Report Prepared for:

VGS2MATL-Joint Venture

Surface Water Sampling Plan

January 2026

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ATTACHMENTS:

On behalf of LBS, ECM recommends the following proposed sampling plan. The confirmation surface water monitoring program will consist of surface water sampling of 5 locations described below (**Figure 1**). Samples will be collected weekly for a period of two months.

1.1 SAMPLING METHOD

Surface water locations will be sampled in consideration of Georgia Surface Water and Groundwater Quality Monitoring and Assessment Strategy (GAEPD, 2015) and in accordance with EPD-WPMP-2 (GAEPD, 2020) and SESDPROC-201-R4 (EPA, 2016) methods, as applicable. Manual grab samples from the surface of the water at each sample location will be collected for laboratory analysis and submitted to Pace Analytical (Pace), a Georgia Environmental Protection Division (EPD) accredited laboratory and accredited by the National Environmental Laboratory Accreditation Program (NELAP). Samples will be taken in vicinity of stream center area at a point that is safely accessible. Where possible (for unpreserved samples only, not applicable to voas for VOC analysis), the sample will be collected directly into the sample container or by decanting the water from a clean, decontaminated (see decontamination section, below) collection device such as a stainless steel scoop or other device. If direct access to the steam is not possible or wadeable, then supplemental sampling equipment (*i.e.*, sampling rod with clean collection bucket) will be utilized.

- A clean pair of new, non-powdered, disposable gloves will be worn each time a different location is sampled and the gloves should be donned immediately prior to sampling. The gloves should not come in contact with the media being sampled and should be changed any time during sample collection when their cleanliness is compromised.
- Sample containers for samples suspected of containing high concentrations of contaminants will be stored separately. Sample collection activities will proceed progressively from the least suspected contaminated area to the most suspected contaminated area (*i.e.* background and furthest downstream are assumed cleanest) (**Figure 1**). Samples of waste or highly contaminated media must not be placed in the same ice chest as environmental (*i.e.*, containing low contaminant levels) or background samples.
- Trip blanks from the laboratory will be submitted at one sample per cooler with each cooler of samples that travels to the laboratory to monitor any potential contamination of bottles during the transportation of the samples.
- If possible, one member of the field sampling team should take all the notes and photographs, fill out tags, etc., while the other members collect the samples.
- Samplers must use new, verified and certified-clean disposable or non-disposable equipment cleaned according to procedures contained in SESD Operating Procedure for Field Equipment Cleaning and Decontamination, SESDPROC-205, or SESD Operating Procedure for Field Cleaning and Decontamination at the FEC, SESDPROC-206, for collection of samples for trace metals or organic compound analyses.

A background sample should be collected from a location not affected by the possible contaminants of concern from the airport and submitted with the other samples (**Figure 1**). The background sample will be collected upstream of the sampled area (see Section 4.4).

Surface water samples for VOC analysis must be collected in 40 ml glass vials with Teflon® septa. The samples should be collected with as little agitation or disturbance as possible. The vial should be filled so that there is a reverse or convex meniscus at the top of the vial and absolutely no bubbles or headspace should be present in the vial after it is capped. After the cap is securely tightened, the vial should be inverted and tapped on the palm of one hand to see if any undetected

bubbles are dislodged. If a bubble or bubbles are present, the vial should be topped off using a minimal amount of sample to re-establish the meniscus. Care should be taken not to flush any preservative out of the vial during topping off. If, after topping off and capping the vial, bubbles are still present, a new vial should be obtained and the sample re-collected. Samples for VOC analysis must be collected using either stainless steel or Teflon® equipment.

Water quality parameters (*e.g.* pH, electric conductivity, dissolved oxygen, temperature, oxidation/reduction potential, color, clarity) will be collected documented with each water sample collected and recorded on a field sampling sheet.

Only "representative" sample (*i.e.* collecting samples under normal conditions for the river) will be collected. For purpose of compliance with the sampling frequency, a representative sample is a sample collected during dry weather or after 48-hours of a rain event of one inch or greater. Sampling variance will be documented and reported.

1.2 SAMPLING PARAMETERS

Sampling collected during each event will be analyzed for the following:

- EPA 8015B for TPH-Jet (C23-C32) and TPH-DRO (C13-C22);
- EPA 8270SIM for PAHs;
- EPA 8260 for BTEX.

In the locations along the natural stream channel, TPH samples will be analyzed with silica gel cleanup to remove naturally-occurring hydrocarbons (**Attachment B**).

Samples will be placed in laboratory supplied containers and labeled in the field. Each sample will be packed in a plastic ice chest with sufficient ice to maintain 4°C ± 2°C during transport to the laboratory.

Sample Chain-of-Custody identifying all the sample containers, chemical analysis requirements, and other field data required by the laboratory will be completed and affixed to each sample cooler and shipped or delivered to the off-site laboratory. Upon arrival at the laboratory, the designated laboratory personnel will open the cooler, inspect and record the condition of each sampling container, and sign the chain-of-custody form.

1.3 DECONTAMINATION PROCEDURES

Disposable sampling equipment will be used whenever possible to reduce equipment decontamination and expedite sampling. The following equipment will be necessary to perform sampling equipment decontamination:

- Scrub brushes
- Hand-held spray bottles
- Buckets
- Liquinox or other non-phosphate based detergent
- Tap water
- Distilled/Deionized water
- Plastic bags

Decontamination procedures for reusable equipment (water quality meter probe) are summarized below:

- Sampling equipment will be decontaminated before initial use, and after use at each sampling location;
- Sampling equipment will be scrubbed with a soft brush to remove loose soil and debris;

- Sampling equipment will then be scrubbed with a mixture of biodegradable soap and tap water, followed by a tap water rinse, and then a distilled water rinse;
- The equipment will then be air dried on plastic sheeting in the field at the sampling location.

1.4 SAMPLING LOCATIONS

Table 1 summarizes the surface water monitoring and sampling program. If results at the Lee's Bridge sample location indicate residual petroleum impacts, the sample location will be moved to the Alternate Downstream location (**Figure 1**) and the Sullivan Creek sample location will be added to assess water quality contributions to Flint River downgradient of the confluence. Sample locations may be adjusted based on the observed extent of impacts from the release.

Table 1: Sampling Program

Name	Location	Rationale
Flint River Upstream/ Background	33°39'20.41"N, 84°25'10.29"W	Location to monitory water quality before it enters the airport
Quarry Outfall	33°38'1.38"N, 84°24'59.18"W	Onsite location where fuel from Concourse drainage enters the Flint River
Outfall FR-1	33°37'48.60"N, 84°24'57.07"W	Location where airport drainage from the airport enters the Flint River
Forest Pkwy location	33°37'4.29"N, 84°24'38.87"W	Fuel recovery location
Lee's Bridge	33°36'30.10"N, 84°24'20.88"W	Farthest downriver observed sheen.
Sullivan Creek (optional)	33°36'19.11"N, 84°24'25.22"W	Location will be sampled if the Downstream sample replaces the Lee's Bridge sample
Alternate Downstream (optional)	33°35'38.76"N, 84°23'52.42"W	Location not impacted by jet fuel release
Duplicate Sample	Varies	One sample location will be selected for each monitoring event for collection of a duplicate sample

1.5 FIELD NOTEBOOKS AND PHOTOGRAPHS

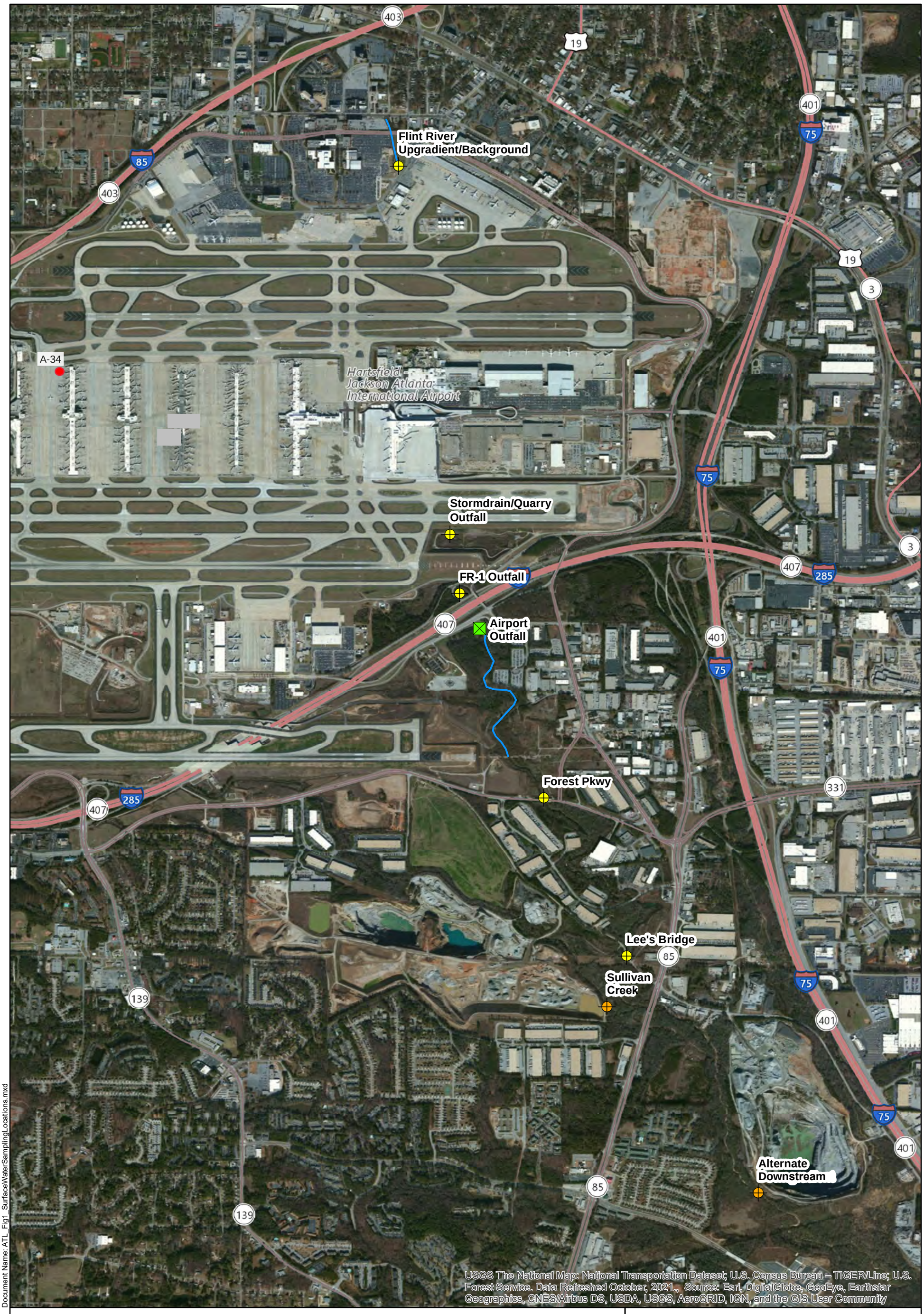
Field personnel will record information pertinent to the sampling program in a field notebook and/or field sampling sheets. Each page of field notebook will be initialed and dated by the person making the entries. Sufficient detail will be included in the notebook to summarize field activities without relying on the recorder's memory. If any corrections are necessary in the notebook, the error will be lined out with a single line and the field personnel will initial the correction. At the end of the field day, blank space in the field notebook will be lined out, initialed, and dated.

Color photographs taken with a digital camera during the sampling activities (at least one photograph at each location) will be numbered to correspond to field notebook or photograph log sheet entries. The name of the photographer, date, time, sampling location, and photograph description will be entered sequentially in the field notebook or photograph log as photographs are taken.

1.6 REPORTING

The surface water monitoring activities will be documented in weekly data submittals that will include a brief description of the site activities, the laboratory reports and chain-of-custody documents, and a summary table. Sample results will be compared to applicable water quality criteria specified in the Georgia Water Quality Control Act (Water Use Classifications and Water Quality Standards [Rule 391-3-6-.03]). A final report will be prepared upon completion of the monitoring program described herein.

FIGURE



Document Name: ATL_Fig1_SurfaceWaterSamplingLocations.mxd

0 1,000 2,000
Feet
1 inch = 2,000 feet

Legend

- Sample Location
- Alternate Sample Location
- Outfall
- Spill Location
- Flint River

SURFACE WATER SAMPLING LOCATIONS

Hartsfield-Jackson Atlanta International Airport (ATL)
Louis Berger Services, Member of WSP
650 S. Central Avenue
Hapeville, GA 30354

DATE: 10/6/2021 | ANALYST: MWHEL

ECM Consultants 25 YEARS 1996-2021
Ignite Success.

Figure: 1

ATTACHMENTS

A.3 Silica Gel Cleanup (SGC)

What It Is

"Bulk" extractable TPH analyses such as SW-846 Method 8015B/C measure all organics present in a sample that (1) can be extracted using an organic solvent and (2) elutes on a gas chromatograph column within a selected boiling-point range. These extraction and quantitation methods are not specific to petroleum hydrocarbons, and the organics measured can include hydrocarbons (HCs) and nonhydrocarbons (non-HCs). SGC is a method used by the laboratory to "clean up" the sample extract before it is analyzed for TPH so that the extract contains primarily HCs. This cleanup is possible because of the different chemical properties between HCs and non-HCs. HCs contain only carbon and hydrogen atoms, and thus are relatively "nonpolar" molecules, and non-HCs contain an atom(s) in addition to carbon and hydrogen (such as oxygen, sulfur ,or nitrogen), and thus are relatively "polar" molecules. The most common non-HCs in groundwater or soil at petroleum release sites are:

- metabolites from biodegradation of the petroleum (e.g., compounds containing oxygen, such as organic acids and alcohols, etc.)
- natural organic matter (e.g., humic acids, etc.)
- sampling, laboratory, or ambient anthropogenic artifacts (e.g., phthalates or BPA)
- other nonpetroleum-related chemicals (e.g., chlorinated solvents)

What It Does

Silica gel (SG) is used for the cleanup because it is a polar substance and therefore adsorbs the polar non-HCs. The best SGCs are based on SW-846 Method 3630C, which is a column cleanup procedure (Figures A2-1 and A2-2). A glass column is packed with SG, the extract is poured onto the column, the SG preferentially adsorbs the polar non-HCs as the extract moves through the column, and the "cleaned up" extract is collected at the bottom and then analyzed for TPH. Lab surrogates are added to the extract before the procedure to monitor effectiveness of the procedure. Other SGC methods can be used and typically are based on adding a few grams of SG to the extract vial and shaking it for a specified time period. Research shows that the shake method is not as effective as the column cleanup for methylene chloride extracts.

How You Can Use It

SGC can be used for many reasons:

- To compare extractable TPH results to hydrocarbon (HC)-based regulatory criteria. SGC allows for an "apples-to-apples" comparison of HCs in the sample to HC-based criteria.
- To accurately measure the extractable-range HCs in the sample. SGC allows the HC signal not to be lost in the total organics mixture.
- To document that biodegradation is occurr ing at the site by comparing results for TPH without SGC to TPH with SGC for a single sample. Oxygen-containing compounds are removed from diesel during the refining process because they will have a detrimental impact on engine performance, so the difference between the without and with SGC is the non-HC content of the sample, which at many sites are the biodegradation metabolites.
- To provide better remediation design and monitoring. Non-HCs have much different physical and chemical properties than HCs, so understanding the site-specific content/proportions of the organics present is important.
- SGC CANNOT be performed on samples to be analyzed for volatile TPH (e.g., GRO/TPH-g) because (1) those samples are not extracted prior to being analyzed, and (2) the cleanup step could result in loss of volatiles.

SGC Schematic (USEPA 3630C)

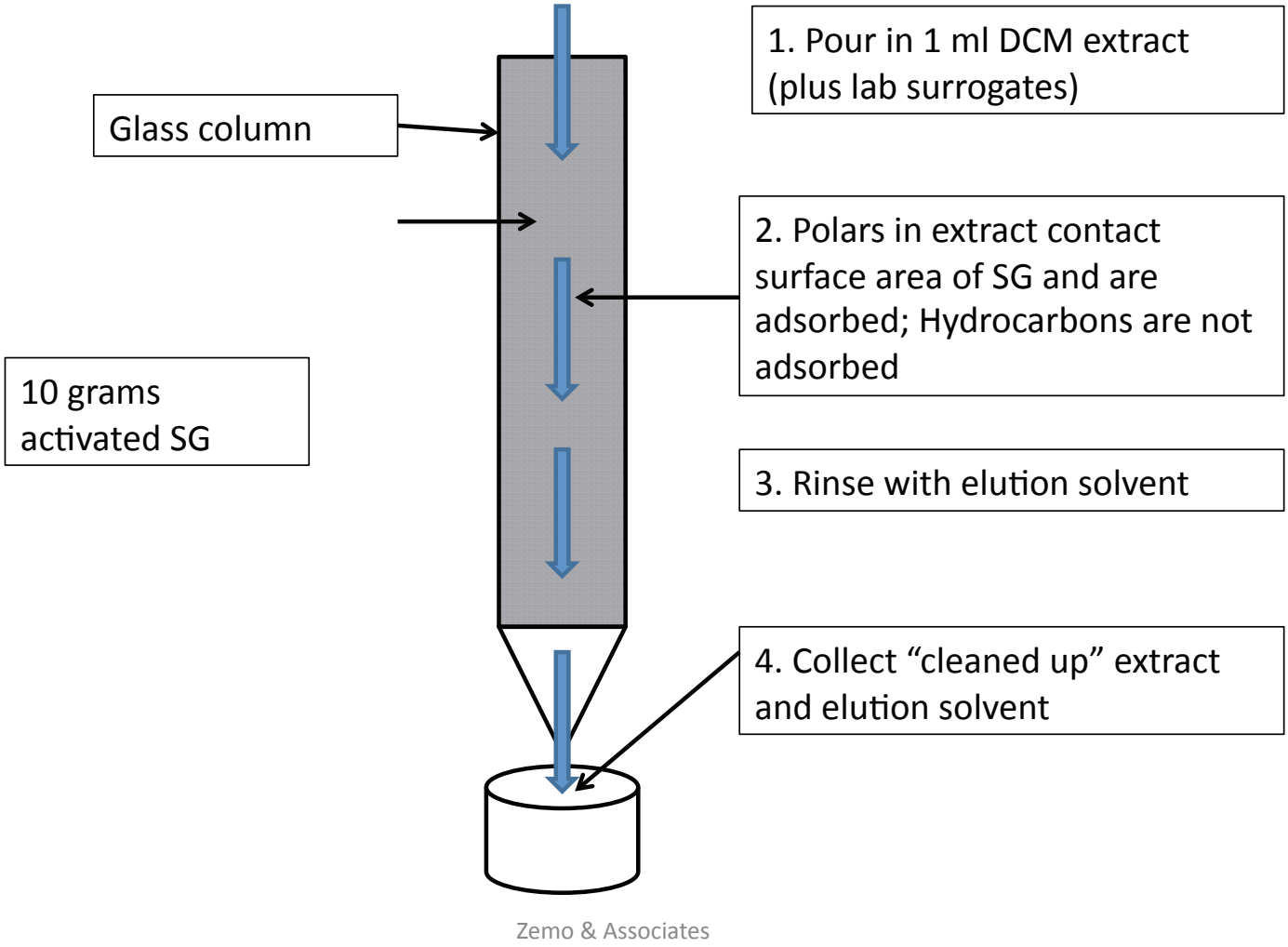


Figure A2-1. SGC schematic (USEPA 3630C)
(Source: Zemo and Associates, 2018.)

Figure A2-2. Laboratory column loaded with silica gel
(Source: Zemo and Associates, 2018.)

Note: Although not the focus of this fact sheet, a silica gel column is also used to separate aliphatic and aromatic HC classes for detailed "fractionated TPH" analyses; that method results in the separation of HCs and non-HCs as part of the procedure.

Silica Gel Use as Media to Separate Aliphatic and Aromatic Hydrocarbons

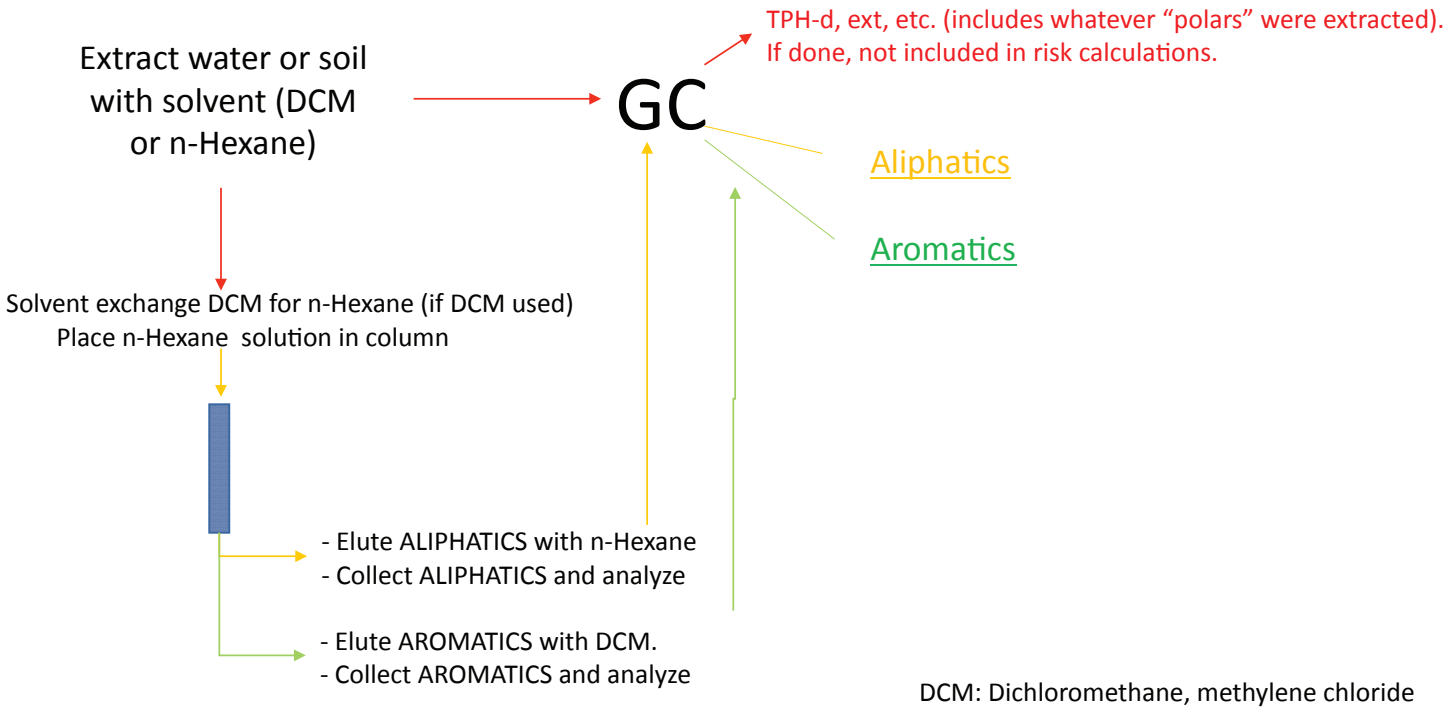


Figure A2-3. Silica gel use as media to separate aliphatic and aromatic hydrocarbons

TPH Risk Evaluation at Petroleum-Contaminated Sites (TPHRisk) Team Contacts

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