

Glyphosate and State-Wide Waivers

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Montana's State-Wide Waiver Program (SWWP) was created in 1996 and was modified over time to include nine analytes: endoathall, diquat, glyphosate, dioxin, ethylene dibromide (EDB), dibromochloropropane (DBCP), source water asbestos, cyanide, and PCBs. Without the waiver, these contaminants would be required as part of the routine sampling for all community and non-transient, non-community public water supply systems (systems). In general, those systems would need to sample for these contaminants once at each entry point (EP) in every 3-year monitoring period. There are approximately 1,250 active EP's at approximately 890 community and non-transient, non-community systems across the state. It is estimated that systems in Montana have saved over \$1.6M for each 3-year sampling period that they did not have to sample for the analytes on the SWWP list. (See Tables 1 & 2.)

Prior to 2005, there is no record of DEQ conducting state-wide monitoring specific to waivers. Records are not clear as to what was used to justify the waiver program; however, the program was approved by EPA.

In 2005 and 2006, DEQ conducted a state-wide monitoring program to verify that the analytes listed in the SWWP are, in fact, not present in Montana's public drinking water and that the waiver is still valid. The monitoring program consisted of sampling glyphosate, ethylene dibromide, and dibromochloropropane at 50 randomly selected systems with diquat, endoathall, dioxin, source water asbestos, cyanide, and PCBs being sampled at 20-25 selected systems. (See map below for the location of the 50 systems sampled for glyphosate.)

From 1/1/1996 through at least 2017 there were >964 glyphosate samples with no glyphosate detects other than during the 2005 monitoring program where one system (Denton MT0000199) detected glyphosate at 25 ppb. It was resampled several months later and no detectable level was measured.

In about 2017, there were a few issues that once again brought up Montana's SWWP, dealing specifically with glyphosate.

Issue 1: Glyphosate was determined, by the World Health Organization and the Center for Disease Control, to be a probable human carcinogen. EPA did not make that finding which resulted in significant disagreement and legal actions.

Issue 2: EPA Headquarters began questioning the use of state-wide waivers. This resulted in Wyoming, the only state for which EPA implements the Safe Drinking Water Act requirements, losing its state-wide waiver program. (I believe they were later able to bring back some form of a state-wide waiver using Montana's as a model.)

Issue 3: A concerned citizen sent a letter to the governor questioning Montana's practice of waiving sampling for glyphosate.

In responding to the complaint, the program made a series of findings:

1. When the original waiver for glyphosate was approved, its use across the country was generally restricted to large agricultural activities using products such as "Roundup". Since that time, the use of glyphosate has become much more prevalent with its use in common household products such as "Weed-Be-Gone". In addition, genetic modification of agricultural crops (i.e. "Roundup resistant" alfalfa) significantly increased its use.
2. The sampling conducted in 2005, although we tried to make it statistically significant, was not representative of the state. We randomly selected systems to sample but due to population

centers we were not sampling in areas that may have significant risk due to large scale chemical use. By looking at the attached map you can see where significant portions of the state’s agricultural area had very few, if any, samples.

3. We needed more information regarding all the waived contaminants to determine whether the state-wide waiver was justified for both ourselves and for potential EPA questions.

The waiver is only justifiable if we are confident that public health is protected. At the same time, the cost savings are significant. The program considered multiple options for gathering the data required to make an informed decision regarding the future of the SWWP.

We proposed 4 options:

Option A: Allow the waiver to expire and move the contaminants back into routine monitoring. This option is the most protective of public health but was rejected due to cost if occurrence data could show that these contaminants are not found in association with public water supply sources.

Option B: DEQ conducts monitoring of 50 sites across the state for all nine State-Wide Waiver analytes. The estimated laboratory cost is \$65,000.

Estimated Costs for Option B: Sample nine analytes at 50 sites.

Method	Analytes	Number of Samples	Lab Price	Cost Per Method
Method 504	Dibromochloropropane	50	\$196	\$9,800
	Ethylene Dibromide			\$0
Method 547	Glyphosate	50	\$140	\$7,000
Method 548	Endothall	50	\$150	\$7,500
Method 549	Diquat	50	\$180	\$9,000
Method 1612 & 1613	2,3,7,8-TCDD (Dioxin)	50	\$250	\$12,500
Method 508A	PCBs	50	\$186	\$9,300
Method 335	Cyanide	50	\$50	\$2,500
Method	Asbestos (at source)	50	\$141	\$7,050
Total			\$1,293	\$64,650

Option C: DEQ conducts monitoring of **more than** 50 sites across the state for nine State-Wide Waiver analytes to improve coverage. The estimated laboratory cost would be equal to ~\$1,300/sample.

Options B and C were rejected as they still didn’t improve coverage across the state given the potential distance between sampling locations and site-specific conditions. If either of these options were chosen, the program would need to cover the costs as sample results would apply to all affected systems in the state. The cost to the program was prohibitive.

Option D: Require every community and non-transient, non-community system to sample **one** of their entry points every 9 years. Use the information gathered to determine the SWWP’s future.

The program chose Option D for the following reasons:

1. Samples would be more indicative of the risk to human health.
2. Costs to justify the waiver would be spread across all those financially benefitting from the waiver.
3. We would have enough information to justify the decision for the SWWP one way or the other.

The program worked with our partners over an extended period explaining what we were proposing and why. There was some initial pushback but it seems that most systems have determined that they would rather pay the cost once every nine years as opposed to once every 3 years. The systems began sampling in early 2020 and we have had very few complaints.

Table 1-The laboratory prices for State Wide Waiver Analytes

Method	Analyte	Lab Price
Method 504	Dibromochloropropane	\$196
	Ethylene Dibromide	
Method 547	Glyphosate	\$140
Method 548	Endothall	\$150
Method 549	Diquat	\$180
Method 1612 & 1613	2,3,7,8-TCDD (Dioxin)	\$250
Method 508A	PCBs	\$186
Method 335	Cyanide	\$50
Method	Asbestos (at source)	\$141
Total		\$1,293
Rounded Totals		\$1,300

This price is per sample. Does not include bulk discount, shipping costs, or personnel time. Systems may be able to receive the Asbestos waiver without sampling.

Total number of active entry point (EP) with VOC/SOC schedule is ~1250.

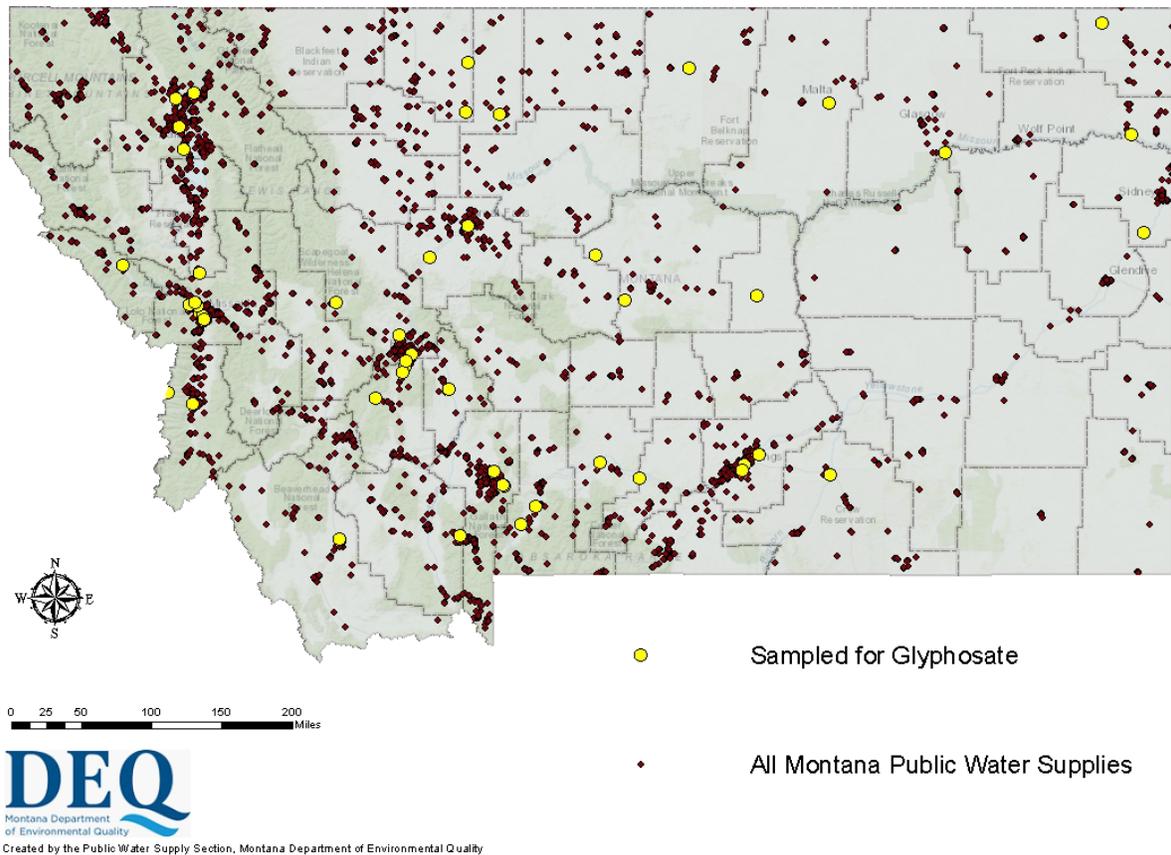
Total number of active PWS with VOC/SOC schedule is ~890.

Table 2- Estimated Prices of Monitoring all nine State Wide Waiver Analytes

Option	Price Per Sample	Number of Samples	Total Price
Sample Every EP	\$1,300	1250	\$1,625,000
Sample Every PWS	\$1,300	890	\$1,157,000
Sample 50 EP	\$1,300	50	\$65,000
Sample 100 EP	\$1,300	100	\$130,000

Only includes lab fees, does not include bulk discount, shipping costs or personnel time.

2005 Glyphosate Sampling in Relation to All Montana Public Water Supplies



Map of 2005 Glyphosate PWS samples compared against all PWS. The glyphosate samples are scattered across the state.

Note The USGS has several samples with detected glyphosate from surface water in Montana. The highest detect is 1.1 ug/L, which is below the MCL.