CAS-ROCHESTER WETCHEM QC LIMITS (effective 5/14/2009)

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other					(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
310.1	2320B		Alkalinity, Total, Carbonate, Bicarb	Water	mg/L	2.00	20	1/10	81-112	1/10	90-108	1/20	90-110
			Alkalinity, Total, Carbonate, Bicarb	Soil	mg/L	200	20	1/10	46-149	1/10	46-149	1/20	90-110
350.1			Ammonia	Water	mg/L	0.050	20	1/10	68-119	1/10	90-110	1/20	90-110
350.1			Ammonia - Low Level	Water	mg/L	0.010	20	1/10	68-119	1/10	90-110	1/20	90-110
350.1 M			Ammonia	Soil	mg/Kg	5.00	30	1/10	74-131	1/10	90-110	1/20	90-110
		D482	Ash, Percent	Non-Aq	%	0.10	10	1/10	NA	NA	59-109	1/20	NA
405.1	5210B		BOD/CBOD	Water	mg/L	2.00	20	1/20	64-129	1/20	85-115	1/20	NA
300.0/9056			Bromide by IC	Water	mg/L	0.10	20	1/10	54-121	1/10	90-110	1/20	90-110
300.0M/9056			Bromide by IC	Soil	mg/Kg	10.0	30	1/10	54-121	1/10	90-110	1/20	90-110
26A			Bromide by IC	Water	mg/L	0.10	20	1/10	50-150	1/10	71-119	1/20	90-110
Autotitrator			Bromide	Water	g/L	0.25	20	1/10	80-120	1/20	80-120	1/20	NA
5050/9056			Bromide for total halogens	NonAq/Soil	mg/kg	30.0	20	1/20	NA	NA	50-150	1/20	90-110
		D4809	BTU	Non-Aq	BTU	500	20	1/20	NA	1/20	90-110	1/20	NA
9081			Cation Exchange Capacity	Soil	meqNa/100g	1.0	30	1/20	NA	NA	NA	NA	NA
410.4			Chemical Oxygen Demand - LL	Water	mg/L	5.00	20	1/10	42-139	1/10	71-117	1/20	85-115
410.4 M			Chemical Oxygen Demand	Soil	mg/Kg	100	30	1/10	10-170	1/10	10-167	1/20	85-115
325.2	4500-Cl^- E		Chloride - Colorimetric	Water	mg/L	1.00	20	1/10	70-126	1/10	86-110	1/20	90-110
300.0/9056			Chloride by IC	Water	mg/L	0.200	20	1/10	56-122	1/10	90-110	1/20	90-110
300.0M/9056			Chloride by IC	Soil	mg/Kg	30.0	30	1/10	56-122	1/10	90-110	1/20	90-110
26A			Chloride by IC	Water	mg/L	0.20	20	1/10	50-150	1/10	53-124	1/20	90-110
5050/9056			Chlorine, Percent	Non-Aq	%	0.01	20	1/10	33-141	NA	61-126	1/20	NA
5050/9056			Chloride - for total halogens	NonAq/Soil	mg/kg	60.0	20	1/20	NA	NA	50-150	1/20	90-110
	409A		Chlorine Demand	Water	mg/L	5.00	20	1/20	NA	NA	NA	NA	NA
330.4	4500-Cl F		Chlorine Residual (Free)	Water	mg/L	0.100	20	1/10	70-130	1/20	90-110	1/20	NA
330.4	4500-Cl F		Chlorine Residual (Total)	Water	mg/L	0.100	20	1/10	70-130	1/20	90-110	1/20	NA
110.2	2120B		Color (True)	Water	CU	5.0	+/-5units	1/10	NA	NA	NA	NA	NA
120.1			Conductivity	Water	umhos/cm	NA	20	1/20	NA	NA	90-110	1/10	NA
7196A	3500-Cr B		CR+6 Hexavalent Chromium	Water	mg/L	0.010	20	1/10	85-115	1/10	92-110	1/20	90-110
218.6			CR+6 Hexavalent Chromium	Water	mg/L	0.010	20	1/20	90-110	1/10	90-110	1/20	95-105
7199			CR+6 Hexavalent Chromium	Water	mg/L	0.010	20	1/20	39-144	1/20	92-110	1/20	90-110
3060/7196A			CR+6 Hexavalent Chromium	Soil	mg/Kg	4.00	20	1/20	75-125	1/10	80-120	1/20	90-110
3060/7199			CR+6 Hexavalent Chromium	Soil	mg/Kg	0.40	20	1/20	75-125	1/20	80-120	1/20	90-110

CAS-ROCHESTER WETCHEM QC LIMITS (effective 5/14/2009)

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other					(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
		ILM05.3	Cyanide, Total	Water	mg/L	0.010	20	1/20	75-125	1/20	85-115	1/20	85-115
		ILM05.3	Cyanide, Total	Soil	mg/Kg	1.00	20	1/20	46-159	1/20	85-115	1/20	85-115
335.4/9012			Cyanide, Total	Water	mg/L	0.010	20	1/10	44-144	1/10	90-110	HL & LL 1/20	90-110
9012A			Cyanide, Total	Water	mg/L	0.010	20	1/10	44-148	1/10	85-115	HL & LL 1/20	85-115
9012A			Cyanide, Total	Soil	mg/Kg	1.00	30	1/10	46-159	1/10	85-115	HL & LL 1/20	85-115
S. 7.3 SW846			Cyanide, Reactivity	Water	mg/Kg	20.0	20	1/20	1-100	1/20	1-100	1/20	85-115
S. 7.3 SW846			Cyanide, Reactivity	Soil	mg/Kg	20.0	30	1/20	1-100	1/20	1-100	1/20	85-115
		D1298	Density / Specific Gravity	non-aq	kg/m3	NA	10	1/10	NA	NA	0.002units	1/20/hydrometer	NA
		D4052	Density	Non-Aq	g/cm3	NA	2	1/10	NA	NA	0.002units	1/10	NA
3500-FE D			Ferrous Iron	Water	mg/L	0.10	20	1/10	77-129	1/10	77-129	1/20	90-110
3500-FE D			Ferrous Iron	Soil	mg/kg	10.0	30	1/10	30-161	1/10	77-129	1/20	90-110
340.2			Fluoride by ISE	Water	mg/L	0.100	20	1/20	82-116	1/20	82-116	1/20	90-110
300.0/9056			Fluoride by IC	Water	mg/L	0.100	20	1/10	58-136	1/10	90-110	1/20	90-110
300.0M/9056			Fluoride by IC	Soil	mg/Kg	20.0	30	1/10	58-136	1/10	90-110	1/20	90-110
26A			Fluoride by IC	Water	mg/L	0.10	20	1/10	50-150	1/10	75-108	1/20	90-110
5050/9056			Fluoride for total halogens	NonAq/Soil	mg/kg	30.0	20	1/20	NA	NA	50-150	1/20	90-110
130.2	2340C		Hardness, Total	Water	mg/L	2.00	20	1/10	78-120	1/10	92-110	1/10	NA
1010			IGN- Pensky Martens Closed Cup	Water	degree C	NA	10	1/20	NA	NA	24.3-29.7 C	1/20	NA
D92/ 1010.CC			IGN - Cleveland Open Cup	Soil	degree C	NA	30	1/20	NA	NA	NA	NA	NA
300.0/9056			Iodide	Water	mg/L	0.20	20	1/10	70-130	1/10	90-110	1/20	90-110
5050/9056			Iodide - for total Halogens	NonAq/Soil	mg/kg	30	20	1/20	NA	NA	30-150	1/20	90-110
300.0/9056			Nitrate as N by IC	Water	mg/L	0.050	20	1/10	68-113	1/10	90-110	1/20	90-110
300.0M/9056			Nitrate as N by IC	Soil	mg/Kg	5.00	30	1/10	68-113	1/10	90-110	1/20	90-110
353.2			Nitrate/Nitrite as N	Water	mg/L	0.050	20	1/10	51-137	1/10	90-110	1/20	90-110
353.2			Nitrate/Nitrite as N	Soil	mg/kg	5.000	30	1/10	51-137	1/10	90-110	1/20	90-110
353.2			Nitrate/Nitrite as N - LL	Water	mg/L	0.002	20	1/10	51-137	1/10	90-110	1/20	90-110
300.0/9056			Nitrite as N by IC	Water	mg/L	0.050	20	1/10	70-130	1/10	90-110	1/20	90-110
353.2			Nitrite as N	Water	mg/L	0.010	20	1/10	70-130	1/10	90-110	1/20	90-110
351.2			Nitrogen, Total Kjeldahl	Water	mg/L	0.200	20	1/10	63-127	1/10	75-113	1/20	90-110(I)85-115(C)
351.2-M			Nitrogen, Total Kjeldahl	Soil	mg/Kg	20.0	30	1/10	25-172	1/10	25-172	1/20	90-110(I)85-115(C)
351.2 LL			Nitrogen, Total Kjeldahl-LL	Water	mg/L	0.100	20	1/10	63-127	1/10	75-120	1/20	90-110(I)85-115(C)
1664A			Oil and Grease by 1664A	Water	mg/L	5.00	20	1/20	78-114	1/20	78-114	1/20	NA
365.1			Othophosphate -LL	Water	mg/L	0.0020	20	1/10	53-127	1/10	90-110	1/20	90-110
365.1			Orthophosphate	Water	mg/L	0.010	20	1/10	53-127	1/10	90-110	1/20	90-110
9095			Paint Filter test	Sludge	%	NA	30	1/20	NA	NA	NA	NA	NA
E203			Percent Water	Waste	%	0.1	20	1/20	NA	NA	74-139	1/10	NA

CAS-ROCHESTER WETCHEM QC LIMITS (effective 5/14/2009)

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other					(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
150.1	4500-H^+ B		pH	Water	SU	NA	±0.10	1/10	NA	NA	NA	NA	±0.05
9040/9045.			pH / Corrosivity	Water	SU	NA	±0.10	1/20	NA	NA	NA	NA	±0.05
9040/9045.			pH / Corrosivity	Soil	SU	NA	±0.10	1/20	NA	NA	NA	NA	±0.05
420.4			Phenolics, Total LL	Water	mg/L	0.002	20	1/10	82-110	1/10	83-115	1/20	85-115
420.4			Phenolics, Total	Water	mg/L	0.005	20	1/10	82-110	1/10	83-115	1/20	85-115
420.4			Phenolics, Manual Distillation	Water	mg/L	0.005	20	1/10	54-136	1/10	54-136	1/20	85-115
9066			Phenolics, Total	Water	mg/L	0.005	20	1/10	65-126	1/10	83-115	1/20	85-115
9066			Phenolics, Total	Soil	mg/Kg	0.100	30	1/10	65-126	1/10	80-120	1/20	85-115
365.1 M			Phosphorus, Total - LL	Water	mg/L	0.003	20	1/10	48-144	1/10	84-114	1/20	90-110
365.1			Phosphorus, Total	Water	mg/L	0.050	20	1/10	48-144	1/10	90-110	1/20	90-110
365.1-M			Phosphorus, Total	Soil	mg/Kg	5.00	30	1/20	16-184	1/10	33-163	1/20	90-110
GEN-SILICON			Silicon, Percent	Soil/nonAq	%	0.0467	10	1/10	NA	NA	80-120	1/20	NA
370.1		I-2700-85	Silica, Dissolved	Water	mg/L	0.010	20	1/10	80-117	1/10	83-116	1/20	90-110
160.3M			Solids, Dry Weight Percent (DWPS)	Soil	mg/Kg	1.0	20	1/10	NA	NA	NA	NA	NA
160.5			Solids, Settleable	Water	mg/L	0.100	20	1/20	NA	NA	NA	NA	NA
160.3	2540B		Solids, Total (TS)	Water	mg/L	10.0	20	1/10	NA	NA	80-120	1/20	NA
160.1	2540C		Solids, Total Dissolved (TDS)	Water	mg/L	10.0	20	1/10	NA	NA	80-120	1/20	NA
160.2	2540D		Solids, Total Suspended (TSS)	Water	mg/L	1.00	20	1/10	NA	NA	80-120	1/20	NA
160.4			Solids, Total Volatile (TVS)	Water	mg/L	10.0	20	1/10	NA	NA	80-120	NA	NA
160.4D			Solids, Volatile Dissolved (VDS)	Water	mg/L	10.0	20	1/10	NA	NA	NA	NA	NA
160.4S			Solids, Volatile Suspended (VSS)	Water	mg/L	1.00	20	1/10	NA	NA	NA	NA	NA
	2540G		Solids, Percent Volatile	Soil	%	NA	20	1/10	NA	NA	NA	NA	NA
375.4	426C		Sulfate, Turbidimetric	Water	mg/L	5.00	20	1/10	72-129	1/10	74-125	1/20	NA
300.0/9056			Sulfate by IC	Water	mg/L	0.200	20	1/10	55-125	1/10	90-110	1/20	90-110
300.0M/0956			Sulfate by IC	Soil	mg/Kg	30.0	30	1/10	25-151	1/10	90-110	1/20	90-110
AVS			Sulfide, Acid Volatile (AVS)	Soil	umoles/g	1.00	30	1/20	56-196	1/20	56-196	1/20	NA
S. 7.3 SW846			Sulfide Reactivity	Water	mg/Kg	100	20	1/20	0-235	NA	84-224	1/20	NA
S. 7.3 SW846			Sulfide Reactivity	Soil	mg/Kg	100	30	1/20	14-135	NA	30-127	1/20	NA
9030B			Sulfide, Acid Soluble	Water	mg/L	1.00	20	1/20	10-110	1/20	51-105	1/20	NA
9030B			Sulfide, Acid Soluble	Soil	mg/Kg	20.0	30	1/20	10-153	1/20	10-137	1/20	NA
376.1	4500-S F		Sulfide, Total	Water	mg/L	1.00	20	1/10	56-138	1/20	56-138	1/20	NA
300M			Sulfur- Alkaline Digestion	Soil	mg/kg	6.68	30	1/20	43-137	1/20	43-137	1/20	NA
425.1	5540C		Surfactants	Water	mg/L	0.02	20	1/20	58-139	NA	64-142	1/20 HL	NA

CAS-ROCHESTER WETCHEM QC LIMITS (effective 5/14/2009)

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other					(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
415.1			TIC	Water	mg/L	1.00	20	1/10	79-125	1/10	79-125	1/20	85-115
415.1	5310C		TOC - LL	Water	mg/L	0.05	20	1/10	62-135	1/10	86-117	1/20	85-115
9060			TOC - LL	Water	mg/L	0.10	20	1/10	62-135	1/10	86-117	1/20	85-115
415.1M/9060	5310C		TOC - RL	Water	mg/L	1.00	20	1/10	62-135	1/10	86-117	1/20	85-115
TOCLK			TOC - Lloyd Kahn	Soil	mg/Kg	300	30	1/20	17-173	1/20	75-125	1/20	85-115
1664A			TPH by 1664A	Water	mg/L	5.00	20	1/20	64-132	1/20	64-132	1/20	NA
180.1			Turbidity	Water	NTU	0.10	10	1/20	NA	NA	90-110	3@run start	90-110