the equipment or bottle blank should be reported unqualified on the Data Summary Tables. However, if the blank action is determined from a laboratory blank (e.g., preparation or calibration blank), then the positive values in the equipment and bottle blanks should be qualified.

- For aqueous equipment and bottle blanks, if an analyte is present in the non-aqueous sample and is also present in the associated aqueous equipment blank or bottle blank, then flag that sample result as EB or BB, respectively, to indicate to the end user that an indeterminate amount of sampling error has potentially impacted the sample results.

NFG criteria:

Table 5. Blank Actions for ICP-AES Analysis

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	≥ MDL but ≤ RL	Non-detect	No action
		≥ MDL but ≤ RL	Report RL value with a “U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier

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ICB/CCB	> RL	\geq MDL but \leq RL	Report RL value with a “U”
		> RL but < Blank Result	Report at level of Blank Result with a “U” or qualify data as unusable (R)
		> Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	\leq (-MDL) but \geq (-RL)	\geq MDL, or non-detect	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	< (-RL)	< 10x the RL	Qualify results that are \geq RL as estimated low (J) Qualify non-detects as estimated (UJ)
Preparation Blank	> RL	\geq MDL but \leq RL	Report RL value with a “U”
		> RL but < 10x the Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier to qualify results as unusable (R) or estimated high (J)
		\geq 10x the Blank Result	No action
Preparation Blank	\geq MDL but $\square \leq$ RL	Non-detect	No action
		\geq MDL but $\square \leq$ RL	Report RL value with a “U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier
Preparation Blank	< (-RL)	< 10x the RL	Qualify results that are \geq RL as estimated low (J) Qualify non-detects as estimated (UJ)

Table 6. Blank Actions for ICP-MS Analysis

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	\geq MDL but \leq RL	Non-detect	No action
		\geq MDL but \leq RL	Report RL value with a “U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier

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ICB/CCB	> RL	\geq MDL but \leq RL	Report RL value with a “U”
		> RL but < Blank Result	Report at level of Blank Result with a “U” or qualify data as unusable (R)
		> Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	\leq (-MDL),but \geq (-RL)	\geq MDL, or non-detect	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	< (-RL)	< 10x RL	Qualify results that are \geq RL as estimated low (J-) Qualify non-detects as estimated (UJ)
Preparation Blank	> RL	\geq MDL but \leq RL	Report RL value with a “U”
		> RL but < 10x the Blank Result	Qualify results as unusable (R) or estimated high (J)
		\geq 10x the Blank Result	No action
Preparation Blank	\geq MDL but \leq RL	Non-detect	No action
		\geq MDL but \leq RL	Report RL value with a “U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier
Preparation Blank	< (-RL)	< 10x RL	Qualify results that are \geq RL as estimated low (J) Qualify non-detects as estimated (UJ)

Table 7. Blank Actions for Mercury Analysis

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	Absolute value is \geq MDL but \leq RL	Non-detect	No action
		\geq MDL but \leq RL	Report RL value with a “U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	Absolute value is	\geq MDL but \leq RL	Report RL value with a “U”

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	> RL	> RL but < Blank Result	Report at level of Blank Result with a “U” or qualify data as unusable (R)
		> Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	≤ (-MDL), but ≥ (-RL)	≥ MDL, or non-detect	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	< (-RL)	< 10x the RL	Qualify results that are ≥ RL as estimated low (J) Qualify non-detects as estimated (UJ)
Preparation Blank	> RL	≥ MDL but ≤ RL	Report RL value with a “U”
		> RL but < 10x the Blank Result	Qualify results as unusable (R) or estimated high (J)
		≥ 10x the Blank Result	No action
Preparation Blank	≥ MDL but ≤ RL	Non-detect	No action
		≥ MDL but ≤ RL	Report RL with a “U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier
Preparation Blank	< (-RL)	< 10x the RL	Qualify results that are ≥ RL as estimated low (J) Qualify non-detects as estimated (UJ)

Table 8. Blank Actions for Cyanide and Wet Chemistry Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	Absolute value is ≥ MDL but ≤ RL	Non-detect	No action
		≥ MDL but ≤ RL	Report RL value with a ”U”
		> RL	Use professional judgment- Flag affected sample data with “B” qualifier

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ICB/CCB	Absolute value is > RL	\geq MDL but \leq RL	Report RL value with a "U"
		> RL but < Blank	Report at level of Blank Result with a "U" or qualify data as unusable (R)
		> Blank Result	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	\leq (-□MDL), but \geq (-RL)	\geq MDL, or non-detects	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	< (-RL)	< 10x the RL	Qualify results that are \geq RL as estimated low (J) Qualify non-detects as estimated (UJ)
Preparation Blank	> RL	\geq MDL but \leq RL	Report RL value with a "U"
		> RL but < 10x the Blank Result	Qualify results as unusable (R) or estimated high (J)
		\geq 10x the Blank Result	No action
Preparation Blank	\geq MDL but \leq RL	Non-detect	No action
		\geq MDL but \leq RL	Report RL value with a "U"
		> RL	Use professional judgment- Flag affected sample data with "B" qualifier
Preparation Blank	< (-RL)	< 10x the RL	Qualify results that are \geq RL as estimated low (J) Qualify non-detects as estimated (UJ)