



Wasco Watersheds: Pesticide Stewardship Partnership

May 2017



Oregon
Department
of Agriculture

2016 Pesticide Water Monitoring Results



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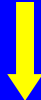
masterson.kevin@deq.state.or.us

kcook@oda.state.or.us

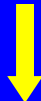
Pesticide Stewardship Partnerships (PSPs)

Key Steps in Partnership Projects

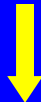
Monitor for current use pesticides in surface waters from drift & runoff



Identify streams with elevated pesticide concentrations or high # of detections



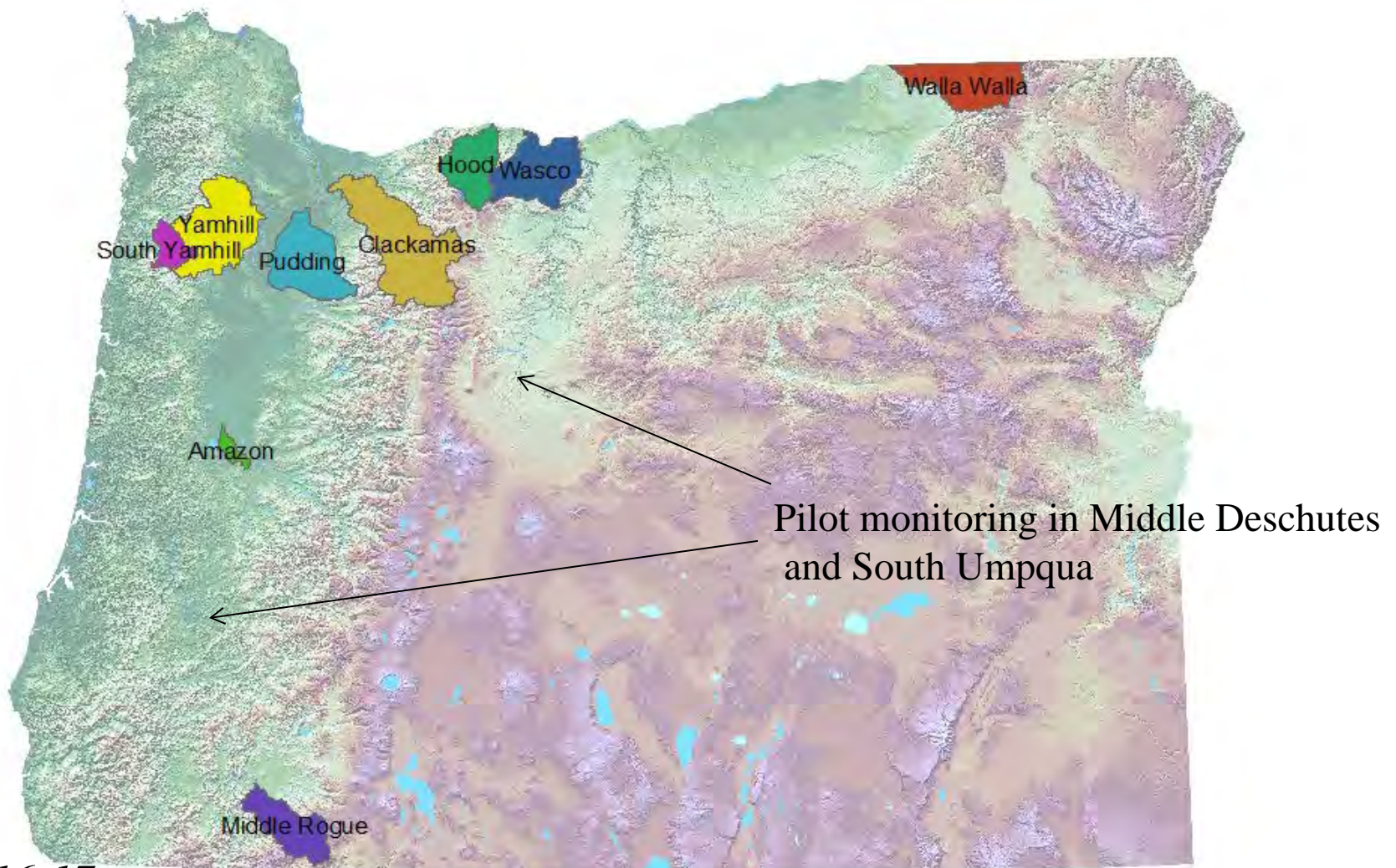
Collaborate to implement voluntary management practices



Follow-up monitoring to determine improvements over time



Pesticide Stewardship Partnerships: 9 Oregon Watersheds*



* As of 2016-17



Pesticide Monitoring Locations in Watershed

- 4 Monitoring Locations
 - Mill Creek
 - At Wright Road
 - At 2nd Street Bridge in The Dalles
 - Threemile Creek
 - At Hwy 197
 - Fifteenmile Creek
 - Above Seufert Falls (aka Cushing Falls)





Pesticide Monitoring Overview



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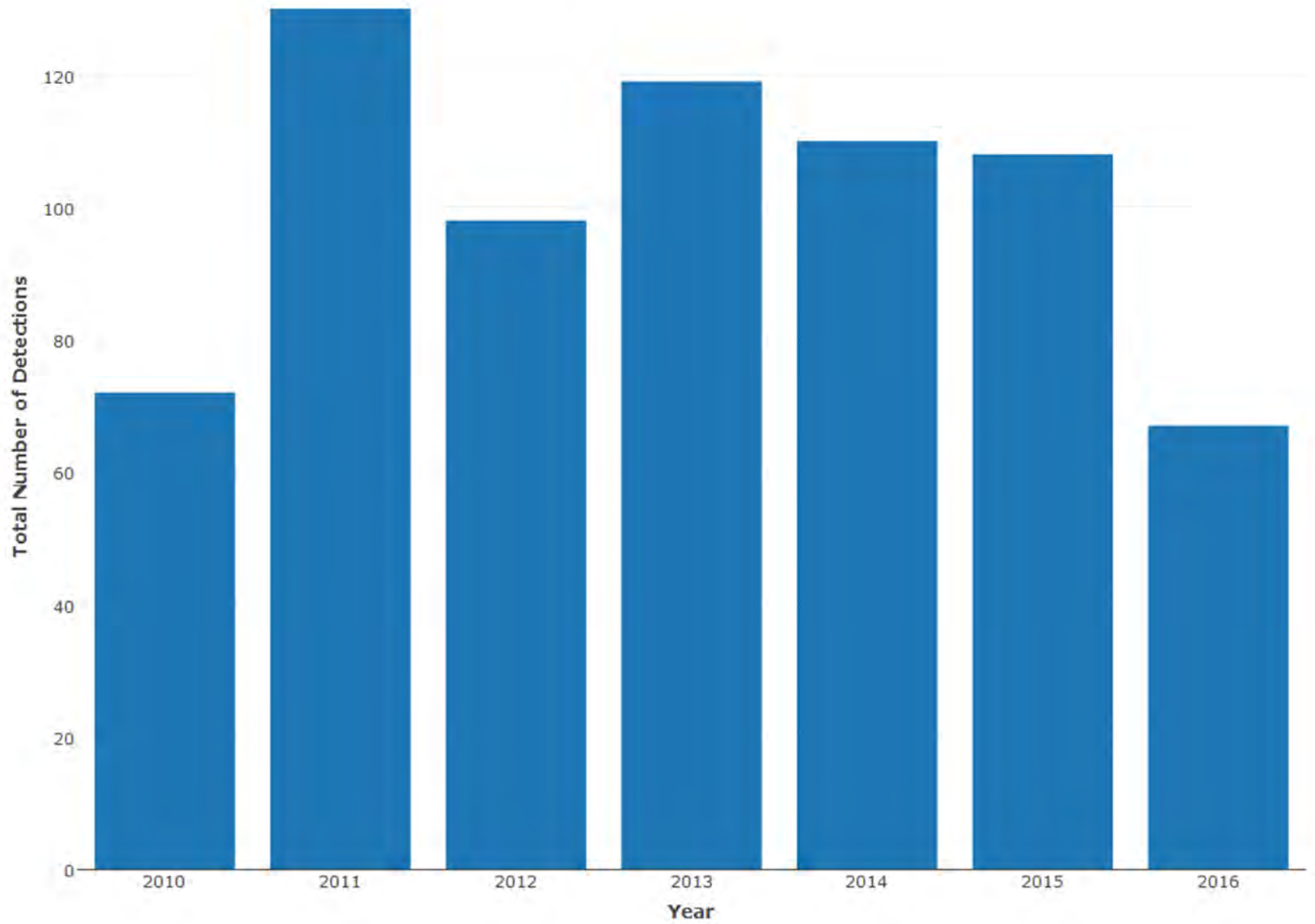
- 2016 Wasco Monitoring Timeframe
 - 15 water sampling events – Wasco SWCD
 - Weekly from mid March through early April
 - Weekly from late May through end of July
 - One early October sampling event
- What Pesticides Are Analyzed?
 - Approximately 125 insecticides, herbicides and fungicides (list evolves over time)
 - **12 Detected in Wasco streams in 2016 – a few with only one detection**

Pesticides Detected in Wasco Streams - 2016

Insecticides	Herbicides	Fungicides
Carbaryl (Sevin)	Atrazine and degradates (Aatrex)	Pyraclostrobin (Headline)
Malathion	Diuron (Karmex, Direx)	
Imidacloprid (Admire)	Hexazinone (Velpar)	
	Bromacil (Krovar)	
	2,6-Dichlorobenzamide (Casoron degrade)	
	Glyphosate (Roundup)	

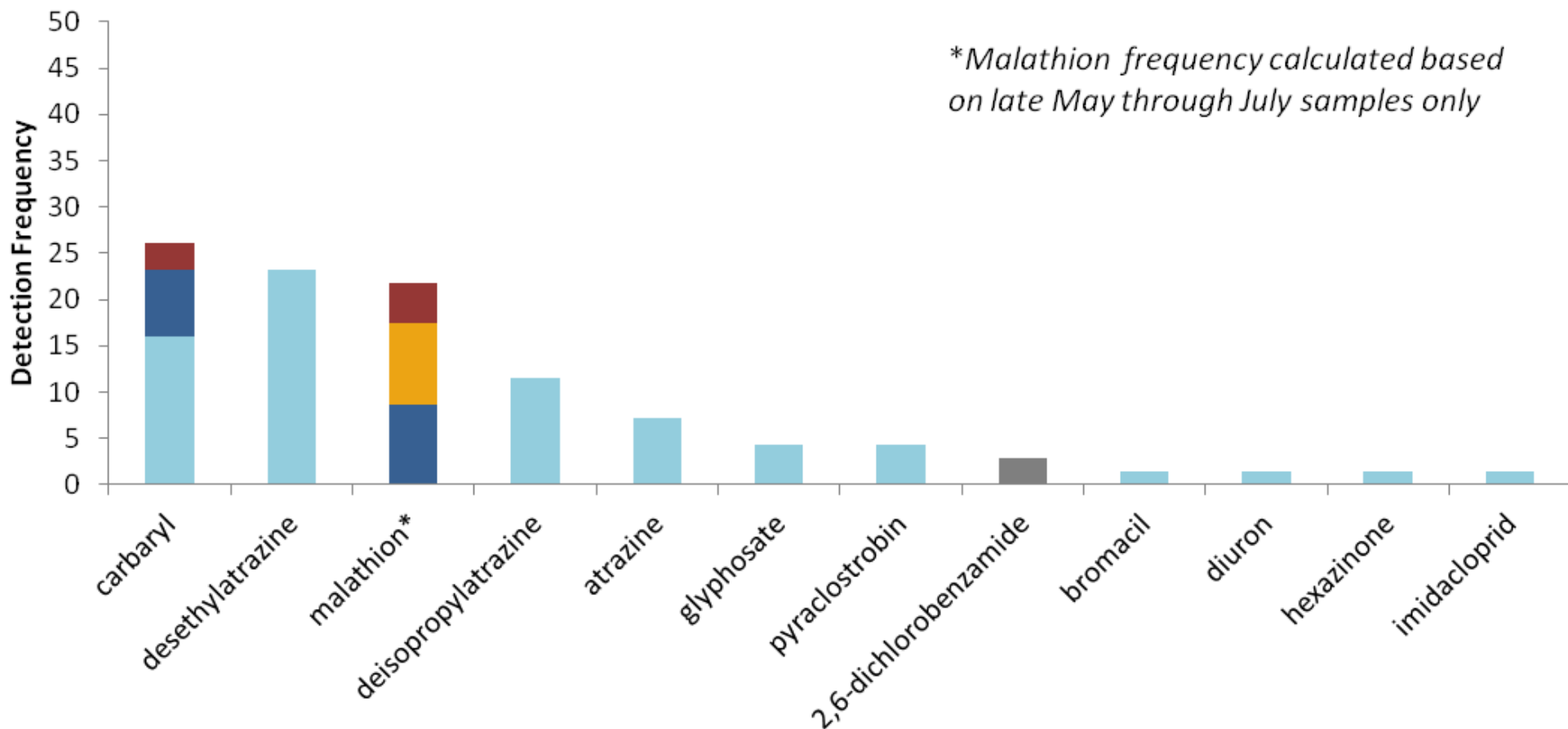
Bold = major ag use pesticides

Total Number of Detections in the Wasco Basin



Detection Frequency in Wasco Basin 2016

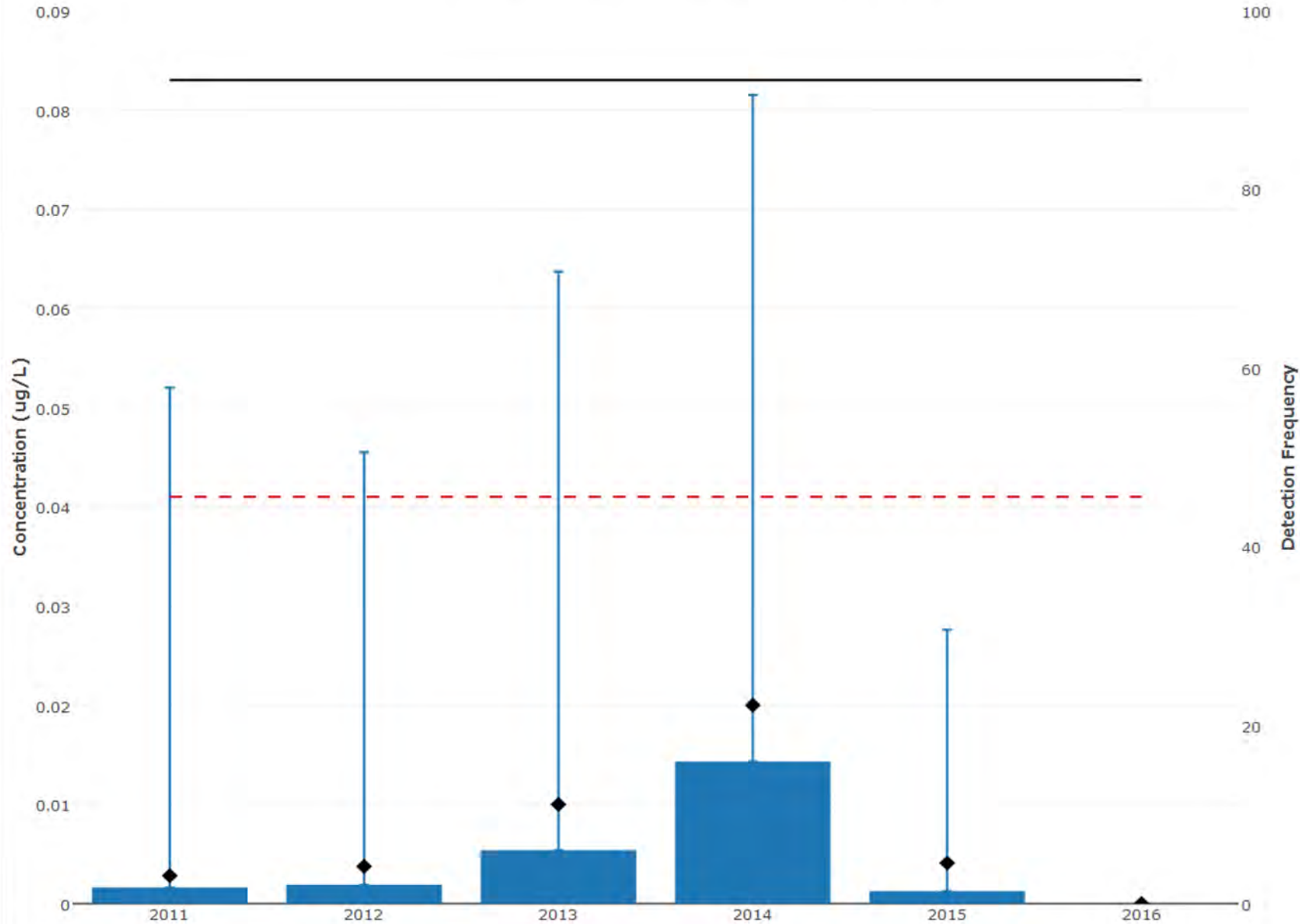
<10% 10-50% 50-100% Over Benchmark No bench



**2016 Wasco Pesticide Monitoring:
Insecticide and Fungicide Findings**

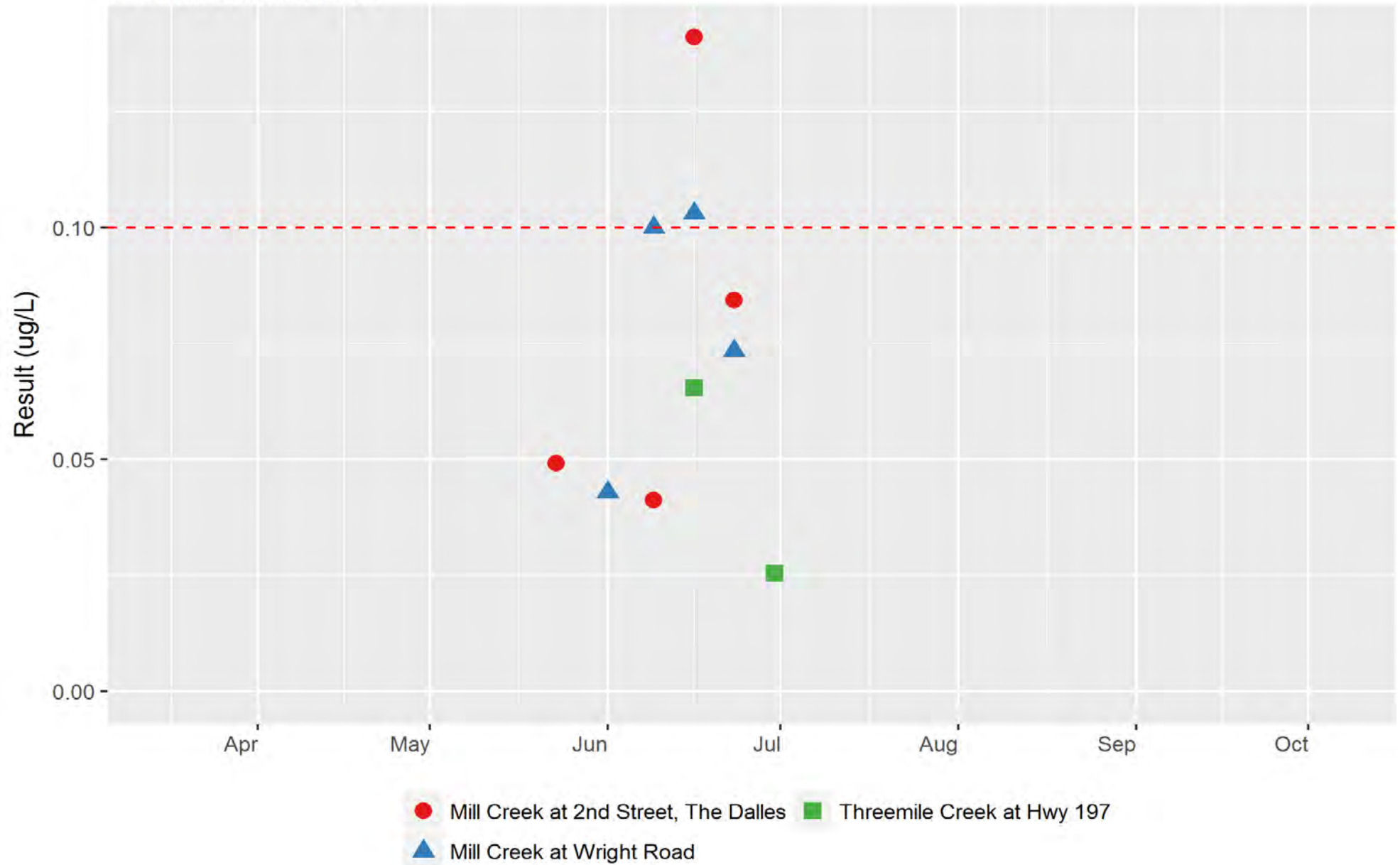
Early Spring Chlorpyrifos in Wasco Basin 2011-2016 Average and Maximum Concentration of All Samples

- Average
- ◆ Detection Frequency
- - - WQS Chronic = 0.041 ug/L
- WQS Acute = 0.083 ug/L



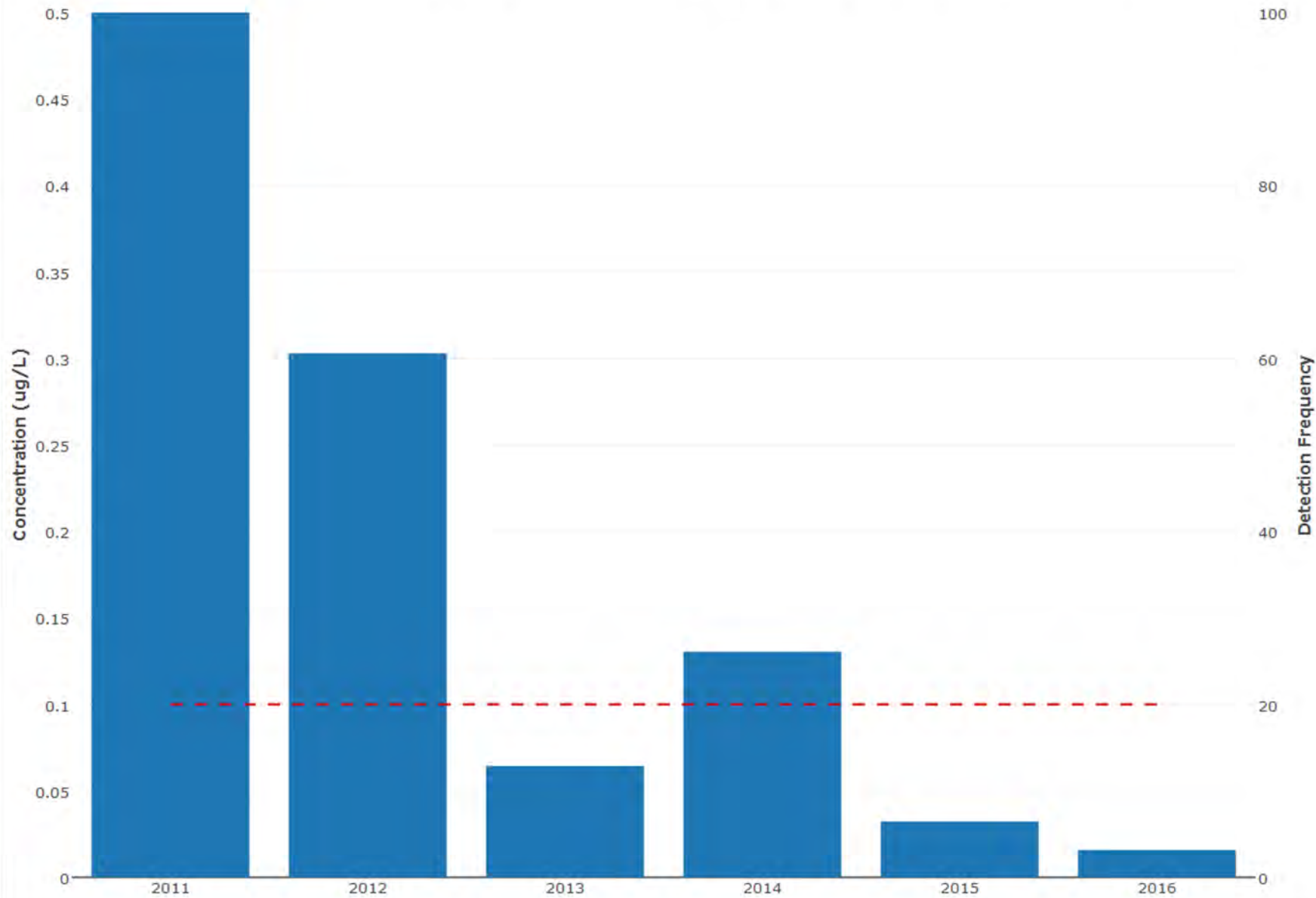
Wasco 2016 malathion and metabolites

minimum benchmark: 0.1



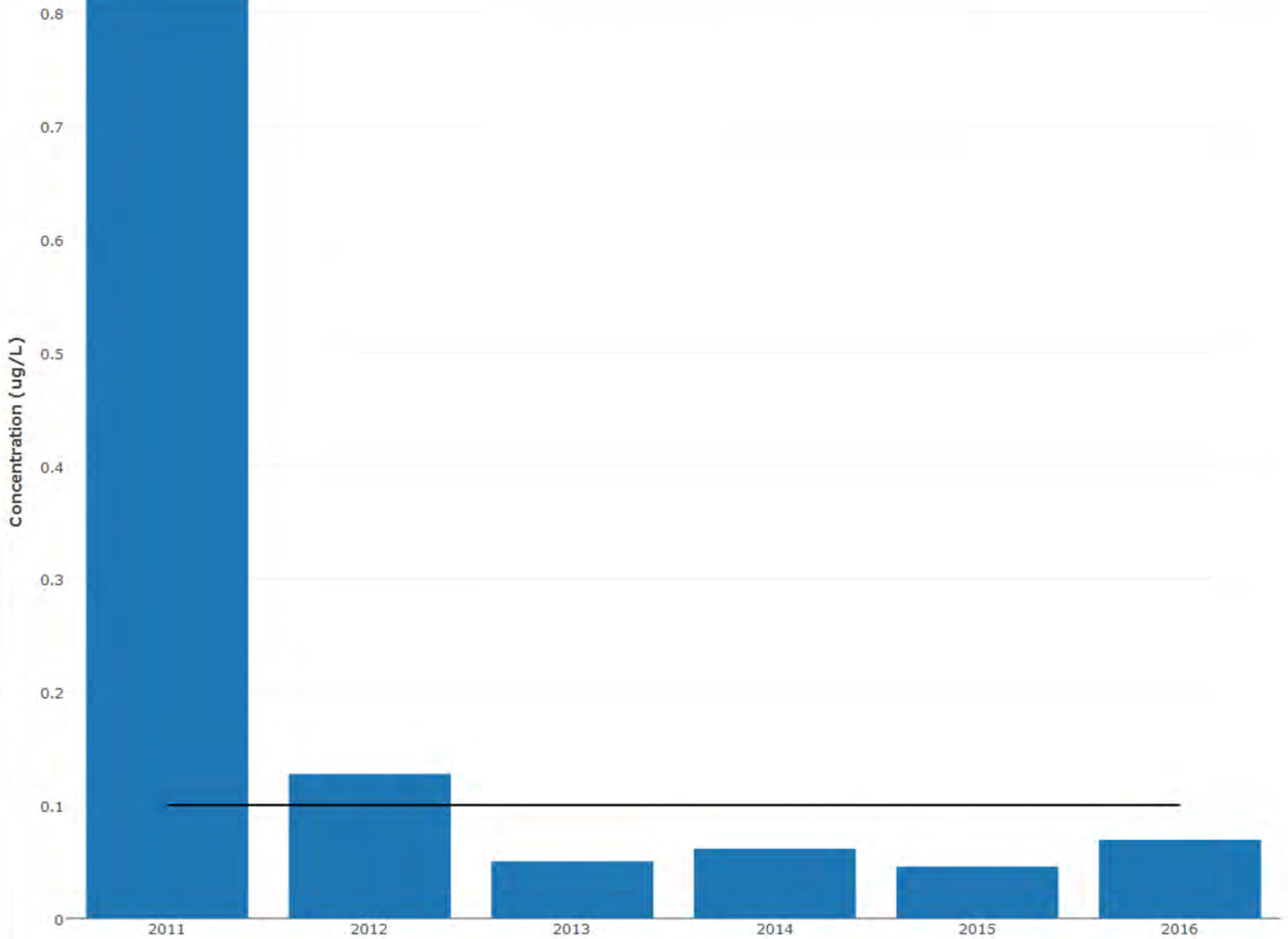
Malathion in Wasco Basin 2011-2016 Average Concentration of all samples (spring/early summer)

■ Average
- - WQ Criteria = 0.1 ug/L

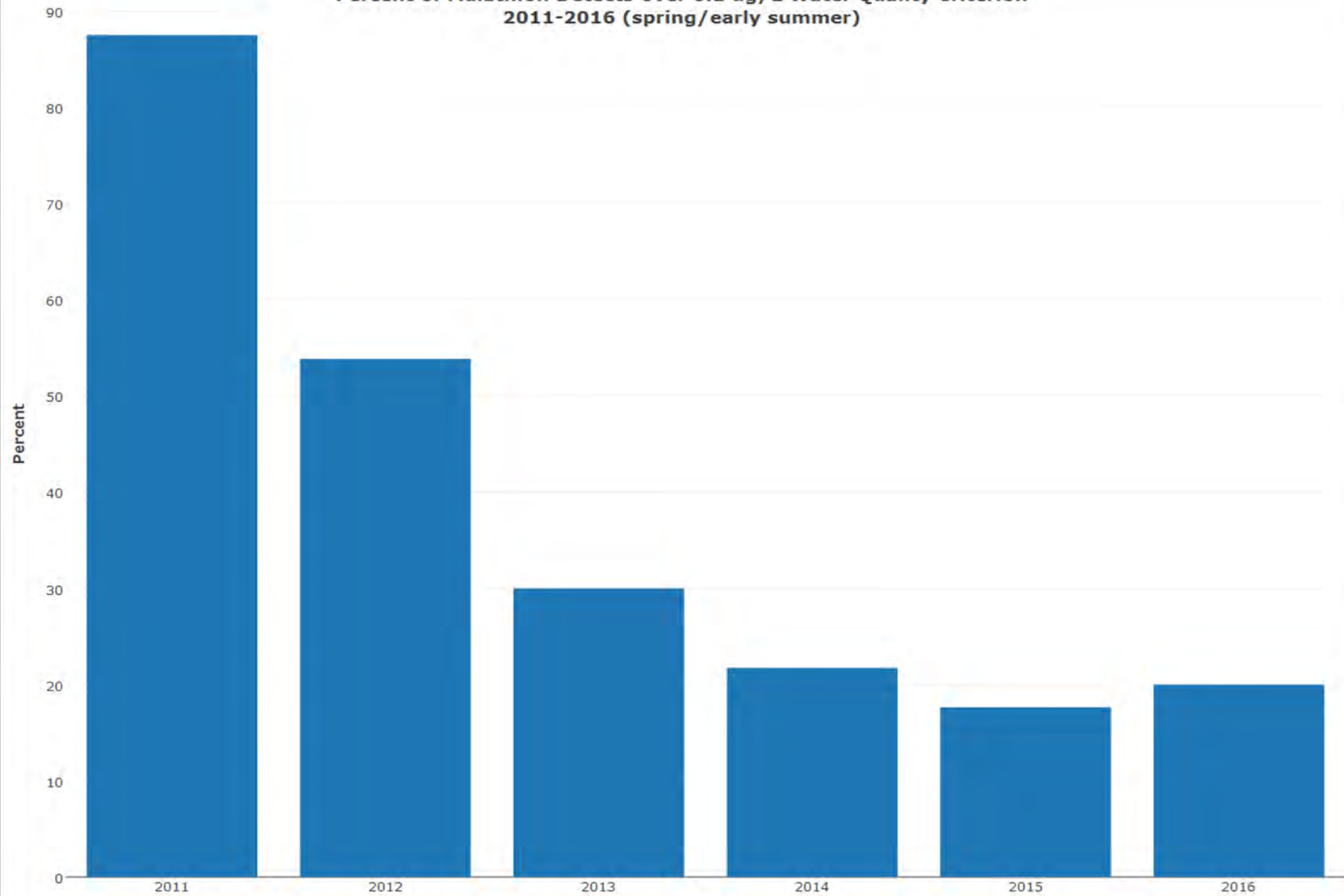


Malathion in Wasco Basin 2011-2016
Median of all samples (spring/early summer)

■ Median
— WQ Criteria

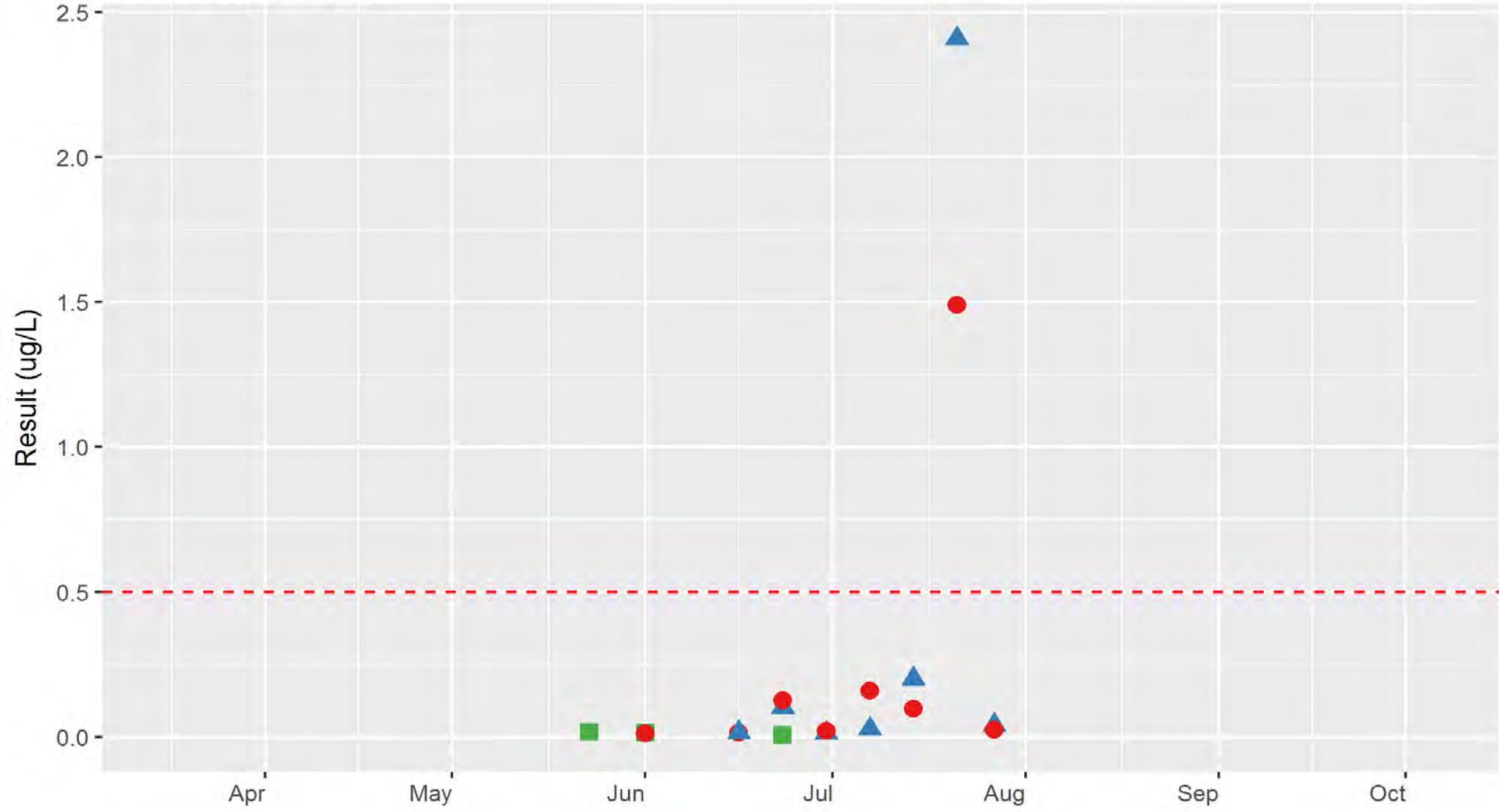


Malathion in Wasco Basin
Percent of Malathion Detects over 0.1 ug/L Water Quality Criterion
2011-2016 (spring/early summer)



Wasco 2016 carbaryl (Sevin)

minimum benchmark: 0.5

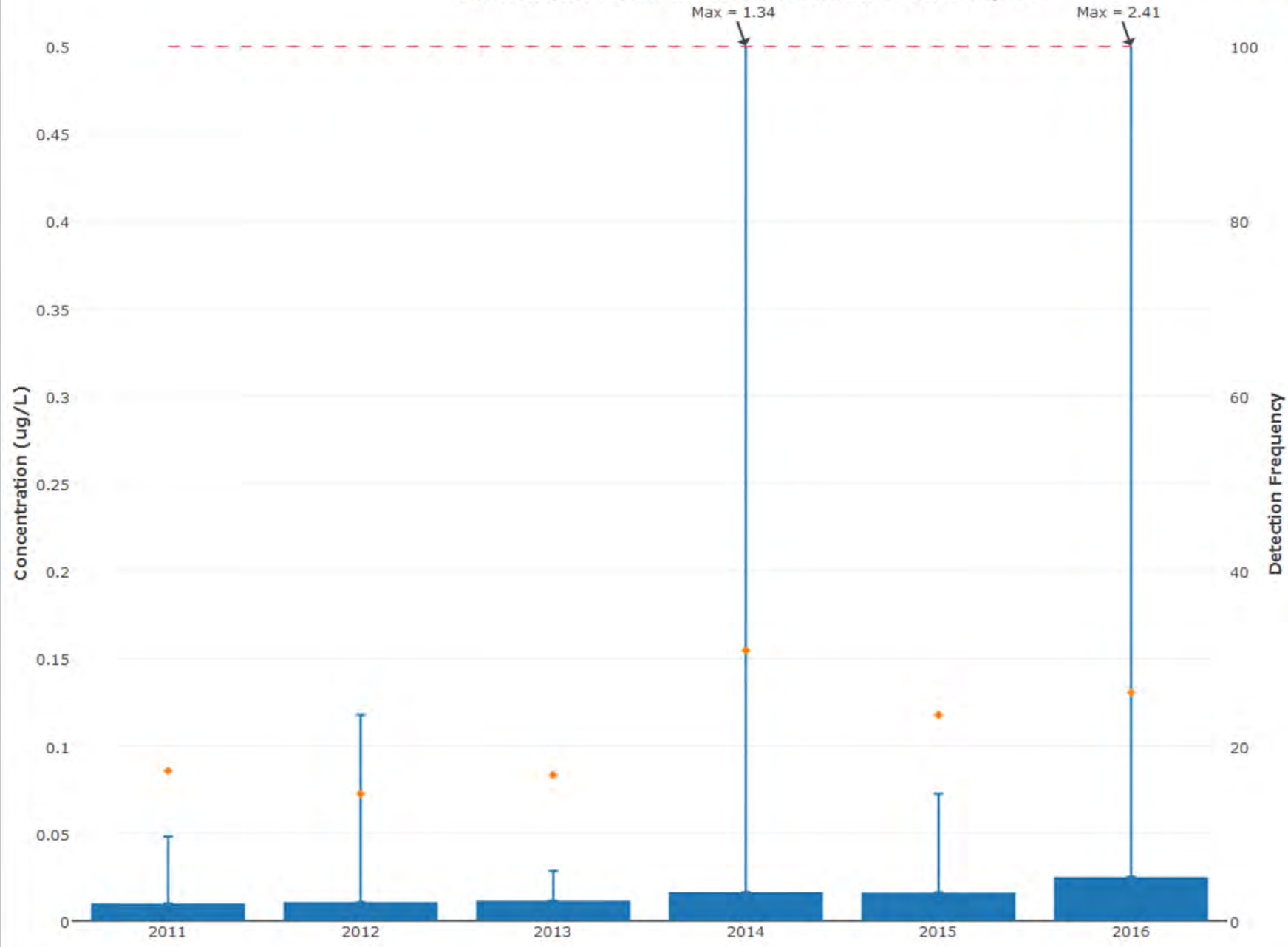


- Mill Creek at 2nd Street, The Dalles
- ▲ Mill Creek at Wright Road
- Threemile Creek at Hwy 197

Carbaryl in Wasco Basin 2011-2016

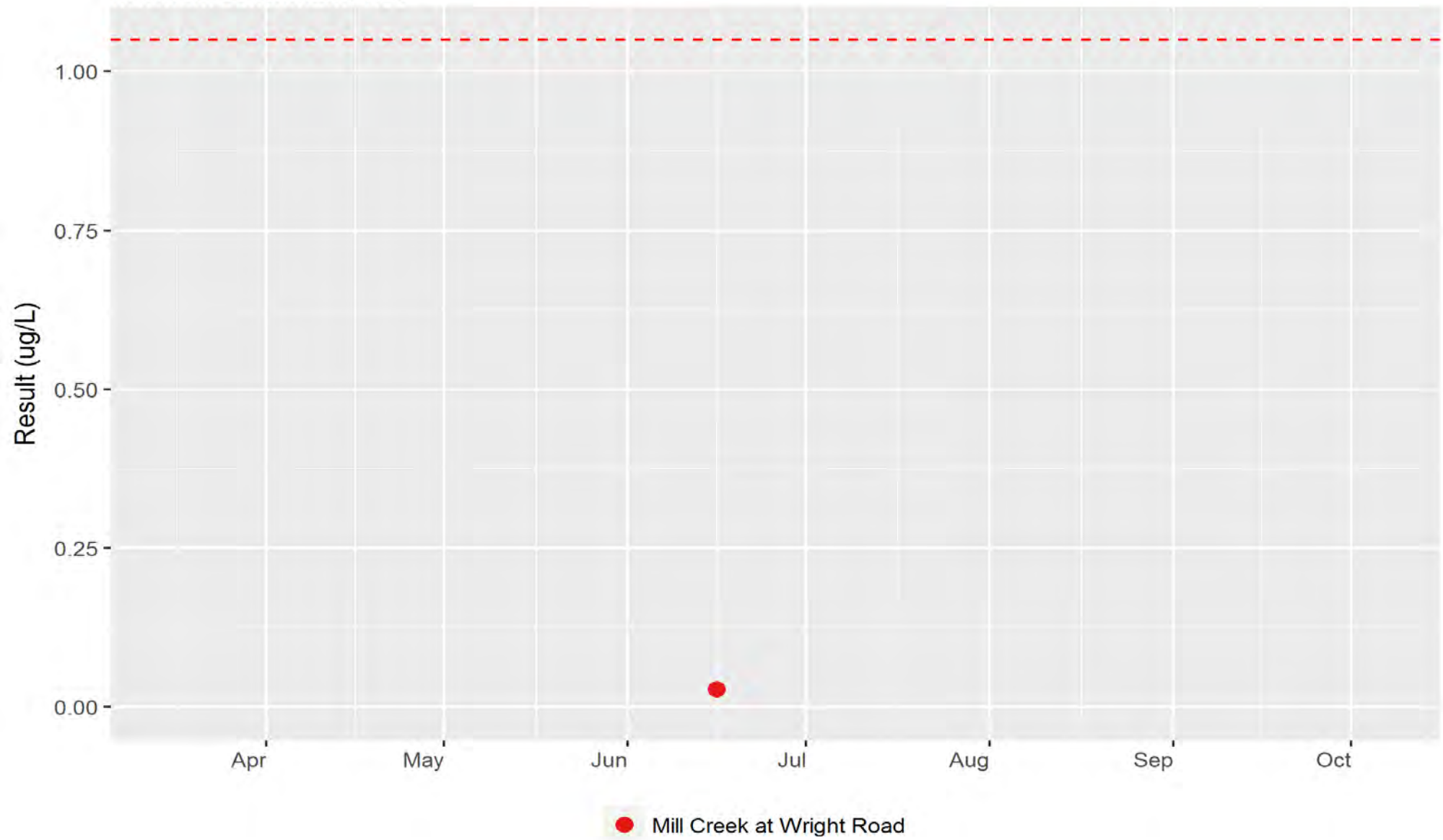
Median and Maximum Concentration of all samples

- Median
- ◆ Detection Frequency
- - Aquatic Life Benchmark = 0.5 ug/L

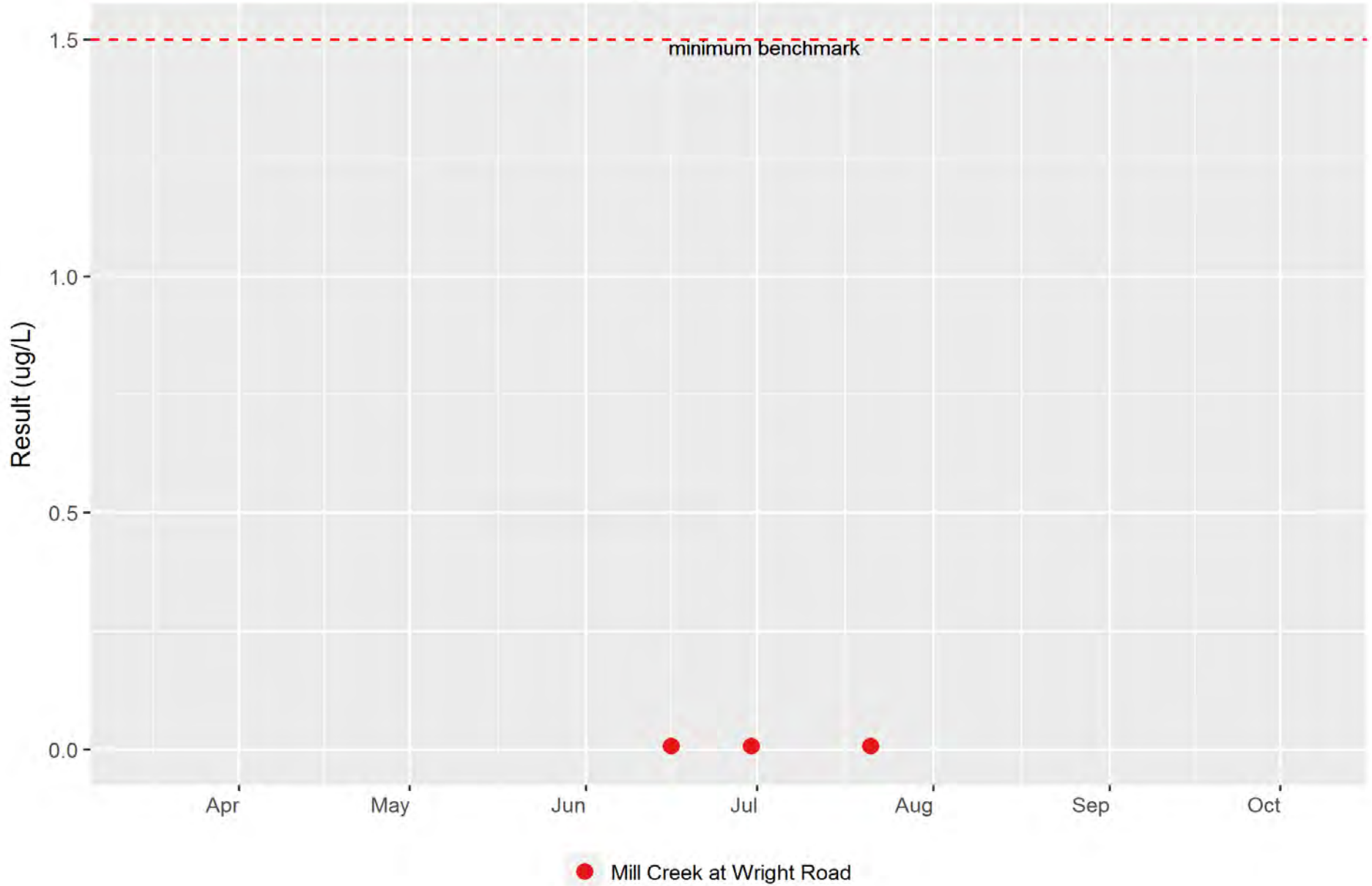


Wasco 2016 imidacloprid (Admire)

minimum benchmark: 1.05

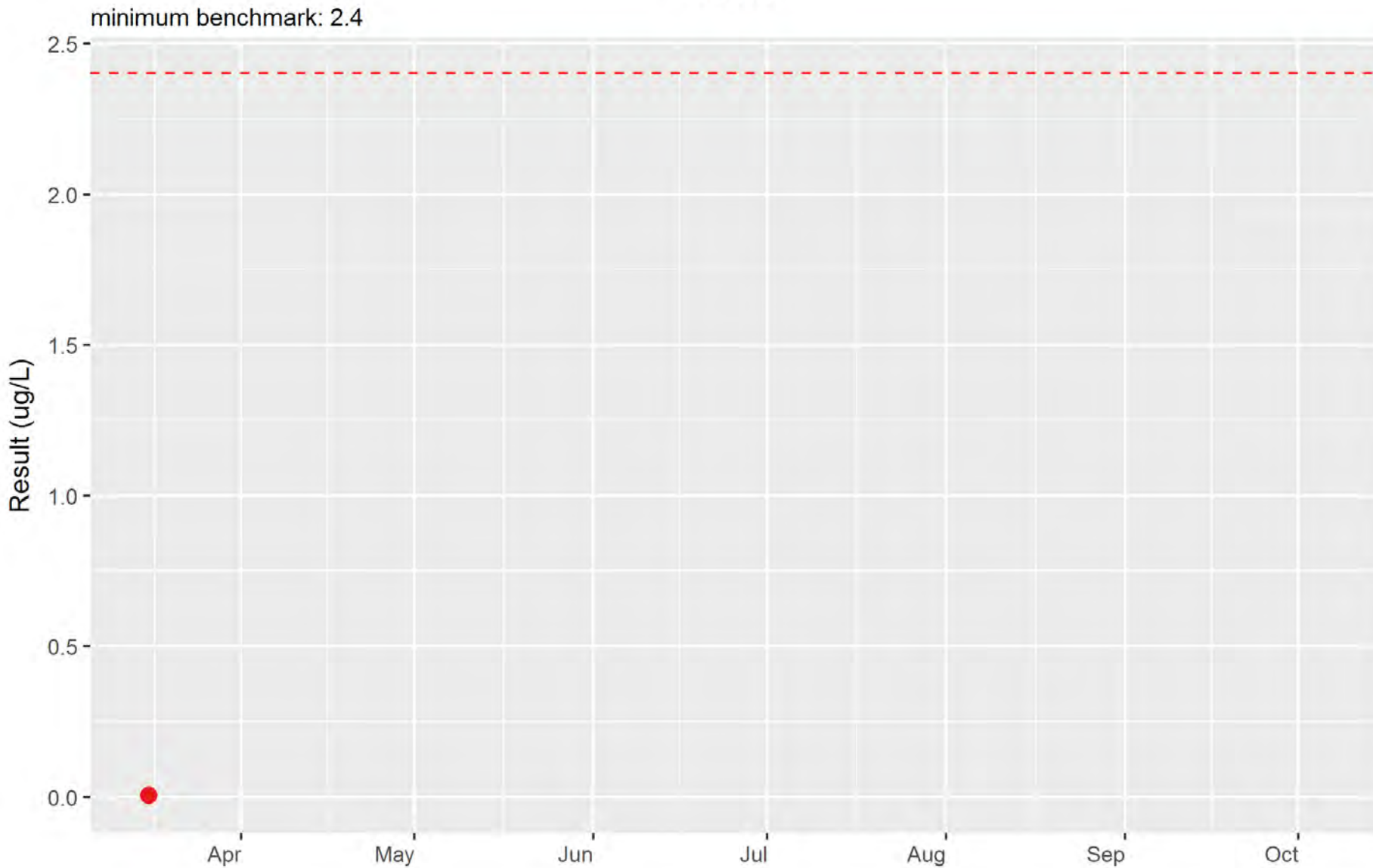


Wasco 2016 pyraclostrobin



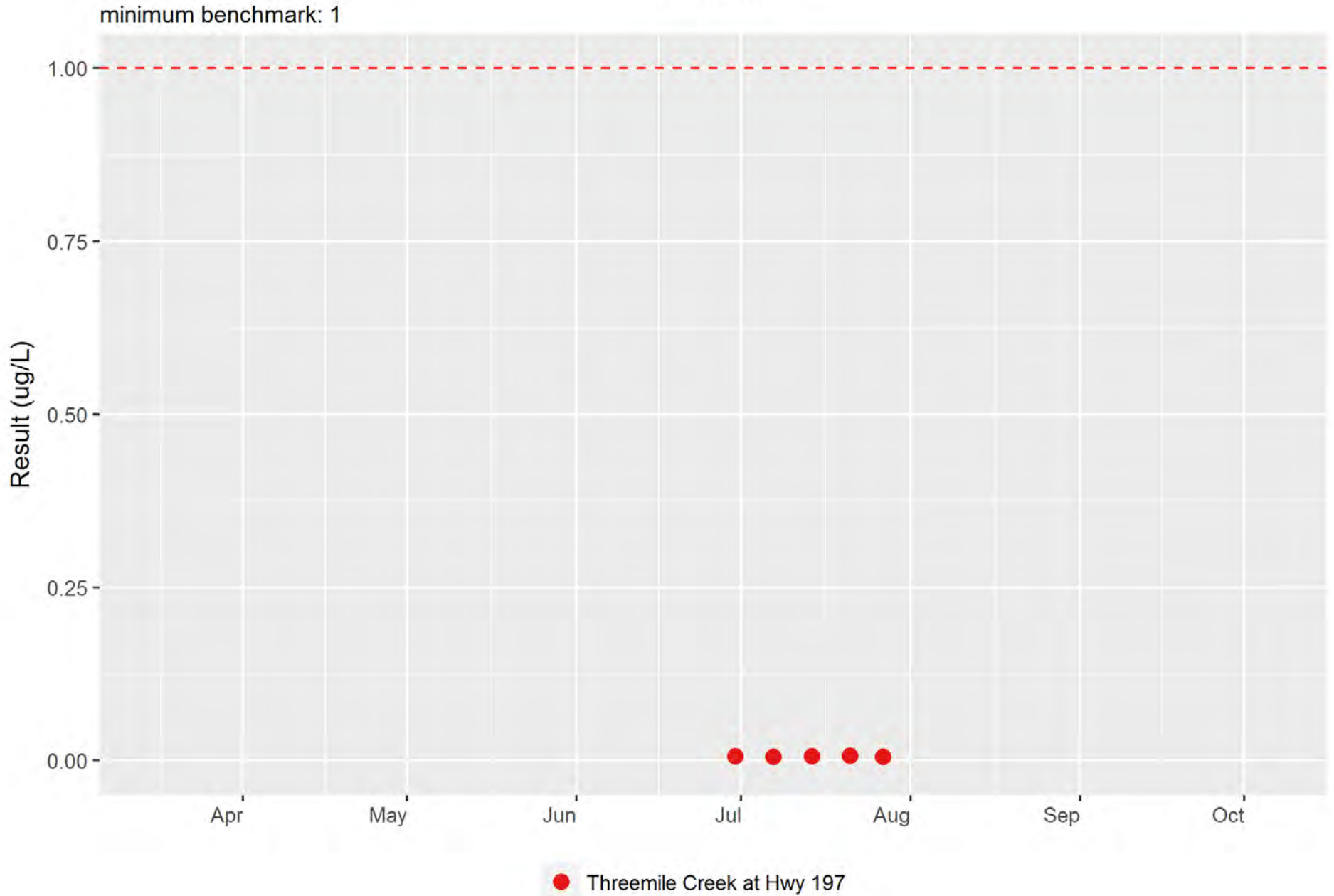
2016 Wasco Pesticide Monitoring: Herbicide Findings

Wasco 2016 diuron

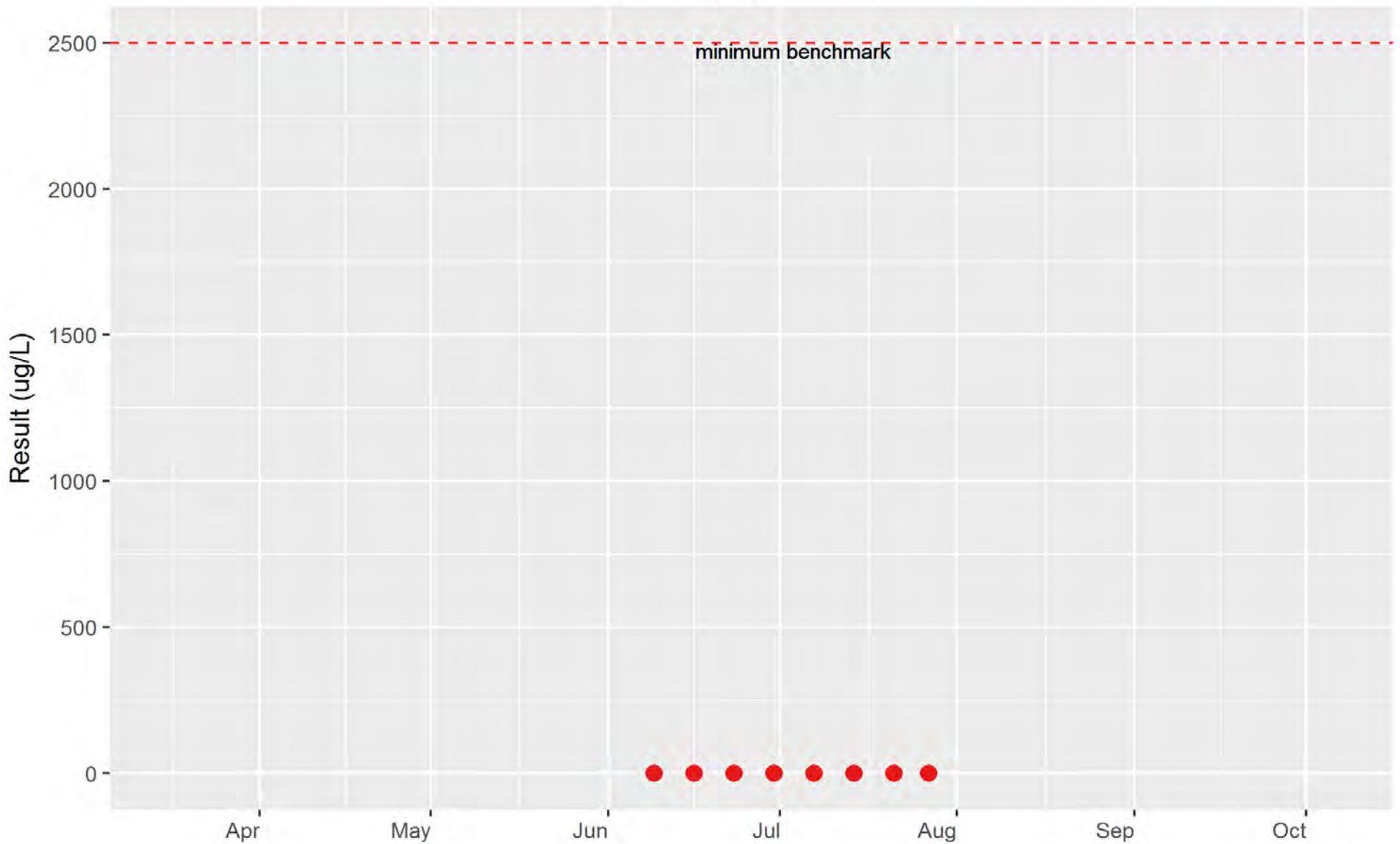


● Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)

Wasco 2016 atrazine



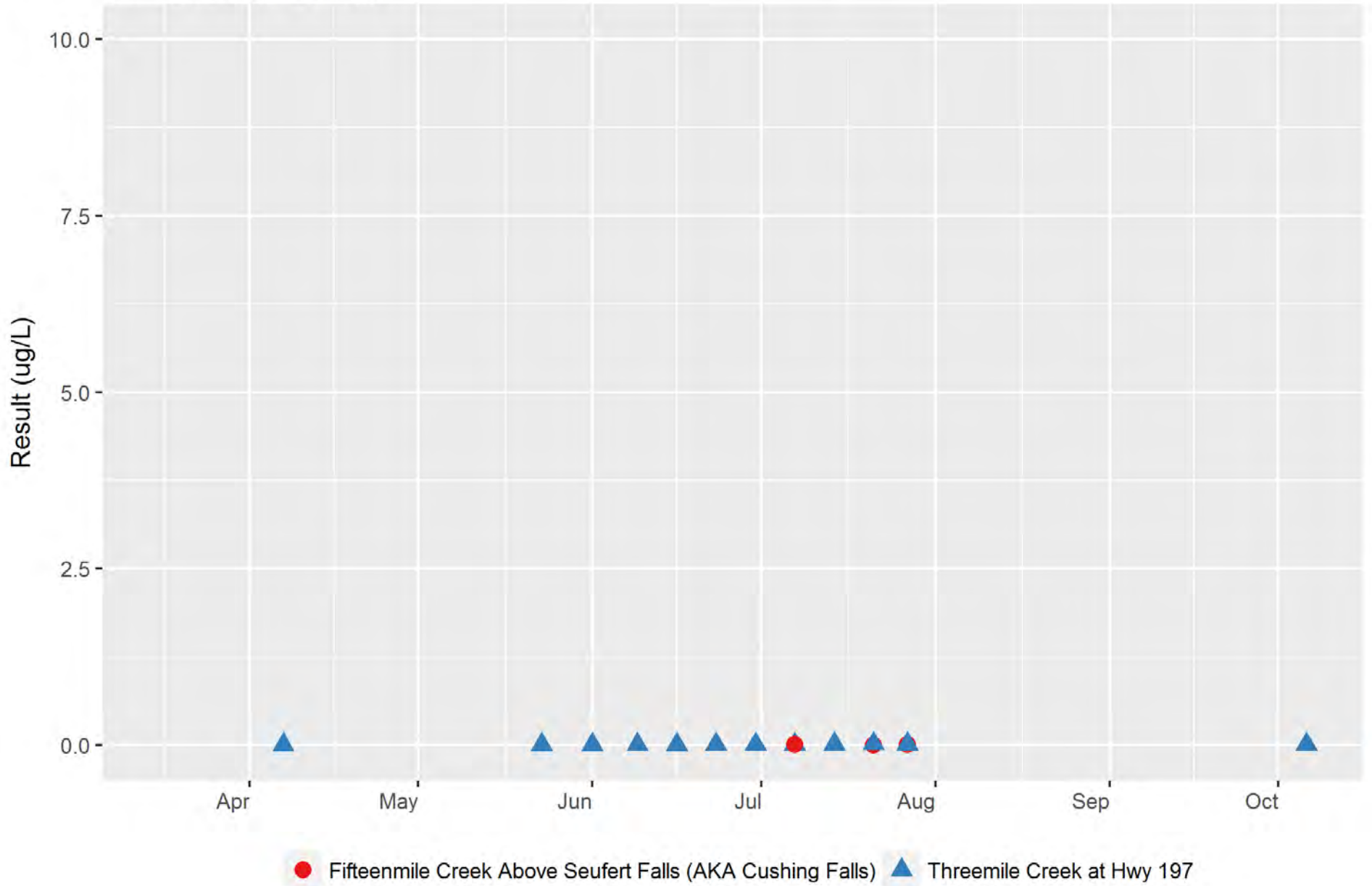
Wasco 2016 deisopropylatrazine



● Threemile Creek at Hwy 197

Wasco 2016 desethylatrazine

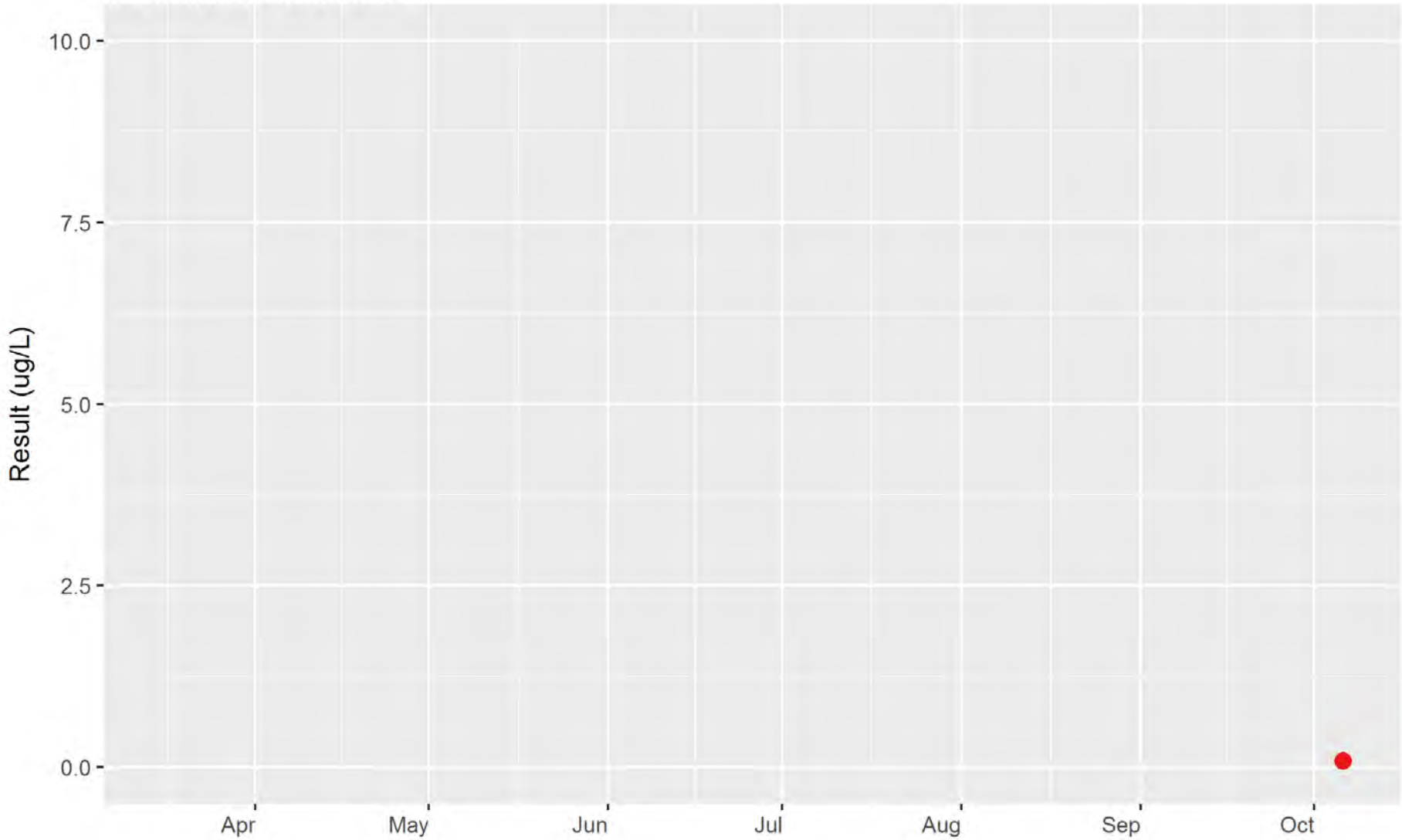
minimum benchmark: 1000



Wasco 2016 glyphosate

*Note: Fifteenmile Cr was only location where
glyphosate and degradate were monitored*

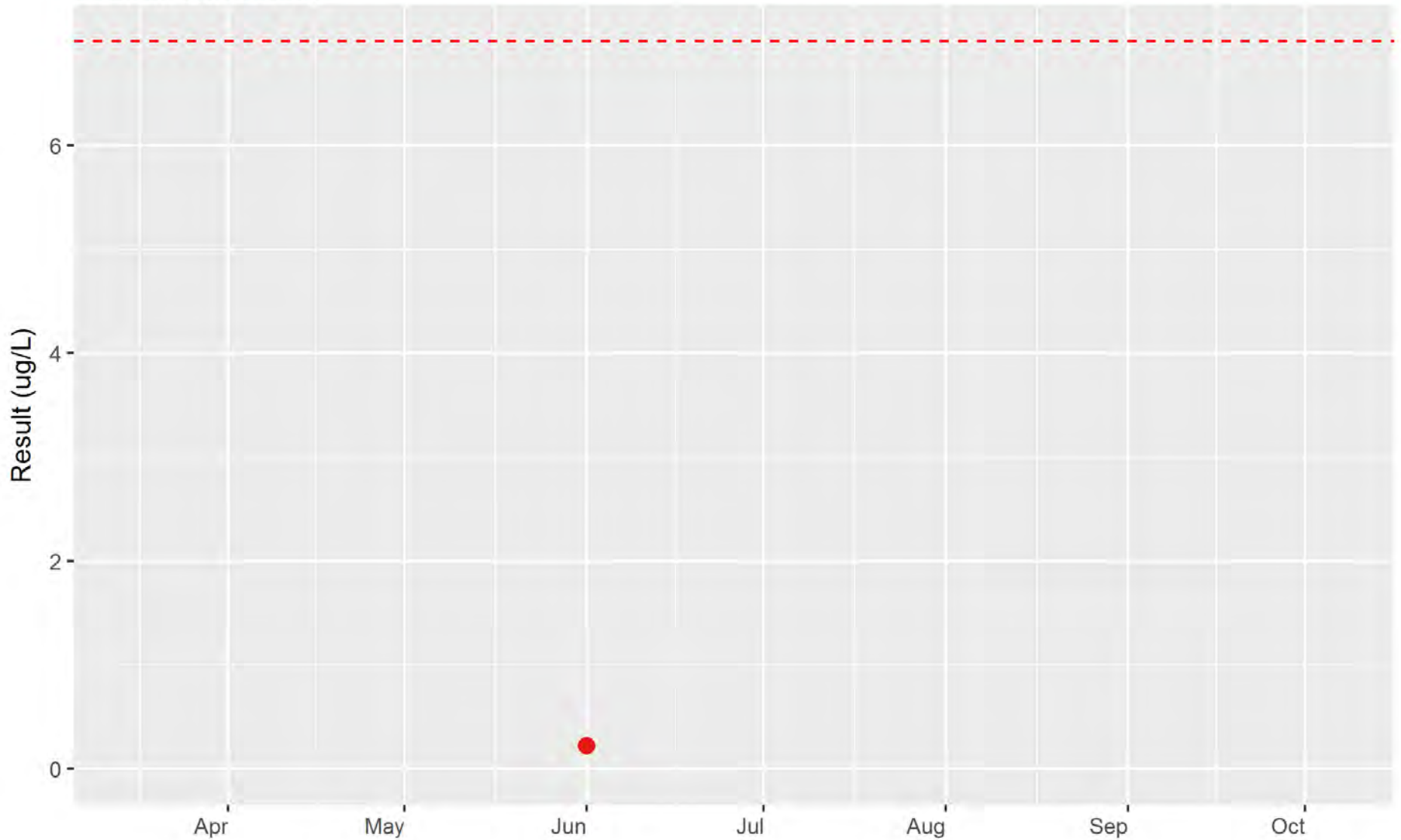
minimum benchmark: 1800



● Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)

Wasco 2016 hexazinone

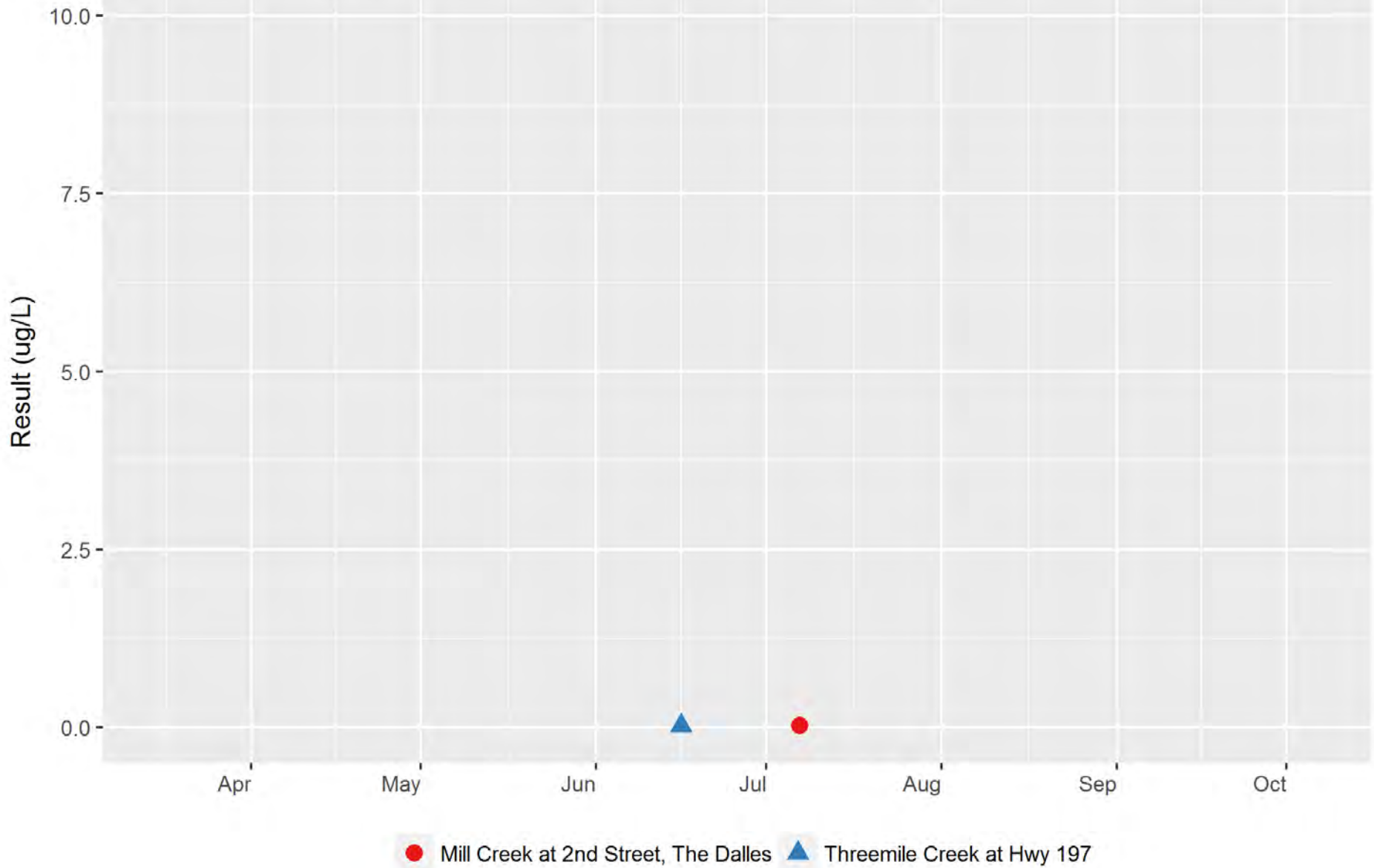
minimum benchmark: 7



● Threemile Creek at Hwy 197

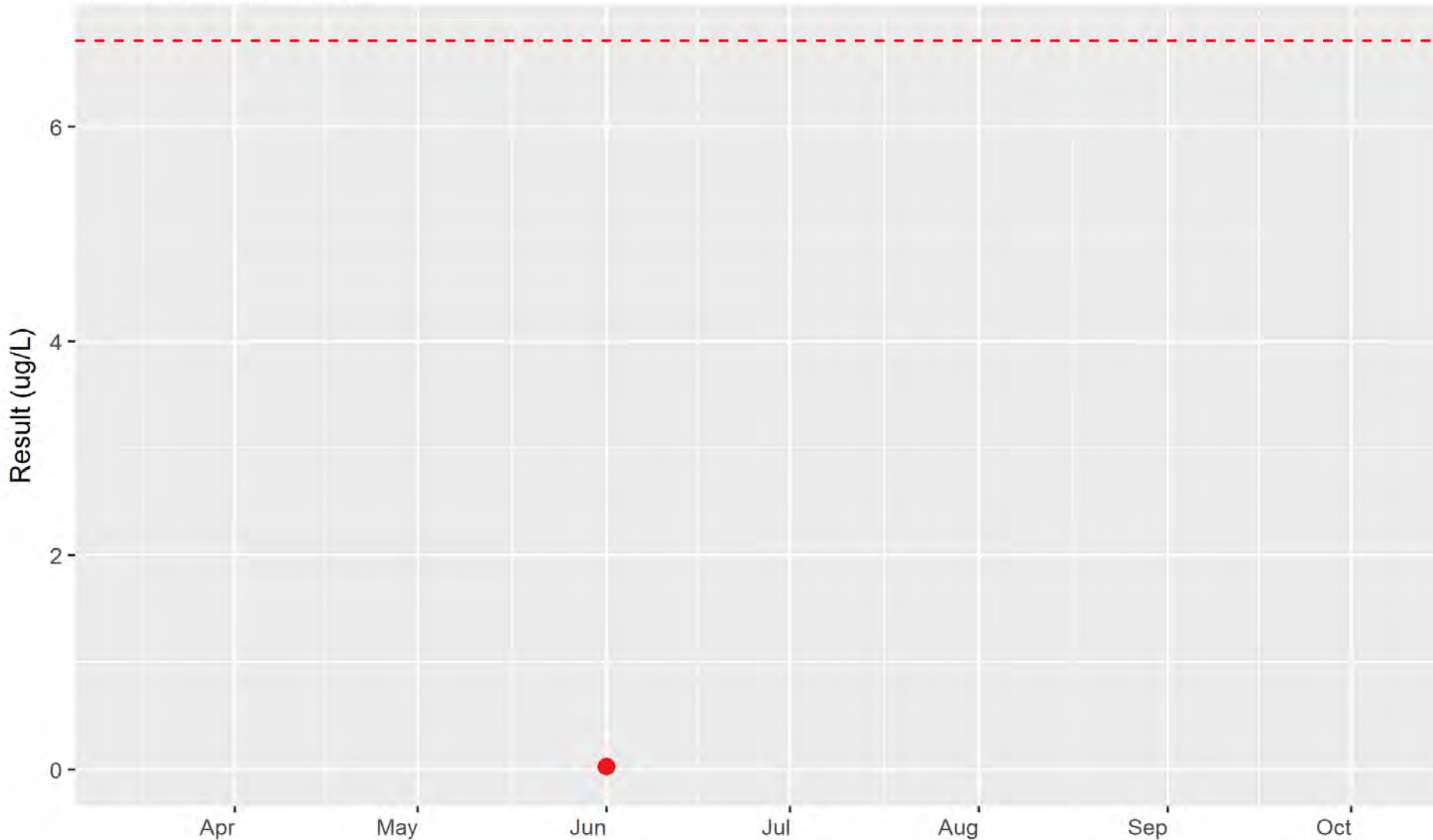
Wasco 2016 2,6-dichlorobenzamide

minimum benchmark: NA



Wasco 2016 bromacil

minimum benchmark: 6.8



● Threemile Creek at Hwy 197

Components of Pesticide Stewardship Partnerships

1. Water monitoring and data analysis
 - *Adding periodic monitoring site on Fifteenmile Cr. in Dufur*
2. Pesticide waste collection
 - *ODA/DEQ support Tri-County Solid Waste's collections*
3. Stewardship Technical Assistance Grants
 - *Mid-Columbia Research Station → spray patternator and Pear IPM project*

The Patternator

