



March 21, 2025

Danielle Gibson
Site Manager / UECA Coordinator
Toxics Cleanup Program
Washington Department of Ecology – Southwest Regional Office
Submitted via e-mail: danielle.gibson@ecy.wa.gov
Phone: 360-409-6164

Re: 2025 Groundwater Monitoring and Asphalt Inspection
Darling-Tacoma Facility (aka Darling Delaware Co., Inc. and Puget Sound By-Products)
Facility No.: 25455514, Cleanup Site No.: 8475, VCP Project No.: SW1317

Dear Ms. Gibson,

Tetra Tech, Inc. (Tetra Tech) is submitting this groundwater monitoring and asphalt inspection report on behalf of Darling Ingredients, Inc. (Darling) for their facility located at 2041 Marc Avenue in Tacoma, Washington (**Figures 1 and 2; Attachment A**). Tetra Tech conducted these monitoring actions for Darling based on the No Further Action (NFA) designation received from Washington Department of Ecology (Ecology), dated September 3, 2021. The work was conducted as described in the Cleanup Action Plan (CAP; Tetra Tech, 2020).

The following sections present a summary of the work conducted. Attachments to this report include figures (**Attachment A**), data tables (**Attachment B**), laboratory analytical report (**Attachment C**), and completed asphalt inspection form (**Attachment D**). Tetra Tech entered groundwater monitoring data collected during this event into Ecology's EIM database.

1.0 GROUNDWATER MONITORING

Tetra Tech conducted the groundwater monitoring event on February 20, 2025. Weather at the time of sampling was approximately 45°F, mostly cloudy, with the presence of a slight breeze to light wind.

Static Water Levels

Field personnel measured the depth to water in each well from the measuring point on the north side of the top of the polyvinylchloride (PVC) well casing using an electronic water level indicator. Field personnel measured depth to water after opening both wells and allowing the wells to vent and stabilize to ambient conditions. **Table 1 (Attachment B)** provides static water level data. Static water levels recorded in well MFG-1 was 5.64 feet and 5.41 feet in well MFG-2, which equate to elevations of 10.37 and 10.23 feet above mean sea level (amsl), respectively. Recorded water levels were consistent with those measured during prior sampling events and observed seasonal variations.

Well Purging

Field personnel purged and sampled wells MFG-1 and MFG-2 using new, dedicated disposable tubing and low flow purging and sampling methods. The tubing intake was placed at a depth of approximately 7 feet

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below ground surface (bgs), which was within the upper 2 feet of saturated well screen, a sample zone which is consistent with prior sample events. The low flow purging rate was estimated at a rate between 0.25 to 0.3 liters per minute for each well.

Field Parameters

Field personnel monitored field parameters during purging using a calibrated In-Situ Aqua Troll 500 multi-parameter meter with in-line low flow cell until parameters stabilized to limits specified in the CAP. Field personnel documented pH, temperature, specific conductance, oxygen reduction potential, and dissolved oxygen. Water levels were also recorded during purging to ensure minimal to no drawdown.

Table 2 (Attachment B) provides field parameter results. **Table 1-1**, below, summarizes the results from this event.

Table 1-1. Field Parameter Results

Field Parameter	Results Range	
	MFG-1	MFG-2
pH	6.9	6.9
Temperature (°C)	12.7	12.7
Specific Conductance (µS/cm)	1,520	924
Oxygen Reduction Potential (mV)	-104	-100
Dissolved Oxygen (mg/L)	0.50	0.86

For this event, field personnel monitored turbidity, which was 23.2 Nephelometric Turbidity Unit (NTU) for sample MFG-1 and 3.23 NTU for sample MFG-2.

Field parameter results were relatively consistent with prior monitoring events, except for specific conductance in MFG-1. It is unclear why the value is greater than prior events.

Of note, the water in both wells had a strong hydrogen sulfide odor, which had been noted during prior sample events. The odor is likely due to degradation of landfill and/or tidal flat organics present in the subsurface of the site.

Field personnel collected groundwater samples after field parameters stabilized. Field personnel transferred water from the wells by pumping directly from the sample tubing into laboratory-provided sample containers. Samples were preserved as required per laboratory and method requirements, then placed into a cooler containing a doubled-resealable bag filled with ice.

Tetra Tech hand delivered the groundwater samples to Eurofins in Tacoma, Washington for analysis within approximately 2.5 to 3.5 hours of collection. Of note, the sample cooler temperature upon receipt by the laboratory was 7°C. Qualification for the temperature being above upper temperature control limit of 6°C is not required since the samples were hand delivered soon after collection, were on ice and in the process of cooling.

Analytical Results

Eurofins analyzed both samples for diesel and heavy oil range petroleum hydrocarbons by the NWTPH-Dx analytical method. Eurofins analyzed the samples both with and without silica gel treatment (SGT).

Table 2 (Attachment B) presents the laboratory analytical results. **Table 1-2**, below, summarizes the results from this event.

Table 1-2. Analytical Results

Analytical Parameter (µg/L)		MFG-1	MFG-2
Diesel Range (C10-24)	Without SGT	1,100	600
	With SGT	120 J	<85
Heavy Oil Range / Motor Oil Range (>C24-C36)	Without SGT	1,000	720
	With SGT	<120	<120
<i>J Value considered estimated due to detection between the laboratory reporting limit and method detection limit</i> µg/L – Micrograms per liter			

The laboratory did not identify any quality control issues while analyzing samples MFG-1 and MFG-2.

Appendix C includes the laboratory report and data validation checklist that discusses the issues encountered.

Previous analytical results have shown small fluctuations in contaminant levels while overall maintaining a reducing trend. In addition, the laboratory noted that the samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern is not typical of a diesel fuel pattern used by the laboratory for quantitative purposes. As discussed in prior documents submitted to Ecology, Tetra Tech believes this elution pattern and analytical results likely indicate degradation of organics associated with landfill and tidal flat materials. The results for the February 20, 2025 sampling event are consistent with those observed during prior sampling events.

2.0 ASPHALT INSPECTION

Tetra Tech conducted an inspection of the asphalt surface across the facility at the time of the groundwater monitoring event on February 20, 2025. Prior to the inspection, Tetra Tech prepared an asphalt inspection form to help guide the inspection and document conditions observed. **Attachment D** includes a copy of the completed asphalt inspection form.

Weather at the time of the inspection was approximately 50 °F, mostly cloudy, with a slight breeze. General asphalt surface conditions during the time of inspection were a combination of wet and dry with several small areas of ponded water due to recent rain events.

The asphalt appeared similar to that during the 2024 asphalt inspection. Alligator cracking was observed in multiple locations along the main truck route on the north side of the property. Some additional asphalt cracks are evident surrounding the lunchroom building and along the western portion of the truck route, between the workshop building and car port and the former rendering plant. Field personnel observed two very shallow depressions in the eastern portion of the truck route, which appeared to be due to truck traffic; no cracking within these was discernible. Asphalt patch seams appeared without discernible gaps.

Aside from the conditions noted above, the condition of the asphalt appeared to be in relatively good condition. Tetra Tech recommends Darling continue with routine asphalt sealing and maintenance by an asphalt contractor.

3.0 TPCHD VARIANCE

The 2022 monitoring report (Tetra Tech 2022) included a discussion about obtaining a variance from Tacoma-Pierce County Health Department's (TPCHD's) related to their yearly Underground Storage Tank (UST) Permit requirements. Tetra Tech worked with Rob Olsen of TPCHD to successfully obtain this UST permit variance. TPCHD issued a Site Closure Determination letter on May 11, 2022, for TPCHD Site ID# SD0001542, Permit# RO0001596.

4.0 CAP MONITORING SCHEDULE

The CAP (2020) and NFA letter from Ecology (2021) specify a general monitoring schedule for groundwater and asphalt inspection work. The CAP states: 1) groundwater monitoring will be conducted once every 3 years, unless modified by Darling and/or Ecology; and 2) asphalt inspections will be conducted annually. More frequent monitoring of asphalt may be required if annual inspections indicate asphalt conditions of concern. **Table 3-1**, below, presents a monitoring schedule for NFA compliance monitoring for the next three anticipated monitoring events. Please also refer to the request in Section 5.

Table 3-1. NFA Compliance Monitoring

Groundwater Monitoring Schedule	Asphalt Monitoring Schedule
January/February – 2028	January/February 2026
January/February – 2031	January/February 2027
January/February – 2034	January/February 2028

5.0 REQUEST

Tetra Tech, on behalf of Darling Ingredients, respectfully requests Ecology approval to discontinue groundwater monitoring efforts at the facility based on the following:

1. The Mann-Kendall statistical analysis presented in the CAP and continued monitoring have shown that concentrations of hydrocarbons have continued to decline over the past 20 years of monitoring.
2. Silica gel treatment results for #2 diesel and heavy oil range hydrocarbons have been non-detect or nearly non-detect (detected between the reporting limit and method detection limit) since at least 2003, including extractable petroleum hydrocarbon fraction ranges analyzed between 2002 and 2017.
3. The elution pattern observed by the laboratory for multiple events coupled with the strong hydrogen sulfide odor in groundwater suggest that hydrocarbons present in groundwater are likely due to degradation of landfill and/or tidal flat organic matter rather than petroleum hydrocarbons.
4. Compliance is demonstrated by meeting the conditions specified and applying the polar metabolite cleanup level of 700 µg/L, as presented in Table 3 of Ecology's Guidance for Silica Gel Cleanup in Washington State (Ecology 2003).

Thank you for you in advance for Ecology's consideration in this matter.

6.0 REFERENCES

Tacoma-Pierce County Health Department (TPCHD), 2022. Site Closure Determination. Facility Name: Darling Ingredients LUST Site, Site Address: 2041 Marc Ave, Tacoma, 98421; Parcel Number: 0320031063; Site ID#: SD0001542; Permits: RO0001598. Letter dated May 11, 2022, to Darling Ingredients, Inc. Letter from Rob Olsen, Environmental Health Specialist III, Contaminated Sites Cleanup.

Tetra Tech, Inc., 2020. Cleanup Action Plan. Darling-Tacoma Facility (aka Darling Delaware Co., Inc. and Puget Sound By-Products). Facility No. 25455514, Cleanup Site No.: 8475, VCP Project No.: SW1317. Dated October 28, 2020.

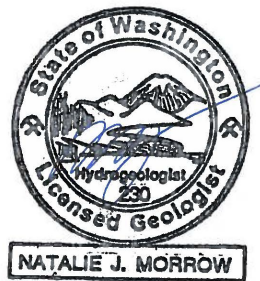
Washington Department of Ecology, 2021. No Further Action at the following Site: Site Name: Puget Sound By-Products, Site Address: 2041 Marc Avenue, Tacoma, Washington, Facility/Site No.: 25455514, VCP Project No.: SW 1317. Letter dated September 3, 2021, to Bill McMurtry, Vice President of Environmental Affairs, North America, Darling Ingredients. Letter from Christopher Maurer, P.E. HQ – Toxics Cleanup Program.

Washington Department of Ecology, 2023. Guidance for Silica Gel Cleanup in Washington State. Toxics Cleanup Program. Publication No. 22-09-059. Dated November 2023.

Please contact Natalie Morrow with questions or comments regarding this report or future monitoring efforts.

Sincerely,
Tetra Tech, Inc.

Natalie J. Morrow, LG, LHG
Project Manager/Sr. Environmental Geologist
406-327-5235
natalie.morrow@tetrattech.com



Cc: William (Billy) Holmes and Jon Elrod –Darling Ingredients, Inc.
Rob Healy and Melisa Bod – Port of Tacoma

Attachments:

- Attachment A – Figures
- Attachment B – Tables
- Attachment C – Laboratory Analytical Report and Data Validation
- Attachment D – Asphalt Inspection Form

ATTACHMENT A - FIGURES



117-002241-25001
3/17/2025



← Groundwater Flow (estimated)

× × Fence

□ Former USTs

Site Map
Darling-Tacoma
2041 Marc Avenue
Tacoma, Washington

ATTACHMENT B - TABLES

TABLE 1
Water Table Elevation Data
 Darling Ingredients, Inc.
 2041 Marc Avenue, Tacoma, Washington

Well	Date	Measuring Point Elevation (ft AMSL)	Depth to Water (top of PVC)	Potentiometric Surface Elevation (ft AMSL)
MFG-1	2/8/2002	16.27	5.06	11.21
	2/13/2002		5.30	10.97
	2/26/2002		5.20	11.07
	6/19/2002		7.09	9.18
	9/26/2002		8.33	7.94
	12/19/2002		7.46	8.81
	9/3/2003		8.27	8.00
	12/9/2003		5.75	10.52
	3/4/2004		5.50	10.77
	6/8/2004		7.06	9.21
	7/20/2017	16.01	7.02	8.99
	1/24/2019		5.47	10.54
	2/3/2022		5.43	10.58
	3/25/2022		5.12	10.89
	3/20/2025		5.64	10.37
MFG-2	2/8/2002	15.8	4.59	11.21
	2/13/2002		4.82	10.98
	2/26/2002		4.72	11.08
	6/19/2002		6.63	9.17
	9/26/2002		7.86	7.94
	12/19/2002		7.00	8.80
	9/3/2003		7.81	7.99
	12/9/2003		5.30	10.50
	3/4/2004		5.06	10.74
	6/8/2004		6.63	9.17
	7/20/2017	15.64	6.83	8.81
	1/24/2019		5.25	10.39
	2/3/2022		5.25	10.39
	3/25/2022		4.89	10.75
	3/20/2025		5.41	10.23
MFG-3	2/8/2002	16.85	5.69	11.16
	2/13/2002		5.89	10.96
	2/26/2002		5.77	11.08
	6/19/2002		7.66	9.19
	9/26/2002		8.87	7.98
	12/19/2002		8.04	8.81
	9/3/2003		8.84	8.01
	12/9/2003		6.31	10.54
	3/4/2004		6.06	10.79
	6/8/2004		7.82	9.03
	7/20/2017		7.37	9.48 (9.22*)
MFG-4	2/8/2002	15.67	4.51	11.16
	2/13/2002		4.70	10.97
	2/26/2002		4.58	11.09
	6/19/2002		6.49	9.18
	9/26/2002		7.71	7.96
	12/19/2002		6.86	8.81
	9/3/2003		7.67	8.00
	12/9/2003		5.16	10.51
	3/4/2004		4.91	10.76
	6/8/2004		6.46	9.21

Survey datum = NAVD88

Survey datum = NAVD88/2012B for 2017 elevations for MFG-1 and MFG-2

*MFG-3 value adjusted to estimate NAVD88/2012B elevation.

MFG-3 - abandoned in 2017 due to destruction during asphalt paving.

MFG-4 - could not be found in 2017, likely destroyed and paved over.

**ATTACHMENT C – LABORATORY ANALYTICAL REPORT
AND DATA VALIDATION**

ANALYTICAL REPORT

PREPARED FOR

Attn: Natalie Morrow
Tetra Tech Inc
2525 Palmer Street
Suite 2

Missoula, Montana 59808-1744

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JOB DESCRIPTION

Darling-Tacoma

JOB NUMBER

580-148193-1

Eurofins Seattle

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

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Case Narrative

Client: Tetra Tech Inc
Project: Darling-Tacoma

Job ID: 580-148193-1

Job ID: 580-148193-1

Eurofins Seattle

Job Narrative 580-148193-1

REVISION

The report being provided is a revision of the original report sent on 3/7/2025. The report (revision 1) is being revised due to The client requested that the results for 1664 be reviewed, it appears that the silica gel and non-silica gel results may be switched..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 2/20/2025 1:21 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.0°C.

Hydrocarbons

Method NWTPH_Dx: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern is not the typical diesel fuel pattern used by the laboratory for quantitative purposes: MFG-1 (580-148193-1) and MFG-2 (580-148193-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Seattle

Definitions/Glossary

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Client Sample ID: MFG-1

Lab Sample ID: 580-148193-1

Date Collected: 02/20/25 10:06

Matrix: Water

Date Received: 02/20/25 13:21

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.12	J	0.19	0.085	mg/L		02/22/25 10:01	03/06/25 15:07	1
Motor Oil (>C24-C36)	ND		0.33	0.12	mg/L		02/22/25 10:01	03/06/25 15:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150				02/22/25 10:01	03/06/25 15:07	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.1		0.19	0.085	mg/L		02/22/25 10:01	02/25/25 01:23	1
Motor Oil (>C24-C36)	1.0		0.33	0.12	mg/L		02/22/25 10:01	02/25/25 01:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	62		50 - 150				02/22/25 10:01	02/25/25 01:23	1

Client Sample Results

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Client Sample ID: MFG-2

Lab Sample ID: 580-148193-2

Date Collected: 02/20/25 11:07

Matrix: Water

Date Received: 02/20/25 13:21

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.19	0.085	mg/L		02/22/25 10:01	03/06/25 15:27	1
Motor Oil (>C24-C36)	ND		0.33	0.12	mg/L		02/22/25 10:01	03/06/25 15:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150				02/22/25 10:01	03/06/25 15:27	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.60		0.19	0.085	mg/L		02/22/25 10:01	02/25/25 01:43	1
Motor Oil (>C24-C36)	0.72		0.33	0.12	mg/L		02/22/25 10:01	02/25/25 01:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	56		50 - 150				02/22/25 10:01	02/25/25 01:43	1

QC Sample Results

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup - RA

Lab Sample ID: MB 580-485602/1-C

Matrix: Water

Analysis Batch: 486667

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 485602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24) - RA	ND		0.20	0.091	mg/L		02/22/25 10:01	03/06/25 14:07	1
Motor Oil (>C24-C36) - RA	ND		0.35	0.13	mg/L		02/22/25 10:01	03/06/25 14:07	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl - RA	87		50 - 150				02/22/25 10:01	03/06/25 14:07	1

Lab Sample ID: LCS 580-485602/2-C

Matrix: Water

Analysis Batch: 486667

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 485602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24) - RA	4.00	3.06		mg/L		77	50 - 120		
Motor Oil (>C24-C36) - RA	4.00	3.59		mg/L		90	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl - RA	83		50 - 150						

Lab Sample ID: LCSD 580-485602/3-C

Matrix: Water

Analysis Batch: 486667

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 485602

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24) - RA	4.00	3.13		mg/L		78	50 - 120	2	26
Motor Oil (>C24-C36) - RA	4.00	3.68		mg/L		92	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl - RA	87		50 - 150						

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH-Dx

Lab Sample ID: MB 580-485602/1-A

Matrix: Water

Analysis Batch: 485702

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 485602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.20	0.091	mg/L		02/22/25 10:01	02/24/25 18:21	1
Motor Oil (>C24-C36)	ND		0.35	0.13	mg/L		02/22/25 10:01	02/24/25 18:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	58		50 - 150				02/22/25 10:01	02/24/25 18:21	1

Lab Sample ID: LCS 580-485602/2-A

Matrix: Water

Analysis Batch: 485702

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 485602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4.00	3.11		mg/L		78	50 - 120		
Motor Oil (>C24-C36)	4.00	3.18		mg/L		80	64 - 120		

Eurofins Seattle

QC Sample Results

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH-Dx (Continued)

LCS LCS									
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	80		50 - 150						
Lab Sample ID: LCSD 580-485602/3-A									
Matrix: Water									
Analysis Batch: 485702									
Client Sample ID: Lab Control Sample Dup									
Prep Type: Total/NA									
Prep Batch: 485602									
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4.00	3.13		mg/L		78	50 - 120	0	26
Motor Oil (>C24-C36)	4.00	3.21		mg/L		80	64 - 120	1	24
LCSD LCSD									
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	82		50 - 150						

Lab Chronicle

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Client Sample ID: MFG-1

Date Collected: 02/20/25 10:06

Date Received: 02/20/25 13:21

Lab Sample ID: 580-148193-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C	RA		485602	TOA	EET SEA	02/22/25 10:01
Total/NA	Cleanup	3630C	RA		486610	SW	EET SEA	03/05/25 15:48
Total/NA	Analysis	NWTPH-Dx	RA	1	486667	SW	EET SEA	03/06/25 15:07
Total/NA	Prep	3510C			485602	TOA	EET SEA	02/22/25 10:01
Total/NA	Analysis	NWTPH-Dx		1	485702	SW	EET SEA	02/25/25 01:23

Client Sample ID: MFG-2

Date Collected: 02/20/25 11:07

Date Received: 02/20/25 13:21

Lab Sample ID: 580-148193-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C	RA		485602	TOA	EET SEA	02/22/25 10:01
Total/NA	Cleanup	3630C	RA		486610	SW	EET SEA	03/05/25 15:48
Total/NA	Analysis	NWTPH-Dx	RA	1	486667	SW	EET SEA	03/06/25 15:27
Total/NA	Prep	3510C			485602	TOA	EET SEA	02/22/25 10:01
Total/NA	Analysis	NWTPH-Dx		1	485702	SW	EET SEA	02/25/25 01:43

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788-24	07-13-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Sample Summary

Client: Tetra Tech Inc
Project/Site: Darling-Tacoma

Job ID: 580-148193-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-148193-1	MFG-1	Water	02/20/25 10:06	02/20/25 13:21
580-148193-2	MFG-2	Water	02/20/25 11:07	02/20/25 13:21

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

3/13/2025 (Rev. 1)

Chain of Custody Record

Client Information		Sample:	Natalie Morrison		Lab PM:	Victoria Fernald		Carrier Tracking No(s):	
Client Contact: Natalie Morrison		Phone:	406-370-8170		E-Mail:	Victoria.Fernald@eurofins.com		State of Origin:	WA
Company: Tetra Tech		Due Date Requested: Standard TAT		PWSID:		Analysis Requested		COC No:	
Address: 3525 Palmer Street Suite 2		TAT Requested (days):		Compliance Project: ☐ Yes ☒ No		PO #:		Page: 1 of 1	
City: Issoula MT 59808		Purchase Order not required		WO #:		Job #:		Preservation Codes:	
State, Zip: 4 4		Phone: 406-327-5235 d; 406-570-8170		Project Name: Natalie Morrison @ Tetra Tech.com		Project #:		☒ A-HCl ☐ B-NaOH ☐ C-Zn Acetate ☐ D-Nitric Acid ☐ E-NaHSO4 ☐ F-MeOH ☐ G-Archer ☐ H-Ascorbic Acid ☐ I-Ice ☐ J-DI Water ☐ K-EDTA ☐ L-EDA ☐ M-Hexane ☐ N-None ☐ O-AsNaO2 ☐ P-Na2O4S ☐ Q-Na2SO3 ☐ R-Na2S2O3 ☐ S-H2SO4 ☐ T-TSP Dodecahydrate ☐ U-Acetone ☐ V-MCAA ☐ W-pH 4.5 ☐ Z-other (specify)	
Site: Darling-Tacoma		SSOW#:		Field Filtered Sample (Yes or No)		Perform MS/MS (Yes or No)		Total Number of containers	
Sample Identification		Sample Date	Sample Time	Sample Type (C-comp, G-grab)	Matrix (W-water, S-solid, O-owastoll, B-trass, AAH)	Field Filtered Sample (Yes or No)		Special Instructions/Note:	
MF G-1	2/20/25	1006	G	W	N	X	X	2	
MF G-2	2/20/25	1107	G	W	N	X	X	2	
 580-148193 Chain of Custody									
Therm ID: 11 Cor: 7.0 Unc: 7.8 Cooler Desc: MB Packing: Bag Just, Seal: Yes No X Blue Ice, Wet Dry, None Lab Count: UPS: Other: CD									
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: 1(1)M, N, Other (specify) EDD for upload to WA EIM System PD for upload to WA EIM System Empty Kit Relinquished by: Date: Time: Method of Shipment:									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For Months									
Relinquished by: Date/Time: Company: Received by: Date/Time: Company:									
Relinquished by: Date/Time: Company: Received by: Date/Time: Company:									
Relinquished by: Date/Time: Company: Received by: Date/Time: Company:									
Custody Seals Intact: ☐ Yes ☐ No Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:									

Login Sample Receipt Checklist

Client: Tetra Tech Inc

Job Number: 580-148193-1

Login Number: 148193

List Number: 1

Creator: Moore, Brook 1

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

DATA VALIDATION CHECKLIST

INTRODUCTION

General Project Information			
Project Name:	Triumph Mine – Mine Water	Date Validated:	3/14/25
Tetra Tech Project Number:	117-8090004	Data Validated By:	N.Morrow
Sample Start and End Dates:	2/20/25	Laboratory Name:	Eurofins Test America
Sample Matrix:	Aqueous	Laboratory Project ID#:	J148193-1
Analytical Parameters:	NWTPH-Dx		
Name & Date of Approved SAP, QAPP, Work Plan, Etc.	Cleanup Action Plan, Darling-Tacoma Facility (aka Darling Delaware Co., Inc. and Puget Sound By-Products) Facility no.: 25455514, Cleanup Site No.: 8475, VCP Project No.: SW1317.Prepared by Tetra Tech, Inc. for Darling Ingredients, Inc. Dated October 28, 2020.		

LIST OF SAMPLES REVIEWED IN THIS REPORT

List all samples in the sample delivery group that were validated in this report.

Validated Samples		
Field Sample ID#	Laboratory Sample ID#	Sample Type (Natural, Duplicate, Field Blank, Etc.)
MFG-1	580-148193-1	Natural
MFG-2	580-148193-1	Natural

QC Review (Discuss any discrepancies or issues identified for each of the following)	Y	N	NA
FIELD COMPLIANCE WITH PROJECT REQUIREMENTS			
Were all the required samples collected as specified in the SAP/QAPP?	X		
Were samples collected as per the field and analytical methods specified in the QAPP?	X		
LABORATORY NARRATIVE, CHAIN-OF-CUSTODY, AND SAMPLE RECEIPT CHECKLIST			
Was a laboratory narrative provided?	X		
Were any non-conformance issues identified with the analytical data? Discuss issues. <i>Sample cooler temperature was 7°C upon receipt</i> - The samples were hand delivered shortly after collection and were properly preserved on ice and the cooling process underway. No qualification is required.		X	
Were sample Chain-of-Custody (CoC) forms complete? Discuss discrepancies.	X		
Were the requested analytical methods in compliance with project requirements (i.e., QAPP, SAP, etc.)?	X		
Were samples received in good condition within method specified temperatures and holding times?	X		
LABORATORY COMPLIANCE WITH PROJECT REQUIREMENTS			
Were samples extracted and analyzed within method-specified holding times?	X		
Do the laboratory reports include all constituents requested to be analyzed on the COC or under the QAPP, SAP, or other applicable project document? <i>Yes. However, the lab report required revision as the laboratory mixed up sample reporting by reporting the silica gel results as the non-silica gel treatment results, and vice versa, for each sample. The error was obvious due to the marked difference in results between the treated and untreated results and comparison with prior site results. The laboratory re-issued the laboratory report with the values reported correctly for each sample.</i>	X		
Were reported units appropriate for the associated sample matrix/matrices and method(s) of analysis?	X		
Did any samples require dilution?	X		

QC Review (Discuss any discrepancies or issues identified for each of the following)	Y	N	NA
Besides those samples that required dilution, were all other detection limits reported by the laboratory in accordance with project requirements?	X		
Did the laboratory qualify any results based on the results falling between the laboratory reporting limit (laboratory practical quantitation limit) and the method detection limit? The #2 diesel result for MFG-1 required qualification by the laboratory as estimated, J, due to detection between the RL and MDL.	X		
LABORATORY QUALITY CONTROL			
CCVs			
Were continuing calibration verification (CCV) results reported?		X	
If so, Were CCV results within control limits?			X
Were any qualifications related to the CCV required?			X
LCS/LCSD			
Were laboratory control samples (LCSs) used by the laboratory and of the same matrix as the natural samples?	X		
Was the number of LCSs used equal to at least 5% (1 in 20) of the total number of samples submitted for analysis per analytical method?	X		
Were all LCS and all LCS/LCSD recoveries and RPDs within control limits?	X		
Were any qualifications related to LCSs or LCS/LCSDs required?		X	
Laboratory Blanks			
Was the number of laboratory blanks analyzed equal to at least 5% (1 in 20) of the total number of samples submitted per analytical method?	X		
Were laboratory blank samples free of analyte contamination?	X		
If not, did any samples require qualification as estimated (J) due to blank contamination?	X		
MS/MSDs			
Were project-specific samples used to prepare MS and MSD samples? MS/MSDs were not analyzed. Use LCS results to assess accuracy and precision.		X	
Was the number of MS/MSDs prepared equal to at least 5% (1 in 20) of the total number of samples submitted per analytical method?			X
Were any MS recoveries or MS/MSD RPDs outside control limits?			X
Were any qualifications related to MS or MS/MSDs required?			X
Laboratory Duplicates			
Were laboratory duplicates analyzed?		X	
Were laboratory duplicate RPDs within laboratory-specified control limits?			X
Were any qualifications related to laboratory duplicates required?			X
Surrogates			
Were surrogate recoveries within laboratory QC limits?	X		
Were any qualifications related to surrogates required?		X	
FIELD QUALITY CONTROL			
Field Blanks (Trip, Equipment Rinsate, Field)			
Were field blanks analyzed?		X	
Were field blanks free of contamination?			X
Field Duplicates			
Was a field duplicate analyzed?		X	
Were RPDs within control limits?			X
ADDITIONAL COMMENTS			
Sample results did not require qualification based on laboratory or field QC.			

ATTACHMENT D – ASPHALT INSPECTION FORM

ASPHALT INSPECTION FORM

Darling Ingredients - Tacoma, Washington Facility

Facility No.: 25455514, Cleanup Site No.: 8475, VCP Project No.: SW1317

Asphalt inspection is a requirement in the Corrective Action Plan (Tetra Tech 2020) and as part of Washington Department of Ecology's (Ecology's) No Further Action (NFA) designation for the Darling Ingredients facility at 2041 Marc Avenue in Tacoma, Washington.

This inspection form was developed as a basic guide for conducting an inspection of the asphalt cap at the facility to help identify areas that may be of potential concern. Areas identified may require more frequent monitoring, or additional inspection and possibly repair by a qualified asphalt contractor to maintain asphalt integrity. Maintenance of asphalt cracks is critical to prevent further damage and/or limit pathways for contaminant migration to, or mobilization of existing contaminants in, the subsurface.

GENERAL INSPECTION INFORMATION			
Company Conducting Inspection: ☒ Tetra Tech ☐ Darling Ingredients		Date: 2/24/25	Time: 1205
Inspection Conducted By:		Weather at Time of Inspection:	
Name: Natalie Morrow		50 Temperature (°F) Cloudy, light wind	
Signature: 		☐ Sunny ☐ Partly Sunny ☒ Mostly Cloudy ☐ Overcast ☐ Raining ☐ Rain within Past 24 hours	

ASPHALT INSPECTION	
Complete the following questions and document areas identified on the attached map. If unsure, document and describe the condition(s) to the best of your ability. Additional consultation with an asphalt specialist may be needed for areas identified as a concern.	
1. General Asphalt Surface Conditions at Time of Inspection:	
☐ Wet ☐ Mostly Wet with Dry Patches ☐ Dry ☒ Mostly Dry with Wet Patches	
2. Areas of Ponded Water, Indications Ponded Water in the Past, or Moisture/Water Evident in Cracks? If yes, document these areas below and on the attached map.	☒ Yes ☐ No
How many areas were identified with ponded water or indications of past ponded water (e.g., asphalt staining, sediment accumulation, prior observations), or evidence of water?	# of Areas ~11
For the areas identified, are there indications of asphalt degradation (cracking, loose rock, sand, broken asphalt, etc.)?	☒ Yes ☐ No
List the location(s) of the areas identified that indicate potential degradation and describe the condition observed. Locate the locations on the map.	
Alligator cracking on northern side of truck route and some alligator or shrink type cracking on south side of storage containers between office and shop.	
3. Cracking – Were any of the following types of cracking observed?	☒ Yes ☐ No
If yes, document cracks below and on the attached map.	
Alligator Cracks? (Resemble chicken wire or alligator skin and are caused by repeated traffic loading). If yes, how many? Mostly on northern side truck route.	☒ Yes ☐ No
Shrinkage Cracks? (Caused by temperature variations that can expand and contract pavement, leading to stress and cracking). If yes, how many? Discuss the location and characteristics of features identified: Alligator or shrink cracking south truck route between office and shop	☒ Yes ☐ No
Reflective Cracks or Opening Along Joints? (Occurs when the pavement overlay was done in unsecured conditions, leading to openings of joints, which can allow water to get to the underlying aggregate and cause pavement damage). Appeared mostly in good condition	☐ Yes ☒ No
Edge Cracks? (Occur due to poor shoulder support, frost action, or inadequate drainage. Usually begin as hairline cracks that can be seal coated.)	☒ Yes ☒ No
Cracks within Wheel Paths? Alligator cracks - north truck route	☒ Yes ☐ No
Cracks from Swell?	☐ Yes ☒ No
Edge Cracks/Failure?	☐ Yes ☒ No

ASPHALT INSPECTION FORM

Darling Ingredients - Tacoma, Washington Facility

Facility No.: 25455514, Cleanup Site No.: 8475, VCP Project No.: SW1317

Crack Seals Present? Identify location of crack sealant areas and describe their condition (good, worn, lifting, cracked, etc.).	☐ Yes ☒ No
How many areas of the above types of cracking were identified?	# of Areas
List the location(s) of the cracks identified and describe the condition and pattern observed (hairline, linear, circular, etc.). Locate the crack areas on the map.	
4. Potholes Identified?	☐ Yes ☒ No
How many potholes were identified?	# of Areas
List the location(s) of the potholes identified and describe the condition observed. Locate the potholes on the map.	
5. Other Issues?	☐ Yes ☐ No
Asphalt lifting? (e.g., due to tree roots or another subsurface feature). If yes, describe and locate on the map.	☐ Yes ☒ No
Asphalt gaps? (e.g., significant gaps around features such as drains, bollards, gutters, posts, foundations, etc. that allows water to drain to the subsurface). If yes, describe and locate on the map. <i>None discernible.</i>	☐ Yes ☒ No
Rutting from Vehicles or Equipment? If yes, describe and locate on the map. <i>Some very shallow depressions observed near shops east side.</i>	☒ Yes ☐ No
Discoloration, fading, wear that may indicate a future area of concern? If yes, describe and locate on the map.	☐ Yes ☒ No
Vegetation Growing in Cracks/Micro-Cracks or Along Asphalt Edges that Could Lead to Cracking? If yes, describe and locate on the map.	☐ Yes ☒ No
Other Observations?	☐ Yes ☒ No
6. Were areas identified that require potential follow-up with the facility manager, more frequent monitoring, or asphalt maintenance contractor?	☐ Yes ☒ No
If yes, discuss which areas require follow up and the type of recommended follow-up. <i>Recommend inspecting occasionally and repair if cracks worsen or asphalt begins to lift up and breakaway.</i>	

FORM DISTRIBUTION

Provide a copy of this completed and signed inspection form to the following. A copy of the completed form will be submitted to Ecology as part of the NFA requirement.

Darling Ingredients personnel:

Daniel Montes De Oca - dmontesdeoca@darlingii.com

William (Billy) Holmes - bholmes@darlingii.com

Environmental Consultant

Tetra Tech, Inc.: Natalie Morrow natalie.morrow@tetrattech.com

406-327-5235 direct

406-543-3045 main office

ASPHALT INSPECTION FORM

Darling Ingredients - Tacoma, Washington Facility

Facility No.: 25455514, Cleanup Site No.: 8475, VCP Project No.: SW1317



PHOTOGRAPH LOG
2041 MARC AVENUE – 2025 ASPHALT INSPECTION
Tetra Tech Project # 117-002241-25001



North side truck route, looking east from weigh scale.



North side truck route, looking east.



North side truck route, looking east.



North side truck route, looking east.



North side truck route, looking east.



East side truck route, looking south.

PHOTOGRAPH LOG
2041 MARC AVENUE – 2025 ASPHALT INSPECTION
Tetra Tech Project # 117-002241-25001



East side truck route, looking south.



East side truck route, looking south.



South side truck route, looking west.



South side truck route, looking west.



South side truck route, looking west.



South side truck route, looking west.



South side truck route, looking west.



South side truck route, looking west.