U.S. ENVIRONMENTAL PROTECTION AGENCY—REGION 5
CHICAGO REGIONAL LABORATORY
ANALYTICAL REQUEST FORM

This analytical request form should be completed before sending samples to CRL for analysis. The requester should complete all relevant fields and email the form and electronic copy of the quality assurance project plan (QAPP) and/or sampling plan to the CRL Sample Coordinator Amanda Wroble (wroble.amanda@epa.gov).

GENERAL

Requester Shannon Downey	Request Date 09/25/13
Title Environmental Engineer	Division/Office ARD/AECAB
Address 77 W Jackson Blvd	
Phone 312-353-2151	E-mail downey.shannon@epa.gov
☒ One-time or ☐ Continuous request (check one) A continuous request is defined as a standing request for the same analytical service (analyses and sample matrices) that may span several sites/projects. Please note that submission of this analytical request form is only required once for a continuous request. However, QAPPs and/or sampling plans should still be submitted for every site/project.	
Site Name and Location Veolia Environmental Services, Sauget, Illinois	
Please attach an electronic copy of a detailed site and project description (QAPP and/or sampling plan)	
Expected Arrival Date at CRL October 17, 2013	
Turnaround Time (standard TAT is 45 days) 45 days	

CRL ANALYTICAL SERVICES

Disclaimer:

The effective versions of all Standard Operating Procedures (SOPs) are available in pdf format on the R5 Intranet. By submitting an analytical request form, the requestor is implying consent for the use of the appropriate effective SOPs. It is the responsibility of the requester to check the intranet for SOP version updates. Periodically, changes are made in the procedures that result in "pen & ink" changes to the SOP until the changes can be incorporated into the SOP. When "pen & ink" changes are made, the CRL Sample Coordinator will contact the requester via email or phone to obtain consent for the changes.

Form Instructions:

1. In the table below, select the appropriate checkbox to request an analysis and enter the proposed number of samples of each matrix type. Analysis not currently available for matrix where box is shaded.
2. For other/waste, briefly describe matrix in the space provided. Additional space for detailed matrix description is available at the end of the table, if needed.
3. For multi-analyte tests, list specific classes/subsets (i.e., PAHs, RCRA metals, etc.) in the space given at the end of this table, if requested.

Analytical & Inorganic

		Sample Matrix and Number		
Analysis	**Check to Request**	**soil/sediment**	**water/liquid**	**other/waste***
alkalinity	☐		_____	_____
biochemical oxygen demand-5 day (BOD)	☐		_____	_____
carbonaceous BOD-5 day (CBOD)	☐		_____	_____
residue, non-filterable (TSS)	☐		_____	_____
residue, filterable (TDS)	☐		_____	_____
total solids (TS)	☐	_____	_____	_____
total volatile solids (TVS)	☐	_____	_____	_____
cyanide, total	☐	_____	_____	_____
cyanide, amenable to chlorination	☐		_____	_____
ammonia-N	☐	_____	_____	_____
nitrate-nitrite-N	☐		_____	_____
total phosphorus (TP)	☐	_____	_____	_____
dissolved phosphorus (DP)	☐		_____	_____
total Kjeldahl nitrogen (TKN)	☐	_____	_____	_____
total organic carbon (TOC)	☐	_____	_____	_____
dissolved organic carbon (DOC)	☐		_____	_____
chemical oxygen demand (COD)	☐	_____	_____	_____
anions**	☐	_____	_____	_____
distillable fluoride	☐		_____	_____
anions (perchlorate) (inactive)	☐	_____	_____	_____
turbidity	☐		_____	_____
PM-10 (inactive)	☐			_____ air filter
PM-2.5 (inactive)	☐			_____ air filter
grain size	☐	_____		_____
specific gravity	☐	_____		_____
pH	☐	_____	_____	_____
corrosivity by pH	☐		_____	_____
ignitability by flashpoint	☐		_____	_____

Analytical & Inorganic (continued)

		Sample Matrix and Number		
Analysis	**Check to Request**	**soil/sedimen**	**water/liquid**	**other/waste***
solvent ID	☐		_____	_____
water content	☐		_____	_____
density	☐		_____	_____
paint filter liquid test	☐		_____	_____
chromium (VI)	☐	_____	_____	_____
mercury	☒	4	3	2

Metals

		Sample Matrix and Number		
Analysis	**Check to Request**	**soil/sedimen t**	**water/liquid**	**other/waste***
total metals** (except Hg & Cr (VI))	☒	4	3	2 air filter
dissolved metals** (except Hg & Cr (VI))	☐		_____	_____
hardness	☐		_____	_____

Organic

		Sample Matrix and Number		
Analysis	**Check to Request**	**soil/sedimen t**	**water/liquid**	**other/waste***
semi-volatiles** (SVOCs)	☐	_____	_____	_____
alkylphenols**	☐		_____	_____
bisphenol A (BPA)	☐		_____	_____
nonylphenol 1- and 2-ethoxy carboxylates ** (NPECs)	☐		_____	_____
nonylphenol and octylphenol ethoxylates** (APEOs)	☐		_____	_____
perfluorinated compounds** (PFCs)	☐		_____	_____
volatiles** (VOCs)	☐	_____	_____	_____
1,4-dioxane, THF	☐		_____	_____
air toxics**	☐			_____ air
methane	☐			_____ air

Organic (continued)

		Sample Matrix and Number		
Analysis	**Check to Request**	**soil/sediment**	**water/liquid**	**other/waste***
pesticides**	☐	_____	_____	_____
atrazine	☐	_____	_____	_____
chlordane (inactive)	☐	_____	_____	_____
toxaphene (inactive)	☐	_____	_____	_____
PCB Aroclors**	☐	_____	_____	_____
total petroleum hydrocarbons (TPH) (inactive)	☐	_____		_____
oil & grease	☐		_____	_____

Toxicity Characteristic Leaching Procedure (TCLP)

		Sample Matrix and Number		
Analysis	**Check to Request**	**soil/sediment**	**water/liquid**	**other/waste***
TCLP VOCs	☐	_____	_____	_____
TCLP SVOCs	☐	_____	_____	_____
TCLP metals	☐	_____	_____	_____
TCLP Hg	☐	_____	_____	_____
TCLP pesticides	☐	_____	_____	_____

*Additional Matrix Description

Please describe *other/waste* matrix, if not specified above. _____

2 Flammable liquids

_____

**Specific Analyte Class/Subset Request

Please list or attach specific class/subset for multi-analyte test, if requested. _____

Please be sure that the following metals are included with the total metals

Arsenic, Cadmium, Beryllium, Chromium, Lead, and Mercury.

NON-STANDARD REQUESTS

For analyses/matrices not listed above, inactive analyses, or project specific requirements (i.e., quality control limits, reporting limits, etc.), please contact the CRL Sample Coordinator (312.353.0375, wroble.amanda@epa.gov) to discuss. Requests for inactive analyses will require extra time to bring the analysis on-line.

CRL DATA FORMAT

The CRL standard data deliverable includes a pdf of the work order in addition to a pdf of the final report and electronic data deliverable (EDD), which include sample and quality control results. EDD typically refers to an Excel spreadsheet of the data, but EDDs are available in a variety of formats. A hardcopy report is available upon request.

CRL SAMPLE DISPOSAL POLICY

Due to space limitations in a controlled temperature environment, samples are relocated to secure room temperature storage six months after the analysis completion of the project. Notification of the intent to relocate the samples is given to the customer with sufficient time for the customer to respond with any objections. Samples remain in secure room temperature storage until the case/project is completed and the samples are no longer needed. Notification is given to the customer with sufficient time for customer response prior to sample disposal.

CRL SAMPLE SHIPMENT GUIDELINES

This document provides guidance in the shipment of samples to CRL for chemical analysis.

Before collecting samples, please refer to the attached table for sample sizes, containers, and preservatives.

Before shipping samples, please notify the CRL Sample Coordinator (312.353.0375, wroble.amanda@epa.gov) and/or CRL Sample Custodian (312.353.9083, snyder.robert@epa.gov) to arrange for sample receipt.

When packing samples for shipment:

- ✓ Seal individual samples in plastic bags, preferably Zip-loc bags.
- ✓ The temperature of samples requiring refrigeration during transport MUST be maintained at or below 6°C.
- ✓ Ice in a sealed plastic bag or reusable ice substitute freeze packs are acceptable cooling media.
- ✓ Chain of custody forms MUST be sealed in a large Zip-loc bag and taped to the inside of the cooler lid.
- ✓ Include the address to which the cooler should be returned.

After items are packed for shipment, secure the cooler with tape and attach a custody seal across the seam of the cooler lid.

All samples MUST be shipped overnight to arrive Monday thru Friday or hand-delivered. No deliveries are accepted on weekends or Federal holidays. Exceptions may be made on a case by case basis dependent on sampling priority/emergency status.

Send all samples to:

Robert Snyder
US EPA Region 5
Chicago Regional Laboratory
536 S. Clark Street, 10th Floor
Chicago, IL 60605

CHICAGO REGIONAL LABORATORY (CRL) SAMPLE HOLDING TIME, PRESERVATION, AND CONTAINER REQUIREMENTS

	Water/Liquid Samples[1]				Soil/Sediment Samples[1]				
Analysis	**Preservation**	**Container Type/Size**	**# of Containers**	**Holding Time**	**Preservation**	**Container Type/Size**	**# of Containers**	**Holding Time**	**Comments**
Alkalinity	Cool, <6^{0}C	1 L polyethylene/ glass bottle	1	14 days					
BOD-5 Day				48 hours					
Carbonaceous BOD-5 Day				48 hours					
Residue, Filterable (TDS)				7 days					
Residue, Non-filterable (TSS)				7 days					
Total Solids (TS)/Total Volatile Solids (TVS)				7 days	Cool, <6^{0}C	4 oz wide mouth glass jar	1	7 days	
Cyanide/CN Amenable to Chlorination	Cool, <6^{0}C NaOH to pH>12	250 mL polyethylene/ glass bottle	1	14 days	Cool, <6^{0}C	4 oz wide mouth glass jar	1	14 days	
Ammonia-N	Cool, <6^{0}C H_2SO_4 to pH<2	500 mL polyethylene/ glass bottle	1	28 days	Cool <6^{0}C	4 oz wide mouth glass jar	1	28 days from extraction to analysis	
Nitrate-Nitrite-N									
Total/Dissolved Phosphorus					Cool <6^{0}C	4 oz wide mouth glass jar	1	28 days from extraction to analysis	TDP requires field filtering through 0.45 µm filter
TKN					Cool <6^{0}C	4 oz wide mouth glass jar	1	28 days from extraction to analysis	
TOC/DOC					Cool, <6^{0}C	4 oz wide mouth glass jar	1	28 days	DOC requires field filtering through 0.45 µm filter
COD					Cool <6^{0}C	4 oz wide mouth glass jar	1	28 days from extraction to analysis	

[1] Matrices other than water/liquid or soil/sediment and additional matrix information are shown in *italics*.

Anions (bromide, fluoride, chloride, sulfate, nitrate, nitrite, ortho-phosphate)	Cool, <6^{0}C	250 mL polyethylene/ glass bottle	1	48hrs for nitrate, nitrite, and ortho-phosphate; 28 days for the rest	Cool, <6^{0}C	4 oz glass jar	1	48 hrs from extraction to analysis for nitrate, nitrite, and ortho-phosphate; 28 days for the rest	
Distillable Fluoride	Cool, <6^{0}C	250 mL polyethylene/ glass bottle	1	28 days					
Anions (perchlorate) (inactive)	none	500 mL polyethylene/ glass bottle	1	28 days	none	8 oz glass jar	1	28 days	
Turbidity	Cool, <6^{0}C	250 mL polyethylene/ glass bottle	1	48 hours					
PM-10 *pre-weighed high-volume air filter* (inactive)					Keep <32^{0}C Archive 4+/-3^{0}C	manila envelope	1	1 year	
PM-2.5 *pre-weighed high-volume air filter* (inactive)					Ave. ambient sampling temp above 4^{0}C	filter cassette or petri dish	1	240 hrs (10 days)	
					$\leq$4^{0}C			30 days	
					Archive 4+/-3^{0}C			-	
Grain Size by Particle Size Analyzer					Cool, <6^{0}C	4 oz wide mouth glass jar/ polyethylene	1	1 year	
Specific Gravity					Cool, <6^{0}C	32 oz wide mouth glass jar	1	1 year	Up to 500 g can be needed for one analysis
pH	Cool, <6^{0}C	polyethylene/ glass bottle	1	immediately[2]	Cool, <6^{0}C	4 oz wide mouth glass jar	1	ASAP[3]	
pH (Corrosivity) *waste*	Cool, <6^{0}C	4 oz wide mouth glass jar	1	ASAP[3]					

[2] Immediately for NPDES compliance purposes is within 15 minutes of sample collection.

[3] ASAP for RCRA Characteristic of Corrosivity is within a few days of receipt at the laboratory.

Flash Point (Ignitability)	Ambient 70^{0}F (high vapor pressure dry ice to maintain 40 to 100^{0}F)	4 oz glass jar	1	high conc/ high hazard samples, analyze ASAP[4]					
Solvent ID (FP)	none No headspace if VOCs requested	500 mL polyethylene/ glass bottle	1	as soon as sample container is opened if VOCs requested					
Water Content (FP)									
Density									
Paint Filter Liquid Test	none	polyethylene/ glass bottle	1	none					
Cr(VI)	Cool, <6^{0}C pH 9.3-9.7 NaOH/ammonium sulfate buffer	250 mL polyethylene/ glass bottle	1	24 hours if unpreserved; 28 days if preserved	Cool, <6^{0}C	4 oz glass jar/ polyethylene	1	30 days	
Hg	HNO_3 to pH<2	250 mL polyethylene/ glass/teflon bottle	1	28 days	Cool, <6^{0}C	4 oz glass jar/ teflon	1	28 days	
Total/Dissolved Metals (except Hg & Cr (VI)) and Hardness	HNO_3 to pH<2	500 mL polyethylene bottle	1	6 mo.	none	4 oz glass jar/ polyethylene	1	6 mo.	Hardness by calculation from ICP analysis. Dissolved metals requires field filtering through 0.45 µm filter.
Total Metals *air (partic.)*					none	envelope or zip-loc	1	none	Need 3 blank filters from same lot for blanks and spikes
SVOCs	Cool, <6^{0}C	1 L narrow mouth amber glass bottle	2 bottles/ sample, 2 additional bottles for MS/MSD for 1/20 samples	7 days from collection to extraction, 40 days from extraction to analysis	Cool, <6^{0}C	8 oz glass jar	1	14 days from collection to extraction, 40 days from extraction to analysis	

[4] ASAP for RCRA Characteristic of Ignitability is within a few days of receipt at the laboratory.

Alkylphenols	Cool, <6^{0}C H_2SO_4 to pH<2	1 L narrow mouth amber glass bottle	1 bottle/ sample, 2 additional bottles for MS/MSD for 1/20 samples	14 days from collection to extraction, 40 days from extraction to analysis					
Bisphenol A	Cool, <6^{0}C HCl to pH<2	250 mL narrow mouth amber glass bottle	1	14 days from collection to extraction, 40 days from extraction to analysis					
APEOs, NPECs	Cool, <6^{0}C add formaldehyde until sample is 1% (V:V)	250 mL narrow mouth amber glass bottle	1	14 days from collection to analysis					
PFCs	Cool, <6^{0}C	50 mL polypropylene tube	5	none					
VOCs	Cool, <6^{0}C 1:1 HCl to pH<2 No headspace	40 mL glass vial	3 vials/ sample, 2 additional vials for MS/MSD for 1/20 samples	14 days	Cool, <6^{0}C	4 oz wide mouth glass jar	1	14 days	high conc—receipt at CRL upon prior approval only
VOCs					*soil/sediment-encore* Cool, <6^{0}C	encore sampler (5g size) 4 oz glass jar	3 1	48 hrs sampling to $NaHSO_4$ preservation in lab, 14 days sampling to analysis	4 oz glass jar is for % solids backup for standard analysis if encores show problems or exceed holding times

					soil/sediment-MeOH preserved Cool, <6°C 1:1 (w:v) sample:methanol (MeOH) (eg., 5 g sample: 5 mL MeOH)	40 mL glass vial 4 oz glass jar encore sampler (5 g size)	3 1 3	14 days 48 hrs sampling to MeOH preservation in lab, 14 days sampling to analysis	Need weight table for container+MeOH & container+MeOH+ soil; 4 oz glass jar is for % solids backup for standard analysis if encores show problems or exceed holding times
1,4-Dioxane, THF	Cool, <6°C No headspace	40 mL glass vial	3 vials/ sample, 4 additional vials for MS/MSD for 1/20 samples	14 days					
Air Toxics *indoor/ ambient air*	none	2.7 L/6 L/15 L Summa air canisters with or without regulator	1	30 days					Can be collected as grab sample or time integrated. Time integrated sampling requires regulator.
Air Toxics *sub-slab/ soil gas*	none	1 L amber glass bottles or Summa canisters with or without regulator	1	30 days					Sub-slab taken as time integrated sample with regulator; soil gas taken as grab sample
Methane *air*	none	1 L amber glass bottles with or without regulator	1	30 days					Can be collected as grab sample or time integrated. Time integrated sampling requires regulator.
Chlorinated Pesticides (single response) & Atrazine	Cool, <6°C	1 L narrow mouth amber glass bottle	1 bottle/ sample, 2 additional bottles for MS/MSD for 1/20 samples	7 days from collection to extraction, 40 days from extraction to analysis	Cool, <6°C	8 oz glass jar	1	14 days from collection to extraction, 40 days from extraction to analysis	If both pesticides and PCBs (w) requested, 1 1L glass bottle needed and 4 additional 1 1L glass bottles for 1 in 20 samples for MS/MSD.

Chlordane (inactive)	Cool, <6^{0}C	1 L narrow mouth amber glass bottle	1 bottle/ sample, 2 additional bottles for MS/MSD for 1/20 samples	7 days from collection to extraction, 40 days from extraction to analysis	Cool, <6^{0}C	8 oz glass jar	1	14 days from collection to extraction, 40 days from extraction to analysis	Chlordane and toxaphene must be requested separately from each other and pesticides since they cannot be analyzed simultaneously.
Toxaphene (inactive)	Cool, <6^{0}C	1 L narrow mouth amber glass bottle	1 bottle/ sample, 2 additional bottles for MS/MSD for 1/20 samples	7 days from collection to extraction, 40 days from extraction to analysis	Cool, <6^{0}C	8 oz glass jar	1	14 days from collection to extraction, 40 days from extraction to analysis	
PCB Aroclors	Cool, <6^{0}C	1 L narrow mouth amber glass bottle	1 bottle/ sample, 2 additional bottles for MS/MSD for 1/20 samples	7 days from collection to extraction, 40 days from extraction to analysis	Cool, <6^{0}C	8 oz glass jar	1	14 days from collection to extraction, 40 days from extraction to analysis	If both pesticides and PCBs (w) requested, 1 1L glass bottle needed and 4 additional 1L glass bottles for 1 in 20 samples for MS/MSD.
PCB Aroclors (TSCA)	Cool, <6^{0}C	1 L narrow mouth amber glass bottle	1 bottle/ sample, 2 additional bottles for MS/MSD for 1/20 samples	7 days from collection to extraction, 40 days from extraction to analysis	*soil/sediment/oil/ wipes/other solid material* Cool, <6^{0}C	8 oz glass jar	1	none	
TPH (inactive)					Cool, <6^{0}C	8 oz glass jar	1	14 days from collection to extraction, 40 days from extraction to analysis	
Oil & Grease	Cool, <6^{0}C H_2SO_4 to pH<2	1 L wide mouth clear glass bottle	1 jar/sample, 2 additional jars for MS/MSD for 1/20 samples	28 days					

TCLP *waste* For all Toxicity Characteristic analytes except herbicides (VOCs, SVOCs, Metals, Mercury, Pesticides)	Cool, <6^{0}C	1 L glass bottle	2	See table below for SW-846 Method 1311 complete list of TCLP & post-extract holding times	Cool, <6^{0}C	16 oz glass jar	2	See table below for SW-846 Method 1311 complete list of TCLP & post-extract holding times	More sample may be necessary for multiphasic samples or samples <100% but >0.5% dry solids. Additional jar is necessary if FP requested.

TCLP Holding Times

Analytes	FROM: Field collection TO: TCLP extraction	FROM: TCLP extraction TO: Preparative extraction	FROM: Preparative extraction TO: Determinative analysis	TOTAL ELAPSED TIME
Volatiles	14	NA	14	28
Semi-volatiles (SVOC/ABN)	14	7	40	61
Pesticides	14	7	40	61
Mercury	28	NA	28	56
Metals (except mercury)	180	NA	180	360