

Appendix A
Weststeyn Dairy: Economic Benefit Analysis – R5
Breakdown and Assumptions

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The following provides my breakdown and assumptions for the economic benefit analysis of Weststeyn Dairy (Discharger). The economic benefit elements are based on information provided by the State Water Board and the requirements of the Discharger’s Waste Discharge Requirements (WDR) Order R5-2009-0082.

General Assumptions:

- All economic benefit components are one-time expenditures
- Penalty payment date: June 18, 2021
- Weststeyn Dairy operates as a for-profit entity

Analysis Breakdown:

Based on the information provided, the economic benefit is the failure to submit reports required by the Discharger’s WDR. The following reports are included in this economic benefit analysis:

- Annual Report for 2020
- 2nd Semi-Annual 2020 Groundwater Monitoring Report
- 2020 Stormwater Monitoring Report
- Setback/Buffer Analysis Report
- Compost Barn Soils Report

In order to evaluate the economic benefit for each report, the analysis is broken down into five sections:

I. Annual Report for 2020

- The economic benefit is the delayed cost of producing the report
- The WDR required the report to be submitted on January 15, 2021, and therefore, the non-compliance date is January 16, 2021
- The compliance date for the report is March 3, 2021
- The costs are only associated with report preparation
 - The total cost is \$1,682
- The following table provides the cost breakdown

Report Preparation:			
Personnel	Cost/Hour	No. of Hours¹	Cost
Project Manager	\$152	1	\$152
Senior Technician	\$102	15	\$1,530
Total Cost			\$1,682

Source: *The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.*

¹In consultation with the prosecution team.

II. 2nd Semi-annual 2020 Groundwater Monitoring Report

- The economic benefit is the avoided cost of producing the report
- The WDR required the report to be submitted on December 30, 2020, and therefore, the non-compliance date is December 31, 2020
- The costs associated with the report are for monitoring, field work, and report preparation
 - The cost for monitoring is \$4,599
 - The cost for field work is \$3,912
 - The cost for report preparation is \$4,602
 - The total cost is \$13,113
- The following tables provides the cost breakdowns

Monitoring:			
Analyte	Cost/Analyte	No. of Wells	Total Cost/Analyte
3 Monitoring Wells			
Nitrate	\$28	3	\$84
EC (field)	\$0	3	\$0
Phosphorus	\$40	3	\$120
Ammonia	\$32	3	\$96
Total Dissolved Solids	\$25	3	\$75
Fecal Coliform	\$45	3	\$135
Potassium	\$28	3	\$84
7 Agricultural & 2 Domestic Wells			
Nitrate	\$28	9	\$252
EC (field)	\$0	9	\$0
General Minerals	\$315	9	\$2,835
Ammonia	\$32	9	\$288
Total Dissolved Solids	\$25	9	\$225
Fecal Coliform	\$45	9	\$405
Total Cost			\$4,599

Source: Central Valley Regional Water Quality Control Board 2018 Lab Contract.

Field Work:				
Personnel	Description	No. of Hours ¹	Cost/Hour	Cost
Project Manager	Scheduling/Coordination	4	\$152	\$608
Technician	Field Preparation/Field Work	32	\$87	\$2,784

Field Work:				
Equipment Rental/Supplies	Units¹		Cost/Unit	Cost
Pump	day	2	\$22	\$44
Truck ²	day	2	\$90	\$180
Drums ³	each	0	\$58	\$0
pH/Conductivity/Temperature/Meter	day	2	\$58	\$116
Water Level Indicator	day	2	\$36	\$72
Bailers ⁴	each	3	\$12	\$36
Misc. Field Items	day	2	\$36	\$72
Total Cost			\$3,912	

Source: The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.

¹ The cost in the guidelines is for 3 monitoring wells. Assumptions are made to scale the number of hours and units in order to accommodate the additional agricultural and domestic wells.

² The cost of the truck was \$60/day in 2001. An assumption of \$90/day is made for 2018.

³ There is no need for drums.

⁴ Bailers are only needed for the 3 monitoring wells.

Reporting Preparation:				
Personnel	Description of Work	No. of Hours	Cost/Hour	Cost
Principle Engineer/Geologist	Review and signature	2	\$182	\$364
Project/Associate Engineer/Geologist	Project Management, report preparation and review	6	\$131	\$786
			\$0	\$0
Staff Engineer/Geologist	Report preparation	8	\$109	\$872
Draft Person	Prepare report figures	4	\$80	\$320
Clerical	Typing/reproduction/mailing	4	\$65	\$260
Total Cost (3 Groundwater Wells)				\$2,602
Total Cost for 7 Agricultural and 2 Domestic Wells¹				\$2,000
Total Cost (3 Groundwater, 7 Agricultural, 2 Domestic Wells)				\$4,602

Source: The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.

¹ Assumed based on the cost of additional wells in the 2018 Cost Guidelines Update: The cost of 6 wells is \$3,300, implying additional wells are approximately \$233/well. \$2,000 is used as an approximation.

III. 2020 Stormwater Monitoring Report

- The economic benefit is the avoided cost of producing the report
- The WDR required the report to be submitted on June 30, 2020, and therefore, the non-compliance date is July 1, 2020
- The costs associated with the report are for monitoring, field work, and report preparation
 - The cost for monitoring is \$1,410
 - The cost for field work is \$1,812
 - The cost for reporting preparation is \$1,172
 - The total cost is \$4,394
- The following tables provides the cost breakdowns

Monitoring:				
Analyte	Cost/Analyte	No. of Fields	No. of Samples	Total Cost/Analyte
Nitrate	\$28	5	2	\$280
Phosphorus	\$40	5	2	\$400
Turbidity	\$28	5	2	\$280
Total Coliform	\$45	5	2	\$450
Fecal Coliform	\$0	5	2	\$0
EC (field)	\$0	5	2	\$0
Temperature (field)	\$0	5	2	\$0
pH (field)	\$0	5	2	\$0
Total NH ₃ (field)	\$0	5	2	\$0
Unionized NH ₃ (field)	\$0	5	2	\$0
Total Cost				\$1,410

Source: Central Valley Regional Water Quality Control Board 2018 Lab Contract.

Field Work:				
Personnel	Cost/Hour	No. of Hours	No. of Sample Events	Cost
Project Manager	\$152	1	2	\$304
Technician	\$87	8	2	\$1,392
Meters	\$58 (per day)	-	2	\$116
Total Cost				\$1,812

Source: The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.

Report Preparation:			
Personnel	Cost/Hour	No. of Hours¹	Cost
Project Manager	\$152	1	\$152
Senior Technician	\$102	10	\$1,020
Total Cost			\$1,172

Source: *The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.*

¹In consultation with the prosecution team.

IV. Setback/Buffer Analysis Report

- The economic benefit is the avoided cost of producing the report
- The WDR required the report to be submitted on June 30, 2017, and therefore, the non-compliance date is July 1, 2017
- The costs are only associated with report preparation
 - The total cost is \$1,682
- The following table provides the cost breakdown

Report Preparation:			
Personnel	Cost/Hour	No. of Hours¹	Cost
Project Manager	\$152	1	\$152
Senior Technician	\$102	15	\$1,530
Total Cost			\$1,682

Source: *The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.*

¹In consultation with the prosecution team.

V. Compost Barn Soils Report

- The economic benefit is the avoided cost of producing the report
- The WDR required the report to be submitted on December 30, 2017, and therefore, the non-compliance date is December 31, 2017
- The costs associated with the report are monitoring, field work, and report preparation costs
 - The cost for monitoring is \$600
 - The cost for field work is \$1,696
 - The cost for reporting preparation is \$968
 - The total cost is \$3,264
- The following tables provide the cost breakdowns

Monitoring:				
Analyte	Cost/Analyte	No. of Samples 2016	No. of Samples 2017	Cost
EC (soil analysis)	\$30 ¹	10	10	\$600
Total Cost				\$600

¹The analysis cost for EC in soil is assumed to be \$30/Analyte.

Field Work:				
Personnel	Cost/Hour	No. of Hours	No. of Sample Events	Cost
Project Manager	\$152	1	2	\$304
Technician	\$87	8	2	\$1,392
Total Cost				\$1,696

Source: The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.

Report Preparation:			
Personnel	Cost/Hour	No. of Hours¹	Cost
Project Manager	\$152	1	\$152
Senior Technician	\$102	8	\$816
Total Cost			\$968

Source: The Underground Storage Tank Cleanup Fund 2018 Cost Guidelines Update.

¹In consultation with the prosecution team.