

This review was performed with guidance from the National Functional Guidelines for Organic Superfund Methods Data Review (US EPA, 2020, US EPA) and/or the National Functional Guidelines for Inorganic Superfund Methods Data Review (US EPA, 2020, US EPA). These validation guidance documents specifically address analyses performed in accordance with the CLP analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the Standard Method (SM), SW-846, and/or US EPA methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the quality of the analytical results and compliance relative to the Standard Method (SM), SW-846, and/or US EPA utilized by the laboratory. This QA review was performed on the data associated with Sample Delivery Group (SDG):

L1863382

The findings offered in this report are based on a review of the Chain-of-Custody Record and Case Narrative, sample preservation and condition upon laboratory receipt, holding times, surrogate recovery, field and laboratory blank results, laboratory and field duplicate precision, laboratory control sample / laboratory control sample duplicate recoveries and precision, matrix spike / matrix spike duplicate recoveries and precision, total and dissolved results comparisons, and/or percent solids (as applicable). All review items may not have been included in this SDG; therefore, only those items included in this SDG were addressed in the QA review.

A summary of the results of the data review process is provided below:

Sample	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Unit	Detect?
GACO0527T173-1S001	N	CALC	Total Nitrogen	N	721000	J	CR	757	25000	ug/Kg	Y

Data Qualifiers

U	The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate, or was observed in a blank at a similar level.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reason Codes and Explanations

BF	Contamination present in a field blank (e.g ., Field Blank, Equipment Blank, etc .); evaluation criteria exceeded
BL	Contamination present in a laboratory blank (e.g ., Method Blank, Instrument Blank, etc .); evaluation criteria exceeded
BT	Contamination present in the Trip Blank; evaluation criteria exceeded
CC	Possible contamination due to carryover from a previous sample
CR	Calculated result in which one or more of the components has been qualified
CRQ	Calculated result flagged due to reporting protocol
CT	Cooler temperature criteria not met
CY	Chemical Yield recovery criteria not met
EC	Result exceeds the calibration range; potential bias indeterminate
FD	Field duplicate imprecision; potential bias indeterminate
GH	Headspace present in the gamma spectrometer sample analysis vessel; potential bias indeterminate
GS	Low sample density in the gamma spectrometer sample analysis vessel; potential bias indeterminate
HT	Holding time exceeded
HV	Headspace present in volatile vials
IN	Interference (e.g ., laboratory, chemical, chromatographic/instrumental, and/or matrix) present in the analysis
LC	Laboratory control sample/laboratory control sample duplicate recovery criteria not met
LCP	Laboratory control sample/laboratory control sample duplicate precision criteria not met; potential bias indeterminate
LD	Laboratory duplicate precision criteria not met; potential bias indeterminate

MDP	Laboratory deviated from the method for a method-defined parameter, based on regulatory requirements
MS	Matrix spike/matrix spike duplicate recovery criteria not met
MSP	Matrix spike/matrix spike duplicate precision criteria not met; potential bias indeterminate
PD	Post-digestion spike recovery criteria not met
OT	Other deficiencies, see report for additional details
PS	Low percent solids; potential bias indeterminate
RA	Replicate/multiple analyses criteria not met; potential bias indeterminate
RL	The analysis meets all qualitative identification criteria, but the measured concentration is between the method detection limit and the quantitation or reporting limit; potential bias indeterminate
RS	Reporting limit standard(s) outside of acceptance limits
SC	Relative percent difference between two columns exceeds criteria; potential bias indeterminate
SP	Sample preservation criteria not met
SR	Surrogate recovery criteria not met
ST	Sample container type incorrect
SU	Sample result is less than the two-sigma uncertainty
SUN	Absolute value of the negative sample result is greater than the two-sigma uncertainty
SW	Sample switch suspected
TD	Result for dissolved constituent significantly exceeded result for total constituent; potential bias indeterminate
TIC	Tentatively identified compound, quantified using an assumed calibration factor; potential bias indeterminate

Lab Sample ID	L1863382-01
Sys Sample Code	GACO0527T173-1S001
Sample Name	GACO0527T173-1S001
Sample Date	5/27/2025 2:30:00 PM
Sample Type	N
Matrix	SO
Parent Sample	
% Moisture	20.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Test Type	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis	
CALC	Total Nitrogen	TN	N	INITIAL	ug/Kg	721000	J	CR	757	25000	25000	Y	Y	1	DRY	
E350.1	Ammonia Nitrogen	7664-41-7	N	INITIAL	ug/Kg		U		8990	12500	12500	N	Y	1	DRY	
SM2540G	Total Solids	10-31-1	N	INITIAL	%	80.0						Y	Y	1	NA	
SM4500-NORG-D	Kjeldahl Nitrogen, TKN	7727-37-9TKN	N	INITIAL	ug/Kg	718000			19000	25000	25000	Y	Y	1	DRY	
SW6010	Aluminum	7429-90-5	T	INITIAL	ug/Kg	10300000			7600	25000	25000	Y	Y	1	DRY	
	Antimony	7440-36-0	T	INITIAL	ug/Kg		U		864	2500	2500	N	Y	1	DRY	
	Beryllium	7440-41-7	T	INITIAL	ug/Kg	578			59.6	250	250	Y	Y	1	DRY	
	Calcium	7440-70-2	T	INITIAL	ug/Kg	12400000			23700	125000	125000	Y	Y	1	DRY	
	Chromium	7440-47-3	T	INITIAL	ug/Kg	10600			267	1250	1250	Y	Y	1	DRY	
	Cobalt	7440-48-4	T	INITIAL	ug/Kg	4140			221	1250	1250	Y	Y	1	DRY	
	Iron	7439-89-6	T	INITIAL	ug/Kg	11000000			2800	12500	12500	Y	Y	1	DRY	
	Magnesium	7439-95-4	T	INITIAL	ug/Kg	3640000			24900	125000	125000	Y	Y	1	DRY	
	Manganese	7439-96-5	T	INITIAL	ug/Kg	189000			216	1250	1250	Y	Y	1	DRY	
	Potassium	7440-09-7	T	INITIAL	ug/Kg	2720000			26100	125000	125000	Y	Y	1	DRY	
	Sodium	7440-23-5	T	INITIAL	ug/Kg			U		51500	125000	125000	N	Y	1	DRY
	Thallium	7440-28-0	T	INITIAL	ug/Kg			U		647	2500	2500	N	Y	1	DRY
Vanadium	7440-62-2	T	INITIAL	ug/Kg	19300				479	2500	2500	Y	Y	1	DRY	
SW8260	1,1,1,2-Tetrachloroethane	630-20-6	N	INITIAL	ug/Kg		U		1.42	3.75	3.75	N	Y	1	DRY	
	1,1,1-Trichloroethane	71-55-6	N	INITIAL	ug/Kg		U		1.38	3.75	3.75	N	Y	1	DRY	
	1,1,2,2-Tetrachloroethane	79-34-5	N	INITIAL	ug/Kg		U		1.04	3.75	3.75	N	Y	1	DRY	
	1,1,2-Trichloroethane	79-00-5	N	INITIAL	ug/Kg		U		0.896	3.75	3.75	N	Y	1	DRY	
	1,1,2-Trichlorotrifluoroethane	76-13-1	N	INITIAL	ug/Kg		U		1.13	3.75	3.75	N	Y	1	DRY	
	1,1-Dichloroethane	75-34-3	N	INITIAL	ug/Kg		U		0.737	3.75	3.75	N	Y	1	DRY	
	1,1-Dichloroethene	75-35-4	N	INITIAL	ug/Kg		U		0.909	3.75	3.75	N	Y	1	DRY	
	1,1-Dichloropropene	563-58-6	N	INITIAL	ug/Kg		U		1.21	3.75	3.75	N	Y	1	DRY	
	1,2,3-Trichlorobenzene	87-61-6	N	INITIAL	ug/Kg		U		11.0	18.8	18.8	N	Y	1	DRY	
	1,2,3-Trichloropropane	96-18-4	N	INITIAL	ug/Kg		U		2.43	18.8	18.8	N	Y	1	DRY	
	1,2,3-Trimethylbenzene	526-73-8	N	INITIAL	ug/Kg		U		2.37	7.50	7.50	N	Y	1	DRY	
	1,2,4-Trichlorobenzene	120-82-1	N	INITIAL	ug/Kg		U		6.60	18.8	18.8	N	Y	1	DRY	
	1,2-Dibromo-3-Chloropropane	96-12-8	N	INITIAL	ug/Kg		U		5.85	37.5	37.5	N	Y	1	DRY	
	1,2-Dibromoethane	106-93-4	N	INITIAL	ug/Kg		U		0.972	3.75	3.75	N	Y	1	DRY	
	1,2-Dichlorobenzene	95-50-1	N	INITIAL	ug/Kg		U		0.638	7.50	7.50	N	Y	1	DRY	

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Matrix	SO
Parent Sample	
% Moisture	20.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Test Type	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW8260	1,2-Dichloroethane	107-06-2	N	INITIAL	ug/Kg		U		0.974	3.75	3.75	N	Y	1	DRY
	1,2-Dichloropropane	78-87-5	N	INITIAL	ug/Kg		U		2.13	7.50	7.50	N	Y	1	DRY
	1,3-Dichlorobenzene	541-73-1	N	INITIAL	ug/Kg		U		0.900	7.50	7.50	N	Y	1	DRY
	1,3-Dichloropropane	142-28-9	N	INITIAL	ug/Kg		U		0.752	7.50	7.50	N	Y	1	DRY
	1,4-Dichlorobenzene	106-46-7	N	INITIAL	ug/Kg		U		1.05	7.50	7.50	N	Y	1	DRY
	2,2-Dichloropropane	594-20-7	N	INITIAL	ug/Kg		U		2.07	3.75	3.75	N	Y	1	DRY
	2-Butanone (MEK)	78-93-3	N	INITIAL	ug/Kg		U		95.3	150	150	N	Y	1	DRY
	2-Chlorotoluene	95-49-8	N	INITIAL	ug/Kg		U		1.30	3.75	3.75	N	Y	1	DRY
	4-Chlorotoluene	106-43-4	N	INITIAL	ug/Kg		U		0.675	7.50	7.50	N	Y	1	DRY
	4-Methyl-2-pentanone (MIBK)	108-10-1	N	INITIAL	ug/Kg		U		3.42	37.5	37.5	N	Y	1	DRY
	Acetone	67-64-1	N	INITIAL	ug/Kg		U		54.8	75.0	75.0	N	Y	1	DRY
	Acrylonitrile	107-13-1	N	INITIAL	ug/Kg		U		5.42	18.8	18.8	N	Y	1	DRY
	Bromobenzene	108-86-1	N	INITIAL	ug/Kg		U		1.35	18.8	18.8	N	Y	1	DRY
	Bromodichloromethane	75-27-4	N	INITIAL	ug/Kg		U		1.09	3.75	3.75	N	Y	1	DRY
	Bromoform	75-25-2	N	INITIAL	ug/Kg		U		1.76	37.5	37.5	N	Y	1	DRY
	Bromomethane	74-83-9	N	INITIAL	ug/Kg		U		2.96	18.8	18.8	N	Y	1	DRY
	Carbon tetrachloride	56-23-5	N	INITIAL	ug/Kg		U		1.35	7.50	7.50	N	Y	1	DRY
	Chlorobenzene	108-90-7	N	INITIAL	ug/Kg		U		0.315	3.75	3.75	N	Y	1	DRY
	Chlorodibromomethane	124-48-1	N	INITIAL	ug/Kg		U		0.918	3.75	3.75	N	Y	1	DRY
	Chloroethane	75-00-3	N	INITIAL	ug/Kg		U		2.55	7.50	7.50	N	Y	1	DRY
	Chloroform	67-66-3	N	INITIAL	ug/Kg		U		1.55	3.75	3.75	N	Y	1	DRY
	Chloromethane	74-87-3	N	INITIAL	ug/Kg		U		6.53	18.8	18.8	N	Y	1	DRY
	cis-1,2-Dichloroethene	156-59-2	N	INITIAL	ug/Kg		U		1.10	3.75	3.75	N	Y	1	DRY
	cis-1,3-Dichloropropene	10061-01-5	N	INITIAL	ug/Kg		U		1.14	3.75	3.75	N	Y	1	DRY
	Dibromomethane	74-95-3	N	INITIAL	ug/Kg		U		1.13	7.50	7.50	N	Y	1	DRY
	Dichlorodifluoromethane	75-71-8	N	INITIAL	ug/Kg		U		2.42	7.50	7.50	N	Y	1	DRY
	Di-isopropyl ether	108-20-3	N	INITIAL	ug/Kg		U		0.615	1.50	1.50	N	Y	1	DRY
	Hexachloro-1,3-butadiene	87-68-3	N	INITIAL	ug/Kg		U		9.00	37.5	37.5	N	Y	1	DRY
	Isopropylbenzene	98-82-8	N	INITIAL	ug/Kg		U		0.638	3.75	3.75	N	Y	1	DRY
	Methyl tert-butyl ether	1634-04-4	N	INITIAL	ug/Kg		U		0.525	1.50	1.50	N	Y	1	DRY
	Methylene Chloride	75-09-2	N	INITIAL	ug/Kg		U		9.96	37.5	37.5	N	Y	1	DRY
	n-Butylbenzene	104-51-8	N	INITIAL	ug/Kg		U		7.88	18.8	18.8	N	Y	1	DRY
	n-Propylbenzene	103-65-1	N	INITIAL	ug/Kg		U		1.43	7.50	7.50	N	Y	1	DRY

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Matrix	SO
Parent Sample	
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Analytic Method	Chemical Name	CAS Rn	Fraction	Test Type	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW8260	p-Isopropyltoluene	99-87-6	N	INITIAL	ug/Kg		U		3.83	7.50	7.50	N	Y	1	DRY
	sec-Butylbenzene	135-98-8	N	INITIAL	ug/Kg		U		4.32	18.8	18.8	N	Y	1	DRY
	Styrene	100-42-5	N	INITIAL	ug/Kg		U		0.344	18.8	18.8	N	Y	1	DRY
	tert-Butylbenzene	98-06-6	N	INITIAL	ug/Kg		U		2.93	7.50	7.50	N	Y	1	DRY
	Tetrachloroethene	127-18-4	N	INITIAL	ug/Kg		U		1.34	3.75	3.75	N	Y	1	DRY
	trans-1,2-Dichloroethene	156-60-5	N	INITIAL	ug/Kg		U		1.56	7.50	7.50	N	Y	1	DRY
	trans-1,3-Dichloropropene	10061-02-6	N	INITIAL	ug/Kg		U		1.71	7.50	7.50	N	Y	1	DRY
	Trichloroethene	79-01-6	N	INITIAL	ug/Kg		U		0.876	1.50	1.50	N	Y	1	DRY
	Trichlorofluoromethane	75-69-4	N	INITIAL	ug/Kg		U		1.24	3.75	3.75	N	Y	1	DRY
Vinyl chloride	75-01-4	N	INITIAL	ug/Kg		U		1.74	3.75	3.75	N	Y	1	DRY	
SW8270	1,2,4-Trichlorobenzene	120-82-1	N	INITIAL	ug/Kg		U		26.0	832	832	N	Y	2	DRY
	1,2-Dichlorobenzene	95-50-1	N	INITIAL	ug/Kg		U		24.6	832	832	N	Y	2	DRY
	1,3-Dichlorobenzene	541-73-1	N	INITIAL	ug/Kg		U		25.2	832	832	N	Y	2	DRY
	1,4-Dichlorobenzene	106-46-7	N	INITIAL	ug/Kg		U		24.7	832	832	N	Y	2	DRY
	2,2-Oxybis(1-Chloropropane)	108-60-1	N	INITIAL	ug/Kg		U		36.0	832	832	N	Y	2	DRY
	2,4,6-Trichlorophenol	88-06-2	N	INITIAL	ug/Kg		U		26.7	832	832	N	Y	2	DRY
	2,4-Dichlorophenol	120-83-2	N	INITIAL	ug/Kg		U		24.2	832	832	N	Y	2	DRY
	2,4-Dimethylphenol	105-67-9	N	INITIAL	ug/Kg		U		21.7	832	832	N	Y	2	DRY
	2,4-Dinitrophenol	51-28-5	N	INITIAL	ug/Kg		U		195	832	832	N	Y	2	DRY
	2,4-Dinitrotoluene	121-14-2	N	INITIAL	ug/Kg		U		23.9	832	832	N	Y	2	DRY
	2,6-Dinitrotoluene	606-20-2	N	INITIAL	ug/Kg		U		27.2	832	832	N	Y	2	DRY
	2-Chloronaphthalene	91-58-7	N	INITIAL	ug/Kg		U		14.6	83.2	83.2	N	Y	2	DRY
	2-Chlorophenol	95-57-8	N	INITIAL	ug/Kg		U		27.5	832	832	N	Y	2	DRY
	2-Nitrophenol	88-75-5	N	INITIAL	ug/Kg		U		29.7	832	832	N	Y	2	DRY
	3,3-Dichlorobenzidine	91-94-1	N	INITIAL	ug/Kg		U		30.7	832	832	N	Y	2	DRY
	4,6-Dinitro-2-methylphenol	534-52-1	N	INITIAL	ug/Kg		U		189	832	832	N	Y	2	DRY
	4-Bromophenyl-phenylether	101-55-3	N	INITIAL	ug/Kg		U		29.2	832	832	N	Y	2	DRY
	4-Chloro-3-methylphenol	59-50-7	N	INITIAL	ug/Kg		U		27.0	832	832	N	Y	2	DRY
	4-Chlorophenyl-phenylether	7005-72-3	N	INITIAL	ug/Kg		U		29.0	832	832	N	Y	2	DRY
	4-Nitrophenol	100-02-7	N	INITIAL	ug/Kg		U		26.0	832	832	N	Y	2	DRY
Acenaphthylene	208-96-8	N	INITIAL	ug/Kg		U		11.7	83.2	83.2	N	Y	2	DRY	
Benzidine	92-87-5	N	INITIAL	ug/Kg		U		156	4170	4170	N	Y	2	DRY	
Benzo(g,h,i)perylene	191-24-2	N	INITIAL	ug/Kg		U		15.2	83.2	83.2	N	Y	2	DRY	

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Analytic Method	Chemical Name	CAS Rn	Fraction	Test Type	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW8270	Benzylbutyl phthalate	85-68-7	N	INITIAL	ug/Kg		U		26.0	832	832	N	Y	2	DRY
	Bis(2-chlorethoxy)methane	111-91-1	N	INITIAL	ug/Kg		U		25.0	832	832	N	Y	2	DRY
	Bis(2-chloroethyl)ether	111-44-4	N	INITIAL	ug/Kg		U		27.5	832	832	N	Y	2	DRY
	Bis(2-ethylhexyl)phthalate	117-81-7	N	INITIAL	ug/Kg		U		105	832	832	N	Y	2	DRY
	Diethyl phthalate	84-66-2	N	INITIAL	ug/Kg		U		27.5	832	832	N	Y	2	DRY
	Dimethyl phthalate	131-11-3	N	INITIAL	ug/Kg		U		176	832	832	N	Y	2	DRY
	Di-n-butyl phthalate	84-74-2	N	INITIAL	ug/Kg		U		28.5	832	832	N	Y	2	DRY
	Di-n-octyl phthalate	117-84-0	N	INITIAL	ug/Kg		U		56.2	832	832	N	Y	2	DRY
	Hexachloro-1,3-butadiene	87-68-3	N	INITIAL	ug/Kg		U		28.0	832	832	N	Y	2	DRY
	Hexachlorobenzene	118-74-1	N	INITIAL	ug/Kg		U		29.5	832	832	N	Y	2	DRY
	Hexachlorocyclopentadiene	77-47-4	N	INITIAL	ug/Kg		U		43.7	832	832	N	Y	2	DRY
	Hexachloroethane	67-72-1	N	INITIAL	ug/Kg		U		32.7	832	832	N	Y	2	DRY
	Isophorone	78-59-1	N	INITIAL	ug/Kg		U		25.5	832	832	N	Y	2	DRY
	Nitrobenzene	98-95-3	N	INITIAL	ug/Kg		U		29.0	832	832	N	Y	2	DRY
	n-Nitrosodimethylamine	62-75-9	N	INITIAL	ug/Kg		U		123	832	832	N	Y	2	DRY
	n-Nitrosodi-n-propylamine	621-64-7	N	INITIAL	ug/Kg		U		27.7	832	832	N	Y	2	DRY
	n-Nitrosodiphenylamine	86-30-6	N	INITIAL	ug/Kg		U		63.0	832	832	N	Y	2	DRY
	Pentachlorophenol	87-86-5	N	INITIAL	ug/Kg		U		22.4	832	832	N	Y	2	DRY
	Phenanthrene	85-01-8	N	INITIAL	ug/Kg		U		16.5	83.2	83.2	N	Y	2	DRY
Phenol	108-95-2	N	INITIAL	ug/Kg		U		33.5	832	832	N	Y	2	DRY	
SW9056	Nitrate-Nitrite	NO2-NO3	N	INITIAL	ug/Kg		U		757	25000	25000	N	Y	1	DRY
WBLACK	TOC By Walkley Black	10-35-5	N	INITIAL	ug/Kg	5710000			128000	500000	500000	Y	Y	5	NA