# TTWG Scopes of Work Mission Reach Groundwater Flow Direction Evaluation Phase II

# Groundwater/Surface Water Interface Monitoring: - GE Site - Mission Reach

### **Mission Reach Groundwater Flow Direction Study** Background/Purpose

- Mission Reach has elevated PCB concentrations in sediment and biofilm, but no obvious surface water loading pathways
  - Regional groundwater model says Mission Reach is losing groundwater on a long-term average basis
- Does a groundwater pathway exist between contaminated sites upland and the Mission Reach of the river over smaller time or spatial scales?
- Develop 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

- Phase I of a two phased approach approved by Task Force in January
  - 1. Identify existing monitoring well locations and associated reports
  - 2. Construct inventory and interactive map
    - Feasibility assessment
  - Construct conceptual site model (or provide recommendations for filling data gaps)
  - 4. Reporting
- Phase II budget range also provided in January
  - \$5k (recommendations for filling gaps) to \$21k (conceptual site model)

### **Interactive Well Map and Excel Database Developed**



#### Hamilton St. Bridge Water Elevation Monitoring

- Project led by Spokane County to monitor continuous water level elevation in river and adjacent groundwater wells
- Are there periods of time when direction of groundwater flow is towards the river?



#### **Recent Hamilton St. Bridge Data Compiled**

- Data suggest that direction of flow is from aquifer to river from March to August of 2022
- Further review needed prior to drawing conclusions



### **Mission Reach Groundwater Flow Direction Study** Phase I Conclusions and Phase II Recommendation from TTWG

#### Phase I Conclusions

- Insufficient data exist to support development of conceptual site model (\$21k)
- Sufficient data exist to support analysis beyond merely reporting data gaps (\$5k)
- Recommendation from TTWG
  - Forego development of conceptual site model
  - Do more than merely report data gaps
    - deeper dive into Hamilton St. data
    - define groundwater flow direction to the extent allowed by the available data
  - \$10k Phase II budget recommended

### **Summary Scopes of Work for Discussion**

## **Groundwater Sampling near GE Site**

# Groundwater/Surface Water Interface Sampling in Mission Reach

# **Summary Scopes of Work**

- TTWG had previously identified several projects of interest that could not be completed prior to the sunsetting of the Task Force
  - Subsequent discussion regarding whether the Task Force should develop formal scopes
  - Set the stage for implementation by the Task Force's successor group
- Direction to develop "conceptual" scopes to gage interest
  - Groundwater/Surface Water Interface Sampling near GE Site and in Mission Reach
  - Potentially request additional Task Force funding to prepare more detailed scopes
- Recommending that more detailed scopes not be developed now
  - Specific sampling locations will be better informed when 2022 data are available
  - Too many uncertainties regarding who will do monitoring, laboratory analysis, data assessment, etc.

# **Groundwater Sampling near GE Site**

- GE has a Superfund NPL site located between Upriver Dam and Greene St.
  - Studies are estimating the extent that PCBs from this site may be affecting observed concentrations in the Spokane River
- Proposed study focuses on PCB concentration delivered to the river
  - "Start at the river and work backwards"
- Three component sub-tasks
  - 1. Groundwater/surface water interface
  - 2. Wells on public property located near the GE Site
  - 3. Groundwater seeps



### **Groundwater/Surface Water Interface** Conceptual 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



## **Groundwater/Surface Water Interface** Conceptual 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



### **Wells on Public Property Located near GE Site** Conceptual Plan

 Two monitoring wells located on public property downgradient of GE Site



## **Seeps Downstream of Upriver Dam** Conceptual Plan

- Urban Waters program sampled two groundwater seeps downstream of Upriver Dam
  - Elevated PCB concentrations observed in one seep
- Task consist of repeating seep sampling



Monitoring Site

DamGW-13

#### **Schedule and Budget**

Deliverable	Completion Date
Draft Q <u>A</u> PP	Four weeks after project initiation
Final QAPP	Twelve weeks after project initiation
Sample collection	July 31, 2024
Laboratory results	October 31, 2024
Data validation	November 30, 2024
Draft technical report	December 31, 2024
Final technical report	January 31, 2025
Data loaded to EIM	January 31, 2025

Item	Budget
Draft and final QAPP	\$10,000
Task 1: Monitoring of PCBs from groundwater wells on public property located near the GE Site	\$12,000
Task 2: Monitoring of PCBs at the groundwater/surface water interface of the Spokane River	\$60,000
Task 3: Monitoring of PCBs in groundwater seeps to the Spokane River	\$15,000
Task 4: Data assessment and reporting	
Total	\$117,000

# **Groundwater/Surface Water Interface Sampling in Mission Reach**

- Biofilm sampling has shown elevated PCBs concentrations in Mission Reach
- Task Force has identified several sites with potentially high historical releases of PCBs
  - Extent to which these PCBs get delivered to the River is unknown
- Proposed study focuses on PCB concentration delivered to the river
  - "Start at the river and work backwards"



### Groundwater/Surface Water Interface Conceptual Plan

 Sample eight locations from ~200' upstream and downstream of each biofilm site showing elevated concentrations



### **Schedule and Budget**

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ltem	Budget
Draft and final QAPP	\$10,000
Task 1: Monitoring of PCBs at the groundwater/surface water	
interface of the Spokane River	
Task 2: Data assessment and reporting	
Total	\$150,000