U.S. Environmental Protection Agency

Region III

Environmental Services Division

Central Regional Laboratory

Sample Submission Guidelines

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REMINDER:
If you have **ANY** questions, please call the Central Regional Laboratory Lab Branch Chief or sample custodian for help.

Region III CRL Sample Submission Guidelines

I. Introduction

As a regulatory agency, EPA makes many technical decisions based on environmental data. The Agency has continually stressed assurance that reliable analytical data be used in its decisions and has adopted "good science" as one of its central themes. This is consistent with the Regional strategic goal of "reliance on data" (Region III Strategic Direction, memo dated 8/19/93, S. Laskowski to All Regional Staff). Much has been done to control data quality in the laboratory. Equally important is the sample collection and handling process which precedes laboratory analysis. Samples must be representative of the matrix being studied, must be collected using methods that will maintain sample integrity, and must be properly preserved to avoid chemical or biological changes. With that in mind, these guidelines have been prepared to assist samplers who will be submitting samples to the Central Regional Laboratory (CRL), Region III.

The Agency Contract Laboratory Program (CLP) has developed extensive guidance and procedures for submission of samples to their contract laboratories. CLP was set up primarily to service a single program, CERCLA/SARA, a.k.a. SUPERFUND. CRL supports all Agency programs and has developed a series of protocols that will allow us to satisfy requirements for a variety of programs. These guidelines must be followed when submitting samples to CRL. When followed properly they link the field and laboratory aspects of your studies in a way that will provide reliable, defensible information essential for informed decision making.

Unless specifically required by law, where there are differences in program methods, CRL has adopted the more conservative and restrictive procedure as the guidance standard followed. If specifically required by legislation, the methods are followed as written in the Federal Register within generally accepted scientific principles.

II. Project Scheduling

To efficiently balance the workload, we request at least one month notification before samples are submitted (two months preferred).

1. Method Selection -

i. Test Methods -

Test methods are approved procedures for 1) measuring the presence and concentration of physical and chemical pollutants 2) evaluating toxicological properties or 3) measuring the effects of substances under various conditions. The Central Regional Laboratory of Region III provides a wide array of environmental analytical techniques. The methods are not static and therefore require constant update. It is important that the samplers identify during the data quality definition phase of the project the methods and detection limits they would like CRL to use. If sufficient time is allotted to the laboratory, CRL will make every effort to perform the requested test as defined by the Quality Assurance Project Plan (QAPP). If insufficient time is allotted to the laboratory, the lab will communicate with the requestor to determine a suitable alternative method.

ii. Quantitation Limits -

CRL refers to a nominal quantitation limit (NQL) for all of its analytical methods. The nominal quantitation limit is defined as the quantitation limit that would be achieved under 'normal' analytical procedures. Such normal procedures would include factors like - sample size & weight, dilution or

concentration, and matrix effect. If any of these factors change, CRL analysts report the actual quantitation limit (AQL) by incorporating the factor(s).

> For example, a routine sample for VOA uses 5 ml of water. Upon analysis the analyst discovers that the sample is highly contaminated and requires a 100 fold dilution. No usable data was generated with the first run. When reported, the analyst will adjust the NQL by a factor of 100 (AQL=NQL*100). If non-routine levels of detection are required, CRL will accommodate the requests for non-routine detection levels with advance notice if it is technically and economically possible. Attachments 1-6 list the NQLs routinely achieved for various analytical parameters.

If the sampler is unable to provide sufficient sample amount, the laboratory will analyze the sample as best it can. If multiple tests use the same sample aliquot, the PROJECT MANAGER will be notified and asked to determine which tests are priority tests for the given aliquot. In either event, elevated detection limits should be expected.

2. Shipment Notification -

Shipping schedule arrangements should be made at least three (3) working days prior to shipment. If the laboratory is expecting a shipment but one was not sent, kindly notify the sample custodian by 9:00 a.m. on the morning the samples were scheduled to arrive at CRL. If there is a difference in the number of samples scheduled on a particular date, then the sample custodian must be notified as well. All notifications or changes should be phoned or faxed in by 3:30 p.m. the day of shipping. Always notify the sample custodian when samples have been shipped.

III. Sampling

Tables 1 and 2 of these guidelines show specific containers, preservatives, volumes/weights, blank requirements and holding times for aqueous and non-aqueous samples submitted to CRL. It is essential that the guidelines be followed so that we produce reliable data that meets the needs of your projects. The minimum volume or weight required allows us to perform a single analysis plus any quality control we employ during the analyses. Avoid volumes or weights in excess of two times the minimum, since the laboratory must dispose of the material after analyses and incur a cost that may become prohibitive. Please combine samples for all analytes requiring the same container and preservative in as few containers as possible.

> SAMPLES WITH 4°C AS A PRESERVATIVE REQUIREMENT MUST BE SHIPPED WITH SUFFICIENT ICE TO REMAIN COOL AT 4°C WHILE IN TRANSIT.

Samplers must be aware of the holding times for all analyses requested and ship samples to CRL as quickly as possible. Holding times are calculated from the time and date of sample collection and not the date of receipt at the lab. In order to assure sufficient holding time and proper temperature preservation, all samples collected should be sent to the lab at the end of each collection day. Samples not properly preserved and/or shipped to the laboratory will result in the data being flagged and could jeopardize its use particularly in enforcement situations. When samples are not properly shipped or preserved, or when there is insufficient volume, the project manager will be notified and given the opportunity to resample. The laboratory reserves the right to postpone analyses of improperly preserved or shipped samples if other samples submitted to CRL have arrived during the same time period and it is determined that the other samples have adhered to the sample submission guidelines.

1. Sample Collection -

Proper collection and identification of samples, documenting their collection in permanent field records, and maintaining sample chain of custody is required. In addition, Regional policy order 5361.5 (Site Location Identification, 09-14-88) requires that locational data be submitted with sample documentation. Recent Federal Register notices also have put environmental data generators on notice that Agency electronic reporting requirements are forthcoming (July 30, 1990, pp. 31030-32). The locational data is valuable information that can be combined with other Regional efforts to make analytical data more meaningful (e.g. GIS and environmental indicators). Sample collection types normally used are defined as follows:

Grab sample -

An individual sample collected over a period of time generally not exceeding 15 minutes. A grab sample is normally associated with water or wastewater sampling. However, soil, solid, oil, sediment, and liquid hazardous waste samples, for example, may also be considered grab samples.

Composite sample -

Time composite sample - A sample containing equal volume, discrete samples collected at equal time intervals over the compositing period. (A timed composite may be collected continuously.)

Flow proportional composite sample - A sample containing a minimum of eight discrete samples collected proportional to the flow rate over the compositing period.

Area composite sample - A sample composited from individual grab samples collected on an area or cross-sectional basis. Area composites shall be made up of equal volumes of grab sample (assuming equal density); the grab sample shall be collected in an identical manner. Examples include sediment composites made up of quarter-point grab samples from a stream, soil samples from a grid points on a grid system, or water samples collected at various depths at the same point.

Split sample -

A sample which has been portioned into two or more containers from a single sample container. Portioning assumes adequate mixing to assure the split samples are for all practical purposes identical. Split samples are usually destined for analysis by two or more laboratories.

Duplicate sample -

Samples collected simultaneously from the same source under identical conditions into separate containers.

Background sample -

A sample collected from an area, water body, or site similar to the one being studied, but located in an area known or thought to be free from pollutants of concern. Background samples are generally matrix matched to the samples of interest.

Reference sample (control sample) -

A sample collected upstream or up-gradient from a source or site to isolate the effects of the source or site on the particular medium being sampled.

Sample aliquot -

A portion of a sample that is representative of the entire sample.

2. Blanks -

Blank samples are used to identify potential sources of contamination during the sampling, storage and analysis process. Blanks should be specified as part of every QAPP or sampling plan. Samplers are strongly encouraged to review their project needs and document data quality objectives (DQOs) for their projects.

All water used for blanks must be deionized lab pure water. (Commercially available HPLC water is not acceptable for most blank uses. HPLC water is similar to "city" drinking water and therefore contains compounds of interest.) Whenever organic methods are requested, organic free water must be used for blanks accompanying all organic samples. Organic blanks should be tested prior to use. (CRL will test and/or supply blank water if requested to do so.) Blanks that have been preserved must be preserved with the same stock and same amount used with the samples.

CRL prefers to use a matrix blank that closely resembles the matrix of interest. Should the field samplers not have a ready source of solid sample blanks, matrices may be available from the Central Regional Laboratory. Please call the sample custodian to see whether solid blank material is available.

The blank types normally used are defined as follows:

Field blank (sample matrix blank) -

Field blanks are analyte free materials closely resembling the sample matrix to be encountered in the actual sample(s). Containers, laboratory pure water and chemicals/reagents are transported to the field and exposed to the same conditions as field samples. Caps are removed from the containers, and if applicable, preservatives are added and other related steps are taken to provide the blank with exposure to contamination equivalent to that of the field samples.

Trip blank -

Trip blanks are collected for volatiles only. These blanks are similar to field blanks with the exception that they are not exposed to field conditions (i.e. not opened). Preservatives are added and containers sealed prior to the sampling trip. Without ever being unsealed, they travel with the samples and sample collection equipment. They allow evaluation of contamination generated from sample containers and changes occurring during the shipping and laboratory storage process.

Equipment blank (sampling equipment blank, usually associated with aqueous samples) -

An equipment blank is a sample of laboratory pure water passed through the sampling equipment to test for carry-over contamination. Equipment blanks will depend on the number of samplers used and will follow specifications set forth in the QAPP. These blanks will also be preserved in the same manner as the corresponding samples.

Rinsate blank (non-aqueous samples) -

A rinsate blank is a sample of laboratory pure water used as the final rinse of sampling equipment during sampling. This blank is also preserved in the same manner as the samples.

Filter blank -

Certain methods require field filtering of samples. Whenever field filtering is performed, a filter blank must be submitted. Laboratory pure water passed through the sample filtration apparatus is considered the filter blank in most cases.

Sterile container blank (air blank) -

An air blank is required for bacteriological tests. A sterile sample container is taken to the field, opened and returned with the samples to the lab.

3. Sample Identification -

Each sample container is to have a sample tag (Attachment 7) and label. Each sample tag and label must be legibly written with indelible (i.e. waterproof) ink. The information that is written on the sample label must match the information on the chain-of-custody (COC) sheet. The sample tag is to be tied on each container so that it will not fall or slip off. Please do not use tape to secure labels or tags since it usually loosens and falls off when the containers get cold or wet. No erasures or white outs are allowed. All errors should be corrected with a single line through the error and then initialed.

For the safety of lab staff, indicate on each sample label, each sample tag and the COC any preservatives used with the samples.

A sample is not fully identified unless locational data is provided. The reverse side of the exposure data sheet contains convenient blocks to write in latitude and longitudinal information.

Exposure data sheet & locational information sheet -

Each time samples are collected, it is the responsibility of the sampler to completely fill out a Hazardous and Risk Exposure Data Sheet (Attachment 8) and include this sheet with the chain-of-custody when samples are shipped. This information helps ensure the safety of the lab staff receiving the samples. Proper precautions need to be taken whenever potentially hazardous samples are encountered. This sheet is a vital part of the CRL safety program and MUST be attached to the outside of any shipping container.

On the reverse of the exposure data sheet is the locational information sheet (Attachment 9). In accordance with Agency and Regional policy, CRL requests all sample submitters to provide this information for each sample collected. Regional EPA policy requires latitude and longitude (lat/long) for each sample. In the future, samples submitted without lat/long may be rejected by the laboratory.

Chain-of-custody sheet (Chain of Custody Record) -

An EPA chain-of-custody (COC) (Attachment 10 & 11) sheet is required by CRL and must accompany each sample shipment. Any sample shipment supplied without a COC will be rejected.

NO CLP TRAFFIC REPORTS OR SAS PACKING LISTS ARE TO BE USED FOR THE EPA LABORATORY.

The COC should be sealed in a zip-locked bag and placed in the ice chest with the samples. Always use indelible ink (never pencil) for all markings on the COC sheet. The original record will accompany the shipment and a copy will be retained by the sampler. Each distinct sample, regardless of how many containers there are, must appear on a separate line. (If additional lines are required for a single sample, indicate inclusion with a bracket.) Any writing errors made on the custody sheet are to be crossed out with a single line, rewritten and initialed.

Chain-of-custody documentation must include:

- site name (project name)
- print sampler's name along with the signature in sampler's signature box
- date & time of collection (time recorded in military time)
- sample description
- parameters requested (i.e. tests, methods)
- number of containers
- type of sample (grab or composite)
- station number
- date, time and signatures for sample receipt and transfer

4. Shipping Requirements -

Samples should be shipped in absorbent material (e.g. popcorn, vermiculite) to absorb any leakage and to prevent glass containers from breaking. Ice should be used for cooling samples. The ice should be placed in a sealed bag to contain any melted ice. These bags should be packed around the samples themselves and not merely laid on top of the packed chest. The chest should be sealed with strapping tape and with custody seals (Attachment 7) on the outside. The custody seal must be placed so that it will be broken when the chest is opened. Department of Transportation (DOT) and or Federal Express approved shipping containers must be used. The shipper must have passed a test given by DOT or any approved commercial carrier before shipping samples to CRL.

Completed chain of custody sheets must be placed in a sealed plastic bag in the shipping container.

IV. Pollution Prevention

For pollution prevention awareness and waste reduction purpose, some Non-Aqueous sample parameters can be combined together. Example of parameters are: chemical oxygen demand (COD); cyanide; mercury; metals; phenol; reactivity; total kjeldahl nitrogen; total phosphorus, and X-Ray for Inorganics and extractables (BNA), PCB/Pesticides for organics.

Since the container types are not the same for Inorganic parameters and Organic parameters, they should be collected separately. Only one 8 oz jar is required for the combined parameters.

V. Tables

In the following tables if the entry in the sampling type column is labelled G, then only grab samples are allowed for that parameter. Examples of grab only samples are: oil and grease, hexavalent chromium, and volatile organic compounds. If compositing is required for these parameters, all compositing will be done in the laboratory.

Table 1
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
Acidity	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	14 days
Acrolein/ Acrylonitrile	G/C	40 ml	Glass teflon	120 ml	cool, 4°C	field, equipment	14 days
Alcohols	G/C	40 ml	Glass VOA vial w/teflon liner	10 ml	none	field	none
Alkalinity	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	14 days
Anions by IC F, Cl, NO_2, NO_3, PO_4, SO_4	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C	none	48 hours
Ammonia (NH_3)	G/C	Quart	Glass/Plastic	1000 ml	cool, 4°C H_2SO_4 to pH<2	field	28 days
Biochemical Oxygen Demand (BOD_5)	G/C	Quart	Glass/Plastic	300 ml	cool, 4°C	none	48 hours
Bromide (Br)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C	none	28 days
Carbamates	G/C	1 liter	Amber glass	1000 ml	-10°C, pH=3[3]	field	28 days
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	G/C	Quart	Glass/Plastic	300 ml	cool, 4°C	none	48 hours
Chemical Oxygen Demand (COD)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C H_2SO_4 to pH<2	field	28 days

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] as per EPA method 531.1 a) add monochloroacetic acid buffer b) if residual chlorine is present add 80 mg of sodium thiosulfate per liter of sample

Table 1 (continued)
Aqueous Sample Requirement^[s

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
Chloride (Cl)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C	none	28 days
Coliform (total & fecal)	G	120 ml	Glass/Plastic	120 ml[3]	cool, 4°C 0.1 ml of 10 % sodium thiosulfate	sterile container (air)	24 hours[4] 6 hours[5]
Color	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C	none	48 hours
Corrosivity	G/C	Quart	Glass/Plastic	500 ml	none	none	24 hours
Cyanide (total and amenable)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C NaOH to pH>12[6]	field	14 days 24 hours[7]
Dissolved Organic Carbon (DOC)	G/C	Quart	Glass/Plastic	100 ml	cool, 4°C H_2SO_4 to pH<2	field & equipment	28 days

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] a) allow head space of 2-3 cm in container b) one sample provided in duplicate for QC for each set of 10 samples

[4] SDWA

[5] NPDES

[6] a) in the presence of residual chlorine add ascorbic acid b) test for sulfides in the field, if present remove with cadmium carbonate (see EPA method 335.4, 1993 or currently approved Standard Methods for latest preservative)

[7] if sulfides are present

Table 1 (continued)
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
EPTOX metals	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	field	none
Extractables (BNA) [NPDES/RCRA/ Superfund]	G/C	1 liter	Amber Glass bottle w/teflon liner	1000 ml	cool, 4°C, dechlorinate w/80 mg/L sodium thiosulfate	field, rinsate & equipment	7 days to extract 40 days to analyze
Extractables (BNA) [SDWA]	G/C	1 liter	Amber Glass bottle w/teflon liner	1000 ml	HCL to pH<2, cool, 4°C, 40-50 mg/L sodium sulfite	field, rinsate & equipment	7 days to extract 30 days to analyze
Hardness	G/C	Quart	Glass Plastic	300 ml	cool 4°C HNO_3 to H<2	field & equipment	6 months
Herbicides [RCRA]	G/C	1 liter	Amber Glass bottle w/teflon liner	1000 ml	cool, 4°C dechlorinate w/80 mg/L sodium thiosulfate	field, rinsate & equipment	7 days to extract 40 days to analyze
Herbicides [SDWA]	G/C	1 liter	Amber Glass bottle w/teflon liner	1000 ml	cool, 4°C dechlorinate w/80 mg/L sodium thiosulfate	field, rinsate & equipment	14 days to extract 28 days to analyze
Hexavalent Chromium (HEX Cr)	G	Quart	Glass/Plastic	300 ml	cool, 4°C	none	24 hours
Ignitability	G/C	40 ml	Glass VOA vial	20 ml	none	none	

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

Table 1 (continued)
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
Mercury[3] (dissolved)	G	Quart	Glass preferred	200 ml	HNO_3 to pH<2	field, equipment & filter	28 days
Mercury[4] (total)	G/C	Quart	Glass preferred	200 ml	HNO_3 to pH<2	field	28 days
Metals (dissolved)	G/C	Quart	Glass/Plastic	600 ml	HNO_3 to pH<2	field & equipment	6 months
Metals (total)	G/C	Quart	Glass/Plastic	600 ml	HNO_3 to pH<2	field & equipment	6 months
Microtox	G	40 ml	Glass VOA vial	20 ml	none	none	24 hours
Nitrate (NO_3)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	48 hours
Nitrite (NO_2)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	48 hours
Nitrate (NO_3) & Nitrite (NO_2)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C H_2SO_4 to pH<2	field	28 days
Oil & Grease	G	Quart	Glass	1000 ml	cool, 4°C H_2SO_4 to pH<2	field	28 days

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] only if mercury is requested w/o metals, otherwise an aliquot from the metals sample will be used.

[4] only if mercury is requested w/o metals, otherwise an aliquot from the metals sample will be used

Table 1 (continued)
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
PAHs by HPLC [SDWA]	G/C	1 liter	Amber glass	1000 ml	cool, 4°C, dechlorinate w/40-50 mg/L sodium thiosulfate HCl to pH<2	field	7 days to extract 30 days to analyze
PAHs by HPLC [NPDES]	G/C	1 liter	Amber glass	1000 ml	cool, 4°C, dechlorinate w/80 mg/L sodium thiosulfate	field	7 days to extract 40 days to analyze
PCB/ Pesticides [SDWA]	G/C	1 liter	Amber Glass w/teflon liner	1000 ml	cool, 4°C, dechlorinate w/80 mg/L sodium thiosulfate	field, rinsate & equipment	7 days to extract 14 days to analyze
PCB/ Pesticides [NPDES/RCRA/ Superfund]	G/C	1 liter	Amber Glass bottle w/teflon liner	1000 ml	cool, 4°C, adjust pH to 5-9 if the sample will not be extracted w/in 72 hrs. Add 80mg/L sodium thiosulfate if CL_2 is present & aldrin is to be analyzed.	field, rinsate & equipment	7 days to extract 40 days to analyze

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

Table 1 (continued)
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
Phenolics, Total	G/C	Quart	Glass	1000 ml	cool, 4°C H_2SO_4 to pH<2	field & equipment	28 days
Phosphorus, Ortho (PO_4)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C	none	48 hours
Reactivity	G/C	Quart	Glass	200 ml	cool, 4°C	none	none
Resorcinol by HPLC	G/C	1 liter	Amber glass	1000 ml	cool, 4°C	field	7 days
Silica (Si)	G	Quart	Plastic	200 ml	cool, 4°C	none	28 days
Sulfate (SO_4)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C	none	28 days
Sulfide (SO_2)	G	BOD bottle	Glass/Plastic	600 ml (2 - 300 ml BOD bottles)	cool, 4°C, Zinc Acetate & NaOH to pH>9	none	7 days
TCLP - extractables	G/C	Quart	Amber Glass w/teflon liner	(300 g)[3]	cool, 4°C (unless cooling causes precipitation of the waste)	field, rinsate & equipment [1 in 10 samples need to provide an additional 300 g for QC]	14 days to TCLP extraction; 7 days to preparative extraction; 40 days to analyze
TCLP - metals	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	field	none

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] Even though this is an aqueous sample, a weight of 300 grams is necessary to perform the analysis.

Table 1 (continued)
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
TCLP - pesticides	G/C	Quart	Amber Glass w/teflon liner	(300 g)[3]	cool, 4°C	field, rinsate & equipment [1 in 10 samples need to provide an additional 300 g for QC]	14 days to TCLP extraction; 7 days to preparative extraction 40 days to analyze
TCLP - VOAs	G/C	40 ml	Glass VOA vials w/teflon liner	160 ml (4 - 40 ml VOA vials) (no headspace)	cool, 4°C	trip, rinsate, field, equipment [1 in 10 samples provide an additional 4 - 40 ml VOA vials for QC]	14 days to TCLP extraction; 14 days to analyze
Total Dissolved Solids (TDS)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	7 days
Total Kjeldahl Nitrogen (TKN)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C H_2SO_4 to pH<2	field & equipment	28 days
Total Organic Carbon (TOC)	G/C	Quart	Glass/Plastic	100 ml	cool, 4°C H_2SO_4 to pH<2	field & equipment	28 days
Total Phosphorus (TP)	G/C	Quart	Glass/Plastic	200 ml	cool, 4°C H_2SO_4 to pH<2	field & equipment	28 days

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] Even though this is an aqueous sample, a weight of 300 grams is necessary to perform the analysis.

Table 1 (continued)
Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
Total Solids (TS)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	7 days
Total Suspended Solids (TSS) (non-filterable residue)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	7 days
Total Trihalo-methanes (TTHMS) [SDWA]	G/C	40 ml	Glass VOA vial w/teflon liner	120 ml (3 - 40 ml VOA vials filled with no headspace)	cool, 4°C 3 mg/40ml sodium thiosulfate or sodium sulfite	trip, field, rinsate, equipment	14 days
Total Volatile Solids (TVS)	G/C	Quart	Glass/Plastic	500 ml	cool, 4°C	none	7 days
Turbidity	G	Quart	Glass/Plastic	200 ml	cool, 4°C	none	48 hours
Volatiles (aromatics) [NPDES]	G/C[3]	40 ml	Glass VOA vial w/teflon liner	120 ml (3 - 40 ml VOA vials filled with no headspace) [double volume for sample for which QC is to be done]	cool, 4°C, dechlorinate with sodium thiosulfate (10mg/40ml) & 1:1 HCl to pH<2	trip, field, rinsate, equipment	14 days preserved 7 days unpreserved

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] Volatiles will be composited in the lab.

Table 1 (continued)

Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Minimum Volume[2]	Preservation	Blanks Required	Holding Time
Volatiles (halocarbons) [NPDES]	G/C[3]	40 ml	Glass VOA vial w/teflon liner	120 ml (3 - 40 ml VOA vials filled with no headspace) [double volume for sample for which QC is to be done]	cool, 4°C sodium thiosulfate (10mg/40ml)	trip, field, rinsate equipment	14 days
Volatiles [RCRA]	G/C[3]	40 ml	Glass VOA vial w/teflon liner	120 ml (3 - 40 ml VOA vials filled with no headspace) [double volume for sample for which QC is to be done]	cool, 4°C, 1:1 HCl to pH<2, if source is chlorinated, remove chlorine with 10mg/40ml sodium thiosulfate	trip, field, rinsate, equipment	14 days [if not preserved with acid, the volatile aromatic holding time is 7 days]
Volatiles [SDWA]	G/C[3]	40 ml	Glass VOA vial w/teflon liner	120 ml (3 - 40 ml VOA vials filled with no headspace) [double volume for sample for which QC is to be done]	cool, 4°C, 1:1 HCl to pH<2, if source is chlorinated, remove chlorine with either 25mg/40ml ascorbic acid or 30mg/40ml sodium thiosulfate	trip, field, rinsate, equipment	14 days [if not preserved with acid, the volatile aromatic holding time is 7 days]

[1] grab = G or composite = C

[2] Please provide 4 times the minimum volume for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] Volatiles will be composited in the lab.

Table 2
Non-Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Appropriate Weight[2]	Preservation	Blanks Required	Holding Time
Volatiles [Superfund]	G/C[3]	40 ml	Glass VOA vial w/teflon liner	120 ml (3 - 40 ml VOA vials filled with no headspace) [double volume for sample for which QC is to be done]	cool, 4°C, 1:1 HCl to pH<2, if source is chlorinated, remove chlorine with 10mg/40ml sodium thiosulfate	trip, field, rinsate, equipment	14 days, 7 days if not preserved with acid
Air Analysis	G/C	6 liter	Summa canister	min. 10 psig	none	1 canister per cleaning batch	7 days
Chemical Oxygen Demand (COD)	G	8 oz. jar *	Glass	5 g	none	none	28 days
Cyanide (total)	G	8 oz. jar *	Glass	5 g	none	none	14 days
EPTOX metals	G	32 oz. jar	Glass	400 g	none	none	none
Extractables (BNA) (semi-volatiles) [Superfund/ RCRA]	G	8 oz. jar #	Amber Glass (wide mouth w/teflon lined lid)	100 g	cool, 4°C	field, rinsate & equipment	7 days to extract 40 days to analyze

[1] grab = G or composite = C

[2] Please provide 4 times the minimum weight for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] Volatiles will be composited in the lab.

* # This parameter can be combined with other parameters. See Pollution Prevention section IV for further explanation.

Table 2 (continued)
Non-Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Appropriate Weight[2]	Preservation	Blanks Required	Holding Time
Herbicides [RCRA]	G	8 oz. jar	Amber Glass (wide mouth w/teflon lined lid)	100 g	cool, 4°C	field, rinsate & equipment	7 days to extract 40 days to analyze
Mercury[3] (total)	G	8 oz. jar *	Glass preferred	5 g	none	none	none
Metals (total)	G	8 oz. jar *	Glass	50 g	none	none	none
PCB/ Pesticides [RCRA/ Superfund]	G	8 oz. jar #	Amber Glass (wide mouth w/teflon lined lid)	50 g	cool, 4°C	field, rinsate & equipment	10 days to extract 40 days to analyze
Phenolics, total	G	8 oz. jar *	Glass	100 g	none	none	28 days
Reactivity	G	8 oz. jar *	Glass	5 g	none	none	none
TCLP - extractables	G	8 oz. jar	Amber Glass (wide mouth w/teflon lined lid)	16 oz. (300 g) (2 - 8 oz jars)	cool, 4°C	field, rinsate & equipment	14 days to TCLP extraction; 7 days to preparative extraction; 40 days to analyze
TCLP - metals	G	Quart jar	Glass/Plastic	300 g	none	none	none

[1] grab = G or composite = C

[2] Please provide 4 times the minimum weight for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

[3] only if mercury is requested w/o other metals, otherwise an aliquot from the metals samples will be used

This parameter can be combined with other parameters. See Pollution Prevention section IV for further explanation.

Table 2 (continued)
Non-Aqueous Sample Requirements

Parameter	Sampling Type[1]	Container Size	Container Type	Appropriate Weight[2]	Preservation	Blanks Required	Holding Time
TCLP - pesticides	G	8 oz. jar	Amber Glass (wide mouth w/teflon lined lid)	16 oz. (300 g) (2 - 8 oz. jars)	cool, 4°C	field, rinsate & equipment	14 days to TCLP extraction; 7 days to preparative extraction; 40 days to analyze
TCLP - VOAs	G	40 ml	Glass VOA vial w/teflon liner	80 g (2 - 40 ml VOA vials) (no headspace)	cool, 4°C	trip, field, rinsate equipment	14 days to TCLP extraction; 14 to analyze
Total Organic Carbon (TOC)	G	8 oz jar*	Glass	100 g	cool, 4°C	none	none
Total Kjeldahl Nitrogen (TKN)	G	8 oz.jar*	Glass	5 g	none	none	28 days
Total Phosphorus (TP)	G	8 oz.jar*	Glass	5 g	none	none	28 days
Volatiles [RCRA/ Superfund]	G	40 ml	Glass VOA vial w/teflon liner	80 g (2- 40 ml VOA vials filled with no headspace)	cool, 4°C	trip, field, rinsate, equipment	14 days
X-Ray Analysis of Soils and Solids	G	8 oz.jar*	Glass	10 g	none	none	none

[1] grab = G or composite = C

[2] Please provide 4 times the minimum weight for all organic tests at the rate of 1 QC sample for each 20 real samples for QC analysis.

* This parameter can be combined with other parameters. See Pollution Prevention section IV for further explanation.

Central Regional Laboratory - Region III
Extractable Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Water = ug/L NPTC = Non-Priority Pollutant Target Compound

Actual Quantitation Limit = (NQL Factor) X NQL

ATTACHMENT 1

CAS	ANALYTE	NQL
62-75-9	N-Nitrosodimethylamine	10
108-95-2	Phenol	10
62-53-34	Aniline NPTC	10
111-44-4	bis(2-Chloroethyl)Ether	10
95-57-8	2-Chlorophenol	10
541-73-1	1,3-Dichlorobenzene	10
106-46-7	1,4-Dichlorobenzene	10
100-51-6	Benzyl Alcohol NPTC	10
95-50-1	1,2-Dichlorobenzene	10
95-48-7	2-Methylphenol NPTC	10
108-60-1	bis(2-chloroisopropyl)Ether	10
106-44-5	4-Methylphenol NPTC	10
621-64-7	N-Nitroso-di-n-Propylamine	10
67-72-1	Hexachloroethane	10
98-95-3	Nitrobenzene	10
78-59-1	Isophorone	10
88-75-5	2-Nitrophenol	10
105-67-9	2,4-Dimethylphenol	10
65-85-0	Benzoic Acid NPTC	50
111-91-1	bis(2-Chloroethoxy)Methane	10
120-83-2	2,4-Dichlorophenol	10
120-82-1	1,2,4-Trichlorobenzene	10
91-20-3	Naphthalene	10
106-47-8	4-Chloroaniline NPTC	10
87-68-3	Hexachlorobutadiene	10
59-50-7	4-Chloro-3-Methylphenol	10
91-57-6	2-Methylnaphthalene NPTC	10
77-47-4	Hexachlorocyclopentadiene	10
88-06-2	2,4,6-Trichlorophenol	10
95-95-4	2,4,5-Trichlorophenol NPTC	50
91-58-7	2-Chloronaphthalene	10
88-74-4	2-Nitroaniline NPTC	50
131-11-3	Dimethylphthalate	10
208-96-8	Acenaphthylene	10

CAS	ANALYTE	NQL
99-09-2	3-Nitroaniline NPTC	50
83-32-9	Acenaphthene	10
51-28-5	2, 4-Dinitrophenol	50
100-02-7	4-Nitrophenol	50
132-64-9	Dibenzofuran NPTC	10
606-20-2	2,6-Dinitrotoluene	10
121-14-2	2,4-Dinitrotoluene	10
84-66-2	Diethylphthalate	10
7005-72-3	4-Chlorophenylphenylether	10
86-73-7	Fluorene	10
100-01-6	4-Nitroaniline NPTC	50
86-30-6	N-Nitrosodiphenylamine(1)	10
534-52-1	4,6-Dinitro-2-Methylphenol	50
101-55-3	4-Bromophenylphenylether	10
118-74-1	Hexachlorobenzene	10
87-86-5	Pentachlorophenol	50
85-01-8	Phenanthrene	10
120-12-7	Anthracene	10
86-74-8	Carbazole NPTC	10
84-74-2	Di-n-Butylphthalate	10
206-44-0	Fluoranthene	10
92-87-5	Benzidine	50
129-00-0	Pyrene	10
85-68-7	Butylbenzylphthalate	10
91-94-1	3,3'-Dichlorobenzidine	20
56-55-3	Benzo(a)Anthracene	10
117-81-7	bis(2-Ethylhexyl)Phthalate	10
218-01-9	Chrysene	10
117-84-0	Di-n-Octylphthalate	10
205-99-2	Benzo(b)Fluoranthene	10
207-08-9	Benzo(k)Fluoranthene	10
50-32-8	Benzo(a)Pyrene	10
193-39-5	Indeno(1,2,3-cd)Pyrene	10
53-70-3	Dibenzo(a,h)Anthracene	10
191-24-23	Benzo (g,h,i)Perylene	10

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQL's for analytical adjustments made during the analysis (i.e., for extractions of more or less than the ideal 30 grams for soil samples, for sample extracts not concentrated to 1.00 ml due to excessive foaming/darkness of the extract, and for sample extract dilutions prior to analysis). For example, the typical NQL factor for a CRL soil sample is 1.5. Therefore, the estimated Actual Quantitation Limit for Phenol would be 0.50 mg/Kg (i.e., 1.5 x .33 mg/Kg).

(1) Cannot be separated from diphenylamine.

Attachment 2

INORGANIC NQLs:

Test Name	Aqueous NQL	Units	Solids NQL	Units
Acidity	4	mg/L		
Alkalinity	2	mg/L		
Ammonia	0.04	mg/L		
Biological Oxygen Demand	2	mg/L		
Bromide	0.5	mg/L		
Chloride	0.2	mg/L		
Color	5	True Color Units		
Chemical Oxygen Demand	4	mg/L		
Cyanide	0.02	mg/L	1.0	mg/Kg
Dissolved Organic Carbon	1	mg/L		
Fluoride	0.1	mg/L		
Hardness	14	mg/L		
Hex Cr	10	ug/L		
Nitrate	0.04	mg/L		
Nitrite	0.01	mg/L		
Nitrite + Nitrate	0.040	mg/L		
Oil & Grease	5	mg/L		
Ortho Phosphorus	0.005	mg/L		
Phenol	10	ug/L		
Silica	0.2	mg/L		
Sulfate	0.5	mg/L		
Sulfide	0.2	mg/L		
Total Dissolved Solids	10	mg/L		
Total Kjeldahl Nitrogen	0.2	mg/L		
Total Organic Carbon	1	mg/L		
Total Phosphorus	0.01	mg/L		
Total Solids	10	mg/L		
Total Suspended Solids	4	mg/L		

The "Nominal Quantitation Limit" listed for each parameter is the level of quantitation normally reported for undiluted samples. Methods used and levels reported are as required by the analytical assignment.

Attachment 3

METALS NQLs:

Test Name	Aqueous NQL	Units	Solids NQL	Units
Aluminum	200	ug/L	20	ug/g
Antimony	10	ug/L	1.0	ug/g
Arsenic	5	ug/L	0.5	ug/g
Barium	200	ug/L	20	ug/g
Beryllium	5	ug/L	0.5	ug/g
Cadmium	5	ug/L	0.5	ug/g
Calcium	1000	ug/L	100	ug/g
Chromium	10	ug/L	1	ug/g
Cobalt	50	ug/L	5	ug/g
Copper	25	ug/L	2.5	ug/g
EP Tox Arsenic	5	mg/L		
EP Tox Barium	100	mg/L		
EP Tox Cadmium	1	mg/L		
EP Tox Chromium	5	mg/L		
EP Tox Lead	5	mg/L		
EP Tox Mercury	0.2	mg/L		
EP Tox Selenium	1	mg/L		
EP Tox Silver	5	mg/L		
Iron	100	ug/L	10	ug/g
Lead	3	ug/L	0.3	ug/g
Magnesium	1000	ug/L	100	ug/g
Manganese	15	ug/L	1.5	ug/g
Mercury	0.2	ug/L	0.1	ug/g
Nickel	40	ug/L	4.0	ug/g
Potassium	1000	ug/L	100	ug/g
Selenium	5	ug/L	0.5	ug/g
Silver	10	ug/L	1	ug/g
Sodium	1000	ug/L	100	ug/g
TCLP Arsenic	5	mg/L		
TCLP Barium	100	mg/L		
TCLP Cadmium	1	mg/L		
TCLP Chromium	5	mg/L		
TCLP Lead	5	mg/L		
TCLP Mercury	0.2	mg/L		
TCLP Selenium	1	mg/L		
TCLP Silver	5	mg/L		
Thallium	5	ug/L	0.5	ug/g
Vanadium	50	ug/L	5	ug/g
Zinc	20	ug/L	2	ug/g

The "Nominal Quantitation Limit" listed for each parameter is the level of quantitation normally reported for undiluted samples. These levels meet or exceed the program requirements for CERCLA and RCRA. Methods used and levels reported are as required by the analytical assignment.

ATTACHMENT 4

Central Regional Laboratory - Region III
Pesticide and PCB Analysis
Nominal Quantitation Limits (NQL)

Units: Water = ug/L NPTC = Non-Priority Pollutant Target Compound

Actual Quantitation Limit = (NQL Factor) X NQL

CAS Number	Pesticide	NQL
319-84-6	Alpha-BHC	0.05
319-85-7	Beta-BHC	0.05
319-86-8	Delta-BHC	0.05
58-89-8	Gamma-BHC	0.05
76-44-8	Heptachlor	0.05
309-00-2	Aldrin	0.05
1024-57-3	Heptachlor Epoxide	0.05
959-98-8	Endosulfan I	0.05
60-57-1	Dieldrin	0.10
72-55-9	4,4'-DDE	0.10
72-20-8	Endrin	0.10
33213-65-9	Endosulfan II	0.10
72-54-8	4,4'-DDD	0.10
1031-07-8	Endosulfan Sulfate	0.10
50-29-3	4,4'-DDT	0.10
7421-93-4	Endrin Aldehyde	0.10
53494-70-5	Endrin Ketone (NPTC)	0.10
72-43-5	Methoxychlor (NPTC)	0.05
5103-71-9	Alpha-Chlordane	0.05
5103-74-2	Gamma-Chlordane	0.05
57-74-9	Chlordane	1.0
8001-35-2	Toxaphene	5.0

CAS Number	PCB	NQL
12674-11-2	Aroclor-1016	1.0
1104-28-2	Aroclor-1221	2.0
11141-16-5	Aroclor-1232	1.0
53469-21-9	Aroclor-1242	1.0
12672-29-6	Aroclor-1248	1.0
11097-69-1	Aroclor-1254	1.0
11096-82-5	Aroclor-1260	1.0

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL Factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

These are the routinely achieved Quantitation Limits for water sample, limits for other matrices are available.

Central Regional Laboratory - Region III
Volatile Organics Analysis
Nominal Quantitation Limits (NQL)

Units: Water = ug/L NPTC = Non-Priority Pollutant Target Compound

Actual Quantitation Limit = (NQL Factor) X NQL

ATTACHMENT 5

CAS #	ANALYTE		NQL
75-71-8	Dichlorodifluoromethane		5
74-87-3	Chloromethane		5
75-01-4	Vinyl Chloride		5
74-83-9	Bromomethane		5
75-00-3	Chloroethane		5
75-69-4	Trichlorofluoromethane		5
75-35-4	1,1-Dichloroethylene		5
75-15-0	Carbon Disulfide	NPTC	5
67-64-1	Acetone	NPTC	5
75-09-2	Methylene Chloride		5
156-60-5	trans-1,2-Dichloroethene		5
75-34-3	1,1-Dichloroethane		5
108-05-4	Vinyl Acetate	NPTC	5
590-20-7	2,2-Dichloropropane		5
156-59-4	cis-1,2-Dichloroethene	NPTC	5
78-93-3	2-Butanone	NPTC	5
74-97-5	Bromochloromethane	NPTC	5
65-66-3	Chloroform		5
71-55-6	1,1,1-Trichloroethane		5
56-23-5	Carbon Tetrachloride		5
563-58-6	1,1-Dichlo-1-propene		5
71-43-2	Benzene		5
107-06-2	1,2-Dichloroethane		5
79-01-6	Trichloroethylene		5
78-87-5	1,2-Dichloropropane		5
74-95-3	Dibromomethane	NPTC	5
75-27-4	Bromodichloromethane		5
110-75-8	2-Chloroethylvinyl ether		5
10061-01-6	trans-1,3-Dichloropropene	NPTC	5
108-10-1	4-Methyl-2-pentanone	NPTC	5
108-83-3	Toluene		5
10061-01-5	cis-1,3-Dichloropropene		5
79-00-5	1,1,2-Trichloroethane		5
127-18-4	Tetrachloroethylene		5

CAS #	ANALYTE		NQL
142-28-9	1,3-Dichloropropane	NPTC	5
591-78-6	2-Hexanone	NPTC	5
124-48-1	Dibromochloromethane		5
106-93-4	1,2-Dibromoethane(EDB)	NPTC	5
108-90-7	Chlorobenzene		5
630-20-6	1,1,1,2-Tetrachloroethane	NPTC	5
100-41-4	Ethylbenzene		5
108-38-3	m-Xylene)(m & p isomers	NPTC	5
106-42-3	p-Xylene together)	NPTC	5
95-47-6	o-Xylene	NPTC	5
100-42-5	Styrene	NPTC	5
75-25-2	Bromoform		5
98-82-81	Isopropylbenzene	NPTC	5
108-86-1	Bromobenzene	NPTC	5
79-34-5	1,1,2,2-Tetrachloroethane		5
96-18-4	1,2,3-Trichloropropane		5
103-65-1	n-Propylbenzene	NPTC	5
95-49-8	2-Chlorotoluene	NPTC	5
106-43-4	4-Chlorotoluene	NPTC	5
108-67-8	1,3,5-Trimethylbenzene	NPTC	5
98-06-6	tert-Butylbenzene	NPTC	5
93-63-6	1,2,4-Trimethylbenzene	NPTC	5
135-98-8	sec-Butylbenzene	NPTC	5
541-73-1	1,3-Dichlorobenzene		5
106-46-7	1,4-Dichlorobenzene		5
99-87-6	p-Isopropyltoluene	NPTC	5
95-50-1	1,2-Dichlorobenzene		5
104-51-8	n-Butylbenzene	NPTC	5
96-12-8	1,2-Dibromo-3-chloropropane		5
120-82-1	1,2,4-Trichlorobenzene		5
91-20-3	Naphthalene		5
87-68-3	Hexachlorobutadiene		5
87-61-6	1,2,3-Trichlorobenzene	NPTC	5

The "Nominal Quantitation Limit" factor is an overall correction factor applied to the method's NQLs for analytical adjustments made during the analysis (i.e., for analyses of more or less than the ideal 5 grams for soil samples, and for sample dilutions prior to analysis). For example, if the NQL factor for a CRL water sample is 2, the estimated Actual Quantitation Limit for vinyl chloride would be 10 ug/L (i.e., 2 x 5 ug/L).

Central Regional Laboratory - Region III
TCLP Extractable Organics Analysis
Nominal Quantitation Limits (NQL Factor)
Matrix: TCLP Acetic Acid Buffer Solution Units: ug/L

ATTACHMENT 6

CASE NUMBER	TCLP ANALYSTE	NQL (ug/L)	Regulatory Levels (mg/L)	Regulatory Levels (ug/L)
110-86-1	Pyridine	ND	5.0	5000
106-46-7	1,4-Dichlorobenzene	10	7.5	7500
95-48-7	o-Cresol	10	200.0	200000
	(m+p)-Cresol Isomers	10	200.0	200000
67-72-1	Hexachloroethane	10	3.0	3000
98-95-3	Nitrobenzene	10	2.0	2000
87-68-3	Hexachlorobutadiene	10	0.5	500
88-06-2	2,4,6-Trichlorophenol	10	2.0	2000
95-95-4	2,4,5-Trichlorophenol	10	400.0	400000
121-14-2	2,4-Dinitrotolene	10	0.13	130
118-74-1	Hexachlorobenzene	10	0.13	130
87-86-5	Pentachlorophenol	50	100.0	100000

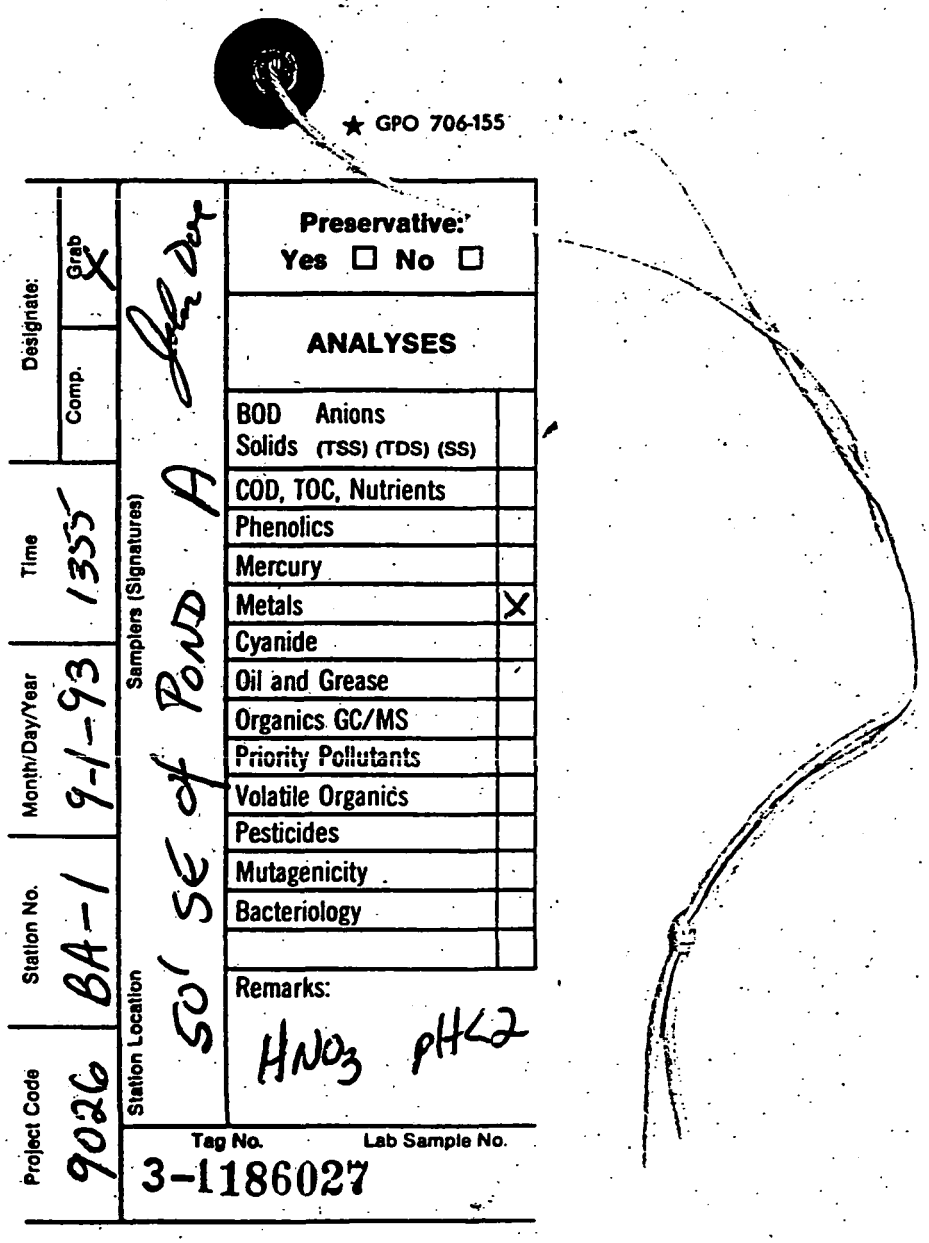
ND=RCRA has not determined a NQL for pyridine in Method 827A.

The NQL Factor is an overall correction factory applied to the method's NQLs for analytical adjustments made during the analysis (i.e., for extractions of more or less than the ideal 1000 mls for aqueous samples, for sample extracts not concentrated to 1.00 ml due to excessive foaming/darknessof the extract, and for sample extract dilutions prior to analysis).

For example, the typical NQL Factor for an CRL TCLP sample is 2.0. Therefore, the estimated Actual Quantitation Limit for o-Cresol would be 20 ug/L (i.e., 2.0 x 10 ug/L).

NOTE: If o-, m, and p-Cresol concentrations cannot be differentiated, the total cresol concentration is used. The regulatory level of total Cresol is 200 mg/L.

Attachment 7



★ GPO 706-155

Designate: Comp. / Grab	X
Time	1355
Month/Day/Year	9-1-93
Station No.	BA-1
Project Code	9026
Samplers (Signatures)	[illegible]
Station Location	50' SE of POND A
Preservative: Yes ☐ No ☐	
ANALYSES	
BOD Anions Solids (TSS) (TDS) (SS)	
COD, TOC, Nutrients	
Phenolics	
Mercury	
Metals	X
Cyanide	
Oil and Grease	
Organics GC/MS	
Priority Pollutants	
Volatile Organics	
Pesticides	
Mutagenicity	
Bacteriology	
Remarks: HNO_3 pH<2	
Tag No.	3-1186027
Lab Sample No.	

CUSTODY SEAL
9/1/93
Date
Signature

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

CUSTODY SEAL
9/1/93
Date
Signature

Attachment 8

Region III, Central Regional Laboratory
Annapolis, Maryland
HAZARD AND RISK EXPOSURE DATA SHEET
LEVELS OF PERSONAL PROTECTION DURING SAMPLING

BACKGROUND

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clean Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA has been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment.

GENERAL

This form is to be used when collecting Environmental Samples (i.e. streams, farm ponds, wells, soils etc.) and for Hazardous Samples (i.e. drums, storage tanks, lagoons, leachates, hazardous waste sites). This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and levels of personal protection used by the sampler in all situations will enable the analyst to be better aware of potential exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.

DEGREE OF PROTECTION

_____ Level A: Highest level of respiratory, skin, and eye protection needed.
Fully encapsulated suit, respirator self-contained (Tank type)

_____ Level B: Highest level of respiratory protection but lesser level of skin protection needed.
Chemical suit, respirator self-contained (Tank type)

_____ Level C: Lesser level of respiratory protection than Level B. Skin protection criteria are similar to Level B.
Chemical suit, cannister respirator/cartridge

_____ Level D: Work uniform without any respirator or skin hazards.
Lab coat, gloves etc.

CLASSIFIED FIELD SAMPLES

____Environmental ____Hazardous ____Comb. (Env. & Haz.) ____Radioactive

Site Name:_____Sampling Date:_____

Sta No. _____,_____,_____,_____,_____,_____,_____,_____,_____,_____
Field pH:_____,_____,_____,_____,_____,_____,_____,_____,_____,_____
(must be taken prior to submission of aqueous samples)

Sampler:_____Work Phone Number:_____

Personal observations at time of sampling (surroundings):_____

_____

_____

Sample collection observations (physical sample, odors etc.)_____

_____

_____

Attachment 9

Station Location Data
Region III, Central Regional Laboratory

Site/Facility:																					
Station:	Latitude										Longitude										
	Degrees		Minutes		Seconds		Fraction				Degrees		Minutes		Seconds		Fraction				Accuracy & Units:

Coordinate Type: (point, Line, Area):

Method Used to Determine Lat/Long: Loran-C/GPS/NAD27/MAP/Address/
Method Description:

Date/Time Coordinates determined: __/__/__ __:__:__

Source of Coordinate Information:

Coordinate information recorded by: _____
(signature)

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 3
841 Chestnut St.
Philadelphia, Pennsylvania 19107

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS							REMARKS
SAMPLERS: *(Signature)*									
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION				

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

3 22511

Attachment 10

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
9026	Bill's Dump

SAMPLERS: (Signature) JOHN DOE John Doe

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Metals	BN/A	VOA	PCB/Pest	BNA + PCB/Pest + Blank	REMARKS
												Tag Numbers
BD-1	9-1-89	1355		X	50' SE of Pond A	4	1	2		1		3-139300 — 3-139303
BD-2	9-2-89 9-1-89	1342		X	Outside front gate small pool of water	1	1					3-139499
BD-3	9-2-89	1030		X	Monitoring Well #1	7	1	2	3	1		3-140100 — 3-140106
BD-4	9-2-89	1245		X	Monitoring Well #2	7	1	2	3	1		3-168100; 3-140200 — 3-140205
BD-00	9-1-89	0900		X	Field Blank	5	1		3		1	3-156000 — 3-156004
TB-00	9-1-89	0800		X	TRIP BLANK	3			3			3-139315 — 3-139317

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
John Doe	9-2-89 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Air Bill Number 8448002205	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files