Spokane River Regional Toxics Task Force
Technical Track Work Group
December 20, 2022 Meeting

Project Updates

Study Status

Project	Status
Expanded synoptic survey (plus catch basins and artesian well)	Monitoring completed, waiting on lab results
Sediment/biofilm	Monitoring completed, waiting on lab results
Long term water column trend assessment	Low flow monitoring completed, waiting on lab results Moderate flow deployment in process
Fish tissue trend assessment	Sampling completed by WDFW, waiting on lab results
GE fingerprinting	Waiting on 2022 synoptic survey lab results

New Laboratory Options/ 3rd Round SPMD Water Column Sampling for 2022-2023 Trend Assessment

Issues with SGS AXYS

- Contract provided to them August 19
- Synoptic samples delivered September 9
- Numerous messages (email and phone) to laboratory in October and November inquiring on status of results received zero response
- Contacted Richard Grace in November
  - Results should be available late December
- Received response from laboratory December 9
  - “contract was executed 06-Dec-2022 which puts the due date at 21-Jan-2022”
  - “Looking ahead at our current work load I don’t know if we’ll be able to meet that deadline. I think more realistically data will be ready mid to late February.”

Laboratory Options Moving Forward
Three Areas of Upcoming Laboratory Analysis

- Moderate flow SPMD sampling
- High flow SPMD sampling
- Confirmation and other potential future sampling

Laboratory Options Moving Forward
Moderate Flow SPMD Sampling

- SGS AXYS already under contract for this work
- Concern about meeting June 30 deadline
  - Schedule allowed eight weeks for laboratory analysis, with June 30 completion
  - SPMDs deployed at early end of moderate flow period, provides another four weeks of buffer
  - Laboratory contract specifies 45-day turnaround time
- Discussion
  - Mechanisms to ensure on-time delivery of laboratory results?
  - Contingency plan for post-June 30 completion?

Laboratory Options Moving Forward
High Flow SPMD Sampling

- Trend assessment calculates annual average PCB concentration based on results from three different flow conditions
  - Original scope truncated to two flow periods to meet June 30 sunset
  - In order to support trend assessment, the Task Force is considering restoring third flow period and extending completion date to December
- Questions
  - Can work be completed by December?
    - Yes, if laboratory can provide data in twelve weeks
  - Do we consider other laboratories?
    - Concern about consistency in results if we switch labs for third SPMD flow condition

Laboratory Options Moving Forward
Confirmation and Other Potential Future Sampling

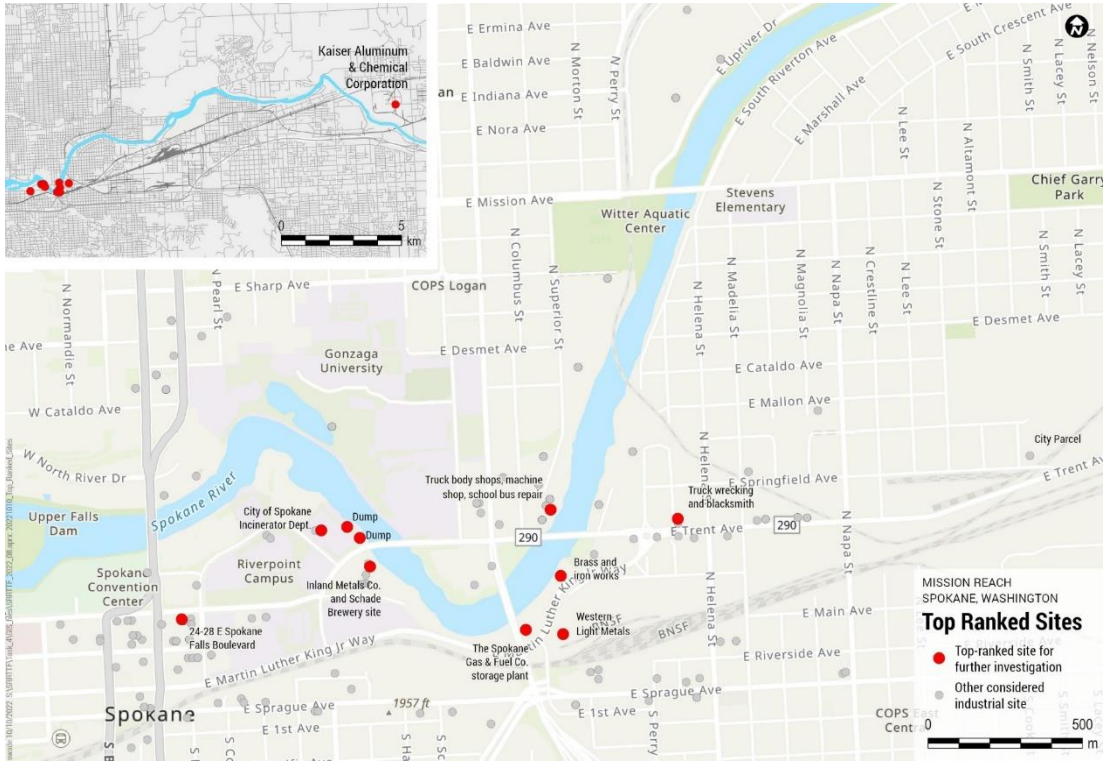
- TTWG has been considering other sampling activities
  - 1668 sampling at GE site monitoring wells, additional biofilm sampling
- Scoping of GE monitoring well study shows that any new project involving collection of PCB data cannot be completed by June 30
  - Scope approval, QAPP development/approval, lab analysis, data validation, etc.
- Not worthwhile to consider these options unless the Task Force extends the deadline to December

Next Steps for Spokane River Historical PCB Source Assessment

Spokane River Historical PCB Source Assessment
Next Steps

- Task Force recently completed prioritization of sites in terms of potential delivery of historical PCB use to the Spokane River
  - What do we do next with high priority sites?

Rank	Site	Total Score	Site Status
1	***Inland Metals Inc***	***15***	**No Further Action**
2	***Kaiser Aluminum & Chemical Corporation***	***13***	**Cleanup Started**
3	City of Spokane Incinerator Department	10	N/A - Sanborn
3	Dump	10	N/A - Sanborn
3	Dump	10	N/A - Sanborn
6	The Spokane Gas & Fuel Co. storage plant	9	N/A - Sanborn
6	***24-28 E Spokane Falls Boulevard***	***9***	**Cleanup Started**
8	Brass and iron works	8	N/A - Sanborn
8	Truck wrecking and blacksmith	8	N/A - Sanborn
8	Western Light Metals	8	N/A - Sanborn
8	Truck body shop, truck body repairing, machine shop, school bus depot/ Crisler Building site	8	No Further Action



What Can We Do Next with High Priority Sites?
Candidate Options

Sites Prioritized Solely by Sanborn

- Deeper dive into site history and characteristics
  - Review of other historical records
    - Existing Phase I environmental assessments
    - Aerial photographs
    - Industrial directories
  - Interviews with current and prior property owners

Sites Where PCB Data Exist

- Analyses of existing data
  - Comparison of fingerprints between site and nearest river hot spot
  - More detailed assessment of connectivity to the river ✓
- Monitoring options
  - Deploy PCB-detection dog
  - Targeted grab samples X

Mission Reach Monitoring Well/Water Level Paper Study to Determine Groundwater Flow Direction

Mission Reach Groundwater Flow Direction Study
Background

- The purpose of the Task Force is to identify and remove sources of PCBs to the Spokane River
- High PCB concentrations have been identified in the Mission Reach
  - No obvious sources exist for this contamination
- Recent historical assessment has identified areas of known and suspected PCB use in upland areas of the Mission Reach
- General understanding is that Mission Reach is a net losing segment

- Does a groundwater pathway exist between contaminated sites and the Mission Reach of the river?

Mission Reach Groundwater Flow Direction Study
Purpose

- Support development of a conceptual site model of groundwater flow direction near the Mission Reach
  - Leverage elevation data from existing monitoring wells

Mission Reach Groundwater Flow Direction Study Tasks

1. Identify existing monitoring well locations and associated reports
2. Construct inventory and interactive map
   - Feasibility assessment

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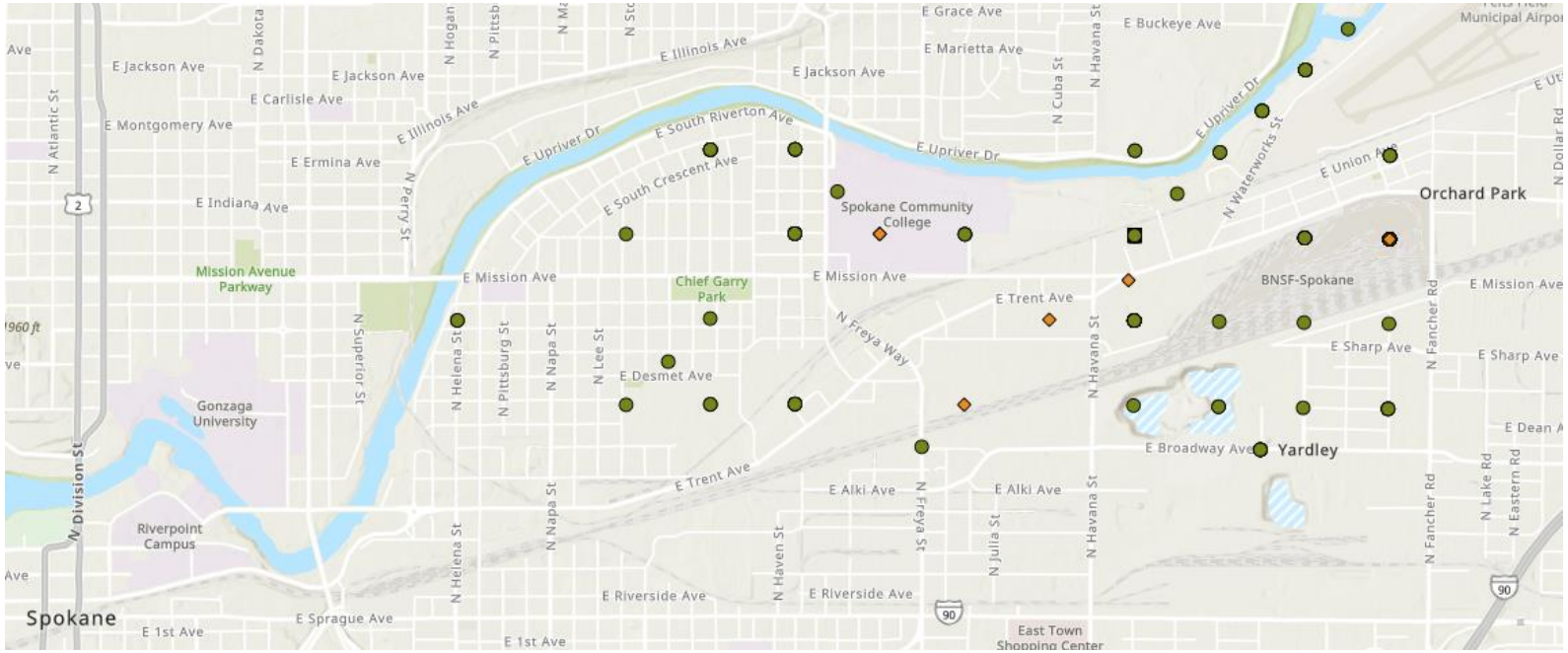
3. Construct conceptual site model (or provide recommendations for filling data gaps)
4. Reporting

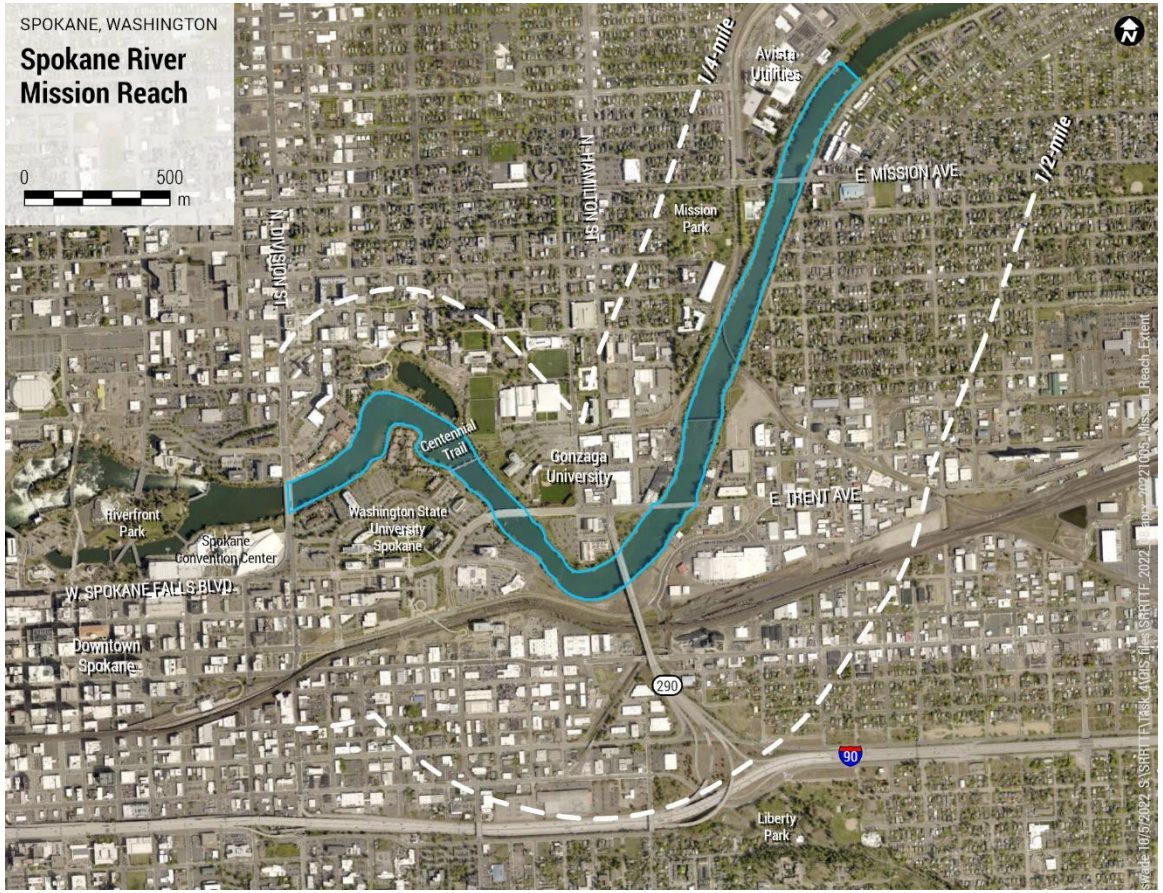
Mission Reach Groundwater Flow Direction Study
Task 1: Identify Monitoring Well Locations and Reports

- Conduct a well search using online data sources to determine the existence of groundwater monitoring wells
- Expand spatial scope from what was done previously near GE site



Mission Reach Groundwater Flow Direction Study
Task 1: Identify Monitoring Well Locations and Reports

- Proposed spatial scope is consistent with that used for historical assessment

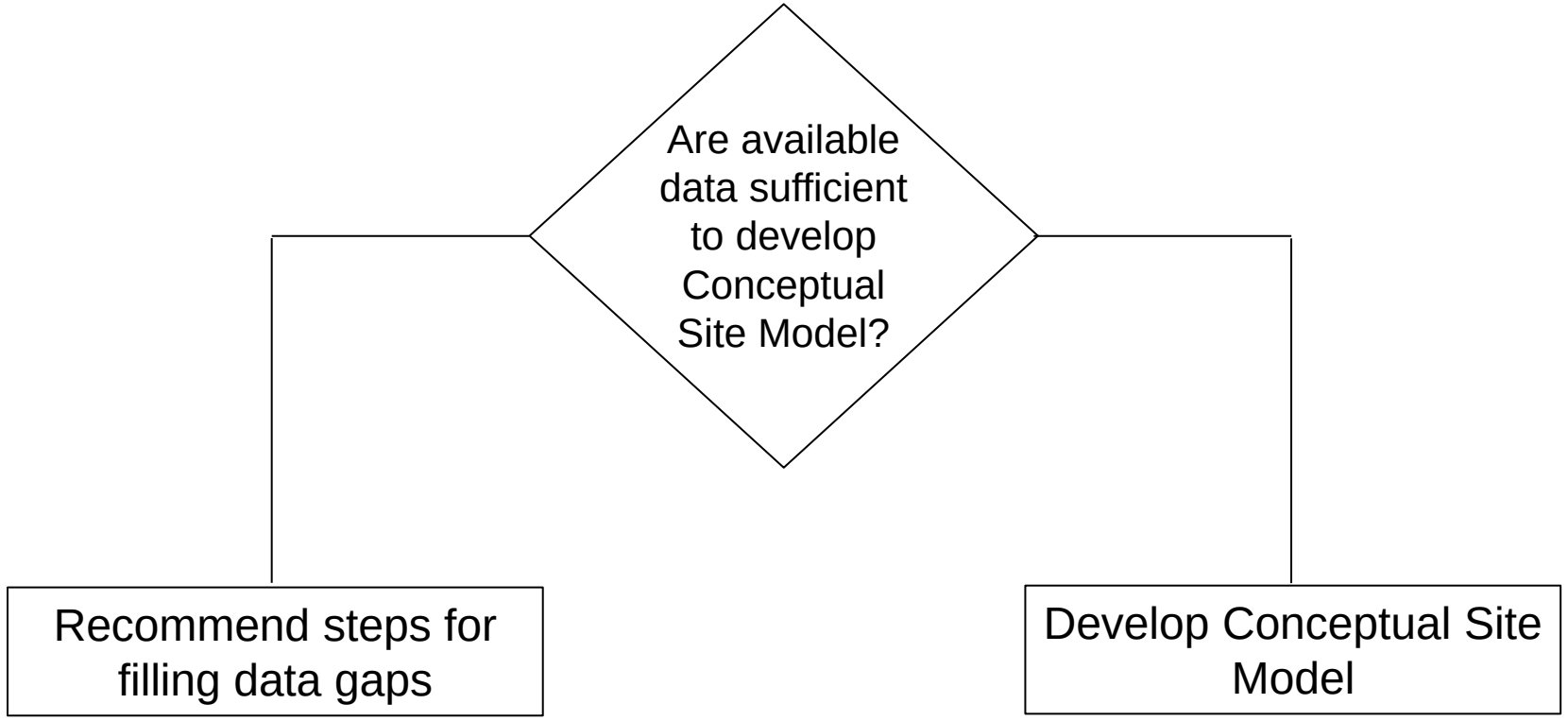


Mission Reach Groundwater Flow Direction Study
Task 2: Construct Inventory and Interactive Map

- Convert site addresses to surveyed monitoring well location coordinates
- Compile geologic information from boring logs and well construction information
- Construct Excel well database and interactive ArcGIS Online well map
- Perform feasibility assessment
  - Are available data sufficient to develop Conceptual Site Model?

Mission Reach Groundwater Flow Direction Study

Task 2 Decision Tree



Mission Reach Groundwater Flow Direction Study

Task 1 and 2 Schedule and Budget

Task	Schedule	Budget
1. Identify Monitoring Well Locations and Reports	February 15, 2023	$9,300
2. Construct Inventory and Interactive Map	March 15, 2023	$13,800
Total		**$23,100**

Mission Reach Groundwater Flow Direction Study
Task 3: Construct Conceptual Site Model

- Results from Task 2 will be used to construct a Conceptual Site Model (CSM) that will identify the following:
  - Hydrostratigraphic units and other significant aquifer features within Mission Reach
  - Horizontal groundwater flow directions and gradients
  - Vertical groundwater flow direction and gradients from available clustered well locations
  - Locations of known or suspected upland sources of PCBs near Mission Reach relative to groundwater flow direction
  - Data gaps and areas that may require additional investigations and/or input to confirm initial evaluations

Mission Reach Groundwater Flow Direction Study

Task 3 and 4 Budget Options

- Range of options exist depending on path taken

Task	No Model	Model of Mission Reach South of River	Model of Mission Reach North and South of River	Model of Mission Reach and Upstream to GE
3. Develop Conceptual Site Model	-	$12,100	$18,300	$36,000
4. Reporting	$5,000	$8,800	$13,200	$15,000
Total	**$5,000**	**$20,900**	**$31,500**	**$51,000**

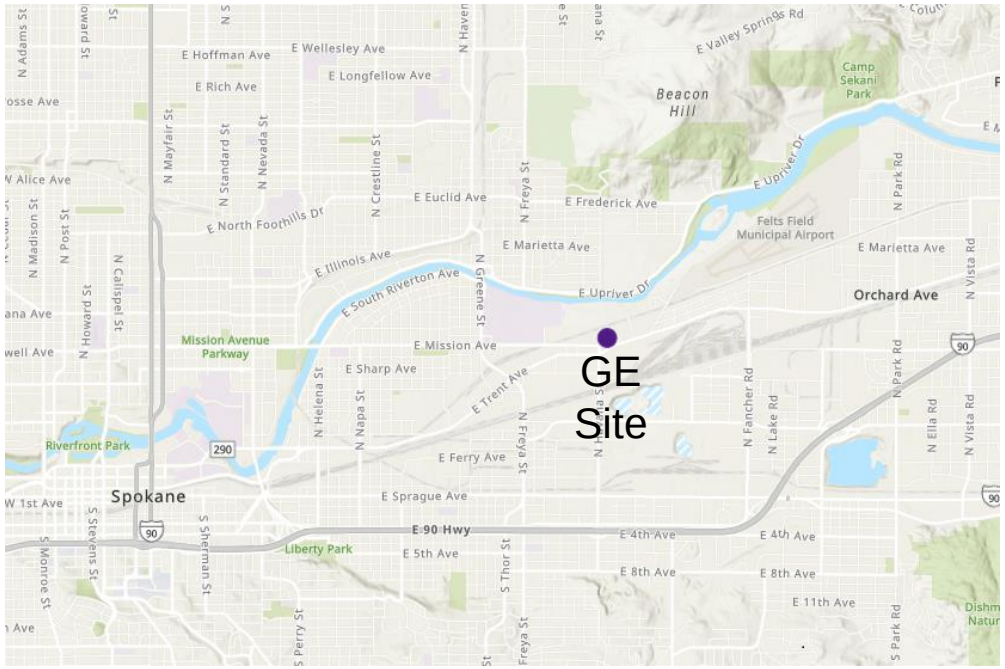
Mission Reach Groundwater Flow Direction Study
Discussion

- Questions?
- Suggested changes?
  - January TTWG meeting occurs prior to next Task Force meeting

GE Site Sampling:
1668 Sampling at GE Site Monitoring Wells

1668 Sampling at GE Site Monitoring Wells
Background

- GE has a Superfund NPL site located between Upriver Dam and Greene St.
- Available data suggests that PCBs from this site may be affecting observed concentrations in the Spokane River
  - Ecology biofilm data show presence of a homolog shift downstream of GE
  - Mass balance assessment suggests presence of additional PCB load entering river near GE

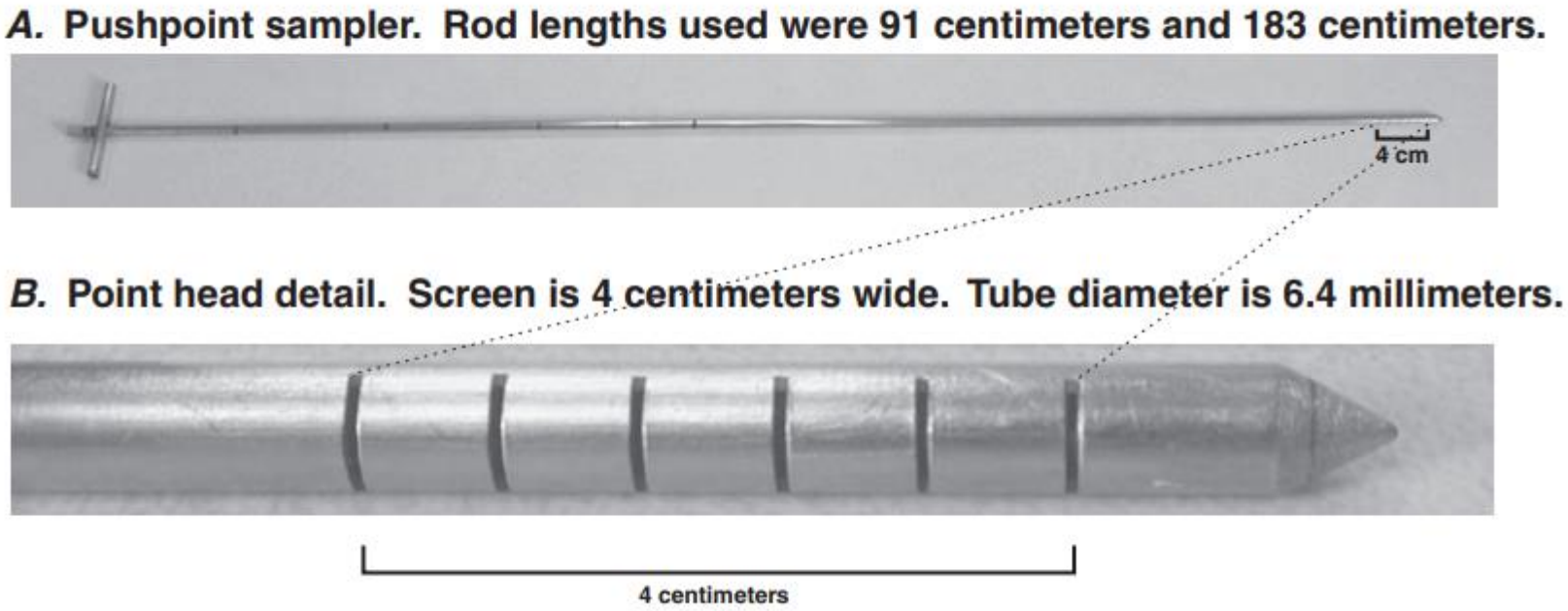


1668 Sampling at GE Site Monitoring Wells
Background

- Task Force is currently sponsoring a fingerprinting study to assess whether the GE site is contributing PCB to the river
  - Indirect assessment of GE PCB load
- A better assessment of PCB load from GE site could be obtained by direct measurement of the extent of groundwater PCB concentration

1668 Sampling at GE Site Monitoring Wells
Monitoring Plan

- Employ temporary push-point samplers (aka Henry samplers) at multiple locations near surface water-groundwater interface
  - Installation of permanent wells infeasible due to regulatory requirements



1668 Sampling at GE Site Monitoring Wells
Monitoring Plan

- Sample a sufficient number of stations to define the presence and extent of the GE plume near the river
  - Sample 10 to 20 locations from ~200’ downstream to ~500 upstream of biofilm site

1668 Sampling at GE Site Monitoring Wells
Schedule and Budget

- Estimated budget $100,000 to $200,000, depending on number of samples analyzed
- Initial calculation of schedule indicates completion more than two months after June 30

Milestone	Completion Date
Work plan approval	January 25, 2023
Draft QAPP	February 24, 2033
Final QAPP	April 14, 2023
Sample collection	May 1, 2023
Laboratory results	June 16, 2023
Data validation	June 30, 2023
Draft technical report	July 21, 2023
Final technical report	August 28, 2023
Data loaded to EIM	September 15, 2023

Future Project Topics

Future Project Topics

- Additional biofilm study
  - Will provide valuable information, but not feasibly completed by June 30
- Sampling of seeps along riverbank for PCBs
  - Will provide valuable information, but not feasibly completed by June 30
- Dye survey to assess connectivity to the river near GE site
  - Likely infeasible by June 30 for several reasons
    - Regulatory requirements associated with dye injection
    - Lack of sufficient downgradient observation wells
    - Uncertain timing of system response
- Additional canine detection work