



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

**Addendum to  
Quality Assurance Project Plan**

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**Edison Large On-Site Sewage System  
Groundwater Assessment**

October 2015

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## Publication Information

### Addendum

This addendum is on the Department of Ecology's website at <https://fortress.wa.gov/ecy/publications/SummaryPages/1503124.html>

This addendum is an addition to an original Quality Assurance Project Plan. It is not a correction (errata) to the original plan.

Data for this project will be available on Ecology's Environmental Information Management (EIM) website at [www.ecy.wa.gov/eim/index.htm](http://www.ecy.wa.gov/eim/index.htm). Search Study ID bcar006.

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# Addendum to Quality Assurance Project Plan

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## Edison Large On-Site Sewage System Groundwater Assessment

October 2015

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Signatures are not available on the Internet version.  
EAP: Environmental Assessment Program

## Summary of changes

This addendum reduces the number of sampling events for the study from 10 to 8. Sampling will end in March 2016 instead of August 2016. Results for the 2 main constituents of concern, nitrate and total coliform bacteria, have been consistently low or non-detectable based on 5 sampling events over almost one year (October 2014-June 2015). We will also have sufficient water level information to characterize groundwater flow direction by March 2016.

Decreasing the sampling effort will still meet the requirement for 8 water quality samples to establish background conditions suggested in the Implementation Guidance for the Ground Water Quality Standards<sup>1</sup>.

The laboratory budget is reduced by \$5,912.

Specific changes to the original QAPP are described below.

### Section 4.6 Tasks required

- Measure water levels and sample monitoring wells for water quality parameters every other month for one year and 2 times between November 1, 2015 and March 31, 2016.

### Section 5.4 Project schedule

Field work completed: March 2016

Lab analyses completed: May 2016

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<sup>1</sup> Kimsey, M., 2005 (original 1996). Implementation Guidance for the Ground Water Quality Standards, Washington State Department of Ecology, Water Quality Program. Publication No. 96-02. <https://fortress.wa.gov/ecy/publications/SummaryPages/9602.html>

## Section 5.6. Budget and funding

Year 2 (FY16)--Lab costs				
Groundwater samples for FY 16 (October 15-March 16)				
Parameter	Cost/sample	No. of samples/event <sup>1</sup>	No. of sampling events	Total cost
Alkalinity	\$ 18	13	2	\$ 468
TDS	\$ 12	13	2	\$ 312
Ammonium-N	\$ 14	13	2	\$ 364
Nitrite+Nitrate-N	\$ 14	13	2	\$ 364
Total persulfate N	\$ 18	13	2	\$ 468
Ortho Phosphate	\$ 16	13	0	\$ -
Total Phosphate	\$ 20	13	0	\$ -
Cations/anions (Na, K, Ca, Mg)	\$ 100	13	0	\$ -
Sulfate	\$ 14	13	0	\$ -
Chloride	\$ 14	13	2	\$ 364
Bromide	\$ 14	13	2	\$ 364
Iron	\$ 41	13	2	\$ 1,066
DOC	\$ 36	13	2	\$ 936
Fecal coliform	\$ 25	13	2	\$ 650
Total coliform	\$ 30	13	2	\$ 780
<sup>1</sup> 10 wells (8 new + 1 deep existing + 1 shallow existing) + 1 piezometer + 1 duplicate + 1 blank= 13 samples				\$ 6,136
Effluent Year 2 (FY16)				
Parameter	Cost/sample	No. of samples <sup>3</sup>	Total cost	
Alkalinity	\$ 18	1	\$ 18	
TDS	\$ 12	2	\$ 24	
Ammonium-N	\$ 14	2	\$ 28	
Nitrite+Nitrate-N	\$ 14	2	\$ 28	
Total persulfate N	\$ 18	2	\$ 36	
Chloride	\$ 14	2	\$ 28	
Bromide	\$ 14	2	\$ 28	
DOC	\$ 36	2	\$ 72	
Fecal coliform	\$ 25	2	\$ 50	
Total coliform	\$ 30	2	\$ 60	
Effluent total cost Year 2:			\$ 372	Total
<b>Year FY16 total lab costs:</b>		<b>\$ 6,508</b>		
<b>Total lab costs for study:</b>		<b>\$25,463</b>		

### Section 7.1.1 Field measurements

Field measurements will be made every 2 months for one year and 2 times between November 1, 2015 and March 31, 2016.

## **Section 14.4 Sampling design evaluation**

The sampling intensity meets the requirements for characterizing background conditions in groundwater, a goal of the study, and requires a minimum of 8 samples.