Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

# GWI Water Quality Monitoring Interview Documentation Form

| | |
|---|---|
| System Name: | System ID #: |
| Contact (Name/Phone #): | County: |

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|---|
| Basis for Potential GWI Source Designation: |

| Source Data | | | |
|---|---|---|---|
| | Source # 0 _ | Source # 0 _ | Source # 0 _ |
| Source Name | | | |
| Capacity, gpm | | | |
| Total Depth | | | |
| Depth of Open Interval | | | |
| | | | |
| | | | |

| Susceptibility and Wellhead Protection Zone Information | | | |
|---|---|---|---|
| | Source # 0_ | Source # 0_ | Source # 0_ |
| Susceptibility Rating | | | |
| Adjacent Surface Water | | | |
| Name | | | |
| Distance | | | |
| WHPA Zone Radius (ft) | | | |
| 6-month | | | |
| 1-year | | | |
| 5-year | | | |

| **Water Quality Monitoring Parameters** | | | |
|---|---|---|---|
| | **Required** | **Optional** | **Selected** |
| **Temperature (°C)** | ☑ | | ☑ |
| **Conductivity (μmhos/cm)** | ☑ | | ☑ |
| **Rainfall / streamflow** | ☑ | | ☑ |
| **Coliform bacteria or HPC** | | ☑ | ☐ |
| **pH** | | ☑ | ☐ |
| **Turbidity** | | ☑ | ☐ |

## ***Summary of Meeting***

Sources to be monitored:

Date(s) to begin sampling:

Preliminary Monitoring Report due on:

Sampling Locations:

Remarks:

## *Water Quality Monitoring:*

**MONITORING EQUIPMENT**

- ❑ Temperature:
  - ☑ digital thermometer with readout to ±0.1° C
- ❑ Conductivity:
  - ☑ temperature compensated conductivity meter with digital readout
  - ☑ range : 0 to 2,000 micromhos/cm [µmoh/cm]
  - ☑ accuracy: ± 1 µmoh/cm
- ❑ pH:
  - ☑ digital readout
  - ☑ accuracy: ± 0.1 pH unit
- ❑ Turbidity:
  - ☑ digital readout
  - ☑ range: 0 - 1,000 NTU [nephelometric turbidity units]
  - ☑ accuracy: ± 0.1 NTU
- ❑ Models Acceptable to the Department
  - ☑ relatively inexpensive models available, such as or equivalent to:
    - Whatman Scientific in Hillsboro, Oregon (1-800-942-8626)
    - Hach Company in Loveland, Colorado (1-800-227-4224)
- ❑ Sampling Frequency & Duration:
  - Once per week minimum for 12 months
  - Same day of week (assure similar usage patterns)
  - No less than five [5] days between measurements
  - Same time of day (assure consistent temperature & sunlight variations)
- ❑ Sampling Technique:
  - ☑ Assure source flowing for 15 to 30 minutes prior to sample collection
  - ☑ Flush a minimum volume equal to 3 casing or collection line volumes
  - ☑ Seasonal source: online for at least 2 weeks prior to initial sample collection
  - ☑ Surface sample:
    - Rinse sample container at least 3 times;
    - Allow container temperature to adjust to water temperature
    - Do not stir
  - ☑ Obtain conductivity, temperature and pH samples in the field
  - ☑ Obtain temperature measurement immediately

- ☑ Allow thermometer time to acclimate to air temperature versus transport temperature

❑ Sampling Location:

- ☑ Source Sample Location:
  - Sample prior to treatment - including chlorination
- ☑ Surface Water Sample Location:
  - Stream cross-section: from as near to stream thalweg (main stream) as possible
    - Avoid shallows and slack-waters
  - Stream length:
    - As close to source location along streambank as possible
    - Bridges ¼ mile upstream to 1 mile downstream of source location are acceptable
- ☑ Spring Sample Location:
  - Surface water measurements not required
  - Air temperature and rainfall measurements required
- ☑ Rainfall / stream gauging:
  - Readings made at the same time as water quality measurements
  - Assure rain gauge located to assure precipitation not obstructed by geography, trees or buildings
  - Record daily precipitation events in narrative for days measurements not taken
  - Daily precipitation and temperature data from USGS or state weather stations can be subsitituted
  - Surface water stream flow measured with pygmy meter or standard device such as weir [if available - do not construct]
  - Surface water stream flow measurements substituted from USGS gaging stations if stations are active, data is available and there are no ungaged, significantly large tributary streams between stations used to gage the site.

| | |
|---|---|
| * | All surface waters within 200 feet of the groundwater source shall be monitored. Surface water is defined as water open to the atmosphere and subject to surface runoff. These include perennial (year-round) rivers, streams, and creeks as well as lakes, ponds and wetlands. Intermittent streams, natural and man-made surface impoundments that receive runoff are also included. Isolated bodies of water that form in low lying areas during the rainy season solely as a result of the water table rising to the surface are not considered surface water. If there is a question as to whether a particular body of water will be considered surface water in the context of this guidance, the deciding factor will be whether or not channeled drainage contributes water to the body. |

❑ WQM REPORTS - Reporting Requirements

- ☑ Preliminary Report: submit following collection of 6 months of data
- ☑ Final Report: submit following collection of minimum of 12 months of data, modified following review of preliminary report.
- ☑ Departmental review fees - billed at hourly rate

❑ Preliminary WQM Report Contents

Include “Background information” and “Elevation profile diagram” portions of final report

❑ **Background information**

☑ map of the area surrounding each potential GWI source.
- locate the potential GWI source,
- locate all surface water bodies within 200 feet of the potential GWI,
- identify the location of the baseline monitoring point for each surface water
- identify
- major roadways,
- any stormwater storage or collection facilities open to the atmosphere, and
- any potential sources of microbiological contamination within the 6-month time of travel [obtained from the source susceptibility survey]for the potential GWI source
  - onsite sewage absorption systems
  - sewer lines,
  - dairy or livestock operations.

☑ Base maps:
- USGS maps
- county plats &/or planning maps
- aerial photos
- water system planning maps
- Minimum scale: 4" per mile or 1" ≈ 1325'

❑ **Elevation profile diagram**

☑ Required for each potential GWI source
☑ elevation profile diagram which shows in cross section the elevations of the potential GWI source and nearby surface water
☑ minimum scale : 1" = 50 feet [horizontal]
☑ = 10' [vertical]

❑ <u>Wells</u>:
☑ well depth
☑ depth to top of first screened/perforated or open interval
☑ surface seal depth (indicate type of seal if known)
☑ the slope of the land in the vicinity of the well
☑ information sources:
- well logs
- water system plans
- waiver susceptibility surveys
- well driller
- WA Dept. Of Ecology, Regional Office - Water Resources Division

❑ <u>Springs, infiltration galleries, and Ranney wells</u>
☑ depth of box or caisson
☑ depth of buried collection laterals
☑ surface seal type, depth, and extent
☑ the slope of the land in the vicinity of the source
☑ information sources:

- ☑ system files
- ☑ as-built drawings
- ☑ construction reports
- ☑ water system plans

If records are incomplete, provide the available information and your best estimate for the remaining information (indicate "estimate" on the diagram).

- ❑ Surface waters that may potentially affect the source
  - ☑ elevation of normal pool
  - ☑ elevation of 100 year floodplain
  - ☑ elevation of lake bed, bottom of river channel or streambed
  - ☑ approximate sampling point elevations
  - ☑ the slope of the land surface between the source and the surface water
  - ☑ information sources: local floodplain maps or reports available in city and county offices.

- ❑ WQM Final Report Contents
  - ☑ Use format provided
  - ☑ Data analyzed and graphically depicted
  - ☑ Analysis performed by the department
  - ☑ Data submitted as electronic files preferred
  - ☑ Format in ASCII text or common spreadsheets - Excel, Lotus, QuattroPro
  - ☑ Data must in column-unique form with one parameter in each column
  - ☑ Do not report values "less than" (<) or "greater than" (>); must be numeric data
  - ☑ Report full dates [06/05/97]
  - ☑ Hour for collection should be provided
  - ☑ Text comment reserved for far right column only
  - ☑ Complete data required for ***each*** potential GWI source
  - ☑ Complete surface water data for ***each*** surface water body within 200 feet of the GWI source
- ❑ Hydraulic connection identified by data:
  - ☑ DOH will make notification to purveyor to proceed with MPA analyses
  - ☑ All sources identified required to install disinfection with appropriate microbiologic inactivation levels [CT's]

Return completed form to: GWI Program Lead
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