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Santa Susana Field Laboratory
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Via Email to losangeles@waterboards.ca.gov

August 12, 2022

Information Technology Unit
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: Second Quarter 2022 NPDES Discharge Monitoring Report
Compliance File CI-6027 and NPDES No. CA0001309
Santa Susana Field Laboratory
Ventura County, California

The Boeing Company (Boeing) hereby submits this Discharge Monitoring Report (DMR) for the Santa Susana Field Laboratory (Santa Susana Site) for the period of April 1 through June 30 (Second Quarter 2022). This DMR was prepared as required by and in accordance with the National Pollutant Discharge Elimination System Permit No. CA0001309 (NPDES Permit) issued by the Los Angeles California Regional Water Quality Control Board (Regional Board) in 2015. The NPDES Permit covers the entire Santa Susana Site, which includes approximately 2,400 acres owned by Boeing, approximately 450 acres owned by the United States and administered by the National Aeronautics and Space Administration (NASA), and approximately 472 acres of Boeing's land for which the Department of Energy (DOE) has assumed responsibility for soil remediation.

An electronic version of this DMR is located at: <http://www.boeing.com/principles/environment/santa-susana/monitoring-reports.page>.

SECOND QUARTER 2022 DMR CONTENTS

This DMR includes the following sections and appendices:

- **Discharge and Sample Collection Summary:** This section describes the number of rain events, the number of samples collected, sample dates, and sample locations during the Second Quarter 2022. Table I summarizes the Second Quarter 2022 sampling record by outfall or location, sample frequency, and sample type collected per the requirements of the NPDES Permit.
- **Receiving Water Surveys:** This section summarizes the receiving water surveys required by the NPDES Permit.
- **Summary of Exceedances and/or Non-Compliance:** This section summarizes the Second Quarter 2022 sample results that exceeded NPDES Permit Limits, Benchmarks, and Receiving Water Limits, and the potential causes thereof.
- **Stormwater Treatment System at Outfall 011 Activities:** This section summarizes the Second Quarter 2022 activities at the stormwater treatment system (SWTS) at Outfall 011.
- **Stormwater Treatment System at Outfall 018 Activities:** This section summarizes the Second Quarter 2022 activities at the SWTS at Outfall 018.

- **Stormwater Pollution Prevention Plan/Best Management Practice Activities:** This section presents the Santa Susana Site-Wide Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practice (BMP)-related activities implemented in the Second Quarter 2022 as well as activities associated with NASA, DOE, the Stormwater Expert Panel (Expert Panel), NASA and Boeing BMP Monitoring-related activities, the Northern Drainage, the Outfall 001/002 BMP Compliance Report, and Other BMP Activities. Table II summarizes typical BMP-related activities that occur at outfalls every quarter. Table III summarizes specific BMP activities completed during the Second Quarter 2022 by location.
- **Figure 1** shows the stormwater collection and conveyance system, the Bell Creek Receiving Water sampling location (RSW-001, Outfall 002), and Santa Susana Site features; **Figure 2** shows the Arroyo Simi Receiving Water sampling location (RSW 002, Frontier Park) and upstream monitoring location.
- **Annual Comprehensive Site Compliance Evaluation Report:** This section discusses the annual site compliance evaluation.
- **Bioassessment Monitoring:** This section discusses the bioassessment review required by the NPDES Permit.
- **SWPPP, BMP Plan, and Spill Contingency Plan Status and Effectiveness Report:** This section references the specific DMR in which more information can be found.
- **Appendix A** summarizes the rainfall measured at the Santa Susana Site during the Second Quarter 2022.
- **Appendix B** tabulates waste shipments during the Second Quarter 2022.
- **Appendix C** presents chemical analytical results from the Second Quarter 2022 stormwater and/or receiving water sample discharge monitoring in tabular form by sampling locations, constituents evaluated (analytes), sample dates, and data validation qualifiers.
- **Appendix D** contains copies of the laboratory analytical reports, chain-of-custody forms, and data validation reports (if validation was performed).
- **Appendix E** presents the Annual Comprehensive Sitewide Compliance Evaluation Report.
- **Appendix F** presents the Annual Bioassessment Sampling Report.

DISCHARGE AND SAMPLE COLLECTION SUMMARY

The Santa Susana Site had one qualifying rain event that produced greater than 0.1 inch of rainfall within a 24-hour period and were preceded by at least 72 hours of dry weather during the Second Quarter 2022 (Appendix A). Automated flow-weighted composite samplers (autosamplers) were set in preparation for all anticipated rain events. No discharge occurred at any of the outfalls; therefore, no samples were collected. There were no changes in the discharge as described in the NPDES Permit during the reporting period. The annual sediment sample and the quarterly surface water sample were collected at the Arroyo Simi–Frontier Park location on 25 April 2022.

Table I summarizes the Second Quarter 2022 sampling record by outfall or location, sample frequency, and sample type collected per NPDES Permit requirements, and results are included in Appendix C.

TABLE I: Sampling Record during the Second Quarter 2022

Date	Outfall/Location	Sample Frequency	Sample Type
4/25/2022	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Quarterly Surface Water	Grab
4/25/2022	Arroyo Simi Receiving Water (RSW-002, Frontier Park)	Annual Sediment	Grab

All analyses were conducted at analytical laboratories certified by the State Water Resources Control Board (SWRCB) for such analyses (i.e., all have current certification from the Environmental Laboratory Accreditation Program [ELAP] established by the California Environmental Laboratory Improvement Act) or have been approved by the SWRCB Executive Officer in accordance with current U.S. Environmental Protection Agency (EPA) guideline procedures or as specified in the NPDES Permit. Laboratory analytical reports, including validation reports and notes (if validation was performed), are included in Appendix D. Attachment H of the NPDES Permit presents the SWRCB's minimum levels laboratories are expected to achieve for reporting and determining compliance with NPDES Permit limits. The analytical laboratory achieved these minimum levels in the Second Quarter 2022 except when reporting limits were above the minimum levels (generally because of matrix interference). In cases where the NPDES Permit limit was less than the reporting limit and minimum level or there was no minimum level specified in the NPDES Permit, the reporting limit was used to determine compliance.

SECOND QUARTER 2022 RECEIVING WATER SURVEYS

The receiving water monitoring program required by the NPDES Permit includes surveys of Bell Creek, Dayton Canyon Creek, and Arroyo Simi. Observations are made only during discharge from Outfalls 002, 008, and 009, respectively, and at most monthly during periods of multiple flow events. During Second Quarter 2022, Outfalls 002, 008, and 009 did not discharge, thus, no receiving water surveys were conducted.

SECOND QUARTER 2022 SUMMARY OF EXCEEDANCES AND/OR NON-COMPLIANCE

No surface water discharges occurred from the Santa Susana Site during Second Quarter 2022. As such, there are no onsite compliance issues to report for this period. Additionally, in the quarterly surface water sample and annual sediment samples collected at Arroyo Simi sampling location (RSW-002, Frontier Park) in Simi Valley, no constituents exceeded receiving water limits.

STORMWATER TREATMENT SYSTEM AT OUTFALL 011 ACTIVITIES

The SWTS located near R-1 Pond (SWTS 011) is situated to discharge through Outfall 011. Maintenance items completed in the Second Quarter 2022 are as follows:

- Installed a new LED light by the instrument panel.
- Drained the system and prepared for seasonal shutdown.

SWTS 011 did not operate in the Second Quarter 2022.

STORMWATER TREATMENT SYSTEM AT OUTFALL 018 ACTIVITIES

The SWTS located at Silvernale Pond (SWTS 018) discharges through Outfall 018. Maintenance items completed in the Second Quarter 2022 are as follows:

- Replaced the stainless steel static mixer for the sludge pump on the Screw Press.
- Replaced the Alum tubing in ChemBox 2.
- Performed seasonal shutdown of the system and the Screw Press.

SWTS 018 did not operate in the Second Quarter 2022.

STORMWATER POLLUTION PREVENTION PLAN/BEST MANAGEMENT PRACTICE ACTIVITIES

Boeing implemented significant BMP activities in compliance with the Site-wide SWPPP (Haley & Aldrich, 2021) to assist in improving stormwater quality and compliance at the Santa Susana Site. Table II summarizes typical BMP-related activities that occur at outfalls every quarter.

TABLE II: Routine Quarterly Outfall BMP Activities

BMP Activities	Outfalls												
	001	002	003	004	005	006	007	008	009	010	011	018	
Conducted erosion and sediment control, and drainage stabilization inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation.	X	X	X	X	X	X	X	X	X	X	X	X	X
Inspected the flume for sediment/debris.	X	X	X	X	N/A	X	N/A	X	X	X	N/A	X	
Inspected the weir for sediment/debris.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X	N/A	
Cleaned the sample box of sediment and debris, checked for the presence of animals, and performed weed abatement as needed.	X	X	X	X	X	X	X	X	N/A	X	X	X	
Checked the flow meter control box for the presence of debris and/or animals.	X	X	X	X	N/A	X	N/A	X	X	X	X	X	
Cleaned the outfall area of sediment and debris and performed weed abatement as needed.	X	X	X	X	X	X	X	X	X	X	X	X	
Reset the flow meter and replaced the tape monthly.	X	X	X	X	N/A	X	N/A	X	X	X	X	X	
Conducted maintenance inspections of the stormwater conveyance system.	N/A	N/A	X	X	X	X	X	N/A	N/A	X	X	X	
Conducted maintenance inspections of the stormwater retention system.	N/A	N/A	X	X	X	X	X	N/A	N/A	X	X	X	
Conducted maintenance inspections of the flow-through structure.	N/A	N/A	X	X	N/A	X	N/A	N/A	N/A	X	X	N/A	

Notes:

X = BMP activity is applicable to the Outfall and was completed in Second Quarter 2022.

N/A = BMP activity is not applicable to the Outfall because the Outfall does not have a flume, sample box, flow meter, retention system or flow-through structure, or is not part of the stormwater conveyance system.

Table III summarizes the additional activities completed during the Second Quarter 2022 by outfall or BMP location.

TABLE III: Additional Second Quarter 2022 BMP Activities

Outfall, Watershed or BMP Location	BMP Activities During Second Quarter 2022
001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 014, and 018	- Performed weed abatement and/or brush clearance in and around the Outfall.
002	- Replaced the fiber rolls at the top of the stairs leading to the Outfall.
005	- Installed dedicated 6" high density polyethylene (HDPE) suction and discharge lines for the Charles King pump. - Installed a new felt walkway to the float switches.
006	- Replaced the autosampler tubing.
007	- Installed new felt walkway for the wildlife.
008	- Replaced the deteriorated fiber roll in front of the autosampler enclosure.
009	- Removed sediment beneath the grating at the autosampler enclosure. - Removed deteriorated fiber roll near the flow meter. - Secured the step stones to the flow meter.
011	- Removed deteriorated fiber rolls along the roadway and behind the autosampler enclosure. - Repaired the media bed cover by the discharge point. - Covered the sandbag check structure with 2 layers of felt. - Removed the rip rap at the discharge point for the SWTS 011 discharge line. - Removed gravel and sediment buildup at the lower water bar.
018	- Replaced the bubbler tubing for the flow meter.
Bowl Road	- Removed sediment and leaf debris from the sump located at the entrance of the Bowl.
Research Road	- Cleaned the check structures along Research Road. - Removed the deteriorated fiber roll at the top of Research Road and installed a rip rap berm.
R-2A Pond	- Installed new anchors for the R2A conveyance lines along the roadway. - Cleared vegetation around the staff gauge, submersible pump, and pump intakes.
Weather Stations	- Installed a new solar panel and battery at the Canyon Location. - Replaced the wind directional unit at the Area I weather station.
Helipad	- Repaired the HDPE liner on the lower dam.
Lower Lot	- Installed fiber rolls around the telephone poles by the BMP staging area.
407 Yard	- Covered the sandbag berm extending from the shade house to the 407 Yard with 2 layers of felt. - Installed a sandbag berm with a felt covering at the personal gate in the 407 Yard. - Installed a rip rap check structure behind the High Bay.
408 Contractor Staging Area	- Built a check structure at the northeast end slope and increased the height of the check structure at the southeast corner. - Removed sediment from the swale along the southern end. - Installed silt fence material over the wooden retaining wall and placed rip rap along the top and bottom of fence to stabilize the sediment.

In addition to Site-wide SWPPP-related activities, specific BMP projects included: NASA, DOE, Expert Panel, Northern Drainage, and Outfall 001/002 BMP Compliance Report. These are discussed in more detail below.

NASA-Related Activities

Demolition BMPs and stormwater activities covered by NASA’s Construction SWPPP for the Bravo area are inspected in accordance with the Construction General Permit (CGP; NASA, 2021). During the Second Quarter 2022, NASA maintained fiber rolls as perimeter and linear sediment controls, maintained silt fencing and gravel/riprap in areas within these sites where construction activities have been completed.

DOE-Related Activities

DOE reported no BMP-related activities during the Second Quarter 2022.

Expert Panel-Related Activities

The BMP activities discussed below were performed, commenced, or completed during the Second Quarter 2022 in coordination with the Expert Panel.

TABLE IV: Expert Panel-Related Second Quarter 2022 Activities

Outfall, Watershed, BMP, or Other Location	BMP Activities During Second Quarter 2022
009 and 011	- More than 50 utility poles were removed from watersheds 009 and 011.
Culvert Modifications (CM)	- Performed BMP Inspections.
NASA Expendable Launch Vehicle (ELV) Area BMPs	- Performed BMP Inspections.
Well 13 Road	- Performed BMP Inspections. - Removed sediment and debris from the check structures along Well 13 Road. - Covered the lower sandbag check structure with 2 layers of felt.
B-1 Area	- Performed BMP Inspections. - Installed new fiber rolls along the slope of Building 450.
Upper Parking Lot Media Filter	- Performed BMP Inspections.
Former Building 1436 Detention Bioswales	- Performed BMP Inspections. - Installed new felt over the check structure for the eastern bioswale inlet.
Lower Lot Biofilter (Sedimentation Basin and Biofilter)	- Performed BMP Inspections. - Conducted weed abatement. - Removed deteriorated fiber roll between biofilter and sedimentation basin. - 15,200 gallons of stormwater were pumped from the cistern to the sedimentation basin during the Second Quarter 2022.
Administration Area Inlet Filters	- Performed BMP Inspections.
Former Shooting Range	- Performed BMP Inspections. - Replaced deteriorated fiber rolls at the entrance. - Removed deteriorated and unneeded fiber rolls near the beginning of the silt fence.
Northern Drainage BMPs	- Performed BMP Inspections.

Outfall 001/002 BMP Compliance Report Related Activities

Boeing and the Expert Panel will continue to monitor and evaluate the effectiveness of BMPs within the watersheds of Outfall 001 and Outfall 002. Recommendations for these watersheds are provided in the 2021 Expert Panel Annual Report (Geosyntec and the Expert Panel, 2021). The Second Quarter 2022 activities included BMP inspections.

Other BMP Activities

BMP observations and maintenance inspections were conducted in conformance with the Site-wide SWPPP (Haley & Aldrich, 2021) at and around the former test stands Alfa and Bravo and former Advanced Propulsion Test Facility.

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT

The annual comprehensive site compliance evaluation was conducted in April 2022 and a summary is included in Appendix E.

BIOASSESSMENT MONITORING

A bioassessment review was conducted at the Santa Susana Site on 3 May 2022 to evaluate water quality conditions in the tributary to Arroyo Simi, downstream of Outfall 006 and the tributary to the Los Angeles River downstream of Outfall 001 in accordance with NPDES Permit requirements. The methods, procedures, and results of the bioassessment review are reported in the Bioassessment Monitoring Report included in Appendix F. Note that there was insufficient water flow to conduct the bioassessment monitoring in the Second Quarter 2022.

CONCLUSIONS

Boeing continues to implement, maintain, and monitor wide ranging control practices intended to improve water quality at stormwater discharge locations at the Santa Susana Site through methods designed to preserve the natural conditions in the watershed to the maximum extent feasible by implementing distributed, sustainable erosion control/restoration measures. The Expert Panel is reviewing the data collected this year and will make BMP and monitoring recommendations that will be communicated in the Expert Panel's 2022 Annual Report.

FACILITY CONTACT

If there are any questions regarding this report or its enclosures, you may contact Mr. Jeffrey Wokurka of Boeing at (818) 466-8800.

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on the 12th of August 2022 at The Boeing Company, Seal Beach, California Site.

Sincerely,



Kim O'Rourke
Global Remediation and Due Diligence Program Manager
Global Enterprise Sustainability – Environment

Enclosures:

References

Figure 1 – Site Map with Stormwater Collection and Conveyance System and Site Features

Figure 2 – Arroyo Simi Receiving Water (RSW-002, Frontier Park) Sampling Location and Upstream Monitoring Point

Appendix A – Second Quarter 2022 Daily Rainfall Summary

Appendix B – Second Quarter 2022 Waste Shipment Summary Table

Appendix C – Second Quarter 2022 Discharge Monitoring Data Summary Tables

Appendix D – Second Quarter 2022 Analytical Laboratory Reports, Chain of Custody Forms, and Validation Reports

Appendix E – Annual Comprehensive Site Compliance Evaluation Report

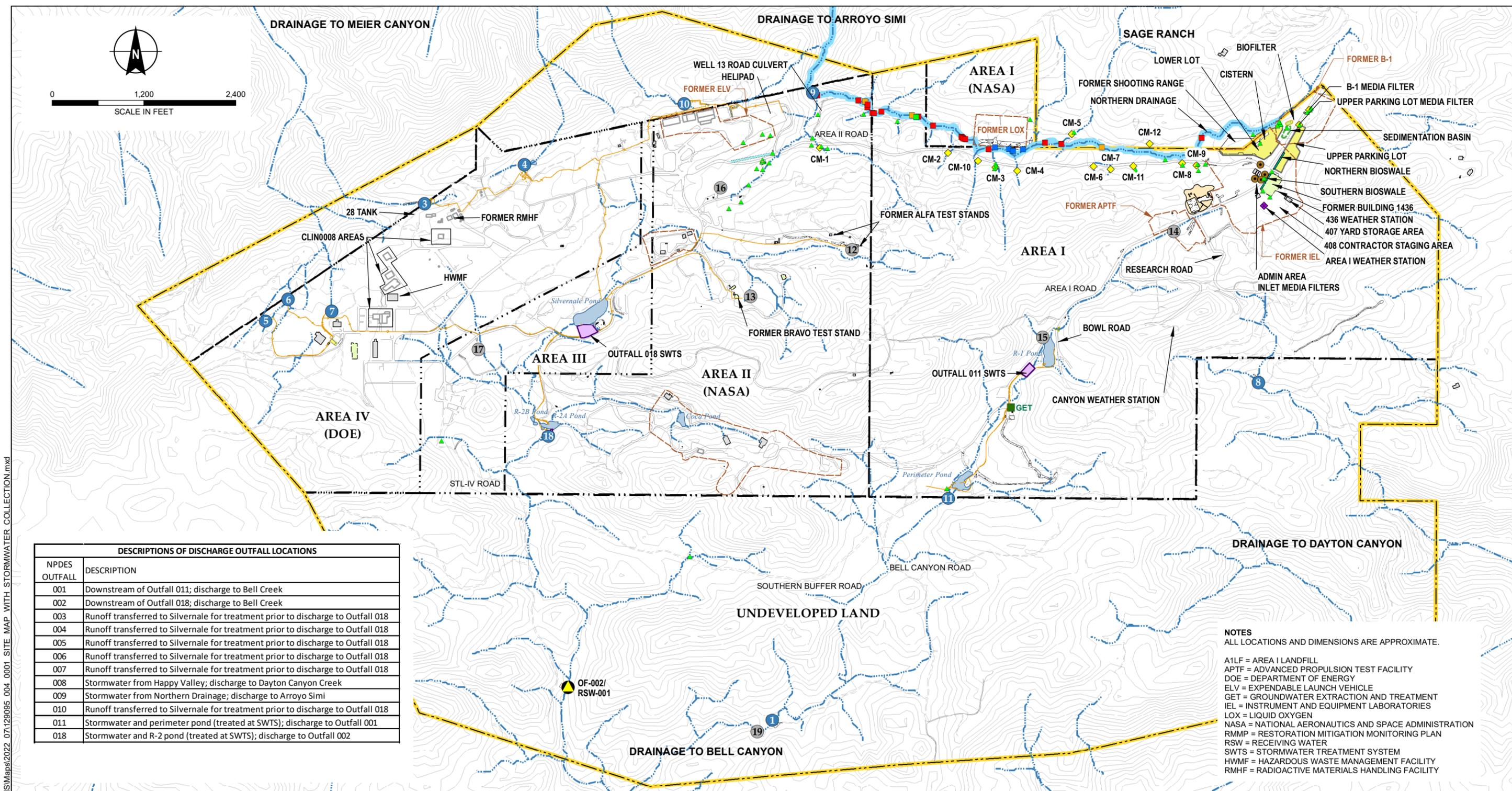
Appendix F – Annual Bioassessment Sampling Report

c: Los Angeles Regional Water Quality Control Board; Attn: Mr. Duong H. Trinh
Los Angeles Regional Water Quality Control Board; Attn: Ms. Kelly Bronwyn
California Department of Toxic Substances Control; Attn: Mr. Mark Malinowski

REFERENCES

1. California Regional Water Quality Control Board, Los Angeles Region, 2015. Waste Discharge Requirements for The Boeing Company, Santa Susana Field Laboratory (Order No. R4-2015-0033, NPDES No. CA0001309). 12 February.
2. Geosyntec and the Expert Panel, 2021. Santa Susana Field Laboratory Site-Wide Stormwater Annual Report, 2020/21 Reporting Year, Ventura County, California (NPDES No. CA0001309, CI No.6027). October.
3. Haley & Aldrich, Inc., 2021. Stormwater Pollution and Prevention Plan (Version 7 for Compliance with 2015 NPDES Permit). 7 December.
4. National Aeronautics and Space Administration, 2021. Stormwater Pollution and Prevention Plan for the Pacific Region MATOC FY21 Facilities Reduction Program at the NASA Santa Susana Field Laboratory (Phase 5 – Bravo Test Area Demolition), Ventura County, California. July.

FIGURES



DESCRIPTIONS OF DISCHARGE OUTFALL LOCATIONS	
NPDES OUTFALL	DESCRIPTION
001	Downstream of Outfall 011; discharge to Bell Creek
002	Downstream of Outfall 018; discharge to Bell Creek
003	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
004	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
005	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
006	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
007	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
008	Stormwater from Happy Valley; discharge to Dayton Canyon Creek
009	Stormwater from Northern Drainage; discharge to Arroyo Simi
010	Runoff transferred to Silvernale for treatment prior to discharge to Outfall 018
011	Stormwater and perimeter pond (treated at SWTS); discharge to Outfall 001
018	Stormwater and R-2 pond (treated at SWTS); discharge to Outfall 002

NOTES
 ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

A1LF = AREA I LANDFILL
 APTF = ADVANCED PROPULSION TEST FACILITY
 DOE = DEPARTMENT OF ENERGY
 ELV = EXPENDABLE LAUNCH VEHICLE
 GET = GROUNDWATER EXTRACTION AND TREATMENT
 IEL = INSTRUMENT AND EQUIPMENT LABORATORIES
 LOX = LIQUID OXYGEN
 NASA = NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 RMMP = RESTORATION MITIGATION MONITORING PLAN
 RSW = RECEIVING WATER
 SWTS = STORMWATER TREATMENT SYSTEM
 HWMF = HAZARDOUS WASTE MANAGEMENT FACILITY
 RMHF = RADIOACTIVE MATERIALS HANDLING FACILITY

- LEGEND**
- ① ACTIVE NPDES OUTFALL LOCATION
 - ⑱ FORMER NPDES OUTFALL LOCATION
 - BELL CREEK RECEIVING WATER (RSW-001) SAMPLING LOCATION AND OUTFALL 002
 - SLOPE DRAIN DISCHARGE POINT TO NORTHERN DRAINAGE
 - ◆ CULVERT MODIFICATION
 - ADMINISTRATION AREA DRAIN INLETS
 - ▲ BMP MONITORING LOCATION
 - GET SYSTEM
 - ◆ AIR MONITORING STATION
 - STORMWATER TREATMENT SYSTEM
 - FORMER STUDY AREA
 - CHECK STRUCTURE - MOSTLY NATURAL SANDSTONE, SOME RIP RAP
 - CHECK STRUCTURE - RIP RAP
 - CHECK STRUCTURE - VEGETATED RIP RAP
 - SLOPE DRAIN WITH UNDERLYING CHECK STRUCTURE AND ENERGY DISSIPATING GRAVEL AT INFLUENT END
 - DRAINAGE
 - NORTHERN DRAINAGE
 - ASPHALT SWALE
 - PAVED ROAD
 - DIRT ROAD
 - 25' ELEVATION CONTOUR
 - VEHICLE PARKING AREA
 - BIOFILTER
 - SEDIMENT BASIN
 - STORAGE TANK
 - BIOSWALE
 - GRAVEL
 - SURFACE WATER POND
 - EXISTING BUILDING/STRUCTURE
 - FORMER BUILDING FOOTPRINT
 - CONCRETE SLAB IN PLACE
 - LANDFILL AREA
 - SANTA SUSANA SITE PROPERTY BOUNDARY
 - ADMINISTRATIVE AREA BOUNDARY

HALEY ALDRICH
 NPDES PERMIT COMPLIANCE SECOND QUARTER 2022
 DISCHARGE MONITORING REPORT
 THE BOEING COMPANY
 VENTURA COUNTY, CALIFORNIA

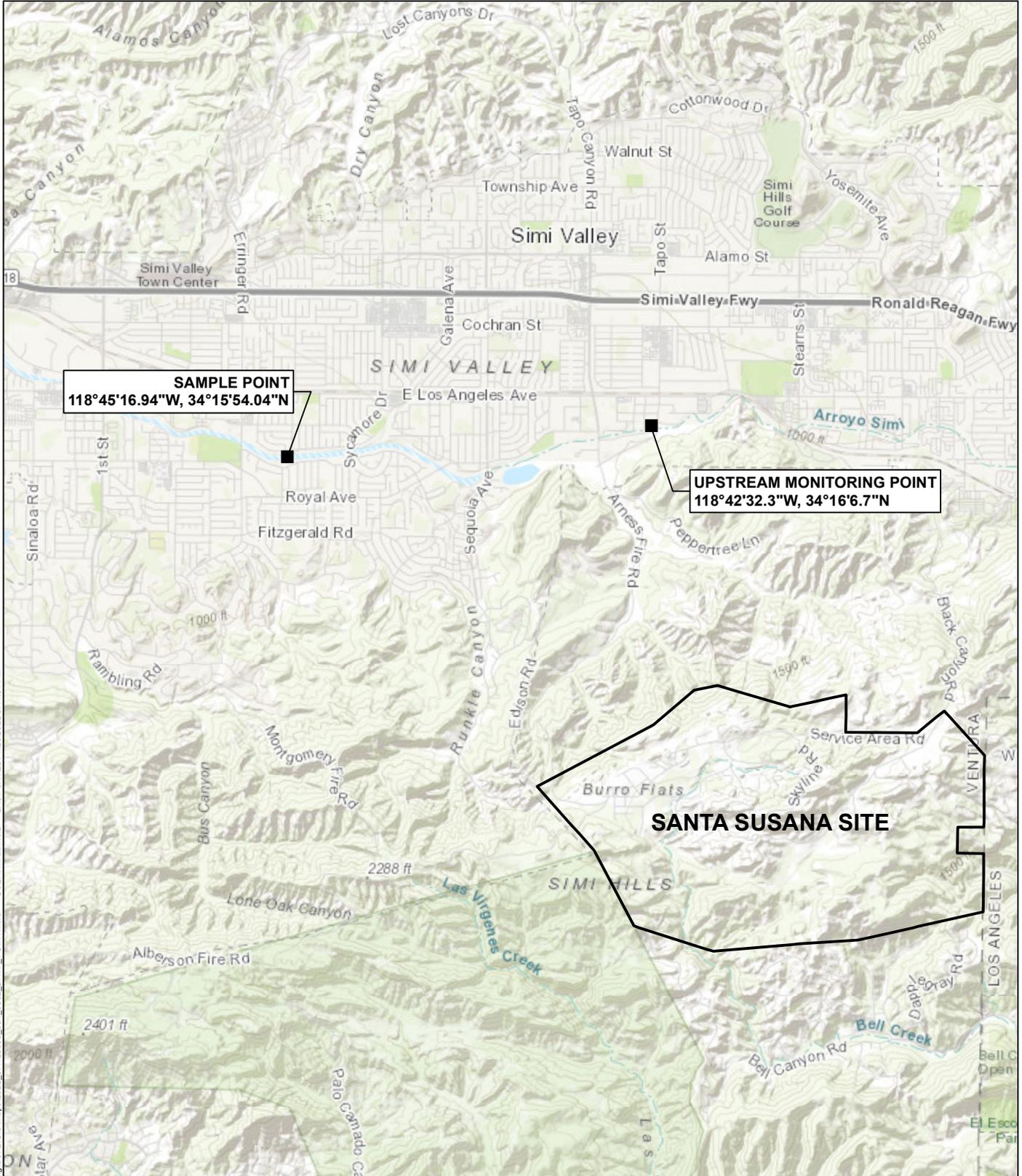
SITE MAP WITH STORMWATER COLLECTION AND CONVEYANCE SYSTEM AND SITE FEATURES

AUGUST 2022

FIGURE 1

C:\Users\hwachholz\Documents\Working\SSFLGIS\Maps\2022_07\129095_004_0001_SITE_MAP_WITH_STORMWATER_COLLECTION.mxd

GIS FILE PATH: C:\Users\hwachholz\Documents\working\SSFLGIS\Maps\2022_07128095_004_0002_DATA_POINT.mxd — USER: hwachholz — LAST SAVED: 4/20/2022 5:41:04 PM



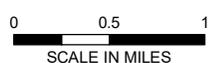
SAMPLE POINT
 118°45'16.94"W, 34°15'54.04"N

UPSTREAM MONITORING POINT
 118°42'32.3"W, 34°16'6.7"N

SANTA SUSANA SITE

NOTES

1. THE SAMPLE POINT IS FOR QUARTERLY WATER QUALITY AND ANNUAL SEDIMENT SAMPLING.
2. THE UPSTREAM SAMPLE POINT LOCATION WAS CHOSEN BASED ON IT BEING UPSTREAM OF ALL POSSIBLE DISCHARGE FROM THE SANTA SUSANA SITE.



**HALEY
ALDRICH**

NPDES PERMIT COMPLIANCE SECOND QUARTER 2022
 DISCHARGE MONITORING REPORT
 THE BOEING COMPANY
 VENTURA COUNTY, CALIFORNIA

**ARROYO SIMI RECEIVING WATER
 (RSW-002, FRONTIER PARK)
 SAMPLING LOCATION AND UPSTREAM
 MONITORING POINT**

AUGUST 2022

FIGURE 2

APPENDIX A

Second Quarter 2022 Rainfall Data Summary

APPENDIX A

TABLE OF CONTENTS

Table A – April 2022 – Daily Rainfall Summary
Table A – May 2022 – Daily Rainfall Summary
Table A – June 2022 – Daily Rainfall Summary

**TABLE A
DAILY RAINFALL SUMMARY**

Station: AREA 1
Parameter: Inches of Rain
Month/Year: April 2022

**SECOND QUARTER 2022
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

HOUR OF THE DAY, PACIFIC STANDARD TIME

	HR-BEG	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
	HR-END	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total		
DAY																												
D	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
A	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Y	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
O	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
F	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
T	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
H	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
E	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
M	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
O	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
N	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
T	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
H	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	d	0.00	
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	20	0.00	0.00	0.00	0.00	0.00	d	d	d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.06	0.11	0.34
	22	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Monthly Total																									0.35			

Flags: d = Off-line part of hour. Invalid hour due to communication error (April 18). Invalid hours due to maintenance activities (April 20). During the off-line hours on April 18 and April 20, the rain gauge at Sage Ranch did not record any measurable rainfall.

**TABLE A
DAILY RAINFALL SUMMARY**

Station: AREA 1
Parameter: Inches of Rain
Month/Year: June 2022

**SECOND QUARTER 2022
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

HOUR OF THE DAY, PACIFIC STANDARD TIME

	HR-BEG	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
	HR-END	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
DAY																											
D	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Y	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
O	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	8	0.00	0.00	0.00	0.00	0.00	0.00	d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	17	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
																											Monthly Total
																											0.02

Flags: d = Off-line part of hour. Invalid hour due to semi-annual audit (June 8). During the off-line hour from 0600 - 0700 on June 8, the rain gauge at Sage Ranch did not record any measurable rainfall.

APPENDIX B

Second Quarter 2022 Waste Shipment Summary Tables

**TABLE B
WASTE SHIPMENT SUMMARY TABLE**

**SECOND QUARTER 2022
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

TYPE OF WASTE	MATRIX	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	DESTINATION
Hazardous Waste	Solid	179	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
Hazardous Waste	Solid	306	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Buttonwillow LLC. 2500 West Lokern Road Buttonwillow, CA 93206
Hazardous Waste	Liquid	3,114	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
Hazardous Waste	Liquid	5,000	P	OC Vacuum Inc 5900 Cherry Ave. Long Beach, CA 90805	n/a	UC Ecology Vernon 5375 South Bovle Avenue Los Angeles, CA 90058
Hazardous Waste	Solid	487	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Environemntal Services, Inc. 2247 South Highway 71 Kimball, NE 69145
Non D.O.T. Regulated Material	Solid	41	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
Non-RCRA Hazardous Waste	Solid	124	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Buttonwillow LLC. 2500 West Lokern Road Buttonwillow, CA 93206
Non-RCRA Hazardous Waste	Liquid	61	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
Non-RCRA Hazardous Waste	Solid	86	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
Non Hazardous, Non D.O.T. Regulated Material	Solid	24	P	Clean Harbors Environmental Services, Inc. 42 Longwater Drive Norwell, MA 02061	n/a	Clean Harbors Wilmington LLC 1737 East Denni Street Wilmington, CA 90744
Non-Hazardous Waste	Liquid	25,000	P	Southwest Processors, Inc. 4120 Bandini Blvd Vernon, CA 90058	n/a	Southwest Processors, Inc. 4120 Bandini Blvd Vernon, CA 90058
Non RCRA Hazardous Waste	Solid	600	P	Patriot Environmental Services 508 East E Street Wilmington, CA 90744-6023	n/a	US Ecology Beatty US Hwy 95, 11 Miles South of Beatty Beatty, NV 89003
Hazardous Waste	Solid	2,000	P	Patriot Environmental Services 508 East E Street Wilmington, CA 90744-6023	n/a	US Ecology Beatty US Hwy 95, 11 Miles South of Beatty Beatty, NV 89003

**TABLE B
WASTE SHIPMENT SUMMARY TABLE**

**SECOND QUARTER 2022
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

TYPE OF WASTE	MATRIX	QTY.	UNITS	TRANSPORTER 1	TRANSPORTER 2	DESTINATION
Hazardous Waste	Solid	2	Y	Star Resources Corp. 1026 Blinn Avenue Wilmington, CA 90744	n/a	Azusa Land Reclamation 1211 W. Gladstone Street Azusa, CA 91702
Waste Fuel	Liquid	175	G	American Integrated Services	n/a	Crosby & Overton, Inc. 1630 W. 17th Street Long Beach, CA 90813
Waste Flammable Liquids	Liquid	50	G	American Integrated Services	n/a	Crosby & Overton, Inc. 1630 W. 17th Street Long Beach, CA 90813
Hazardous Waste	Solid	3,700	P	American Integrated Services	n/a	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
Hazardous Waste	Liquid	70	L	Patriot Environmental Services 508 East E Street Wilmington, CA 90744-6023	n/a	US Ecology Vernon 5375 South Boyle Avenue Los Angeles, CA 90058
Hazardous Waste	Liquid	40,000	G	Ecology Control Industries	n/a	US Ecology Vernon 5375 South Boyle Avenue Los Angeles, CA 90058
Hazardous Waste	Liquid	985	G	Patriot Environmental Services 508 East E Street Wilmington, CA 90744-6023	n/a	US Ecology Vernon 5375 South Boyle Avenue Los Angeles, CA 90058
Non RCRA Hazardous Waste	Solid	1,800	P	American Integrated Services	n/a	Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029
Hazardous Waste	Solid	125	P	Ecology Control Industries	n/a	US Ecology Beatty US Hwy 95, 11 Miles South of Beatty Beatty, NV 89003
Hazardous Waste	Solid	72	P	Araiza Trucking	n/a	Chemical Waste Management Inc. (WMI Kettleman Hills) 35251 Old Skyline Road Kettleman City, CA 92339
Hazardouse Waste	Solid	90	P	BTI Tank Rentals	n/a	Chemical Waste Management Inc. (WMI Kettleman Hills) 35251 Old Skyline Road Kettleman City, CA 92339
Hazardous Waste	Solid	36	P	Los Gomez Transport Inc	n/a	Chemical Waste Management Inc. (WMI Kettleman Hills) 35251 Old Skyline Road Kettleman City, CA 92339

Notes:
n/a = Not Applicable
G = Gallons
L = Liters
P = Pounds
Y = Yards

APPENDIX C

Second Quarter 2022 Discharge Monitoring Data Summary Tables

APPENDIX C

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Reporting Summary Notes

Arroyo Simi - Discharge Monitoring Data Summary Table

Arroyo Simi, Sediment - Discharge Monitoring Data Summary Table

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Not all of the following notes, abbreviations, symbols, or acronyms occur on every table:

1. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxic equivalents (TEQs) for the purpose of determining permit compliance are the sum of the products of the detected dioxin congener concentration multiplied by that congener's toxicity equivalency factor (TEF) and bioaccumulation equivalency factor (BEF). The resulting compliance TCDD TEQ does not include those congener concentrations that are reported as detected but not quantified (DNQ), as specified on page 26 of the NPDES permit (Water Board, 2015).
2. Temperature, total residual chlorine (TRC), dissolved oxygen (DO), and pH are measured in the field and are not validated.
3. pH and temperature are identified on the table as daily maximum discharge limits. The NPDES permit limit has an instantaneous minimum (6.5) and maximum (8.5) for pH and an instantaneous maximum of 86°F for temperature.
4. Exceedances are defined on page 6 of the NPDES permit as constituents in excess of daily maximum benchmark limits, daily maximum permit limits, or receiving water limits. Analytical concentrations or calculations to determine compliance to the NPDES permit are compared to the same number of significant figures as the daily maximum benchmark limits, daily maximum permit limits, or receiving water limits.
5. Priority pollutants sampled once every five years, at Arroyo Simi Receiving Water sampling location (RSW-002, Frontier Park) were analyzed during the First Quarter 2018.
6. Dissolved metals are filtered by the laboratory and reported as "Metal, dissolved". Total metals are not filtered by the laboratory and reported as "Metal".
7. Abbreviations, symbols, and acronyms:

-92.9 +/-200	A negative radiochemical analytical result indicates the count rate of the sample was less than the background condition. Radiological results are presented as activity plus or minus total uncertainty.
%	Percent.
\$	Reported result or other information was incorrectly reported by the laboratory; result was corrected by the data validator.
--	Based on validation of the data, a qualifier was not required.
-	No NPDES permit limit established for daily maximum or receiving water limit.
<(value)	Analyte not detected at a concentration greater than or equal to the detection limit (DL), method detection limit (MDL), or laboratory reporting limit (RL); see laboratory report for specific detail.
>(value)	Greater than most probable number.
*	Result not validated.
**	Flow for each outfall is calculated over the 24-hour period when the outfall autosampler is operating to collect the composite sample. See definition of "Daily Discharge" on page A-2 of attachment A of the NPDES permit.
*1	Improper preservation of sample.

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

*2	The inductively coupled plasma (ICP)/matrix spike (MS) parts per billion (ppb) check standard was recovered above the control limit; therefore, the constituent detected was qualified as estimated (J).
*3	Initial and or continuing calibration recoveries were outside acceptable control limits.
*5	Blank spike/blank spike duplicate relative percent difference was outside the control limit.
*10	Value was estimated detect or estimated non-detect (J, UJ) due to deficiencies in quantitation of the constituent including constituents reported by the laboratory as estimated maximum possible concentration (EMPC) values.
*11	No calibration was performed for this compound; result is reported as a tentatively identified compound (TIC).
*III	Unusual problems found with the data that have been described in the validation report.
ANR	Analysis not required; e.g., constituent or outfall was not required by the NPDES permit to be sampled and analyzed over the reporting period (annual, semi-annual, etc.).
Avg	Average.
B	Laboratory method blank contamination.
BA	Relative percent difference out of control.
BEF	Bioaccumulation equivalency factor.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
C	Calibration percent relative standard deviation (%RSD) or percent difference (%D) were noncompliant.
CaCO3	Calcium carbonate
Chromium VI	Hexavalent chromium
Comp	Composite sample type.
C5	Calibration verification percent recovery (%R) was outside method control limits.
CEs/100 ml	Cell equivalents per 100 milliliters.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
%D	Percent difference between the initial and continuing calibration relative response factors.
Deg C	Degrees Celsius.
Deg F	Degrees Fahrenheit.
DL	Detection limit.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	E in validation qualifier indicates that duplicates show poor agreement.

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

EB	Equipment blank.
EMPC	Estimated maximum possible concentration.
F	The analyte was detected in an associated field blank (FB) or equipment blank (EB) as well as in the sample.
FB	Field blank.
F1	Matrix spike (MS) and/or matrix spike duplicate (MSD) recovery is outside acceptance limits.
ft/sec	Feet per second.
G	Gallons.
gpd	Gallons per day.
H	Holding time was exceeded.
Hardness	Equivalent of calcium carbonate (CaCO ₃).
Hp	Hepta.
Hx	Hexa.
ICP	Interference check solution results were unsatisfactory.
J	Estimated value.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
J, DX	Estimated value, value < lowest standard method quantitation limit (MQL), but > than method detection limit (MDL).
K	The sample dilution's set-up did not meet the oxygen depletion criteria of at least 2 milligrams per liter (mg/L); therefore, the reported result is an estimated value only.
L	Laboratory control sample percent recovery (%R) was outside control limits.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
L2	The laboratory control sample percent recovery (%R) was below the method control limits.
LBS/DAY	Pounds per day.
LCS	Laboratory control standard.
LCSD	Laboratory control standard duplicate.
LQ	Laboratory control standard (LCS)/ laboratory control standard duplicate (LCSD) recovery above method control limits.
M1	Matrix spike (MS) and/or matrix spike duplicate (MSD) were above the acceptance limits due to sample matrix interference.
M2	The matrix spike (MS) and/or matrix spike duplicate (MSD) were below the acceptance limits due to sample matrix interference.
Max	Maximum.
MB	Analyte present in the method blank.
MDA/MDC	Minimum detectable activity/minimum detectable concentration.

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

MDL	Method detection limit.
Meas	Measure sample type.
MFL	Million fibers per liter.
MGD	Million gallons per day.
MHA	Due to high level of analyte in the sample, the matrix spike (MS)/matrix spike duplicate (MSD) calculation does not provide useful spike recovery information.
mg/L	Milligrams per liter.
mg/kg	Milligrams per kilogram.
ml/L	Milliliters per liter
ml/L/hr	Milliliters per liter per hour.
MPN/100 mL	Most probable number per 100 milliliters.
MQL	Method quantitation limit.
MS	Matrix spike.
MSD	Matrix spike duplicate.
mS/cm	MilliSiemens per centimeter
NA	Not applicable; no NPDES permit limit established for the constituent and/or outfall or analyte not required per receiving water monitoring requirements.
ND	Analyte not detected.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.
NM	Not measured or determined or minimum detectable activities (MDAs) are not calculated as there is no statistical method for combining MDAs.
NPDES	National Pollutant Discharge Elimination System.
NR	Not reported by laboratory by the deadline of this report.
NTU	Nephelometric turbidity unit.
OCDD	Octa CDD.
OCDF	Octa CDF.
P	Pounds.
ppb	Parts per billion.
pCi/L	PicoCuries per liter.
Pe	Penta.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
Q	Matrix spike (MS) recovery outside of control limits.
Q1	Matrix spike (MS)/matrix spike duplicate (MSD) relative percent difference (RPD) was outside the control limit.
R	As a validation qualifier, results are rejected; the presence or absence of analyte cannot be verified.
(R)	Percent recovery (%R) for calibration not within control limits.
RL	Laboratory reporting limit.

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

RL-1	Reporting limit raised due to sample matrix effects.
RPD	Relative percent difference.
%R	Percent recovery.
%RSD	Percent relative standard deviation.
% Normal/Alive	Percent normal and alive.
% Survival	Percent survival.
S	Surrogate recovery was outside control limits.
s.u.	Standard unit.
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin.
TCDF	2,3,7,8-tetrachlorodibenzo-p-furan.
TEQ	Toxic equivalent.
TIC	Tentatively identified compound
TIE	Toxicity identification evaluation
TOC	Total organic carbon
T	Presumed contamination, as indicated by a detect in the trip blank.
U	Result not detected.
µg/L	Micrograms per liter.
µg/g	Micrograms per gram.
µg/kg	Micrograms per kilogram.
µmhos/cm	Micromhos per centimeter.
UJ	Result not detected at the estimated reporting limit.
WHO TEF	World Health Organization toxic equivalency factor.
w/out	Without.
^	Analysis not completed due to hold time exceedance or insufficient sample volume.
#	Per Order No. R4-2015-0033, page 16, Footnote 1. The effluent limitations for total suspended solids and settleable solids are not applicable for discharges during wet weather. During wet weather flow, a discharge event is greater than 0.1 inch of rainfall in a 24-hour period. No more than one sample per week need be obtained during extended periods of rainfall or the discharge of collected stormwater. A storm event must be preceded by at least 72 hours of dry weather.
(1)	Based on the NPDES permit, table E-3a footnote 2, receiving water samples for pH, hardness, and priority pollutants must be collected on the same day as effluent samples.
(2)	Additional sample, not required by the NPDES permit.
(4.0)3.1	Represents (dry weather limit) wet weather limit / monthly average limit.
(3)	Secondary maximum contaminant level.

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

(4)	The drinking water maximum contaminant level of 3.00E-05 µg/L is for the dioxin congener 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). TCDD Toxic Equivalent (TEQ) without detected but not quantified (DNQ) values is the sum of the products of the detected dioxin congener concentration multiplied by that congener's toxic Equivalency factor (TEF) and bioaccumulation equivalency factor (BEF). There are 17 dioxin congeners.
(a)	Based on Order No. R4-2015-0033, page 17, footnote 7, sampling event is a dry discharge and the NPDES Permit Limit for cadmium is 4.0 ug/L and 3.93 lbs/day at OF001,002,011,018 and 0.24 lbs/day at OF008.
(b)	Based on Order No. R4-2015-0033, page 17, footnote 7, sampling event is a wet discharge and the NPDES Permit Limit for cadmium is 3.1 ug/L and 4.91 lbs/day at OF001,002,011,018 and 3.05 lbs/day at OF008.
(c)	Based on Order No. R4-2015-0033, page 16, footnote 1, sampled during wet weather flow. The effluent limitations for total suspended solids and/or settleable solids are not applicable for discharges during wet weather.
(d)	Based on Order No. R4-2015-0033, page 16, footnote 1, sampled during dry weather flow. The effluent limitations for total suspended solids and/or settleable solids are applicable for discharges during dry weather.
(e)	Based on Order No. R4-2015-0033, page 17, footnote 8, sampling event is a dry discharge and the NPDES Permit Limit for selenium is 5 ug/L and 4.91 lbs/day.
(f)	Based on Order No. R4-2015-0033, page 17, footnote 8, sampling event is a wet discharge and the NPDES Permit Limit for selenium is 8.2 ug/L and 8.06 lbs/day.
(g)	The composite sample was collected as a grab sample from the stream due to insufficient flow.
(h)	Total Ammonia is reported in wet weight units milligrams per kilogram (mg/kg).
(i)	Total organic carbon (TOC) is reported in dry weight units. Permit asks for TOC units in % dry weight, but data is provided in dry unit milligrams per kilogram (mg/kg).
(j)	Analyte does not have a receiving water limit for Bell Creek Receiving Water (RSW-001, OF002).
(k)	Field parameter noted on field notes rather than COC.
(l)	When field staff arrived onsite to collect the composite sample, they discovered that the autosampler had malfunctioned and had not collected "sips." Field staff repaired the autosampler, reset it, determined it was functioning properly, then returned the next day to collect the composite sample.
(m)	The composite sample was collected as a grab sample from the sample box due to insufficient flow.
(n)	The grab sample was collected at the first opportunity given the short duration and low-flow at this Outfall.
(o)	Unsafe conditions all day prevented access to the Outfall.
(p)	Various annual constituents were analyzed by laboratory due to field and laboratory error.

**REPORTING SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

(q)	Minimum levels met with the exception of 2-chlorovinyl ether. The minimum level is 1.0 µg/L, while the laboratory reported with an MDL of 1.1 µg/L due to an updated MDL study.
(r)	The sampling frequency of this constituent is increased from once per year to once per discharge until four consecutive sample results demonstrate compliance per the NPDES permit. The corresponding dissolved metal also increased in sampling frequency to once per discharge.
(s)	Analyte does not have a daily maximum permit limit for OF002.
(t)	Reanalysis

**ARROYO SIMI
DISCHARGE MONITORING DATA SUMMARY TABLE**

**SECOND QUARTER 2022
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

April 1 through June 30, 2022

					4/25/2022 07:30	
ANALYTE	UNITS	DAILY MAXIMUM PERMIT LIMIT	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	LABORATORY/ VALIDATION QUALIFIER
POLLUTANTS WITH LIMITS						
4,4'-DDD	µg/L	0.0014	1/Quarter	Grab	ND < 0.0044	U
4,4'-DDE	µg/L	0.001	1/Quarter	Grab	ND < 0.0019	U
4,4'-DDT	µg/L	0.001	1/Quarter	Grab	ND < 0.0016	U
Aroclor 1016	µg/L	0.0003	1/Quarter	Grab	ND < 0.044	U
Aroclor 1221	µg/L	0.0003	1/Quarter	Grab	ND < 0.044	U
Aroclor 1232	µg/L	0.0003	1/Quarter	Grab	ND < 0.044	U
Aroclor 1242	µg/L	0.0003	1/Quarter	Grab	ND < 0.044	U
Aroclor 1248	µg/L	0.0003	1/Quarter	Grab	ND < 0.044	U
Aroclor 1254	µg/L	0.0003	1/Quarter	Grab	ND < 0.052	U
Aroclor 1260	µg/L	0.0003	1/Quarter	Grab	ND < 0.052	U
Chlordane	µg/L	0.001	1/Quarter	Grab	ND < 0.026	U
Chlorpyrifos	µg/L	0.02	1/Quarter	Grab	ND < 0.0069	U
Diazinon	µg/L	0.16	1/Quarter	Grab	ND < 0.0052	U
Dieldrin	µg/L	0.0002	1/Quarter	Grab	ND < 0.0013	U
E. coli	mpn/100mL	235	1/Year	ANR	ANR	ANR
pH (Field)	s.u.	6.5-8.5	1/Quarter	Grab	6.91	*
Toxaphene	µg/L	0.0003	1/Quarter	Grab	ND < 0.054	U
POLLUTANTS WITHOUT LIMITS						
Hardness (as CaCO3)	mg/L	-	1/Quarter	Grab	330	=
Priority Pollutants	NA	-	1/5 Years	ANR	ANR	ANR
Temperature (Field)	Deg F	-	1/Quarter	Grab	64.3	*
TCDD - Equivalent	µg/L	-	1/Year	ANR	ANR	ANR
Total Suspended Solids	mg/L	-	1/Year	ANR	ANR	ANR
Water Velocity	ft/sec	-	1/Quarter	Meas	0.0	*

See reporting summary notes for abbreviations, definitions, and other explanations for the data presented.

ARROYO SIMI, SEDIMENT
DISCHARGE MONITORING DATA SUMMARY TABLE

SECOND QUARTER 2022
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

April 1 through June 30, 2022

					4/25/2022 07:45	
ANALYTE	UNITS	DAILY MAXIMUM PERMIT LIMIT	SAMPLE FREQUENCY	SAMPLE TYPE	RESULT	LABORATORY/ VALIDATION QUALIFIER
POLLUTANTS WITH LIMITS						
4,4'-DDD	µg/g	0.002	1/Year	Grab	ND < 0.00014	U
4,4'-DDE	µg/g	0.0014	1/Year	Grab	0.00028	J (DNQ)
4,4'-DDT	µg/g	0.0003	1/Year	Grab	ND < 0.00024	U
Aroclor 1016	µg/g	0.12	1/Year	Grab	ND < 0.0079	U
Aroclor 1221	µg/g	0.12	1/Year	Grab	ND < 0.0079	U
Aroclor 1232	µg/g	0.12	1/Year	Grab	ND < 0.0079	U
Aroclor 1242	µg/g	0.12	1/Year	Grab	ND < 0.0079	U
Aroclor 1248	µg/g	0.12	1/Year	Grab	ND < 0.0079	U
Aroclor 1254	µg/g	0.12	1/Year	Grab	ND < 0.0051	U
Aroclor 1260	µg/g	0.12	1/Year	Grab	ND < 0.0051	U
Chlordane	µg/g	0.0033	1/Year	Grab	ND < 0.00082	U
Dieldrin	µg/g	0.0002	1/Year	Grab	ND < 0.00011	U
Toxaphene	µg/g	0.0006	1/Year	Grab	ND < 0.0031	U
POLLUTANTS WITHOUT LIMITS						
Bivalve Embryo Toxicity (<i>Mytilus edulis</i>)	% Normal/Alive	-	1/Year	Grab	100	=
Conductivity (Field)	µmhos/cm	-	1/Year	Grab	880	*
Dissolved Oxygen (Field)	mg/L	-	1/Year	Grab	6.66	*
Percent Moisture	%	-	1/Year	Grab	9.8	*
pH (Field)	s.u.	-	1/Year	Grab	6.91	*
Sediment Toxicity (<i>Eohaustorius estuarius</i>)	% Survival	-	1/Year	Grab	100	=
Temperature (Field)	Deg F	-	1/Year	Grab	64.3	*
Total Ammonia	mg/kg	-	1/Year	Grab	ND < 1.98	U
Total Organic Carbon	mg/kg	-	1/Year	Grab	1300	J (DNQ)
Water Velocity	ft/sec	-	1/Year	Meas	0.0	*
PARTICULATE SIZE DISTRIBUTION						
Clay (<0.00391 mm)	%	-	1/Year	Grab	0.17	*
Coarse Sand (0.5 mm to 1 mm)	%	-	1/Year	Grab	44.37	*
Fine Sand (0.125 mm to 0.25 mm)	%	-	1/Year	Grab	2.79	*
Gravel (greater than 2mm)	%	-	1/Year	Grab	11.83	*
Medium Sand (0.25 mm to 0.5 mm)	%	-	1/Year	Grab	15.26	*
Silt (0.00391 mm to 0.0625 mm)	%	-	1/Year	Grab	0.55	*
Total Silt and Clay (0 mm to 0.0625 mm)	%	-	1/Year	Grab	0.72	*
Very Coarse Sand (1 mm to 2 mm)	%	-	1/Year	Grab	24.47	*
Very Fine Sand (0.0625 mm to 0.125 mm)	%	-	1/Year	Grab	0.56	*

APPENDIX D

**Second Quarter 2022 Analytical Laboratory Reports, Chain of Custody
Forms, and Validation Reports**

APPENDIX D

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Section No.

1	Arroyo Simi – 570-93643-1 – April 25, 2022, Eurofins Calscience Analytical Report
2	Arroyo Simi – 570-93643-2 – April 25, 2022, Eurofins Calscience Analytical Report
3	Arroyo Simi – 570-93645-1 – April 25, 2022, Eurofins Calscience Analytical Report
4	Arroyo Simi – 570-93645-2 – April 25, 2022, Eurofins Calscience Analytical Report
5	Arroyo Simi – 570-93645-3 – April 25, 2022, Eurofins Calscience Analytical Report
6	Data Usability Summary Report

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-93643-1

Client Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

For:

Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Ms. Katherine Miller

Virendra R Patel

Authorized for release by:

5/17/2022 8:34:27 AM

Virendra Patel, Project Manager I
(714)895-5494

Virendra.Patel@et.eurofinsus.com

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results through



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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LH	Surrogate Recoveries were higher than QC limits
PI	Primary and confirm results varied by > than 40% RPD

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Job ID: 570-93643-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-93643-1

Comments

No additional comments.

Receipt

The samples were received on 4/25/2022 1:02 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 was 4.7° C.

GC Semi VOA

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

Metals

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

Organic Prep

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

- 1
- 2
- 3
- 4
- 5
- 6
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- 13
- 14
- 15

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Client Sample ID: Arroyo_Simi_20220425_Grab

Lab Sample ID: 570-93643-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	330		7.1	1.0	mg/L	1		SM 2340B	Total Recoverable

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method: 608.3 - Organochlorine Pesticides in Water

Client Sample ID: Arroyo_Simi_20220425_Grab

Date Collected: 04/25/22 07:30

Date Received: 04/25/22 13:02

Lab Sample ID: 570-93643-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.033	0.026	ug/L		04/26/22 10:24	04/28/22 16:54	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		04/26/22 10:24	04/28/22 16:54	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		04/26/22 10:24	04/28/22 16:54	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		04/26/22 10:24	04/28/22 16:54	1
Dieldrin	ND		0.0033	0.0013	ug/L		04/26/22 10:24	04/28/22 16:54	1
Toxaphene	ND		0.067	0.054	ug/L		04/26/22 10:24	04/28/22 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	147	LH	20 - 139	04/26/22 10:24	04/28/22 16:54	1

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: Arroyo_Simi_20220425_Grab

Date Collected: 04/25/22 07:30

Date Received: 04/25/22 13:02

Lab Sample ID: 570-93643-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.10	0.044	ug/L		04/26/22 10:24	04/28/22 01:04	1
Aroclor 1221	ND		0.10	0.044	ug/L		04/26/22 10:24	04/28/22 01:04	1
Aroclor 1232	ND		0.10	0.044	ug/L		04/26/22 10:24	04/28/22 01:04	1
Aroclor 1242	ND		0.10	0.044	ug/L		04/26/22 10:24	04/28/22 01:04	1
Aroclor 1248	ND		0.10	0.044	ug/L		04/26/22 10:24	04/28/22 01:04	1
Aroclor 1254	ND		0.10	0.052	ug/L		04/26/22 10:24	04/28/22 01:04	1
Aroclor 1260	ND		0.10	0.052	ug/L		04/26/22 10:24	04/28/22 01:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	116		20 - 139	04/26/22 10:24	04/28/22 01:04	1
DCB Decachlorobiphenyl (Surr)	45		20 - 154	04/26/22 10:24	04/28/22 01:04	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: Arroyo_Simi_20220425_Grab

Lab Sample ID: 570-93643-1

Date Collected: 04/25/22 07:30

Matrix: Water

Date Received: 04/25/22 13:02

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	330		7.1	1.0	mg/L			05/12/22 02:10	1

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Surrogate Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (20-139)
570-93643-1	Arroyo_Simi_20220425_Grab	147 LH

Surrogate Legend

TCX = Tetrachloro-m-xylene

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (20-139)
570-93643-1 MS	Arroyo_Simi_20220425_Grab	66
570-93643-1 MSD	Arroyo_Simi_20220425_Grab	58 PI
MB 570-229384/1-A	Method Blank	61

Surrogate Legend

TCX = Tetrachloro-m-xylene

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (20-139)	DCB1 (20-154)
570-93643-1	Arroyo_Simi_20220425_Grab	116	45
LCS 570-229384/4-A	Lab Control Sample	55	60
LCSD 570-229384/5-A	Lab Control Sample Dup	64	70
MB 570-229384/1-A	Method Blank	51	73

Surrogate Legend

TCX = Tetrachloro-m-xylene (Surr)

DCB = DCB Decachlorobiphenyl (Surr)

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 570-229384/1-A
Matrix: Water
Analysis Batch: 230017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229384

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.033	0.026	ug/L		04/26/22 10:23	04/28/22 13:26	1
4,4'-DDD	ND		0.0067	0.0044	ug/L		04/26/22 10:23	04/28/22 13:26	1
4,4'-DDE	ND		0.0033	0.0019	ug/L		04/26/22 10:23	04/28/22 13:26	1
4,4'-DDT	ND		0.0033	0.0016	ug/L		04/26/22 10:23	04/28/22 13:26	1
Dieldrin	ND		0.0033	0.0013	ug/L		04/26/22 10:23	04/28/22 13:26	1
Toxaphene	ND		0.067	0.054	ug/L		04/26/22 10:23	04/28/22 13:26	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	61		20 - 139				04/26/22 10:23	04/28/22 13:26	1

Lab Sample ID: 570-93643-1 MS
Matrix: Water
Analysis Batch: 230017

Client Sample ID: Arroyo_Simi_20220425_Grab
Prep Type: Total/NA
Prep Batch: 229384

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
4,4'-DDD	ND		0.0333	0.0339		ug/L		102		31 - 141
4,4'-DDE	ND		0.0333	0.0299		ug/L		90		30 - 145
4,4'-DDT	ND		0.0333	0.0398		ug/L		119		25 - 160
Dieldrin	ND		0.0333	0.0260		ug/L		78		36 - 146
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
Tetrachloro-m-xylene	66		20 - 139							

Lab Sample ID: 570-93643-1 MSD
Matrix: Water
Analysis Batch: 230017

Client Sample ID: Arroyo_Simi_20220425_Grab
Prep Type: Total/NA
Prep Batch: 229384

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
4,4'-DDD	ND		0.0333	0.0284		ug/L		85		31 - 141	18	39
4,4'-DDE	ND		0.0333	0.0240		ug/L		72		30 - 145	22	35
4,4'-DDT	ND		0.0333	0.0237	BA	ug/L		71		25 - 160	51	42
Dieldrin	ND		0.0333	0.0232		ug/L		70		36 - 146	11	49
MSD MSD												
Surrogate	%Recovery	Qualifier	Limits									
Tetrachloro-m-xylene	58	PI	20 - 139									

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 570-229384/1-A
Matrix: Water
Analysis Batch: 229656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229384

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1016	ND		0.10	0.044	ug/L		04/26/22 10:23	04/27/22 22:52	1
Aroclor 1221	ND		0.10	0.044	ug/L		04/26/22 10:23	04/27/22 22:52	1
Aroclor 1232	ND		0.10	0.044	ug/L		04/26/22 10:23	04/27/22 22:52	1
Aroclor 1242	ND		0.10	0.044	ug/L		04/26/22 10:23	04/27/22 22:52	1
Aroclor 1248	ND		0.10	0.044	ug/L		04/26/22 10:23	04/27/22 22:52	1

Eurofins Calscience

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: MB 570-229384/1-A
Matrix: Water
Analysis Batch: 229656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229384

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1254	ND		0.10	0.052	ug/L		04/26/22 10:23	04/27/22 22:52	1
Aroclor 1260	ND		0.10	0.052	ug/L		04/26/22 10:23	04/27/22 22:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	51		20 - 139				04/26/22 10:23	04/27/22 22:52	1
DCB Decachlorobiphenyl (Surr)	73		20 - 154				04/26/22 10:23	04/27/22 22:52	1

Lab Sample ID: LCS 570-229384/4-A
Matrix: Water
Analysis Batch: 229656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 229384

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
Aroclor 1016	0.133	0.107		ug/L		80	50 - 140
Aroclor 1260	0.133	0.122		ug/L		91	8 - 140
Surrogate	%Recovery	Qualifier	Limits				
Tetrachloro-m-xylene (Surr)	55		20 - 139				
DCB Decachlorobiphenyl (Surr)	60		20 - 154				

Lab Sample ID: LCSD 570-229384/5-A
Matrix: Water
Analysis Batch: 229656

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 229384

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
Aroclor 1016	0.133	0.0948	J,DX	ug/L		71	50 - 140	12	36
Aroclor 1260	0.133	0.121		ug/L		90	8 - 140	1	38
Surrogate	%Recovery	Qualifier	Limits						
Tetrachloro-m-xylene (Surr)	64		20 - 139						
DCB Decachlorobiphenyl (Surr)	70		20 - 154						

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

GC Semi VOA

Prep Batch: 229384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93643-1	Arroyo_Simi_20220425_Grab	Total/NA	Water	608	
MB 570-229384/1-A	Method Blank	Total/NA	Water	608	
LCS 570-229384/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 570-229384/5-A	Lab Control Sample Dup	Total/NA	Water	608	
570-93643-1 MS	Arroyo_Simi_20220425_Grab	Total/NA	Water	608	
570-93643-1 MSD	Arroyo_Simi_20220425_Grab	Total/NA	Water	608	

Analysis Batch: 229656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93643-1	Arroyo_Simi_20220425_Grab	Total/NA	Water	608.3	229384
MB 570-229384/1-A	Method Blank	Total/NA	Water	608.3	229384
LCS 570-229384/4-A	Lab Control Sample	Total/NA	Water	608.3	229384
LCSD 570-229384/5-A	Lab Control Sample Dup	Total/NA	Water	608.3	229384

Analysis Batch: 230017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93643-1	Arroyo_Simi_20220425_Grab	Total/NA	Water	608.3	229384
MB 570-229384/1-A	Method Blank	Total/NA	Water	608.3	229384
570-93643-1 MS	Arroyo_Simi_20220425_Grab	Total/NA	Water	608.3	229384
570-93643-1 MSD	Arroyo_Simi_20220425_Grab	Total/NA	Water	608.3	229384

Metals

Analysis Batch: 233562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93643-1	Arroyo_Simi_20220425_Grab	Total Recoverable	Water	SM 2340B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Client Sample ID: Arroyo_Simi_20220425_Grab

Lab Sample ID: 570-93643-1

Date Collected: 04/25/22 07:30

Matrix: Water

Date Received: 04/25/22 13:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	608			1500 mL	1 mL	229384	04/26/22 10:24	OAJ3	ECL 4
Total/NA	Analysis	608.3		1			230017	04/28/22 16:54	UHHN	ECL 4
Instrument ID: GC52A										
Total/NA	Prep	608			1500 mL	1 mL	229384	04/26/22 10:24	OAJ3	ECL 4
Total/NA	Analysis	608.3		1			229656	04/28/22 01:04	UHHN	ECL 4
Instrument ID: GC64A										
Total Recoverable	Analysis	SM 2340B		1			233562	05/12/22 02:10	W1BQ	ECL 4
Instrument ID: NOEQUIP										

Laboratory References:

ECL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

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Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
California	State	2944	09-30-22

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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Method	Method Description	Protocol	Laboratory
608.3	Organochlorine Pesticides in Water	40CFR136A	ECL 4
608.3	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	ECL 4
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	ECL 4
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	ECL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

ECL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494



Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-93643-1	Arroyo_Simi_20220425_Grab	Water	04/25/22 07:30	04/25/22 13:02

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CHAIN OF CUSTODY FORM



Loc: 570
93643

570-93643 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108			Project: Boeing-SSFL NPDES Permit 2015 Quarterly Arroyo Simi-Frontier Park Dry Weather						ANALYSIS REQUIRED				Field Readings		Meter serial # <u>112500VAT</u>	
Eurofins Calscience Project Manager Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 ECI Project #44024446			Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)						Hardness as CaCO ₃ , Recoverable (SM2340B) Chlorpyrifos Diazinon (E625 2) Weick Labs in Hacienda Heights CA Pesticides: Chlordane 4,4-DDD 4,4-DDE, 4,4-DDT Dieldrin Toxaphene + PCBs only (E608)				Field Readings: (Include units) Time of Readings: <u>0715</u>		pH <u>6.91</u> pH unit Temp <u>64.3</u> °F Velocity <u>0.0</u> ft/sec	
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.			Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)										Field readings QC Checked by: <u>[Signature]</u> Date/Time: <u>0425-2022 0715</u>			
Sampler Adrien Mobeka			Comments													
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD								
Arroyo Simi	Arroyo_Simi_20220425_Grab	4/25/2022 /0730	WS	250 mL Poly	3	HNO ₃	100	Yes	X							
			WS	1L Glass Amber	6	HCl	275	Yes		X					Extract w/in 24-Hours of sampling at Weick Labs	
			WS	1L Glass Amber	6	None	285	Yes			X				Hold	
	Arroyo_Simi_20220425_Grab_Extra	4/25/2022 /0730	WS	1L Glass Amber	2	None	275	No			H				Hold	
			WS	1L Glass Amber	2	None	285	No			H				Hold	
<div style="border: 1px solid red; padding: 5px; display: inline-block; color: red;"> Sample times added by M. Dominick 4/26/2022 </div>																
Relinquished By: <u>[Signature]</u> 4-24-2022/1050 HIA			Company: HIA			Received By: <u>[Signature]</u>			Date/Time: 4/25/22 1050			Turn-around time: (Check) 24 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 10 Day <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 5 Day <input type="checkbox"/> Normal <input type="checkbox"/>				
Relinquished By: <u>[Signature]</u>			Date/Time: 4/25/22 1302 EC			Company: EC			Received By: <u>[Signature]</u>			Date/Time: 4/25/22 1050			Sample Integrity (Check) intact: <input type="checkbox"/> On ice: <input type="checkbox"/>	
Relinquished By: <u>[Signature]</u>			Date/Time: <u>[Signature]</u>			Company: <u>[Signature]</u>			Received By: <u>[Signature]</u>			Date/Time: 4/25/22 1302			Store samples for 6 months. Data Requirements: (Check) No Level IV: <input type="checkbox"/> All Level IV: <input checked="" type="checkbox"/>	

3.2/49 IR96



CHAIN OF CUSTODY FORM



Loc: 570
93643

570-93643 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108			Project: Boeing-SSFL NPDES Permit 2015 Quarterly Arroyo Simi-Frontier Park Dry Weather			ANALYSIS REQUIRED			Field Readings		Meter serial # <u>11500VAT</u>																																																																																																																																																				
Eurofins Calscience Project Manager Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 ECl Project #44024446			Project Manager Katherine Miller 520.289.8606, 520.904.6944 (cell)			Hardness as CaCO ₃ , Recoverable (SM2340B) Chlorpyrifos Diazinon (E625 2) Weck Labs in Hacienda Heights CA Pesticides: Chlordane 4,4-DDD 4,4-DDE, 4,4-DDT Dieldrin Toxaphene + PCBs only (E608)			Field Readings: (Include units) Time of Readings: <u>0715</u>		pH <u>6.91</u> pH unit Temp <u>64.3</u> °F Velocity <u>0.0</u> ft/sec																																																																																																																																																				
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.			Field Manager Mark Dominick 978.234.5033, 818.599.0702 (cell)						Field readings QC Checked by: <u>[Signature]</u> Date/Time: <u>0425-2022 0715</u>		Comments																																																																																																																																																				
Sampler Adrien Mobeka			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Description</th> <th>Sample I.D.</th> <th>Sampling Date/Time</th> <th>Sample Matrix</th> <th>Container Type</th> <th># of Cont.</th> <th>Preservative</th> <th>Bottle #</th> <th>MS/MSD</th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="6" style="writing-mode: vertical-rl; transform: rotate(180deg);">Arroyo Simi</td> <td rowspan="3">Arroyo_Simi_20220425_Grab</td> <td rowspan="3">4/25/2022</td> <td>WS</td> <td>250 mL Poly</td> <td>3</td> <td>HNO₃</td> <td>100</td> <td>Yes</td> <td>X</td> <td></td> </tr> <tr> <td>WS</td> <td>1L Glass Amber</td> <td>6</td> <td>HCl</td> <td>275</td> <td>Yes</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>WS</td> <td>1L Glass Amber</td> <td>6</td> <td>None</td> <td>285</td> <td>Yes</td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <td rowspan="3">Arroyo_Simi_20220425_Grab_Extra</td> <td rowspan="3">4/25/2022</td> <td>WS</td> <td>1L Glass Amber</td> <td>2</td> <td>None</td> <td>275</td> <td>No</td> <td></td> <td></td> <td>H</td> <td></td> </tr> <tr> <td>WS</td> <td>1L Glass Amber</td> <td>2</td> <td>None</td> <td>285</td> <td>No</td> <td></td> <td></td> <td></td> <td>H</td> <td></td> </tr> <tr> <td></td> </tr> </tbody> </table>									Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD														Arroyo Simi	Arroyo_Simi_20220425_Grab	4/25/2022	WS	250 mL Poly	3	HNO ₃	100	Yes	X													WS	1L Glass Amber	6	HCl	275	Yes		X													WS	1L Glass Amber	6	None	285	Yes				X												Arroyo_Simi_20220425_Grab_Extra	4/25/2022	WS	1L Glass Amber	2	None	275	No			H												WS	1L Glass Amber	2	None	285	No				H																															
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD																																																																																																																																																							
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			WS	1L Glass Amber	6	None	285	Yes				X																																																																																																																																																			
	Arroyo_Simi_20220425_Grab_Extra	4/25/2022	WS	1L Glass Amber	2	None	275	No			H																																																																																																																																																				
			WS	1L Glass Amber	2	None	285	No				H																																																																																																																																																			
Relinquished By: <u>[Signature]</u> Date/Time: <u>4-24-2022/1050</u> Company: <u>H&A</u>			Received By: _____ Date/Time: _____			Turn-around time: (Check) 24 Hour _____ 72 Hour _____ 10 Day: <u>X</u> 48 Hour _____ 5 Day _____ Normal _____																																																																																																																																																									
Relinquished By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u> Company: <u>EC</u>			Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1050</u>			Sample Integrity (Check) intact: _____ On ice: _____																																																																																																																																																									
Relinquished By: _____ Date/Time: _____ Company: _____			Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u>			Store samples for 6 months. Data Requirements: (Check) No Level IV: _____ All Level IV: <u>X</u>																																																																																																																																																									

3.2/49 IR96



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-93643-1

Login Number: 93643
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-93643-2

Client Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

For:

Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Ms. Katherine Miller

Virendra R Patel

Authorized for release by:
6/1/2022 1:04:09 PM

Virendra Patel, Project Manager I
(714)895-5494
Virendra.Patel@et.eurofinsus.com

LINKS

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results through



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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-2



Job ID: 570-93643-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-93643-2

Comments

No additional comments.

Receipt

The samples were received on 4/25/2022 1:02 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 was 4.7° C.

Lab Admin

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

Subcontract Work

Method Weck- 525.2 - Diaznon and Chlorpyrifos: This method was subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-2

Method	Method Description	Protocol	Laboratory
Subcontract	Weck- 525.2 - Diaznon and Chlorpyrifos	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 E. Clark Avenue, City of Industry, CA 91745



Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Quarterly Arroyo Simi-Frontier Park Dry

Job ID: 570-93643-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-93643-1	Arroyo_Simi_20220425_Grab	Water	04/25/22 07:30	04/25/22 13:02

1

2

3

4

5

6

7

8

9

Work Orders: 2D25042

Project: 570-93643-1

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 5/24/2022

Received Date: 4/25/2022

Turnaround Time: Normal

Phones: (949) 261-1022

Fax: (949) 260-3297

P.O. #: 570-93643-1

Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 4/25/22 with the Chain-of-Custody document. The samples were received in good condition, at 4.8 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: Arroyo_Simi_20220425_Grab (570-93643-1)
2D25042-01 (Water)

Sampled: 04/25/22 7:30 by Client

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			Instr: GCMS13				
Batch ID: W2D1846		Preparation: EPA 525.2/SPE		Prepared: 04/26/22 07:20		Analyst: EFC	
Chlorpyrifos	ND	6.9	10	ng/l	1	05/14/22	
Diazinon	ND	5.2	10	ng/l	1	05/14/22	
<i>Surrogate(s)</i>							
1,3-Dimethyl-2-nitrobenzene	70%		50-141	Conc: 351		05/14/22	
Triphenyl phosphate	125%		63-200	Conc: 626		05/14/22	

Quality Control Results

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limit	RPD	Limit	Qualifier
Blank (W2D1846-BLK1)											
					Prepared: 04/26/22 Analyzed: 05/14/22						
Chlorpyrifos	ND	6.9	10	ng/l							
Diazinon	ND	5.2	10	ng/l							
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene	383			ng/l	500		77	50-141			
Triphenyl phosphate	588			ng/l	500		118	63-200			
LCS (W2D1846-BS1)											
					Prepared: 04/26/22 Analyzed: 05/14/22						
Chlorpyrifos	48.8	6.9	10	ng/l	50.0		98	63-145			
Diazinon	45.7	5.2	10	ng/l	50.0		91	25-180			
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene	396			ng/l	500		79	50-141			
Triphenyl phosphate	593			ng/l	500		119	63-200			
Matrix Spike (W2D1846-MS1)											
					Source: 2D25042-01		Prepared: 04/26/22 Analyzed: 05/14/22				
Chlorpyrifos	52.3	6.9	10	ng/l	50.0	ND	105	37-168			
Diazinon	48.1	5.2	10	ng/l	50.0	ND	96	36-153			
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene	326			ng/l	500		65	50-141			
Triphenyl phosphate	586			ng/l	500		117	63-200			
Matrix Spike Dup (W2D1846-MSD1)											
					Source: 2D25042-01		Prepared: 04/26/22 Analyzed: 05/14/22				
Chlorpyrifos	46.9	6.9	10	ng/l	50.0	ND	94	37-168	11	30	
Diazinon	46.7	5.2	10	ng/l	50.0	ND	93	36-153	3	30	
<i>Surrogate(s)</i>											
1,3-Dimethyl-2-nitrobenzene	355			ng/l	500		71	50-141			
Triphenyl phosphate	600			ng/l	500		120	63-200			

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:



Rahul R. Nair
Project Manager



DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • HW-DOH #4047 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Eurofins Calscience

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

C570-93643

2

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California
Company: Weck Laboratories, Inc.	Accreditations Required (See note): State - California; State Program - California		

Address: 14859 E. Clark Avenue,	Due Date Requested:	Analysis Requested
City: City of Industry	TAT Requested (days): STANDARD TAT - LEVEL 4 REQUIRED	
State, Zip: CA, 91745	PO #:	
Phone:	WO #:	
Email:	Project #: 570-93643	
Project Name: Quarterly Arroyo Simi-Frontier Park Dry	SSOW#:	

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck-525.2 - Diazon and Chlorpyrifos)	Analysis Requested														
								Preservation Code:														
Arroyo_Simi_20220425_Grab (570-93643-1)	4/25/22	07:30 Pacific	G	Water	X	X																
Arroyo_Simi_20220425_Grab_Extra (570-93643-2)	4/25/22	07:30 Pacific	G	Water			HOLD															

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under c maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are)
Unconfirmed	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/>
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2
Empty Kit Relinquished by:	Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Method of Shipment:
------------------	------------	----------	--------------	------------	---------------------





Sample Receipt Checklist

Weck WKO: 2D25042
 Logged by: Jerico Bolotano
 Checked by: JB

Date/Time Received: 04/25/22 @ 12:16
 # of Samples: 02
 Delivered by: Client

Task	Yes	No	N/A	Comments
DC present at receipt?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
DC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
DC matches sample labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Project Manager notified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Sample Temperature	4.8°C			
Samples received on ice?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Ice Type (Blue/Wet)	Wet			
All samples intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Samples in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Sufficient sample volume?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Samples intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Project Manager notified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Sample labels checked for correct preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DC Headspace: none, <6mm/<Pea size?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.2, 524.3, 624.1, 8260, 1666 P/T, LUFT				
PH verified upon receipt?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	pH paper Lot# 231619
Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 608.3 5-9				
Free Chlorine Tested <0.1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cl Test Strip Lot# 070620
O&G pH <2 verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pH paper Lot#
PH adjusted for O&G	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pH Reading
				Acid Lot#
				Amt added:
Project Manager notified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



CHAIN OF CUSTODY FORM



Loc: 570
93643

570-93643 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108			Project: Boeing-SSFL NPDES Permit 2015 Quarterly Arroyo Simi-Frontier Park Dry Weather						ANALYSIS REQUIRED				Field Readings		Meter serial # <u>112500VAT</u>
Eurofins Calscience Project Manager Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 ECI Project #44024446			Project Manager Katherine Miller 520.289.8606, 520.904.6944 (cell)						Hardness as CaCO ₃ , Recoverable (SM2340B) Chlorpyrifos Diazinon (E625 2) Weick Labs in Hacienda Heights CA Pesticides: Chloridene 4,4-DDD 4,4-DDE, 4,4-DDT Dieldrin Toxaphene + PCBs only (E608)				Field Readings: (Include units) Time of Readings: <u>0715</u>		pH <u>6.91</u> pH unit Temp <u>64.3</u> °F Velocity <u>0.0</u> ft/sec
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.			Field Manager Mark Dominick 978.234.5033, 818.599.0702 (cell)										Field readings QC Checked by: <u>[Signature]</u> Date/Time: <u>0425-2022 0715</u>		
Sampler Adrien Mobeka			Comments												
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD							
Arroyo Simi	Arroyo_Simi_20220425_Grab	4/25/2022 /0730	WS	250 mL Poly	3	HNO ₃	100	Yes	X						
			WS	1L Glass Amber	6	HCl	275	Yes		X					Extract w/in 24-Hours of sampling at Weick Labs
			WS	1L Glass Amber	6	None	285	Yes			X				Hold
	Arroyo_Simi_20220425_Grab_Extra	4/25/2022 /0730	WS	1L Glass Amber	2	None	275	No			H				Hold
			WS	1L Glass Amber	2	None	285	No			H				Hold
<div style="border: 1px solid red; padding: 5px; display: inline-block; color: red;"> Sample times added by M. Dominick 4/26/2022 </div>															
Relinquished By: <u>[Signature]</u> Date/Time: <u>4-24-2022/1050</u> Company: <u>HAIA</u>			Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1050</u>			Turn-around time: (Check) 24 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 10 Day <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 5 Day <input type="checkbox"/> Normal <input type="checkbox"/>									
Relinquished By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u> Company: <u>EC</u>			Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1050</u>			Sample Integrity (Check) intact: <input type="checkbox"/> On ice: <input type="checkbox"/>									
Relinquished By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u> Company: <u>EC</u>			Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u>			Store samples for 6 months. Data Requirements: (Check) No Level IV: <input type="checkbox"/> All Level IV: <input checked="" type="checkbox"/>									

3.2/49 IR96



CHAIN OF CUSTODY FORM



Loc: 570
93643

570-93643 Chain of Custody

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108			Project: Boeing-SSFL NPDES Permit 2015 Quarterly Arroyo Simi-Frontier Park Dry Weather			ANALYSIS REQUIRED				Field Readings Meter serial # <u>11500VAT</u>		
Eurofins Calscience Project Manager Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 ECl Project #44024446			Project Manager Katherine Miller 520.289.8606, 520.904.6944 (cell)			Hardness as CaCO ₃ , Recoverable (SM2340B) Chlorpyrifos Diazinon (E625 2) Weck Labs in Hacienda Heights CA Pesticides: Chlordane 4,4-DDD 4,4-DDE, 4,4-DDT Dieldrin Toxaphene + PCBs only (E608)				Field Readings: (Include units) Time of Readings: <u>0715</u>		
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.			Field Manager Mark Dominick 978.234.5033, 818.599.0702 (cell)							pH <u>6.91</u> pH unit Temp <u>64.3</u> °F Velocity <u>0.0</u> ft/sec		
Sampler Adrien Mobeka										Field readings QC Checked by: <u>[Signature]</u> Date/Time: <u>0425-2022 0715</u>		
Comments												
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD				
Arroyo Simi Page 13 of 14	Arroyo_Simi_20220425_Grab	4/25/2022	WS	250 mL Poly	3	HNO ₃	100	Yes	X			
			WS	1L Glass Amber	6	HCl	275	Yes		X		Extract within 24-Hours of sampling at Weck Labs
	Arroyo_Simi_20220425_Grab_Extra	4/25/2022	WS	1L Glass Amber	6	None	285	Yes			X	Hold
			WS	1L Glass Amber	2	None	275	No		H		Hold
Relinquished By: <u>[Signature]</u> Date/Time: <u>4-24-2022/1050</u> Company: <u>HA</u>												
Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1050</u>												
Turn-around time: (Check) 24 Hour _____ 72 Hour _____ 10 Day: <u>X</u> 48 Hour _____ 5 Day _____ Normal _____												
Relinquished By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u> Company: <u>EC</u>												
Received By: <u>[Signature]</u> Date/Time: <u>4/25/22 1302</u>												
Sample Integrity (Check) intact: _____ On ice: _____												
Store samples for 6 months. Data Requirements: (Check) No Level IV: _____ All Level IV: <u>X</u>												

3.2/49 IR96



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-93643-2

Login Number: 93643

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

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	
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	

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-93645-1

Client Project/Site: Boeing NPDES SSFL Outfalls - Annual
Sediment

For:

Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Ms. Katherine Miller

Virendra R Patel

Authorized for release by:
5/18/2022 11:50:28 AM

Virendra Patel, Project Manager I
(714)895-5494
Virendra.Patel@et.eurofinsus.com

LINKS

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results through



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www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Job ID: 570-93645-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-93645-1

Comments

No additional comments.

Receipt

The samples were received on 4/25/2022 1:02 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 was 4.9° C.

GC Semi VOA

Method 8081A: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-230062 and analytical batch 570-231306 recovered outside control limits for the following analytes: 4,4'-DDT. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

General Chemistry

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

Organic Prep

Method 3546: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: Arroyo_Simi-Sed_20220425 (570-93645-1), Arroyo_Simi-Sed_20220425 (570-93645-1[MS]) and Arroyo_Simi-Sed_20220425 (570-93645-1[MSD]). The reagent lot number used was: 2327392 8082/8081 LL

Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-232053 was flagged as being outside control limits due to a L.I.M.S. limitation: Arroyo_Simi-Sed_20220425 (570-93645-1) and (570-93645-B-1 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria. Method D4464.

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

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDE	0.28	J,DX	1.0	0.14	ug/Kg	1		8081A	Total/NA
Clay (less than 0.00391 mm)	0.17		0.01	0.01	%	1		D4464	Total/NA
Coarse Sand (0.5mm to 1mm)	44.37		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	2.79		0.01	0.01	%	1		D4464	Total/NA
Gravel (greater than 2 mm)	11.83		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	15.26		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	0.55		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	0.72		0.01	0.01	%	1		D4464	Total/NA
Very Coarse Sand (1 to 2mm)	24.47		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	0.56		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: 8081A - Organochlorine Pesticides (GC)

Client Sample ID: Arroyo_Simi-Sed_20220425

Date Collected: 04/25/22 07:45

Date Received: 04/25/22 16:00

Lab Sample ID: 570-93645-1

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.0	0.14	ug/Kg		04/28/22 09:33	05/04/22 09:54	1
4,4'-DDE	0.28	J,DX	1.0	0.14	ug/Kg		04/28/22 09:33	05/04/22 09:54	1
4,4'-DDT	ND	LQ	1.0	0.24	ug/Kg		04/28/22 09:33	05/04/22 09:54	1
Chlordane (technical)	ND		5.0	0.82	ug/Kg		04/28/22 09:33	05/04/22 09:54	1
Dieldrin	ND		0.20	0.11	ug/Kg		04/28/22 09:33	05/04/22 09:54	1
Toxaphene	ND		5.0	3.1	ug/Kg		04/28/22 09:33	05/04/22 09:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	78		27 - 176				04/28/22 09:33	05/04/22 09:54	1
Tetrachloro-m-xylene	75		20 - 163				04/28/22 09:33	05/04/22 09:54	1

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Date Collected: 04/25/22 07:45

Matrix: Solid

Date Received: 04/25/22 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		10	7.9	ug/Kg		04/28/22 09:33	05/03/22 11:17	1
Aroclor-1221	ND		10	7.9	ug/Kg		04/28/22 09:33	05/03/22 11:17	1
Aroclor-1232	ND		10	7.9	ug/Kg		04/28/22 09:33	05/03/22 11:17	1
Aroclor-1242	ND		10	7.9	ug/Kg		04/28/22 09:33	05/03/22 11:17	1
Aroclor-1248	ND		10	7.9	ug/Kg		04/28/22 09:33	05/03/22 11:17	1
Aroclor-1254	ND		10	5.1	ug/Kg		04/28/22 09:33	05/03/22 11:17	1
Aroclor-1260	ND		10	5.1	ug/Kg		04/28/22 09:33	05/03/22 11:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	63		20 - 155	04/28/22 09:33	05/03/22 11:17	1
Tetrachloro-m-xylene (Surr)	59		25 - 126	04/28/22 09:33	05/03/22 11:17	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

General Chemistry

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Date Collected: 04/25/22 07:45

Matrix: Solid

Date Received: 04/25/22 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		9.88	1.98	mg/Kg		05/10/22 16:39	05/10/22 17:54	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Date Collected: 04/25/22 07:45

Matrix: Solid

Date Received: 04/25/22 16:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	0.17		0.01	0.01	%			05/05/22 13:39	1
Coarse Sand (0.5mm to 1mm)	44.37		0.01	0.01	%			05/05/22 13:39	1
Fine Sand (0.125 to 0.25mm)	2.79		0.01	0.01	%			05/05/22 13:39	1
Gravel (greater than 2 mm)	11.83		0.01	0.01	%			05/05/22 13:39	1
Medium Sand (0.25 to 0.5 mm)	15.26		0.01	0.01	%			05/05/22 13:39	1
Silt (0.00391 to 0.0625mm)	0.55		0.01	0.01	%			05/05/22 13:39	1
Total Silt and Clay (0 to 0.0626mm)	0.72		0.01	0.01	%			05/05/22 13:39	1
Very Coarse Sand (1 to 2mm)	24.47		0.01	0.01	%			05/05/22 13:39	1
Very Fine Sand (0.0625 to 0.125 mm)	0.56		0.01	0.01	%			05/05/22 13:39	1

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PARTICLE SIZE SUMMARY

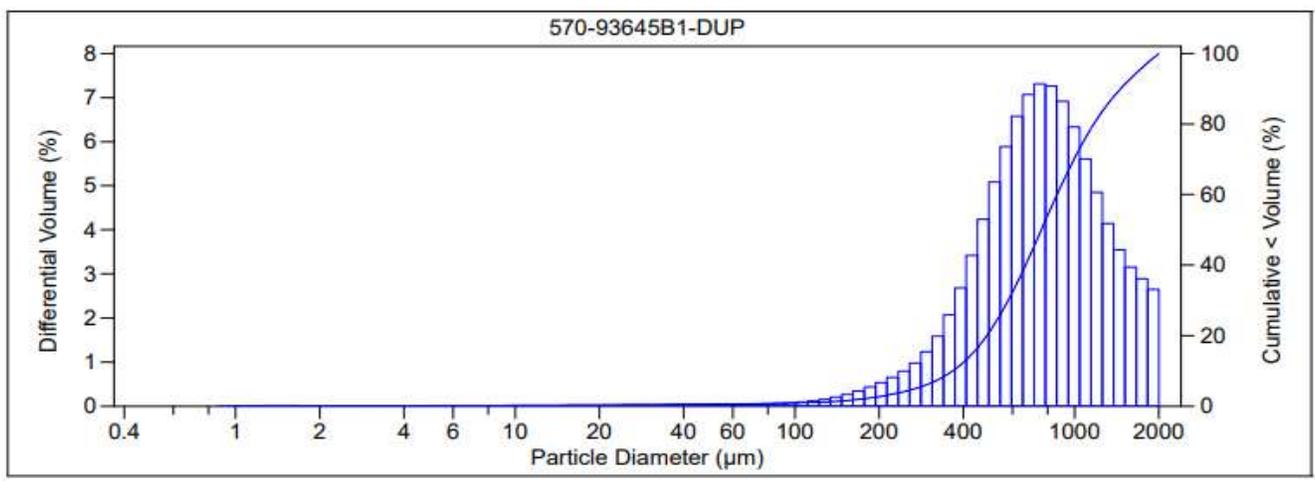
(ASTM D422 / D4464M)

Haley & Aldrich	Date Sampled:	04/25/22
	Date Received:	04/25/22
	Work Order No:	570-93645
	Date Analyzed:	05/05/22
	Method:	ASTM D4464M

Project: Boeing-SSFL NPDES

Sample ID	Depth ft	Description	Mean Grain Size mm
Arroyo_Simi-Sed_20220425		Very Coarse Sand	1.138

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
10.06	26.67	44.03	15.41	2.79	0.48	0.42	0.15	0.57



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PARTICLE SIZE SUMMARY

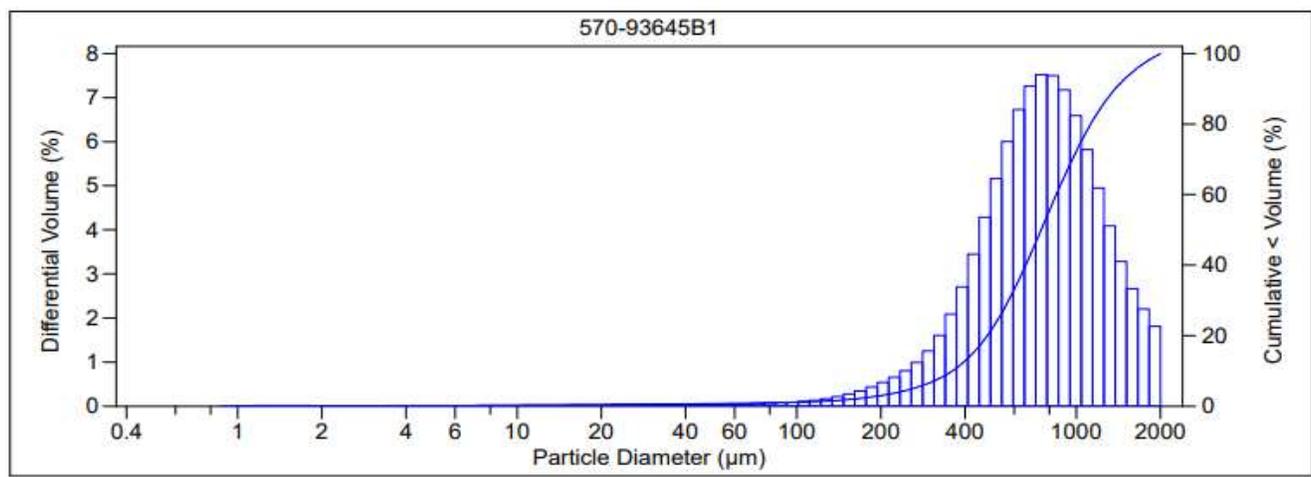
(ASTM D422 / D4464M)

Haley & Aldrich	Date Sampled:	04/25/22
	Date Received:	04/25/22
	Work Order No:	570-93645
	Date Analyzed:	05/05/22
	Method:	ASTM D4464M

Project: Boeing-SSFL NPDES

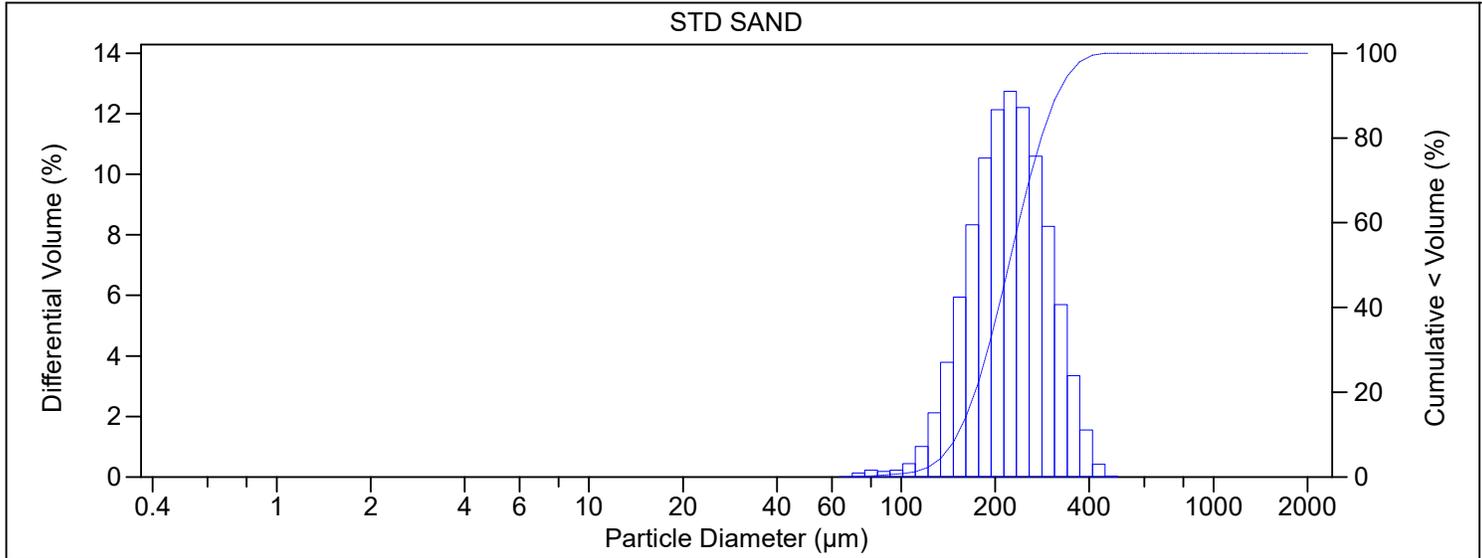
Sample ID	Depth ft	Description	Mean Grain Size mm
Arroyo_Simi-Sed_20220425		Very Coarse Sand	1.167

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
11.83	24.47	44.37	15.26	2.79	0.56	0.55	0.17	0.72



v3.0

File name:	C:\LS13320\STD SAND_ 5 May 2022_ 15.52.46.\$ls		
	STD SAND_ 5 May 2022_ 15.52.46.\$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	1106		
Run number:	4		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986953		
Optical model:	Fraunhofer.rf780d		
Residual:	0.91%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:51 5 May 2022	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



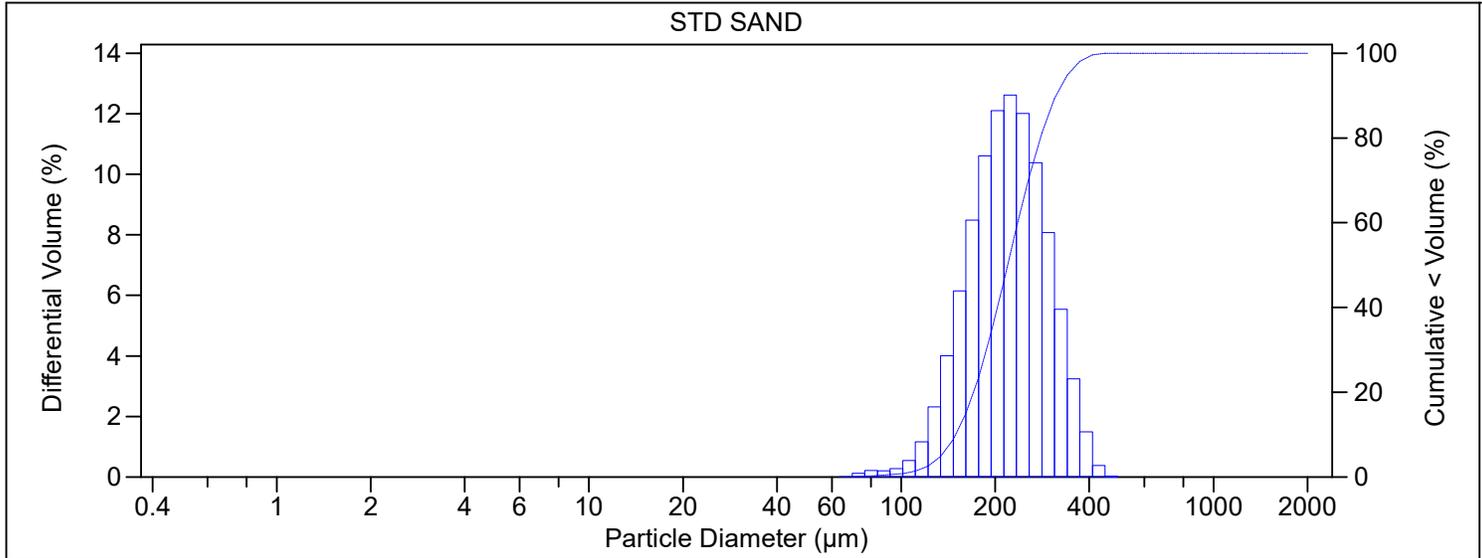
Volume Statistics (Arithmetic)		STD SAND_ 5 May 2022_ 15.52.46.\$ls					
Calculations from 0.375 µm to 2000 µm							
Volume:	100%						
Mean:	227.7 µm	S.D.:	63.47 µm				
Median:	221.2 µm	Variance:	4028 µm ²				
Mean/Median ratio:	1.029	Skewness:	0.477 Right skewed				
Mode:	223.4 µm	Kurtosis:	0.016 Leptokurtic				
d ₁₀ :	151.3 µm	d ₅₀ :	221.2 µm	d ₉₀ :	315.3 µm		
Folk and Ward Statistics (Phi)							
Mean:	2.18	Median:	2.18	Deviation:	0.41		
Skewness:	0.04	Kurtosis:	0.96				
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
135.9 µm	164.7 µm	181.1 µm	205.2 µm	221.2 µm	268.7 µm	293.2 µm	343.6 µm

Particle Diameter µm	STD SAND_ 5 May 2022 _15.52.46 .\$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	2.82
125	63.5
250	33.7
500	0.00018
1000	0
2000	

STD SAND_ 5 May 2022_ 15.52.46.\$ls					
Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0
0.412	0	22.73	0	1255	0
0.452	0	24.95	0	1377	0
0.496	0	27.39	0	1512	0
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0.015		
1.261	0	69.62	0.14		
1.385	0	76.43	0.23		
1.520	0	83.90	0.19		
1.669	0	92.10	0.23		
1.832	0	101.1	0.45		
2.011	0	111.0	1.01		
2.208	0	121.8	2.12		
2.423	0	133.7	3.79		
2.660	0	146.8	5.95		
2.920	0	161.2	8.33		
3.206	0	176.9	10.5		
3.519	0	194.2	12.1		
3.863	0	213.2	12.7		
4.241	0	234.1	12.2		
4.656	0	256.9	10.6		
5.111	0	282.1	8.28		
5.611	0	309.6	5.70		
6.159	0	339.9	3.35		
6.761	0	373.1	1.56		
7.422	0	409.6	0.42		
8.148	0	449.7	0.036		
8.944	0	493.6	0.00021		
9.819	0	541.9	0		
10.78	0	594.9	0		
11.83	0	653.0	0		
12.99	0	716.9	0		
14.26	0	786.9	0		
15.65	0	863.9	0		
17.18	0	948.3	0		
18.86	0	1041	0		



File name:	C:\LS13320\STD SAND_ 5 May 2022_ 16.07.32.\$Is		
	STD SAND_ 5 May 2022_ 16.07.32.\$Is		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	1106		
Run number:	6		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986953		
Optical model:	Fraunhofer.rf780d		
Residual:	1.42%		
LS 13 320	Aqueous Liquid Module		
Start time:	16:06 5 May 2022	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic)		STD SAND_ 5 May 2022_ 16.07.32.\$Is					
Calculations from 0.375 µm to 2000 µm							
Volume:	100%						
Mean:	225.9 µm	S.D.:	63.50 µm				
Median:	219.5 µm	Variance:	4032 µm ²				
Mean/Median ratio:	1.029	Skewness:	0.476 Right skewed				
Mode:	223.4 µm	Kurtosis:	-0.0073 Platykurtic				
d ₁₀ :	149.5 µm	d ₅₀ :	219.5 µm	d ₉₀ :	313.4 µm		
Folk and Ward Statistics (Phi)							
Mean:	2.19	Median:	2.19	Deviation:	0.41		
Skewness:	0.04	Kurtosis:	0.96				
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
134.2 µm	163.0 µm	179.4 µm	203.5 µm	219.5 µm	267.0 µm	291.5 µm	341.5 µm

Particle Diameter µm	STD SAND_ 5 May 2022 _16.07.32 .\$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	3.16
125	64.0
250	32.8
500	0
1000	0
2000	

STD SAND_ 5 May 2022_16.07.32.\$ls					
Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0
0.412	0	22.73	0	1255	0
0.452	0	24.95	0	1377	0
0.496	0	27.39	0	1512	0
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0.013		
1.261	0	69.62	0.13		
1.385	0	76.43	0.21		
1.520	0	83.90	0.20		
1.669	0	92.10	0.28		
1.832	0	101.1	0.54		
2.011	0	111.0	1.17		
2.208	0	121.8	2.31		
2.423	0	133.7	4.01		
2.660	0	146.8	6.15		
2.920	0	161.2	8.48		
3.206	0	176.9	10.6		
3.519	0	194.2	12.1		
3.863	0	213.2	12.6		
4.241	0	234.1	12.0		
4.656	0	256.9	10.4		
5.111	0	282.1	8.07		
5.611	0	309.6	5.54		
6.159	0	339.9	3.25		
6.761	0	373.1	1.50		
7.422	0	409.6	0.39		
8.148	0	449.7	0.024		
8.944	0	493.6	0		
9.819	0	541.9	0		
10.78	0	594.9	0		
11.83	0	653.0	0		
12.99	0	716.9	0		
14.26	0	786.9	0		
15.65	0	863.9	0		
17.18	0	948.3	0		
18.86	0	1041	0		



Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (27-176)	TCX1 (20-163)
570-93645-1	Arroyo_Simi-Sed_20220425	78	75
570-93645-1 MS	Arroyo_Simi-Sed_20220425	78	68
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	76	68
LCS 570-230062/2-A	Lab Control Sample	105	98
LCSD 570-230062/3-A	Lab Control Sample Dup	101	93
MB 570-230062/1-A	Method Blank	98	86

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene

Method: 8082 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (20-155)	TCX1 (25-126)
570-93645-1	Arroyo_Simi-Sed_20220425	63	59
570-93645-1 MS	Arroyo_Simi-Sed_20220425	74	72
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	78	73
LCS 570-230062/6-A	Lab Control Sample	87	75
LCSD 570-230062/7-A	Lab Control Sample Dup	93	80
MB 570-230062/1-A	Method Blank	70	71

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 570-230062/1-A
Matrix: Solid
Analysis Batch: 231306

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 230062

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.0	0.14	ug/Kg		04/28/22 09:33	05/04/22 03:21	1
4,4'-DDE	ND		1.0	0.14	ug/Kg		04/28/22 09:33	05/04/22 03:21	1
4,4'-DDT	ND		1.0	0.23	ug/Kg		04/28/22 09:33	05/04/22 03:21	1
Chlordane (technical)	ND		5.0	0.82	ug/Kg		04/28/22 09:33	05/04/22 03:21	1
Dieldrin	ND		0.20	0.11	ug/Kg		04/28/22 09:33	05/04/22 03:21	1
Toxaphene	ND		5.0	3.1	ug/Kg		04/28/22 09:33	05/04/22 03:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	98		27 - 176	04/28/22 09:33	05/04/22 03:21	1
Tetrachloro-m-xylene	86		20 - 163	04/28/22 09:33	05/04/22 03:21	1

Lab Sample ID: LCS 570-230062/2-A
Matrix: Solid
Analysis Batch: 231306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	5.00	6.02		ug/Kg		120	41 - 140
4,4'-DDE	5.00	6.23		ug/Kg		125	46 - 132
4,4'-DDT	5.00	7.59	LQ	ug/Kg		152	40 - 136
cis-Chlordane	5.00	5.22		ug/Kg		104	42 - 128
Dieldrin	5.00	5.39		ug/Kg		108	40 - 130
trans-Chlordane	5.00	5.30		ug/Kg		106	20 - 166

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	105		27 - 176
Tetrachloro-m-xylene	98		20 - 163

Lab Sample ID: LCSD 570-230062/3-A
Matrix: Solid
Analysis Batch: 231306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 230062

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDD	5.00	5.73		ug/Kg		115	41 - 140	5	22
4,4'-DDE	5.00	5.80		ug/Kg		116	46 - 132	7	20
4,4'-DDT	5.00	7.16	LQ	ug/Kg		143	40 - 136	6	21
cis-Chlordane	5.00	5.01		ug/Kg		100	42 - 128	4	20
Dieldrin	5.00	5.24		ug/Kg		105	40 - 130	3	21
trans-Chlordane	5.00	5.08		ug/Kg		102	20 - 166	4	44

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	101		27 - 176
Tetrachloro-m-xylene	93		20 - 163

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 570-93645-1 MS

Matrix: Solid

Analysis Batch: 231306

Client Sample ID: Arroyo_Simi-Sed_20220425

Prep Type: Total/NA

Prep Batch: 230062

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
4,4'-DDD	ND		10.0	9.44		ug/Kg		94		13 - 178
4,4'-DDE	0.28	J,DX	10.0	10.1		ug/Kg		98		10 - 174
4,4'-DDT	ND	LQ	10.0	10.8		ug/Kg		108		10 - 169
cis-Chlordane	ND		10.0	7.61		ug/Kg		76		10 - 153
Dieldrin	ND		10.0	5.80		ug/Kg		58		34 - 127
trans-Chlordane	ND		10.0	7.77		ug/Kg		77		17 - 152
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
DCB Decachlorobiphenyl (Surr)	78		27 - 176							
Tetrachloro-m-xylene	68		20 - 163							

Lab Sample ID: 570-93645-1 MSD

Matrix: Solid

Analysis Batch: 231306

Client Sample ID: Arroyo_Simi-Sed_20220425

Prep Type: Total/NA

Prep Batch: 230062

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
4,4'-DDD	ND		9.97	8.99		ug/Kg		90		13 - 178	5	40
4,4'-DDE	0.28	J,DX	9.97	9.72		ug/Kg		95		10 - 174	4	40
4,4'-DDT	ND	LQ	9.97	10.2		ug/Kg		103		10 - 169	5	40
cis-Chlordane	ND		9.97	7.37		ug/Kg		74		10 - 153	3	40
Dieldrin	ND		9.97	7.21		ug/Kg		72		34 - 127	22	40
trans-Chlordane	ND		9.97	7.52		ug/Kg		75		17 - 152	3	40
MSD MSD												
Surrogate	%Recovery	Qualifier	Limits									
DCB Decachlorobiphenyl (Surr)	76		27 - 176									
Tetrachloro-m-xylene	68		20 - 163									

Method: 8082 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 570-230062/1-A

Matrix: Solid

Analysis Batch: 231174

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 230062

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Aroclor-1016	ND		10	7.8	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
Aroclor-1221	ND		10	7.8	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
Aroclor-1232	ND		10	7.8	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
Aroclor-1242	ND		10	7.8	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
Aroclor-1248	ND		10	7.8	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
Aroclor-1254	ND		10	5.1	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
Aroclor-1260	ND		10	5.1	ug/Kg		04/28/22 09:33	05/03/22 09:42		1
MB MB										
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac		
DCB Decachlorobiphenyl (Surr)	70		20 - 155			04/28/22 09:33	05/03/22 09:42	1		
Tetrachloro-m-xylene (Surr)	71		25 - 126			04/28/22 09:33	05/03/22 09:42	1		

Eurofins Calscience

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCS 570-230062/6-A
Matrix: Solid
Analysis Batch: 231174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230062

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
							Lower	Upper
Aroclor-1016	20.0	18.0		ug/Kg		90	50	150
Aroclor-1260	20.0	17.7		ug/Kg		89	50	150
LCS LCS								
Surrogate	%Recovery	Qualifier	Limits					
DCB Decachlorobiphenyl (Surr)	87		20 - 155					
Tetrachloro-m-xylene (Surr)	75		25 - 126					

Lab Sample ID: LCSD 570-230062/7-A
Matrix: Solid
Analysis Batch: 231174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 230062

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
							Lower	Upper	RPD	Limit
Aroclor-1016	20.0	19.4		ug/Kg		97	50	150	8	30
Aroclor-1260	20.0	20.0		ug/Kg		100	50	150	12	25
LCSD LCSD										
Surrogate	%Recovery	Qualifier	Limits							
DCB Decachlorobiphenyl (Surr)	93		20 - 155							
Tetrachloro-m-xylene (Surr)	80		25 - 126							

Lab Sample ID: 570-93645-1 MS
Matrix: Solid
Analysis Batch: 231174

Client Sample ID: Arroyo_Simi-Sed_20220425
Prep Type: Total/NA
Prep Batch: 230062

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
									Lower	Upper
Aroclor-1016	ND		20.0	17.4		ug/Kg		87	20	180
Aroclor-1260	ND		20.0	16.4		ug/Kg		82	20	180
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
DCB Decachlorobiphenyl (Surr)	74		20 - 155							
Tetrachloro-m-xylene (Surr)	72		25 - 126							

Lab Sample ID: 570-93645-1 MSD
Matrix: Solid
Analysis Batch: 231174

Client Sample ID: Arroyo_Simi-Sed_20220425
Prep Type: Total/NA
Prep Batch: 230062

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
									Lower	Upper	RPD	Limit
Aroclor-1016	ND		20.0	18.0		ug/Kg		90	20	180	3	40
Aroclor-1260	ND		20.0	17.8		ug/Kg		89	20	180	8	40
MSD MSD												
Surrogate	%Recovery	Qualifier	Limits									
DCB Decachlorobiphenyl (Surr)	78		20 - 155									
Tetrachloro-m-xylene (Surr)	73		25 - 126									

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 570-233182/1-A
Matrix: Solid
Analysis Batch: 233186

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 233182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		10.0	2.00	mg/Kg		05/10/22 16:39	05/10/22 17:54	1

Lab Sample ID: LCS 570-233182/2-A
Matrix: Solid
Analysis Batch: 233186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 233182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia (as N)	49.8	42.17		mg/Kg		85	67 - 127

Lab Sample ID: LCSD 570-233182/3-A
Matrix: Solid
Analysis Batch: 233186

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 233182

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia (as N)	50.0	40.79		mg/Kg		82	67 - 127	3	13

Lab Sample ID: 570-93645-1 MS
Matrix: Solid
Analysis Batch: 233186

Client Sample ID: Arroyo_Simi-Sed_20220425
Prep Type: Total/NA
Prep Batch: 233182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia (as N)	ND		49.6	39.35		mg/Kg		79	54 - 168

Lab Sample ID: 570-93645-1 MSD
Matrix: Solid
Analysis Batch: 233186

Client Sample ID: Arroyo_Simi-Sed_20220425
Prep Type: Total/NA
Prep Batch: 233182

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia (as N)	ND		49.8	38.96		mg/Kg		78	54 - 168	1	11

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-93645-1 DU
Matrix: Solid
Analysis Batch: 232053

Client Sample ID: Arroyo_Simi-Sed_20220425
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay (less than 0.00391 mm)	0.17		0.15		%		13	20
Coarse Sand (0.5mm to 1mm)	44.37		44.03		%		0.8	20
Fine Sand (0.125 to 0.25mm)	2.79		2.79		%		0	20
Gravel (greater than 2 mm)	11.83		10.06		%		16	20
Medium Sand (0.25 to 0.5 mm)	15.26		15.41		%		1	20
Silt (0.00391 to 0.0625mm)	0.55		0.42		%		27	20
Total Silt and Clay (0 to 0.0626mm)	0.72		0.57		%		23	20
Very Coarse Sand (1 to 2mm)	24.47		26.67		%		9	20
Very Fine Sand (0.0625 to 0.125 mm)	0.56		0.48		%		15	20

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

GC Semi VOA

Prep Batch: 230062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	3546	
MB 570-230062/1-A	Method Blank	Total/NA	Solid	3546	
LCS 570-230062/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 570-230062/6-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 570-230062/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
LCSD 570-230062/7-A	Lab Control Sample Dup	Total/NA	Solid	3546	
570-93645-1 MS	Arroyo_Simi-Sed_20220425	Total/NA	Solid	3546	
570-93645-1 MS	Arroyo_Simi-Sed_20220425	Total/NA	Solid	3546	
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	Total/NA	Solid	3546	
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	Total/NA	Solid	3546	

Analysis Batch: 231174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	8082	230062
MB 570-230062/1-A	Method Blank	Total/NA	Solid	8082	230062
LCS 570-230062/6-A	Lab Control Sample	Total/NA	Solid	8082	230062
LCSD 570-230062/7-A	Lab Control Sample Dup	Total/NA	Solid	8082	230062
570-93645-1 MS	Arroyo_Simi-Sed_20220425	Total/NA	Solid	8082	230062
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	Total/NA	Solid	8082	230062

Analysis Batch: 231306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	8081A	230062
MB 570-230062/1-A	Method Blank	Total/NA	Solid	8081A	230062
LCS 570-230062/2-A	Lab Control Sample	Total/NA	Solid	8081A	230062
LCSD 570-230062/3-A	Lab Control Sample Dup	Total/NA	Solid	8081A	230062
570-93645-1 MS	Arroyo_Simi-Sed_20220425	Total/NA	Solid	8081A	230062
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	Total/NA	Solid	8081A	230062

General Chemistry

Prep Batch: 233182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	SM 4500 NH3 B	
MB 570-233182/1-A	Method Blank	Total/NA	Solid	SM 4500 NH3 B	
LCS 570-233182/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 B	
LCSD 570-233182/3-A	Lab Control Sample Dup	Total/NA	Solid	SM 4500 NH3 B	
570-93645-1 MS	Arroyo_Simi-Sed_20220425	Total/NA	Solid	SM 4500 NH3 B	
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	Total/NA	Solid	SM 4500 NH3 B	

Analysis Batch: 233186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	SM 4500 NH3 D	233182
MB 570-233182/1-A	Method Blank	Total/NA	Solid	SM 4500 NH3 D	233182
LCS 570-233182/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 D	233182
LCSD 570-233182/3-A	Lab Control Sample Dup	Total/NA	Solid	SM 4500 NH3 D	233182
570-93645-1 MS	Arroyo_Simi-Sed_20220425	Total/NA	Solid	SM 4500 NH3 D	233182
570-93645-1 MSD	Arroyo_Simi-Sed_20220425	Total/NA	Solid	SM 4500 NH3 D	233182

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QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Geotechnical

Analysis Batch: 232053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	D4464	
LCS 570-232053/4	Lab Control Sample	Total/NA	Solid	D4464	
LCSD 570-232053/6	Lab Control Sample Dup	Total/NA	Solid	D4464	
570-93645-1 DU	Arroyo_Simi-Sed_20220425	Total/NA	Solid	D4464	

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Date Collected: 04/25/22 07:45

Matrix: Solid

Date Received: 04/25/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			19.98 g	2 mL	230062	04/28/22 09:33	SP9M	ECL 4
Total/NA	Analysis	8081A		1			231306	05/04/22 09:54	UHNN	ECL 4
Instrument ID: GC52A										
Total/NA	Prep	3546			19.98 g	2 mL	230062	04/28/22 09:33	SP9M	ECL 4
Total/NA	Analysis	8082		1			231174	05/03/22 11:17	UHNN	ECL 4
Instrument ID: GC81A										
Total/NA	Prep	SM 4500 NH3 B			2.53 g	50 mL	233182	05/10/22 16:39	GG0B	ECL 4
Total/NA	Analysis	SM 4500 NH3 D		1			233186	05/10/22 17:54	GG0B	ECL 4
Instrument ID: NOEQUIP										
Total/NA	Analysis	D4464		1			232053	05/05/22 13:39	C4LT	ECL 4
Instrument ID: NOEQUIP										

Laboratory References:

ECL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494



Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-22
California	SCAQMD LAP	17LA0919	12-01-22
California	State	2944	09-30-22
Guam	State	21-003R	06-22-22
Nevada	State	CA00111	07-31-22
Oregon	NELAP	CA300001	01-31-23
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-12-22

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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	ECL 4
8082	Polychlorinated Biphenyls (PCBs) (GC)	SW846	ECL 4
SM 4500 NH3 D	Ammonia	SM	ECL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	ECL 4
3546	Microwave Extraction (Low Level)	SW846	ECL 4
SM 4500 NH3 B	Distillation, Ammonia	SM	ECL 4

Protocol References:

ASTM = ASTM International

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-93645-1	Arroyo_Simi-Sed_20220425	Solid	04/25/22 07:45	04/25/22 16:00

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93645

570-93645 Chain of Custody

A A A A A A A A

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108		Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park		ANALYSIS REQUIRED				Field Readings		Meter serial #			
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin CA 92780 Tel: 714-895-5494 ECI Project #44024446		Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)		Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8062)	Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136) ABC Labs in Ventura, CA	Chronic 10-day echinasterius toxicity (EPA/600/R-94/023) ABC Labs in Ventura, CA	% Moisture (25403)	Particle Size Distribution (D422M)	Field readings: (Include units)	
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.		Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)										Time of readings: 0715	
Sampler: Adrien Mobeka												Temp: 64.3	Temp
												DO: 6.66	mg/L
												Conductivity: 880	umhos/cm
												Velocity: 0.0	ft/sec
												Field readings QC	
												Checked by: <i>Mark Dominick</i>	
												Date/Time: 04-25-2022/0715	

Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8062)	Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136) ABC Labs in Ventura, CA	Chronic 10-day echinasterius toxicity (EPA/600/R-94/023) ABC Labs in Ventura, CA	% Moisture (25403)	Particle Size Distribution (D422M)	Comments				
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022 /0745	SE	9 oz Jar	3	None	165	Yes	X												
			SE	9 oz Jar	1	None	246	No		X											
			SE	9 oz Jar	3	None	280	Yes				X									
			SE	9 oz Jar	3	None	290	Yes						X							
			SE	1L wide mouth Plastic	3	None	295	No							X					Deliver to ABC labs in Ventura, CA	
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No								X					Keep sample in cooler in the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No									X				
			SE	9 oz Jar	1	None	310	No										X			

Sample time added by M. Dominick 4/26/2022

Legend: A=Annual

Relinquished By: <i>Mark Dominick</i> Date/Time: 4-25-2022/1050 H:IA Company: H:IA	Received By: <i>EC</i> Date/Time: 4/25/22 1050	Turn-around time: (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input checked="" type="checkbox"/> 48 Hour: 5 Day: <input type="checkbox"/> Normal: <input type="checkbox"/>
Relinquished By: <i>Mark</i> Date/Time: 4/25/22 1302 Company: EC	Received By: <i>Alvare</i> Date/Time: 4/25/22 1302	Sample Integrity: (Check) Intact: <input type="checkbox"/> On Ice: <input type="checkbox"/>
Relinquished By:	Received By:	Store samples for 6 months. Data Requirements: (Check) No Level I: All Level IV: <input checked="" type="checkbox"/>

* Hand-delivered by H:IA to ABC in Ventura, CA

3.2/4.9 IR96

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5/18/2022





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570-93645 Chain of Custody

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field Readings		Meter serial #				
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108		Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park		Total Ammonia (SM4500-NH3-D) Total Organic Carbon (9060) - Dry Weight Corrected PCBs (SW8082) Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A) 48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/196) ABC Labs in Ventura, CA Chronic 10-day echinostorus estuarinus Toxicity (EPA/600/R-94/025) ABC Labs in Ventura, CA % Moisture (2540c) Particle Size Distribution (D422M)										Field readings: (Include units) Time of readings <u>0705</u>						
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin CA 92780 Tel: 714-895-5494 ECI Project #44024446		Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)												pH <u>6.91</u> pH unit Temp <u>64.3</u> °F DO <u>6.66</u> mg/L Conductivity <u>880</u> umhos/cm Velocity <u>0.0</u> ft/sec						
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.		Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)												Field readings QC Checked by: <i>[Signature]</i> Date/Time: <u>04-25-2022/0705</u>						
Sampler: Adrien Mobeka														Comments						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8082)	Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/196) ABC Labs in Ventura, CA	Chronic 10-day echinostorus estuarinus Toxicity (EPA/600/R-94/025) ABC Labs in Ventura, CA	% Moisture (2540c)	Particle Size Distribution (D422M)	Comments			
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022	SE	9 oz Jar	3	None	165	Yes	X											
			SE	9 oz Jar	1	None	246	No		X										
			SE	9 oz Jar	3	None	280	Yes			X									
			SE	9 oz Jar	3	None	290	Yes				X								
			SE	1L wide mouth Plastic	3	None	295	No					X						Deliver to ABC labs in Ventura, CA	
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No							X					Keep sample in cooler in the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No								X				
SE	9 oz Jar	1	None	310	No									X						

Legend: A=Annual

Relinquished By: <i>[Signature]</i> Date/Time: <u>4-25-2022/1050 H:IA Company: <u>H:IA</u></u>	Received By: <i>[Signature]</i> Date/Time: <u>4/25/22 1050</u>	Turn-around time: (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input checked="" type="checkbox"/> 48 Hour: 5 Day: <input type="checkbox"/> Normal: <input type="checkbox"/>
Relinquished By: <i>[Signature]</i> Date/Time: <u>4/25/22 1302</u> Company: <u>EC</u>	Received By: <i>[Signature]</i> Date/Time: <u>4/25/22 1302</u>	Sample Integrity: (Check) Intact: <input type="checkbox"/> On Ice: <input type="checkbox"/>
Relinquished By:	Received By:	Store samples for 6 months. Data Requirements: (Check) No Level I: All Level IV: <input checked="" type="checkbox"/>

* Hand-delivered by H:IA to ABC in Ventura, CA

3.2/4.9 IR96

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5/18/2022



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-93645-1

Login Number: 93645
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

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	
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	

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-93645-2

Client Project/Site: Boeing NPDES SSFL Outfalls - Annual
Sediment

For:

Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Ms. Katherine Miller

Virendra R Patel

Authorized for release by:

5/17/2022 8:37:04 AM

Virendra Patel, Project Manager I
(714)895-5494

Virendra.Patel@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Qualifiers

General Chemistry

Qualifier	Qualifier Description
BU	Analyzed out of holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Job ID: 570-93645-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-93645-2

Comments

No additional comments.

Receipt

The samples were received on 4/25/2022 1:02 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 was 4.9° C.

Metals

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

General Chemistry

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

- 1
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Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Average Dup	1300	J,DX	2200	110	mg/Kg	1	✳	9060A	Total/NA

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This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

General Chemistry

Client Sample ID: Arroyo_Simi-Sed_20220425

Date Collected: 04/25/22 07:45

Date Received: 04/25/22 16:00

Lab Sample ID: 570-93645-1

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Average Dup	1300	J,DX	2200	110	mg/Kg	☼		05/10/22 14:14	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.8	BU	0.10	0.10	%			05/11/22 13:14	1
Percent Solids	90	BU	0.10	0.10	%			05/11/22 13:14	1

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 580-390132/5
Matrix: Solid
Analysis Batch: 390132

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Average Dup	ND		2000	97	mg/Kg			05/10/22 13:48	1

Lab Sample ID: LCS 580-390132/6
Matrix: Solid
Analysis Batch: 390132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Average Dup	120000	118000		mg/Kg		98	80 - 120

Lab Sample ID: LCSD 580-390132/7
Matrix: Solid
Analysis Batch: 390132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Average Dup	120000	115000		mg/Kg		96	80 - 120	3	20

Lab Sample ID: 580-113170-A-1 MS
Matrix: Solid
Analysis Batch: 390132

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Average Dup	1200	J,DX	120000	121000		mg/Kg		100	75 - 125

Lab Sample ID: 580-113170-A-1 MSD
Matrix: Solid
Analysis Batch: 390132

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Average Dup	1200	J,DX	120000	124000		mg/Kg		102	75 - 125	2	20

Lab Sample ID: 580-113170-A-1 DU
Matrix: Solid
Analysis Batch: 390132

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Average Dup	1200	J,DX	1230	J,DX	mg/Kg		7	20

Method: Moisture - 2540 - Percent Moisture

Lab Sample ID: 570-93645-1 DU
Matrix: Solid
Analysis Batch: 390242

Client Sample ID: Arroyo_Simi-Sed_20220425
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	9.8	BU	10		%		1	20
Percent Solids	90	BU	90		%		0.2	20

Eurofins Calscience

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

General Chemistry

Analysis Batch: 390132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	9060A	
MB 580-390132/5	Method Blank	Total/NA	Solid	9060A	
LCS 580-390132/6	Lab Control Sample	Total/NA	Solid	9060A	
LCSD 580-390132/7	Lab Control Sample Dup	Total/NA	Solid	9060A	
580-113170-A-1 MS	Matrix Spike	Total/NA	Solid	9060A	
580-113170-A-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	9060A	
580-113170-A-1 DU	Duplicate	Total/NA	Solid	9060A	

Analysis Batch: 390242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-93645-1	Arroyo_Simi-Sed_20220425	Total/NA	Solid	Moisture - 2540	
570-93645-1 DU	Arroyo_Simi-Sed_20220425	Total/NA	Solid	Moisture - 2540	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Client Sample ID: Arroyo_Simi-Sed_20220425

Lab Sample ID: 570-93645-1

Date Collected: 04/25/22 07:45

Matrix: Solid

Date Received: 04/25/22 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			390132	05/10/22 14:14	N1R	FGS SEA
Instrument ID: TAC105										
Total/NA	Analysis	Moisture - 2540		1			390242	05/11/22 13:14	N1R	FGS SEA
Instrument ID: NOEQUIP										

Laboratory References:

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



Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
California	State	2954	07-07-22
Florida	NELAP	E87575	06-30-22
Louisiana	NELAP	03073	06-30-22
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-22
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-22
US Fish & Wildlife	US Federal Programs	058448	05-31-22
USDA	US Federal Programs	P330-20-00031	02-10-23
Washington	State	C788	07-13-22
Wisconsin	State	399133460	08-31-22

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Method	Method Description	Protocol	Laboratory
9060A	Organic Carbon, Total (TOC)	SW846	FGS SEA
Moisture - 2540	Percent Moisture	SM	FGS SEA

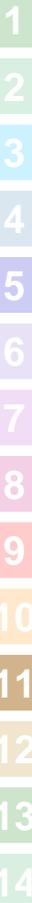
Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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



Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-93645-1	Arroyo_Simi-Sed_20220425	Solid	04/25/22 07:45	04/25/22 16:00

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93645

570-93645 Chain of Custody

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field Readings		Meter serial #		
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108 Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin CA 92780 Tel: 714-895-5494 ECI Project #44024446		Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park		Total Ammonia (SM4500-NH3-D) Total Organic Carbon (9060) - Dry Weight Corrected PCBs (SW8062) Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A) 48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136) ABC Labs in Ventura, CA Chronic 10-day echinasterius edentatus Toxicity (EPA/600/R-94/023) ABC Labs in Ventura, CA % Moisture (2540C) Particle Size Distribution (D422M)										Field readings: (Include units) Time of readings: 0715 pH: 6.91 pH unit Temp: 64.3 °F DO: 6.66 mg/L Conductivity: 880 umhos/cm Velocity: 0.0 ft/sec				
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.		Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)												Field readings QC Checked by: <i>[Signature]</i> Date/Time: 04-25-2022/0715				
Sampler: Adrien Mobeka		Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)																
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8062)	Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136) ABC Labs in Ventura, CA	Chronic 10-day echinasterius edentatus Toxicity (EPA/600/R-94/023) ABC Labs in Ventura, CA	% Moisture (2540C)	Particle Size Distribution (D422M)	Comments	
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022 /0745	SE	9 oz Jar	3	None	165	Yes	X									
			SE	9 oz Jar	1	None	246	No		X								
			SE	9 oz Jar	3	None	280	Yes			X							
			SE	9 oz Jar	3	None	290	Yes				X						
			SE	1L wide mouth Plastic	3	None	295	No					X					Deliver to ABC labs in Ventura, CA
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No						X				Keep sample in cooler in the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No							X			
			SE	9 oz Jar	1	None	310	No								X		

Sample time added by M. Dominick 4/26/2022

Legend: A=Annual

Relinquished By: <i>[Signature]</i> Date/Time: 4-25-2022/1050 H:IA Company: H:IA	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1050 Turn-around time: (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input checked="" type="checkbox"/> 48 Hour: 5 Day: <input type="checkbox"/> Normal: <input type="checkbox"/>
Relinquished By: <i>[Signature]</i> Date/Time: 4/25/22 1302 EC Company: EC	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1302 Sample Integrity: (Check) Intact: <input type="checkbox"/> On Ice: <input type="checkbox"/> Store samples for 6 months. Data Requirements: (Check) No Level I: All Level IV: <input checked="" type="checkbox"/>

* Hand-delivered by H:IA to ABC in Ventura, CA

3.2/4.9 IR96

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5/17/2022





93645

570-93645 Chain of Custody

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field Readings		Meter serial #		
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108		Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park												Field readings: (Include units)				
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin CA 92780 Tel: 714-895-5494 ECI Project #44024446		Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)												Time of readings: 0705				
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.		Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)												pH: 6.91 pH unit				
Sampler: Adrien Mobeka														Temp: 64.3 °F				
														DO: 6.66 mg/L				
														Conductivity: 880 umhos/cm				
														Velocity: 0.0 ft/sec				
														Field readings QC				
														Checked by: <i>[Signature]</i>				
														Date/Time: 04-25-2022/0705				
														Comments				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8082)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95119) ABC Labs in Ventura, CA	Chronic 10-day echinostorus estuarinus Toxicity (EPA/600/R-94/022) ABC Labs in Ventura, CA	% Moisture (2540c)	Particle Size Distribution (D422M)		
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022	SE	9 oz Jar	3	None	165	Yes	X									
			SE	9 oz Jar	1	None	246	No		X								
			SE	9 oz Jar	3	None	280	Yes			X							
			SE	9 oz Jar	3	None	290	Yes				X						
			SE	1L wide mouth Plastic	3	None	295	No					X					Deliver to ABC labs in Ventura, CA
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No						X				Keep sample in cooler in the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No							X			
			SE	9 oz Jar	1	None	310	No								X		

Page 14 of 17

Legend: A=Annual

Relinquished By: <i>[Signature]</i> Date/Time: 4-25-2022/1050 H:IA Company: H:IA	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1050	Turn-around time: (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input checked="" type="checkbox"/> 48 Hour: 5 Day: <input type="checkbox"/> Normal: <input type="checkbox"/>
Relinquished By: <i>[Signature]</i> Date/Time: 4/25/22 1302 EC Company: EC	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1302	Sample Integrity: (Check) Intact: <input type="checkbox"/> On Ice: <input type="checkbox"/>
Relinquished By:	Received By:	Store samples for 6 months. Data Requirements: (Check) No Level I: All Level IV: <input checked="" type="checkbox"/>

* Hand-delivered by H:IA to ABC in Ventura, CA

3.2/4.9 IR96

5/17/2022



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-93645-2

Login Number: 93645
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

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	
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	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-93645-2

Login Number: 93645
List Number: 2
Creator: Presley, Kim A

List Source: Eurofins Seattle
List Creation: 04/27/22 12:29 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	
Cooler Temperature is recorded.	True	IR8=1.7/1.9
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?	N/A	Received project as a subcontract.
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-93645-3

Client Project/Site: Boeing NPDES SSFL Outfalls - Annual
Sediment

For:

Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Attn: Ms. Katherine Miller

Virendra R Patel

Authorized for release by:

6/9/2022 7:24:17 AM

Virendra Patel, Project Manager I
(714)895-5494

Virendra.Patel@et.eurofinsus.com

LINKS

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results through



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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Haley & Aldrich, Inc.

Job ID: 570-93645-3

Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Job ID: 570-93645-3

Job ID: 570-93645-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-93645-3

Comments

No additional comments.

Receipt

The samples were received on 4/25/2022 1:02 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 was 4.9° C.

Lab Admin

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

Subcontract Work

Methods 48-hour Bivalve Embryo toxicity, Bioassay-Chronic 10day eohaustorius: These methods were subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certifications are different from that of the facility issuing the final report.



Method Summary

Client: Haley & Aldrich, Inc.

Job ID: 570-93645-3

Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Method	Method Description	Protocol	Laboratory
Subcontract	48-hour Bivalve Embryo toxicity	None	Aquatic
Subcontract	Bioassay-Chronic 10day eohaustorius	None	Aquatic

Protocol References:

None = None

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

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Sample Summary

Client: Haley & Aldrich, Inc.

Job ID: 570-93645-3

Project/Site: Boeing NPDES SSFL Outfalls - Annual Sediment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-93645-1	Arroyo_Simi-Sed_20220425	Solid	04/25/22 07:45	04/25/22 16:00

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June 8, 2022

Virendra Patel
Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Dear Virendra Patel:

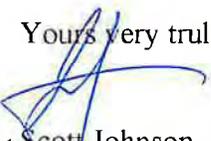
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136*. Results were as follows:

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	Arroyo_Simi-Sed_20220425
DATE RECEIVED:	4/25/2022
ABC LAB. NO.:	CSE0422.136

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC =	100.00 %
TU _c =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,


Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 08 Jun-22 16:33 (p 1 of 1)
 Test Code/ID: CSE0422.126m / 15-7899-2598

Mussel Shell Development Test				Aquatic Bioassay & Consulting Labs, Inc.			
Batch ID:	19-9614-6693	Test Type:	Development-Survival	Analyst:	Joe Freas		
Start Date:	03 May-22 12:10	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Water		
Ending Date:	05 May-22 12:10	Species:	Mytilus galloprovincialis	Brine:			
Test Length:	48h	Taxon:	Bivalvia	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	20-7496-0882	Code:	7BAD63F2	Project:	Boeing-SSFL NPDES		
Sample Date:	25 Apr-22 07:45	Material:	Sediment	Source:	Bioassay Report		
Receipt Date:	25 Apr-22 12:25	CAS (PC):		Station:	Arroyo_Simi-Sed_20200521		
Sample Age:	8d 4h	Client:	Eurofins Calscience				

Single Comparison Summary						
Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S	
06-6778-7413	Combined Proportion Normal	Equal Variance t Two-Sample Test	0.9441	100% passed combined proportion normal	1	

Test Acceptability				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
06-6778-7413	Combined Proportion Normal	PMSD	0.01322	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9795	0.9699	0.9892	0.9721	0.9907	0.0035	0.0078	0.79%	0.00%
100		5	0.9888	0.9792	0.9985	0.9814	1.0000	0.0035	0.0078	0.79%	-0.95%

Combined Proportion Normal Detail							MD5: FCC604EC84DA76ACF00877F883325664				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	N	0.9814	0.9721	0.9907	0.9814	0.9721					
100		0.9907	1.0000	0.9814	0.9907	0.9814					

Combined Proportion Normal Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/215	209/215	213/215	211/215	209/215
100		213/215	215/215	211/215	213/215	211/215

CETIS Analytical Report

Report Date: 08 Jun-22 16:33 (p 1 of 2)
Test Code/ID: CSE0422.126m / 15-7899-2598

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 06-6778-7413	Endpoint: Combined Proportion Normal	CETIS Version: CETISv2.1.1
Analyzed: 08 Jun-22 16:33	Analysis: Parametric-Two Sample	Status Level: 1
Edit Date: 08 Jun-22 16:32	MD5 Hash: FCC604EC84DA76ACF00877F883325664	Editor ID: 007-615-942-9

Batch ID: 19-9614-6693	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 03 May-22 12:10	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 05 May-22 12:10	Species: Mytilus galloprovincialis	Brine:
Test Length: 48h	Taxon: Bivalvia	Source: Carlsbad Aquafarms CA Age:

Sample ID: 20-7496-0882	Code: 7BAD63F2	Project: Boeing-SSFL NPDES
Sample Date: 25 Apr-22 07:45	Material: Sediment	Source: Bioassay Report
Receipt Date: 25 Apr-22 12:25	CAS (PC):	Station: Arroyo_Simi-Sed_20200521
Sample Age: 8d 4h	Client: Eurofins Calscience	

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed combined proportion normal endpoint	1.32%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		100	8	-1.787	1.86	0.04266	CDF	0.9441	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
PMSD	0.01322	<<	0.25	No	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0042015	0.0042015	1	3.194	0.1117	Non-Significant Effect
Error	0.0105242	0.0013155	8			
Total	0.0147257		9			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.3223	11.26	0.5858	Equal Variances
	Mod Levene Equality of Variance Test	0.4193	13.75	0.5413	Equal Variances
	Variance Ratio F Test	2.053	23.15	0.5031	Equal Variances
Distribution	Anderson-Darling A2 Test	0.6372	3.878	0.0972	Normal Distribution
	D'Agostino Skewness Test	1.242	2.576	0.2143	Normal Distribution
	Kolmogorov-Smirnov D Test	0.2493	0.3025	0.0785	Normal Distribution
	Shapiro-Wilk W Normality Test	0.8777	0.7411	0.1227	Normal Distribution

Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9795	0.9699	0.9892	0.9814	0.9721	0.9907	0.0035	0.79%	0.00%
100		5	0.9888	0.9792	0.9985	0.9907	0.9814	1.0000	0.0035	0.79%	-0.95%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.4300	1.3930	1.4660	1.4340	1.4030	1.4740	0.0131	2.05%	0.00%
100		5	1.4710	1.4180	1.5230	1.4740	1.4340	1.5370	0.0188	2.86%	-2.87%

Combined Proportion Normal Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9814	0.9721	0.9907	0.9814	0.9721
100		0.9907	1.0000	0.9814	0.9907	0.9814

CETIS Analytical Report

Report Date: 08 Jun-22 16:33 (p 2 of 2)
 Test Code/ID: CSE0422.126m / 15-7899-2598

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 06-6778-7413 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.1
 Analyzed: 08 Jun-22 16:33 Analysis: Parametric-Two Sample Status Level: 1
 Edit Date: 08 Jun-22 16:32 MD5 Hash: FCC604EC84DA76ACF00877F883325664 Editor ID: 007-615-942-9

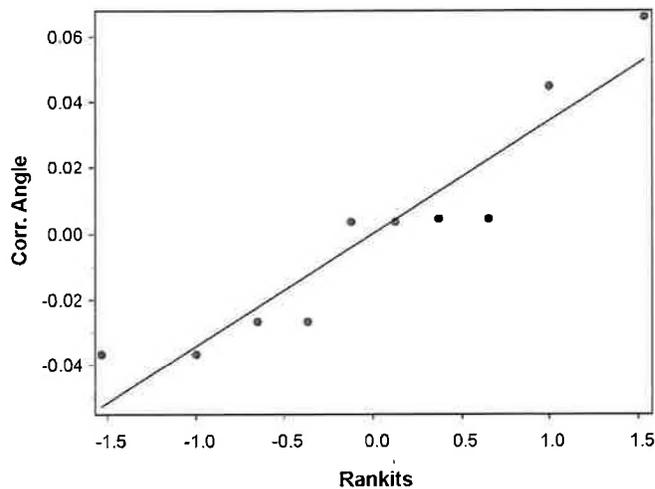
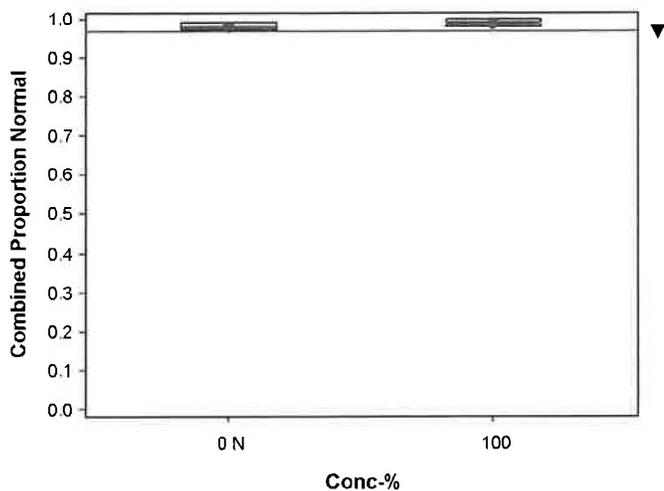
Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.4340	1.4030	1.4740	1.4340	1.4030
100		1.4740	1.5370	1.4340	1.4740	1.4340

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	211/215	209/215	213/215	211/215	209/215
100		213/215	215/215	211/215	213/215	211/215

Graphics



CETIS Measurement Report

Report Date: 08 Jun-22 16:33 (p 1 of 1)
 Test Code/ID: CSE0422.126m / 15-7899-2598

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 19-9614-6693	Test Type: Development-Survival	Analyst: Joe Freas
Start Date: 03 May-22 12:10	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 05 May-22 12:10	Species: Mytilus galloprovincialis	Brine:
Test Length: 48h	Taxon: Bivalvia	Source: Carlsbad Aquafarms CA Age:
Sample ID: 20-7496-0882	Code: 7BAD63F2	Project: Boeing-SSFL NPDES
Sample Date: 25 Apr-22 07:45	Material: Sediment	Source: Bioassay Report
Receipt Date: 25 Apr-22 12:25	CAS (PC):	Station: Arroyo_Simi-Sed_20200521
Sample Age: 8d 4h	Client: Eurofins Calscience	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.75	4.844	8.656	6.6	6.9	0.1061	0.2121	3.14%	0
100		2	6.55	5.915	7.185	6.5	6.6	0.03535	0.0707	1.08%	0
Overall		4	6.65	6.374	6.926	6.5	6.9	0.0866	0.1732	2.61%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
100		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
Overall		4	7.9	7.9	7.9	7.9	7.9	0	0	0.00%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.00%	0
100		2	34	34	34	34	34	0	0	0.00%	0
Overall		4	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)



June 8, 2022

Virendra Patel
Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Dear Virendra Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods*, EPA/600/R-94/025. Results were as follows:

CLIENT: Eurofins Calscience
SAMPLE I.D.: Arroyo_Simi-Sed_20220425
DATE RECEIVED: 4/25/2022
ABC LAB. NO.: CSE0422.126

***Eohaustorius estuarius* 10 Day Survival Sediment Bioassay**

Percent Survival = 100.00% Survival

Yours very truly,


Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 08 Jun-22 16:12 (p 1 of 1)
 Test Code/ID: 636F4790 / 16-6823-7200

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 00-6873-9673	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 06 May-22 12:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 16 May-22 12:01	Species: Eohaustorius estuarius	Brine: Not Applicable
Test Length: 10d 0h	Taxon: Malacostraca	Source: Northwestern Aquatic Scienc Age:
Sample ID: 06-6371-2648	Code: 278F7388	Project: Boring-SSFL NPDES
Sample Date: 25 Apr-22 07:45	Material: Sediment	Source: Bioassay Report
Receipt Date: 25 Apr-22 12:25	CAS (PC):	Station: Arroyo_Simi-Sed_20220425
Sample Age: 11d 4h	Client: Eurofins Calscience	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
01-8461-0318	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	100% passed survival rate	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
01-8461-0318	Survival Rate	Control Resp	1	0.9	<<	Yes	Passes Criteria

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Survival Rate Detail

MD5: D2BA4081DAD0A69D634823731B2DEACB

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	20/20	20/20	20/20	20/20	20/20
100		20/20	20/20	20/20	20/20	20/20

CETIS Analytical Report

Report Date: 08 Jun-22 16:12 (p 1 of 2)
 Test Code/ID: 636F4790 / 16-6823-7200

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 01-8461-0318	Endpoint: Survival Rate	CETIS Version: CETISv2.1.1
Analyzed: 08 Jun-22 16:11	Analysis: Nonparametric-Two Sample	Status Level: 1
Edit Date: 08 Jun-22 16:11	MD5 Hash: D2BA4081DAD0A69D634823731B2DEACB	Editor ID: 007-615-942-9
Batch ID: 00-6873-9673	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 06 May-22 12:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 16 May-22 12:01	Species: Eohaustorius estuarius	Brine: Not Applicable
Test Length: 10d 0h	Taxon: Malacostraca	Source: Northwestern Aquatic Scienc Age:
Sample ID: 06-6371-2648	Code: 278F7388	Project: Boring-SSFL NPDES
Sample Date: 25 Apr-22 07:45	Material: Sediment	Source: Bioassay Report
Receipt Date: 25 Apr-22 12:25	CAS (PC):	Station: Arroyo_Simi-Sed_20220425
Sample Age: 11d 4h	Client: Eurofins Calscience	

Data Transform	Alt Hyp	Comparison Result
Angular (Corrected)	C > T	100% passed survival rate endpoint

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		100	8	27.5	--	1	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.9	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1			Indeterminate
Error	0	0	8			
Total	0		9			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test				Indeterminate

Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.4590	1.4580	1.4590	1.4590	1.4590	1.4590	0.0000	0.00%	0.00%
100		5	1.4590	1.4580	1.4590	1.4590	1.4590	1.4590	0.0000	0.00%	0.00%

Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.4590	1.4590	1.4590	1.4590	1.4590
100		1.4590	1.4590	1.4590	1.4590	1.4590

CETIS Measurement Report

Report Date: 08 Jun-22 16:12 (p 1 of 1)
 Test Code/ID: 636F4790 / 16-6823-7200

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 00-6873-9673	Test Type: Survival-Reburial	Analyst: Joe Freas
Start Date: 06 May-22 12:01	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 16 May-22 12:01	Species: Eohaustorius estuarius	Brine: Not Applicable
Test Length: 10d 0h	Taxon: Malacostraca	Source: Northwestern Aquatic Scienc Age:
Sample ID: 06-6371-2648	Code: 278F7388	Project: Boring-SSFL NPDES
Sample Date: 25 Apr-22 07:45	Material: Sediment	Source: Bioassay Report
Receipt Date: 25 Apr-22 12:25	CAS (PC):	Station: Arroyo_Simi-Sed_20220425
Sample Age: 11d 4h	Client: Eurofins Calscience	

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	10.05	9.415	10.69	10	10.1	0.03536	0.07073	0.70%	0
100		2	9.7	7.159	12.24	9.5	9.9	0.1414	0.2828	2.92%	0
Overall		4	9.875	9.457	10.29	9.5	10.1	0.1315	0.263	2.66%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
100		2	7.7	7.698	7.702	7.7	7.7	0	0	0.00%	0
Overall		4	7.8	7.616	7.984	7.7	7.9	0.05774	0.1155	1.48%	0 (0%)

Salinity-ppt

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.00%	0
100		2	20	20	20	20	20	0	0	0.00%	0
Overall		4	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
Overall		4	14.85	14.76	14.94	14.8	14.9	0.02887	0.05773	0.39%	0 (0%)

* C570-93645*

A A A A A A A A

Client Name/Address: Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108 Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue, Suite #100 Tustin, CA 92780 Tel: 714-895-5494 ECI Project #44024446									Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park									ANALYSIS REQUIRED				Field Readings		Meter serial #									
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement # 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.									Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)									Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (8060) - Dry Weight Corrected	PCBs (SW8062)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo Toxicity (Mytilus edulis or Crassostrea gigas) (EPA8-85/136) ABC Labs in Ventura CA	Chronic 10-day echinostorus toxicity (EPA800/R-94/025) ABC Labs in Ventura CA	% Moisture (2540G)	Particle Size Distribution (D422M)	Field readings: (Include units) Time of readings: 0715		pH 6.91 pH unit Temp 64.3 °F		DO 6.66 mg/L Conductivity 880 µmhos/cm Velocity 0.0 ft/sec		Field readings QC Checked by: <i>Mark Dominick</i> Date/Time: 04-25-2022/0715	
Sampler: Adrien Mobeka									Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)									Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments				
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MSMSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (8060) - Dry Weight Corrected	PCBs (SW8062)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo Toxicity (Mytilus edulis or Crassostrea gigas) (EPA8-85/136) ABC Labs in Ventura CA	Chronic 10-day echinostorus toxicity (EPA800/R-94/025) ABC Labs in Ventura CA	% Moisture (2540G)	Particle Size Distribution (D422M)	Field readings QC	Checked by:	Date/Time:	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments	Comments				
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022	SE	9 oz Jar	3	None	165	Yes	X																								
			SE	9 oz Jar	1	None	246	No		X																							
			SE	9 oz Jar	3	None	260	Yes			X																						
			SE	9 oz Jar	3	None	290	Yes					X																				
			SE	1L wide mouth Plastic	3	None	295	No						X																			
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No								X																	
			SE	9 oz Jar	1	None	305	No									X																
SE	9 oz Jar	1	None	310	No											X																	
Legend: A=Annual																																	
Relinquished By: <i>Mark Dominick</i> Date/Time: 4-25-2022/1220 H:IA Company:									Received By: <i>AD</i> Date/Time: 4/25/22									Turn-around time: (Check) 24 Hour: ___ 72 Hour: ___ 10 Day: <u>X</u> 48 Hour: ___ 5 Day: ___ Normal: ___															
Relinquished By: Date/Time: Company:									Received By: Date/Time:									Sample Integrity: (Check) Intact: ___ On Ice: ___ Store samples for 6 months Data Requirements: (Check) No Level I: ___ All Level IV: <u>X</u>															
Relinquished By: Date/Time: Company:									Received By: Date/Time:																								

* Hand-delivered by H:IA to ABC in Ventura, CA 4-25-2022/1220

Page 18 of 35

6/9/2022





96 Hour *Eohaustorius estuarius* Survival Bioassay - Standard Toxicant

DATE: 03/6/2022

STANDARD TOXICANT: Ammonium Chloride

ENDPOINT: SURVIVAL

UNIONIZED AMMONIA

NOEC = 0.4520mg/L

EC25 = 0.9022mg/L

EC50 = 1.8400mg/L

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Analytical Report

Report Date: 08 Jun-22 15:57 (p 1 of 2)
Test Code/ID: EOH050622 / 09-2352-3700

Reference Toxicant 96-h Acute Survival Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 19-7439-7153	Endpoint: Survival Rate	CETIS Version: CETISv2.1.1	Analyzed: 08 Jun-22 15:57	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 08 Jun-22 15:55	MD5 Hash: 0C8137E8C4EE80C491CEB112F33DE8B2	Editor ID: 007-615-942-9			
Batch ID: 08-3934-3527	Test Type: Survival	Analyst: Joe Freas	Start Date: 06 May-22 12:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 10 May-22 12:00	Species: Eohaustorius estuarius	Brine: Not Applicable	Test Length: 96h	Taxon: Malacostraca	Source: Northwestern Aquatic Scienc Age:
Sample ID: 00-0000-0307	Code: EOH050622	Project: REF TOX	Sample Date: 06 May-22	Material: Ammonia (Unionized)	Source: Reference Toxicant
Receipt Date: 06 May-22	CAS (PC):	Station: REF TOX	Sample Age: 12h	Client: Internal Lab	

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates			
Level	mg/L	95% LCL	95% UCL
EC15	0.6543	0.543	0.7352
EC20	0.7554	0.6475	0.8363
EC25	0.9022	0.6853	1.056
EC40	1.48	1.284	1.787
EC50	1.84	1.571	2.065

Survival Rate Summary			Calculated Variate(A/B)							Isotonic Variate	
Conc-mg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	A/B	Mean	%Effect
0	N	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	1.0000	0.00%
0.227		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	40/40	1.0000	0.00%
0.452		4	0.9500	0.9500	0.9000	1.0000	6.08%	5.00%	38/40	0.9500	5.00%
0.806		4	0.7750	0.8000	0.7000	0.8000	6.45%	22.50%	31/40	0.7750	22.50%
1.672		4	0.5500	0.5500	0.5000	0.6000	10.50%	45.00%	22/40	0.5500	45.00%
3.524		4	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/40	0	100.00%

Survival Rate Detail					
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	1.0000	1.0000	1.0000	1.0000
0.227		1.0000	1.0000	1.0000	1.0000
0.452		1.0000	0.9000	1.0000	0.9000
0.806		0.8000	0.8000	0.7000	0.8000
1.672		0.6000	0.5000	0.5000	0.6000
3.524		0.0000	0.0000	0.0000	0.0000

Survival Rate Binomials					
Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	N	10/10	10/10	10/10	10/10
0.227		10/10	10/10	10/10	10/10
0.452		10/10	9/10	10/10	9/10
0.806		8/10	8/10	7/10	8/10
1.672		6/10	5/10	5/10	6/10
3.524		0/10	0/10	0/10	0/10

CETIS Analytical Report

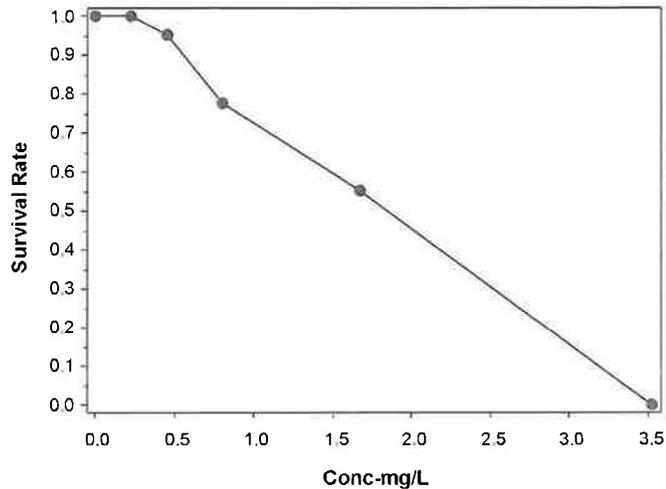
Report Date: 08 Jun-22 15:57 (p 2 of 2)
Test Code/ID: EOH050622 / 09-2352-3700

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-7439-7153	Endpoint: Survival Rate	CETIS Version: CETISv2.1.1
Analyzed: 08 Jun-22 15:57	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 08 Jun-22 15:55	MD5 Hash: 0C8137E8C4EE80C491CEB112F33DE8B2	Editor ID: 007-615-942-9

Graphics



CETIS Measurement Report

Report Date: 08 Jun-22 15:57 (p 1 of 1)
 Test Code/ID: EOH050622 / 09-2352-3700

Reference Toxicant 96-h Acute Survival Test Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 08-3934-3527	Test Type: Survival	Analyst: Joe Freas
Start Date: 06 May-22 12:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 10 May-22 12:00	Species: Eohaustorius estuarius	Brine: Not Applicable
Test Length: 96h	Taxon: Malacostraca	Source: Northwestern Aquatic Scienc Age:
Sample ID: 00-0000-0307	Code: EOH050622	Project: REF TOX
Sample Date: 06 May-22	Material: Ammonia (Unionized)	Source: Reference Toxicant
Receipt Date: 06 May-22	CAS (PC):	Station: REF TOX
Sample Age: 12h	Client: Internal Lab	

Dissolved Oxygen-mg/L

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.1	-0.5237	14.72	6.5	7.7	0.4243	0.8485	11.95%	0
0.227		2	6.9	6.889	6.911	6.9	6.9	0	0	0.00%	0
0.452		2	6.75	3.573	9.927	6.5	7	0.1768	0.3536	5.24%	0
0.806		2	6.55	5.915	7.185	6.5	6.6	0.03535	0.0707	1.08%	0
1.672		2	6.55	5.915	7.185	6.5	6.6	0.03535	0.0707	1.08%	0
3.524		2	6.5	5.229	7.771	6.4	6.6	0.07071	0.1414	2.18%	0
Overall		12	6.725	6.495	6.955	6.4	7.7	0.1045	0.3621	5.39%	0 (0%)

pH-Units

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
0.227		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
0.452		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
0.806		2	7.8	7.787	7.813	7.8	7.8	0	0	0.00%	0
1.672		2	7.85	7.215	8.485	7.8	7.9	0.03535	0.07071	0.90%	0
3.524		2	7.8	7.787	7.813	7.8	7.8	0	0	0.00%	0
Overall		12	7.858	7.826	7.891	7.8	7.9	0.01486	0.05149	0.66%	0 (0%)

Salinity-ppt

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	20	20	20	20	20	0	0	0.00%	0
0.227		2	20	20	20	20	20	0	0	0.00%	0
0.452		2	20	20	20	20	20	0	0	0.00%	0
0.806		2	20	20	20	20	20	0	0	0.00%	0
1.672		2	20	20	20	20	20	0	0	0.00%	0
3.524		2	20	20	20	20	20	0	0	0.00%	0
Overall		12	20	20	20	20	20	0	0	0.00%	0 (0%)

Temperature-°C

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
0.227		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
0.452		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
0.806		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
1.672		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
3.524		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
Overall		12	14.85	14.82	14.88	14.8	14.9	0.01508	0.05222	0.35%	0 (0%)

CHRONIC MYTILUS DEVELOPMENT BIOASSAY

DATE: 5/3/2022

STANDARD TOXICANT: Unionized Ammonia

NOEC = 0.037 mg/l

EC25 = 0.09158 mg/l

EC50 = 0.12890 mg/l

Yours very truly,



✓ Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 08 Jun-22 16:42 (p 1 of 1)
 Test Code/ID: MYT050322 / 20-4689-8673

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 19-9614-6693	Test Type: Development-Survival	Analyst:
Start Date: 03 May-22 12:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 05 May-22 12:11	Species: Mytilus galloprovincialis	Brine:
Test Length: 48h	Taxon: Bivalvia	Source: Carlsbad Aquafarms CA Age:
Sample ID: 01-0606-4145	Code: 6526911	Project: REF TOX
Sample Date: 03 May-22 12:11	Material: Ammonia (Unionized)	Source: Reference Toxicant
Receipt Date: 03 May-22 12:00	CAS (PC):	Station: REF TOX
Sample Age: ---	Client: Internal Lab	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	S
08-4766-2166	Combined Proportion Normal	Dunnett Multiple Comparison Test	0.037	0.079	0.05406	3.43%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	mg/L	95% LCL	95% UCL	S
01-3713-7610	Combined Proportion Normal	Linear Interpolation (ICPIN)	EC15	0.08158	0.06841	0.08745	1
			EC20	0.08658	0.08009	0.09235	
			EC25	0.09158	0.08623	0.09805	
			EC40	0.1083	0.09956	0.1199	
			EC50	0.1289	0.1204	0.138	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
08-4766-2166	Combined Proportion Normal	PMSD	0.03431	<<	0.25	No	Passes Criteria

Combined Proportion Normal Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	5	0.9758	0.9583	0.9933	0.9535	0.9907	0.0063	0.0141	1.45%	0.00%
0.037		5	0.9786	0.9647	0.9925	0.9628	0.9907	0.0050	0.0112	1.14%	-0.29%
0.079		5	0.8558	0.7780	0.9336	0.7721	0.9302	0.0280	0.0627	7.32%	12.30%
0.105		5	0.6019	0.5157	0.6881	0.5163	0.7023	0.0311	0.0694	11.54%	38.32%
0.14		5	0.4363	0.3847	0.4878	0.4000	0.4977	0.0186	0.0415	9.52%	55.29%
0.165		5	0.1144	0.0662	0.1627	0.0744	0.1581	0.0174	0.0389	33.96%	88.27%

Combined Proportion Normal Detail

MD5: 3A17151CB5151D98CECA35F62FBCCC02

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9721	0.9535	0.9814	0.9907	0.9814
0.037		0.9628	0.9721	0.9814	0.9907	0.9860
0.079		0.9302	0.8744	0.8140	0.7721	0.8884
0.105		0.7023	0.6186	0.5628	0.6093	0.5163
0.14		0.4977	0.4605	0.4093	0.4000	0.4140
0.165		0.1209	0.0744	0.1442	0.1581	0.0744

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	209/215	205/215	211/215	213/215	211/215
0.037		207/215	209/215	211/215	213/215	212/215
0.079		200/215	188/215	175/215	166/215	191/215
0.105		151/215	133/215	121/215	131/215	111/215
0.14		107/215	99/215	88/215	86/215	89/215
0.165		26/215	16/215	31/215	34/215	16/215

CETIS Analytical Report

Report Date: 08 Jun-22 16:42 (p 1 of 3)
 Test Code/ID: MYT050322 / 20-4689-8673

Mussel Shell Development Test			Aquatic Bioassay & Consulting Labs, Inc.		
Analysis ID: 08-4766-2166	Endpoint: Combined Proportion Normal	CETIS Version: CETISv2.1.1	Analyzed: 08 Jun-22 16:42	Analysis: Parametric-Control vs Treatments	Status Level: 1
Edit Date: 08 Jun-22 16:39	MD5 Hash: 3A17151CB5151D98CECA35F62FBCC02	Editor ID: 007-615-942-9			
Batch ID: 19-9614-6693	Test Type: Development-Survival	Analyst:	Start Date: 03 May-22 12:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 05 May-22 12:11	Species: Mytilus galloprovincialis	Brine:	Test Length: 48h	Taxon: Bivalvia	Source: Carlsbad Aquafarms CA Age:
Sample ID: 01-0606-4145	Code: 6526911	Project: REF TOX	Sample Date: 03 May-22 12:11	Material: Ammonia (Unionized)	Source: Reference Toxicant
Receipt Date: 03 May-22 12:00	CAS (PC):	Station: REF TOX	Sample Age: ---	Client: Internal Lab	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	MSDu	PMSD
Angular (Corrected)	C > T	0.037	0.079	0.05406	---	0.03348	3.43%

Dunnnett Multiple Comparison Test									
Control	vs	Conc-mg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		0.037	8	-0.2154	2.362	0.09141	CDF	0.8891	Non-Significant Effect
		0.079*	8	5.986	2.362	0.09141	CDF	<1.0E-05	Significant Effect
		0.105*	8	13.71	2.362	0.09141	CDF	<1.0E-05	Significant Effect
		0.14*	8	18.04	2.362	0.09141	CDF	<1.0E-05	Significant Effect
		0.165*	8	27.86	2.362	0.09141	CDF	<1.0E-05	Significant Effect

Test Acceptability Criteria					
Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
PMSD	0.03431	<<	0.25	No	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	4.59322	0.918643	5	245.3	<1.0E-05	Significant Effect
Error	0.0898802	0.0037450	24			
Total	4.6831		29			

ANOVA Assumptions Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Bartlett Equality of Variance Test	4.227	15.09	0.5172	Equal Variances	
	Levene Equality of Variance Test	1.354	3.895	0.2762	Equal Variances	
	Mod Levene Equality of Variance Test	1.244	4.248	0.3301	Equal Variances	
Distribution	Anderson-Darling A2 Test	0.2644	3.878	0.7236	Normal Distribution	
	D'Agostino Kurtosis Test	0.3062	2.576	0.7594	Normal Distribution	
	D'Agostino Skewness Test	0.08479	2.576	0.9324	Normal Distribution	
	D'Agostino-Pearson K2 Omnibus Test	0.101	9.21	0.9508	Normal Distribution	
	Kolmogorov-Smirnov D Test	0.1091	0.1853	0.4712	Normal Distribution	
	Shapiro-Wilk W Normality Test	0.9828	0.9031	0.8931	Normal Distribution	

Combined Proportion Normal Summary											
Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	0.9758	0.9583	0.9933	0.9814	0.9535	0.9907	0.0063	1.45%	0.00%
0.037		5	0.9786	0.9647	0.9925	0.9814	0.9628	0.9907	0.0050	1.14%	-0.29%
0.079		5	0.8558	0.7780	0.9336	0.8744	0.7721	0.9302	0.0280	7.32%	12.30%
0.105		5	0.6019	0.5157	0.6881	0.6093	0.5163	0.7023	0.0311	11.54%	38.32%
0.14		5	0.4363	0.3847	0.4878	0.4140	0.4000	0.4977	0.0186	9.52%	55.29%
0.165		5	0.1144	0.0662	0.1627	0.1209	0.0744	0.1581	0.0174	33.96%	88.27%

CETIS Analytical Report

Report Date: 08 Jun-22 16:42 (p 2 of 3)
 Test Code/ID: MYT050322 / 20-4689-8673

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 08-4766-2166 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.1
 Analyzed: 08 Jun-22 16:42 Analysis: Parametric-Control vs Treatments Status Level: 1
 Edit Date: 08 Jun-22 16:39 MD5 Hash: 3A17151CB5151D98CECA35F62FBCCC02 Editor ID: 007-615-942-9

Angular (Corrected) Transformed Summary

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	5	1.4200	1.3640	1.4750	1.4340	1.3530	1.4740	0.0201	3.16%	0.00%
0.037		5	1.4280	1.3800	1.4760	1.4340	1.3770	1.4740	0.0174	2.72%	-0.59%
0.079		5	1.1880	1.0760	1.3000	1.2090	1.0730	1.3030	0.0405	7.61%	16.32%
0.105		5	0.8889	0.7999	0.9779	0.8956	0.8017	0.9937	0.0321	8.06%	37.39%
0.14		5	0.7213	0.6694	0.7733	0.6989	0.6847	0.7831	0.0187	5.80%	49.19%
0.165		5	0.3412	0.2638	0.4187	0.3552	0.2763	0.4090	0.0279	18.27%	75.96%

Combined Proportion Normal Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	0.9721	0.9535	0.9814	0.9907	0.9814
0.037		0.9628	0.9721	0.9814	0.9907	0.9860
0.079		0.9302	0.8744	0.8140	0.7721	0.8884
0.105		0.7023	0.6186	0.5628	0.6093	0.5163
0.14		0.4977	0.4605	0.4093	0.4000	0.4140
0.165		0.1209	0.0744	0.1442	0.1581	0.0744

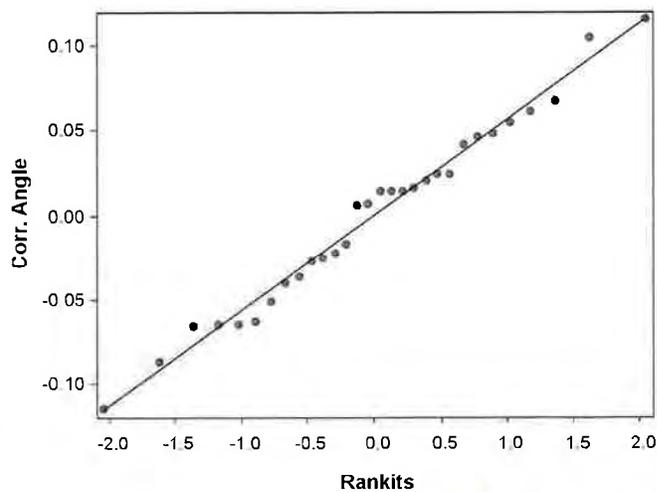
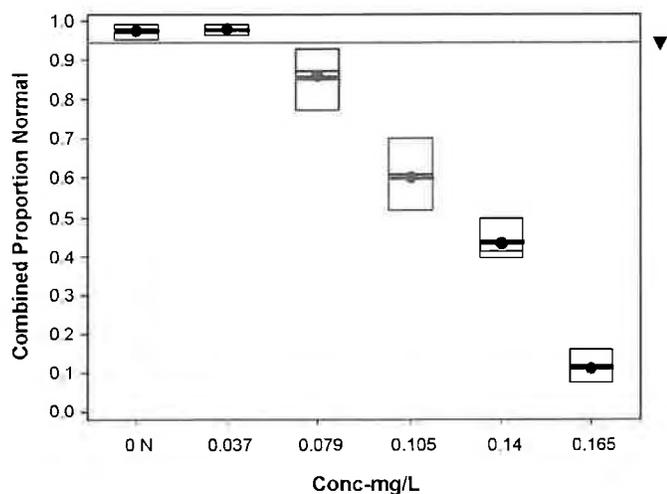
Angular (Corrected) Transformed Detail

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	1.4030	1.3530	1.4340	1.4740	1.4340
0.037		1.3770	1.4030	1.4340	1.4740	1.4520
0.079		1.3030	1.2090	1.1250	1.0730	1.2300
0.105		0.9937	0.9051	0.8484	0.8956	0.8017
0.14		0.7831	0.7458	0.6942	0.6847	0.6989
0.165		0.3552	0.2763	0.3895	0.4090	0.2763

Combined Proportion Normal Binomials

Conc-mg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	N	209/215	205/215	211/215	213/215	211/215
0.037		207/215	209/215	211/215	213/215	212/215
0.079		200/215	188/215	175/215	166/215	191/215
0.105		151/215	133/215	121/215	131/215	111/215
0.14		107/215	99/215	88/215	86/215	89/215
0.165		26/215	16/215	31/215	34/215	16/215

Graphics



CETIS Analytical Report

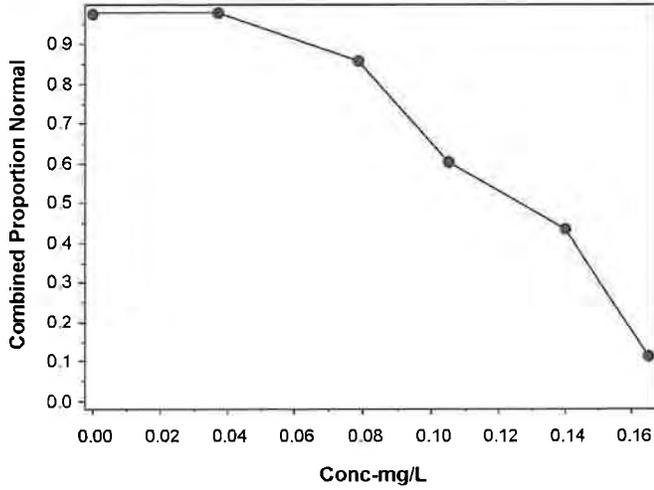
Report Date: 08 Jun-22 16:42 (p 2 of 2)
Test Code/ID: MYT050322 / 20-4689-8673

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 01-3713-7610	Endpoint: Combined Proportion Normal	CETIS Version: CETISv2.1.1
Analyzed: 08 Jun-22 16:42	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Edit Date: 08 Jun-22 16:39	MD5 Hash: 3A17151CB5151D98CECA35F62FBCCC02	Editor ID: 007-615-942-9

Graphics



CETIS Measurement Report

Report Date: 08 Jun-22 16:42 (p 1 of 1)
 Test Code/ID: MYT050322 / 20-4689-8673

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 19-9614-6693	Test Type: Development-Survival	Analyst:
Start Date: 03 May-22 12:00	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 05 May-22 12:11	Species: Mytilus galloprovincialis	Brine:
Test Length: 48h	Taxon: Bivalvia	Source: Carlsbad Aquafarms CA Age:
Sample ID: 01-0606-4145	Code: 6526911	Project: REF TOX
Sample Date: 03 May-22 12:11	Material: Ammonia (Unionized)	Source: Reference Toxicant
Receipt Date: 03 May-22 12:00	CAS (PC):	Station: REF TOX
Sample Age: ---	Client: Internal Lab	

Dissolved Oxygen-mg/L

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	6.7	5.429	7.971	6.6	6.8	0.07071	0.1414	2.11%	0
0.037		2	6.7	4.159	9.241	6.5	6.9	0.1414	0.2828	4.22%	0
0.079		2	6.8	4.259	9.341	6.6	7	0.1414	0.2828	4.16%	0
0.105		2	6.9	5.629	8.171	6.8	7	0.07071	0.1414	2.05%	0
0.14		2	7.15	6.515	7.785	7.1	7.2	0.03536	0.07071	0.99%	0
0.165		2	6.55	5.915	7.185	6.5	6.6	0.03535	0.0707	1.08%	0
Overall		12	6.8	6.647	6.953	6.5	7.2	0.06963	0.2412	3.55%	0 (0%)

Total Ammonia (N)-mg/L

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	0	0	0	0	0	0	0	---	0
Overall		2	0	0	0	0	0	0	0	#Num!	0 (0%)

pH-Units

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
0.037		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
0.079		2	7.9	7.884	7.916	7.9	7.9	0	0	0.00%	0
0.105		2	7.85	7.215	8.485	7.8	7.9	0.03535	0.07071	0.90%	0
0.14		2	7.8	7.787	7.813	7.8	7.8	0	0	0.00%	0
0.165		2	7.7	7.698	7.702	7.7	7.7	0	0	0.00%	0
Overall		12	7.842	7.791	7.892	7.7	7.9	0.02289	0.0793	1.01%	0 (0%)

Salinity-ppt

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	34	34	34	34	34	0	0	0.00%	0
0.037		2	34	34	34	34	34	0	0	0.00%	0
0.079		2	34	34	34	34	34	0	0	0.00%	0
0.105		2	34	34	34	34	34	0	0	0.00%	0
0.14		2	34	34	34	34	34	0	0	0.00%	0
0.165		2	34	34	34	34	34	0	0	0.00%	0
Overall		12	34	34	34	34	34	0	0	0.00%	0 (0%)

Temperature-°C

Conc-mg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	2	14.8	13.53	16.07	14.7	14.9	0.07072	0.1414	0.96%	0
0.037		2	14.8	13.53	16.07	14.7	14.9	0.07072	0.1414	0.96%	0
0.079		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
0.105		2	14.75	14.11	15.39	14.7	14.8	0.03537	0.07075	0.48%	0
0.14		2	14.9	14.87	14.93	14.9	14.9	0	0	0.00%	0
0.165		2	14.85	14.21	15.49	14.8	14.9	0.03539	0.07077	0.48%	0
Overall		12	14.82	14.77	14.88	14.7	14.9	0.025	0.0866	0.58%	0 (0%)



93645

570-93645 Chain of Custody

Client Name/Address:								Project:								ANALYSIS REQUIRED				Field Readings		Meter serial #
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108 Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin CA 92780 Tel: 714-895-5494 ECI Project #44024446								Project: Boeing-SSFL NPDES Permit 2015 Annual Sediment Arroyo Simi-Frontier Park								Total Ammonia (SM4500-NH3-D) Total Organic Carbon (9060) - Dry Weight Corrected PCBs (SW8062) Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A) 48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136) ABC Labs in Ventura, CA Chronic 10-day echinasterius edentatus Toxicity (EPA/600/R-94/023) ABC Labs in Ventura, CA % Moisture (25403) Particle Size Distribution (D422M)				Field readings: (Include units) Time of readings: 0715 pH: 6.91 pH unit Temp: 64.3 °F DO: 6.66 mg/L Conductivity: 880 umhos/cm Velocity: 0.0 ft/sec		
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.								Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)												Field readings QC Checked by: <i>[Signature]</i> Date/Time: 04-25-2022/0715		
Sampler: Adrien Mobeka								Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)														
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8062)	Chlordane, Dieldrin Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95/136) ABC Labs in Ventura, CA	Chronic 10-day echinasterius edentatus Toxicity (EPA/600/R-94/023) ABC Labs in Ventura, CA	% Moisture (25403)	Particle Size Distribution (D422M)	Comments					
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022 /0745	SE	9 oz Jar	3	None	165	Yes	X													
			SE	9 oz Jar	1	None	246	No		X												
			SE	9 oz Jar	3	None	280	Yes			X											
			SE	9 oz Jar	3	None	290	Yes				X										
			SE	1L wide mouth Plastic	3	None	295	No					X				Deliver to ABC labs in Ventura, CA					
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No						X			Keep sample in cooler in the dark until delivered to ABC Labs					
			SE	9 oz Jar	1	None	305	No							X							
			SE	9 oz Jar	1	None	310	No								X						

Sample time added by M. Dominick 4/26/2022

Legend: A=Annual

Relinquished By: <i>[Signature]</i> Date/Time: 4-25-2022/1050 H:IA Company: H:IA	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1050	Turn-around time: (Check) 24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input checked="" type="checkbox"/> 48 Hour: 5 Day: <input type="checkbox"/> Normal: <input type="checkbox"/>
Relinquished By: <i>[Signature]</i> Date/Time: 4/25/22 1302 EC Company: EC	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1302	Sample Integrity: (Check) Intact: <input type="checkbox"/> On Ice: <input type="checkbox"/>
Relinquished By:	Received By:	Store samples for 6 months. Data Requirements: (Check) No Level: All Level IV: <input checked="" type="checkbox"/>

* Hand-delivered by H:IA to ABC in Ventura, CA

3.2/4.9 IR96

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93645

570-93645 Chain of Custody

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field Readings		Meter serial #				
Haley & Aldrich 5333 Mission Center Rd Suite 300 San Diego, CA 92108		Boeing-SSFL NPDES Permit 2015												Field readings: (Include units)						
Eurofins Calscience Project Manager: Virendra Patel 2841 Dow Avenue Suite #100 Tustin CA 92780 Tel: 714-895-5494 ECI Project #44024446		Annual Sediment Arroyo Simi-Frontier Park												Time of readings: 0705						
Eurofins Calscience's services under this COC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2022-26-Eurofins Calscience by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and Eurofins Calscience Laboratories Inc.		Project Manager: Katherine Miller 520.289.8606, 520.904.6944 (cell)												pH: 6.91 pH unit						
Sampler: Adrien Mobeka		Field Manager: Mark Dominick 978.234.5033, 818.599.0702 (cell)												Temp: 64.3 °F						
														DO: 6.66 mg/L						
														Conductivity: 880 umhos/cm						
														Velocity: 0.0 ft/sec						
														Field readings QC						
														Checked by: <i>[Signature]</i>						
														Date/Time: 04-25-2022/0705						
														Comments						
Sample Description	Sample I.D.	Sampling Date/Time	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	MS/MSD	Total Ammonia (SM4500-NH3-D)	Total Organic Carbon (9060) - Dry Weight Corrected	PCBs (SW8082)	Chlordane, Dieldrin, Toxaphene, 4,4-DDD, 4,4-DDE, 4,4-DDT (SW8081A)	48-hour Bivalve Embryo Toxicity (Mytilus edulis or Crassostrea gigas) (EPAR-95119) ABC Labs in Ventura, CA	Chronic 10-day echinostorus estuarius Toxicity (EPA/600/R-94/022) ABC Labs in Ventura, CA	% Moisture (2540C)	Particle Size Distribution (D422M)				
Arroyo Simi	Arroyo_Simi-Sed_20220425	4/25/2022	SE	9 oz Jar	3	None	165	Yes	X											
			SE	9 oz Jar	1	None	246	No		X										
			SE	9 oz Jar	3	None	280	Yes			X									
			SE	9 oz Jar	3	None	290	Yes				X								
			SE	1L wide mouth Plastic	3	None	295	No						X					Deliver to ABC labs in Ventura, CA	
			SE	1L wide mouth Plastic	4	4°C in the Dark	300	No								X				Keep sample in cooler in the dark until delivered to ABC Labs
			SE	9 oz Jar	1	None	305	No									X			
SE	9 oz Jar	1	None	310	No										X					

Legend: A=Annual

Relinquished By: <i>[Signature]</i> Date/Time: 4-25-2022/1050 H:IA Company: H:IA	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1050	Turn-around time: (Check) 24 Hour: _____ 72 Hour: _____ 10 Day: <input checked="" type="checkbox"/> _____ 48 Hour: 5 Day: _____ Normal: _____
Relinquished By: <i>[Signature]</i> Date/Time: 4/25/22 1302 EC Company: EC	Received By: <i>[Signature]</i> EC Date/Time: 4/25/22 1302	Sample Integrity: (Check) Intact: _____ On Ice: _____
Relinquished By: _____ Date/Time: _____ Company: _____	Received By: _____ Date/Time: _____	Store samples for 6 months. Data Requirements: (Check) No Level I: All Level IV: <input checked="" type="checkbox"/> _____

* Hand-delivered by H:IA to ABC in Ventura, CA

3.2/4.9 IR96

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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-93645-3

Login Number: 93645

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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	
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Data Usability Summary Report

Project Name: Boeing NPDES SSFL

Project Description: Second Quarter 2022

Sample Date(s): 25 April 2022

Analytical Laboratory: Eurofins Calscience – Tustin, CA

Validation Performed by: Sean Fischer

Validation Reviewed by: Vanessa Godard

Validation Date: 12 July 2022

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

- 1. Sample Delivery Group Number 570-93643-1, 570-93643-2, 570-93645-1, 570-93645-2, and 570-93645-3**
 - 2. Precision and Accuracy [for SDG(s) above]**
 - 3. Explanations**
 - 4. Glossary**
 - 5. Abbreviations**
 - 6. Qualifiers**
- References**

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- National Functional Guidelines (NFG) for Organic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section). Written in 2015, the QAPP referenced the NFG written at the time. Data in this report has been reviewed against the most recent NFG.

Data reported in this sampling event were reported to the laboratory method detection limit (MDL) or estimated detection limit (EDL). Results found between the MDL and the laboratory reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives for the project and therefore usable; any exceptions are noted in the following pages.

Method D4464 for grain size was not validated in this DUSR.

1. Sample Delivery Group Number 570-93643-1, 570-93643-2, 570-93645-1, 570-93645-2, and 570-93645-3

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 570-93643-1, dated 17 May 2022
- 570-93643-2, dated 1 June 2022
- 570-93645-1, dated 18 May 2022
- 570-93645-2, dated 17 May 2022
- 570-93645-3, dated 9 June 2022

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol. Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- Samples times added on COCs for all SDGs on 26 April 2022.
- 570-93643-2: Method SW8315 subcontracted to Weck Laboratories, Inc., City of Industry, CA.
- 570-93645-3: Methods EPA/600/R-94/025 and EPA/600/R-95/136 subcontracted to Aquatic Bioassay & Consulting, Ventura, CA.

Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
Arroyo_Simi_20220425_Grab	N	2D25042-01*	04/25/2022	WS	C
Arroyo_Simi_20220425_Grab	N	570-93643-1	04/25/2022	WS	A, B
Arroyo_Simi-Sed_20220425	N	570-93645-1**	04/25/2022	SE	D, E, F, G, H, I, J

* Method SW8315 subcontracted to Weck Laboratories, Inc., City of Industry, CA

** Methods EPA/600/R-94/025 and EPA/600/R-95/136 subcontracted to Aquatic Bioassay & Consulting, Ventura, CA.

Method Holding Times			
A.	E608.3	Organochlorine Pesticides and PCBs by GC/HSD	14 days extraction / 40 days analysis for liquid, unpreserved
B.	SM2340	Hardness	180 days for liquid, preserved
C.	SW8315	Diazinon and Chlorpyrifos	Immediate extraction within 24 hours of collection for diazinon, 14 days extraction for chlorpyrifos / 30 days analysis for liquid, preserved
D.	D4464*	Grain Size	No holding time
E.	SM4500-NH3D	Total Ammonia	28 days for sediment, unpreserved
F.	SW8081A	Organochlorine Pesticides	7 days extraction / 40 days analysis for sediment, unpreserved
G.	SW8082	Polychlorinated Biphenyls (PCBs)	7 days extraction / 40 days analysis for sediment, unpreserved

Method Holding Times			
H.	SW9060A	Total Organic Carbon	28 days for sediment, unpreserved
I.	EPA/600/R-94/025	Sediment Toxicity (chronic 10-day <i>eohaustorius estuaries</i> toxicity)	14 days for sediment, unpreserved
J.	EPA/600/R-95/136	48-hour Bivalve Embryo toxicity (<i>Mytilus edulis</i> or <i>Crassostrea gigas</i>)	14 days for sediment, unpreserved

* Method D4464 not validated in this DUSR

1.2 CASE NARRATIVE

The laboratory report case narratives included the following issues:

- 570-93645-1 for Method 3546 Organic Prep: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: Arroyo_Simi-Sed_20220425 (570-93645-1), Arroyo_Simi-Sed_20220425 (570-93645-1[MS]) and Arroyo_Simi-Sed_20220425 (570-93645-1[MSD]).
- 570-93645-1 for Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-232053 was flagged as being outside control limits due to a L.I.M.S. limitation: Arroyo_Simi-Sed_20220425 (570-93645-1) and (570-93645-B-1 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project specific QAPP.

No dilutions were performed for the analysis of the samples in this report.

1.5 REPORTING BASIS (WET/DRY)

[Refer to section E 1.1.](#) Sediment data in this SDG were reported on a wet/dry weight basis.

Where reported, percent solid results or percent moisture were reviewed and found to be within limits.

1.6 SURROGATE RECOVERY COMPLIANCE

[Refer to section E 1.2.](#) The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control (QC) limits, with the following exceptions:

Method	Sample ID	Lab ID	Surrogate	Dilution	%R	Qualification
E608.3	Arroyo Simi_20220425_Grab	570-93643-1	Tetrachloro-m-xylene	1x	147%	None, samples are ND

1.7 LABORATORY CONTROL SAMPLES

[Refer to section E 1.3.](#) Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses exhibited recoveries and relative percent differences (RPDs) within the specified limits with the following exceptions:

Sample Type	Method	Batch ID	Analyte	%R	Qualifier	Affected Samples
LCS/LCSD	SW8081A	231306	4,4'-DDT	152%/143%	J+/None	None, samples are ND

1.8 MATRIX SPIKE SAMPLES

[Refer to section E 1.4.](#) The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Lab Sample Number	Matrix Spike/Matrix Spike Duplicate Sample Client ID	Method(s)
570-93643-1 MS/MSD	Arroyo_Simi_20220425_Grab	E608.3
W2D1846-MS1/MSD1	Arroyo_Simi_20220425_Grab	SW8315
570-93645-1 MS/MSD	Arroyo_Simi-Sed_20220425	SW8081A, SW8082, SM4500-NH3D

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits with the following exceptions:

Sample Type	Method	Parent Sample	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD	E608.3	Arroyo_Simi_20220425_Grab	4,4'-DDT	RPD = 51	J/None	None, samples are ND

1.9 BLANK SAMPLE ANALYSIS

[Refer to section E 1.5.](#) Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

1.10 DUPLICATE SAMPLE ANALYSIS

[Refer to section E 1.6.](#) No client samples were used for laboratory duplicate analysis.

No field duplicates were collected in this data set.

1.11 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected. No qualifiers were applied to any data in this report.

2. Precision and Accuracy [for SDG(s) above]

[Refer to section E 1.7.](#) Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

3. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.1 Reporting Basis (Wet/Dry)
 - Soil samples can be reported on either a wet (as received) or dry weight basis. Dry weight data indicate calculations were made to compensate for the moisture content of the soil sample.
 - Percent (%) solids should be appropriately considered when evaluating analytical results for non-aqueous samples. Sediments with high moisture content may or may not be successfully analyzed by routine analytical methods. Samples should have greater than or equal to 30 percent solids to be appropriately quantified.
- E 1.2 Surrogate Recovery Compliance
 - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determine the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
 - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
 - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
 - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
 - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
 - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
 - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
 - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (%RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
 - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%Rec) of certain spiked compounds. This can be assessed using LCS, BS, MS, and/or surrogate recoveries.

4. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
 - EB Equipment Blank Sample
 - FB Field Blank Sample
 - FD Field Duplicate Sample
 - N Primary Sample
 - TB Trip Blank Sample
- Units:
 - ng/L nanograms per liter
 - µg/kg microgram per kilogram
 - µg/L microgram per liter
 - µg/m³ microgram per cubic meter
 - mg/kg milligram per kilogram
 - mg/L milligram per liter
 - ppb v/v parts per billion volume/volume
 - pCi/L picocuries per liter
 - pg/g picograms per gram
- Matrices:
 - AA Ambient Air
 - GS Soil Gas
 - GW/WG Groundwater
 - QW Water Quality
 - IA Indoor Air
 - SE Sediment
 - SO Soil
 - WQ Water Quality control matrix
 - WS Surface Water
- Table Footnotes:
 - NA Not applicable
 - ND Non-detect
 - NR Not reported
- Common Symbols:
 - % percent
 - < less than
 - ≤ less than or equal to
 - > greater than
 - ≥ greater than or equal to
 - = equal
 - °C degrees Celsius
 - ± plus or minus
 - ~ approximately
 - x times (multiplier)

5. Abbreviations

%D	Percent Difference	MS/MSD	Matrix Spike/Matrix Spike Duplicate
%R	Percent Recovery	NA	not applicable
%RSD	Percent Relative Standard Deviation	ND	Non-Detect
%v/v	Percent volume by volume	NFG	National Functional Guidelines
µg/L	micrograms per liter	NH ₃	Ammonia
2s	2 sigma	NYSDEC	New York State Department of Environmental Conservation
4,4-DDT	4 4-dichlorodiphenyltrichloroethane		
Abs Diff	Absolute Difference	PAH	polycyclic aromatic hydrocarbon
BPJ	Best Professional Judgement	PCB	Polychlorinated Biphenyl
BS	Blank Spike	PDS	Post Digestion Spike
CCB	Continuing Calibration Blank	PEM	Performance Evaluation Mixture
CCV	Continuing Calibration Verification	PFAS	Per- and Polyfluoroalkyl Substances
CCVL	Continuing Calibration Verification Low	PFBA	Perfluorbutanoic Acid
		PFD	Perfluorodecalin
COC	Chain of Custody	PFOA	Perfluorooctanoic Acid
COM	Combined Isotope Calculation	PFOS	Perfluorooctanoic Acid
Cr (VI)	Hexavalent Chromium	PFPeA	nonafluorovaleric acid
CRI	Collision Reaction Interface	QAPP	Quality Assurance Project Plan
DoD	Department of Defense	QC	Quality Control
DUSR	Data Usability Summary Report	QSM	Quality Systems Manual
EMPC	Estimated Maximum Possible Concentration	R ²	R-squared value
		Ra-226	Radium-226
FBK	Field Blank Contamination	Ra-228	Radium-228
FDP	Field Duplicate	RESC	Resolution Check Measure
GC	Gas Chromatograph	RL	Laboratory Reporting Limit
GC/MS	Gas Chromatography/Mass Spectrometry	RPD	Relative Percent Difference
		RRF	Relative Response Factors
GPC	Gel Permeation Chromatography	RT	Retention Time
H ₂	Hydrogen gas	SAP	sampling analysis plan
HCl	Hydrochloric Acid	SDG	Sample Delivery Group
ICAL	Initial Calibration	SIM	Selected ion monitoring
ICB	Initial Calibration Blank	SOP	Laboratory Standard Operating Procedures
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry	SPE	Solid Phase Extraction
		SVOC	Semi-Volatile Organic Compounds
ICV	Initial Calibration Verification	TIC	Tentatively Identified Compound
ICVL	Initial Calibration Verification Low	TKN	Total Kjeldahl Nitrogen
IPA	Isopropyl Alcohol	TPH	Total Petroleum Hydrocarbon
LC	Laboratory Control	TPU	Total Propagated Uncertainty
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate	u	atomic mass unit
		USEPA	U.S. Environmental Protection Agency
MBK	Method Blank Contamination	VOC	Volatile Organic Compounds
MDC	Minimum Detectable Concentration	WP	Work Plan
MDL	Laboratory Method Detection Limit		
mg/kg	milligrams per kilogram		

6. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Validation Note:
 - *III Unusual problems found with the data that have been described in the validation report.
 - B Laboratory method blank contamination.
 - D The analysis with this flag should not be used because another more technically sound analysis is available.
 - DNQ Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
 - H Holding time was exceeded.
- Validation Qualifiers:
 - U The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or "ND".
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.
 - R The sample results were rejected as unusable; the compound may or may not be present in the sample.
 - = No Qualifier

References

1. United States Environmental Protection Agency (USEPA), 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.
2. USEPA, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.
3. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

APPENDIX E

Annual Comprehensive Sitewide Compliance Evaluation Report

APPENDIX E

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT REPORTING YEAR JULY 1, 2021 THROUGH JUNE 30, 2022

This Annual Comprehensive Site Compliance Evaluation Report (Annual Evaluation) was prepared for The Boeing Company (Boeing) Santa Susana Field Laboratory (Site), located in Simi Hills, Ventura County, California in general accordance with Attachment G (Section IX.D.) of the Site's Waste Discharge Requirements (National Pollutant Discharge Elimination System [NPDES] Permit No. CA0001309, CI No. 6027). This Report evaluates compliance with the Site-Wide Stormwater Pollution Prevention Plan (SWPPP) during reporting year July 1, 2021 through June 30, 2022. The Annual Evaluation was conducted between April 26 to 29, 2022 and May 2 to 4, 2022 by Mark Dominick, PG, QSD and Michelle Dallalah, both of Haley & Aldrich, Inc.

REVIEW OF VISUAL OBSERVATION RECORDS, INSPECTION RECORDS, AND SAMPLING AND ANALYSIS RESULTS

For the reporting year, the Inspectors reviewed all inspection forms during the Annual Evaluation, up to March 2022, that documented inspections/visual observations. Inspection forms completed for the reporting year after the Annual Evaluation was conducted were reviewed by June 30, 2022; each inspection form was complete or revised as needed. A process exists and has been implemented for non-compliance items to be properly evaluated and corrected.

Sampling and analysis results are evaluated in each quarterly Discharge Monitoring Report (DMR).

POTENTIAL POLLUTANT SOURCE VISUAL INSPECTION

For the reporting year, the Inspectors conducted visual inspections at the Site during the Annual Evaluation at buildings, equipment, and surrounding areas to evaluate the status of existing potential pollutant sources. The Inspectors confirmed that areas where known potential pollutants exist have appropriate best management practices (BMPs) installed and maintained to minimize and/or eliminate the potential for pollutant releases to reach the drainage system. No additional BMPs are required at this time. No additional buildings, equipment, or surrounding areas were identified that require BMPs.

BEST MANAGEMENT PRACTICE REVIEW

For the reporting year, the Inspectors reviewed and evaluated the structural and non-structural BMPs at the Site during the Annual Evaluation. The Inspectors determined the BMPs were adequate, properly implemented, required minor maintenance, and were in compliance with the SWPPP and BMP plan. The Inspectors observed minor amounts of sediment delivered or accumulated around sediment control BMPs due to the upstream areas being well-vegetated with a diversity of plants. The on-site evaluation did result in recommendations which the Inspectors identified on the inspection forms and verified that the corrective actions were completed prior to the issuance of the Second Quarter DMR, with the exception of the recommendation to remove accumulated sediment from behind check structures in several site drainages. Check structures will be cleared once the Los Angeles Regional Water Quality Control Board (Regional Board) issues a Clean Water Act Section 401 Water Quality Certification (401C) approving the work.

APPENDIX E

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION REPORT REPORTING YEAR JULY 1, 2021 THROUGH JUNE 30, 2022

SWPPP REVISIONS AND SCHEDULE

The Regional Board adopted the 2015 NPDES Permit No. R4-2015-0033 on February 12, 2015, effective April 1, 2015, to revise the existing 2010 NPDES Permit No. R4-2010-0090. Version 9 of the SWPPP will be completed in the fall of 2022 based on observations made during the Annual Evaluation and include the following revisions:

- Updated text to Santa Susana Site Areas (Section 2.3);
- Updated text to Surface Water Drainages (Section 2.4.1);
- Updated text to Surface Water Monitoring Locations (Section 2.4.3);
- Updated text to Groundwater Treatment (Section 2.5.2);
- Updated text to Significant Materials and Potential Sources (Sections 2.8.1.1 and 2.8.1.4);
- Updated text to Dust and Particulate Generating Activities (Section 2.8.2);
- Updated text to Non-Stormwater Discharges (Section 2.8.4);
- Updated text to Pollutants with Potential to be Present (Section 3.2);
- Updated text to Waste Handling/Waste Recycling (Section 4.1.5);
- Added text to New BMPs to be Implemented (Section 4.3);
- Updated text to the Sampling and Analysis Plan section;
- Updated text to the References (Section 6);
- Updated figures;
- Updated Significant Materials Inventory (Appendix C);
- Updated Spill Prevention and Response Plan (Appendix E); and
- Updated inspection forms (Appendix F).

NON-COMPLIANCE INCIDENTS AND CORRECTIVE ACTIONS TAKEN

As part of the Annual Evaluation, the Inspectors reviewed the non-compliance issues (Permit Limit exceedances) discussed in the DMRs and reviewed the corrective actions. The Inspectors have determined that the corrective actions were appropriate and have been completed. During the onsite portion of the annual evaluation, minor recommendations were made to Boeing and the Inspectors have determined that the recommendations were either completed prior to the issuance of the Second Quarter DMR or will be scheduled to be completed following issuance of the 401C.

CERTIFICATION

Per NPDES Permit Appendix G, Section IX.D, the signature and certification requirements for this evaluation report are included in the DMR text.

APPENDIX F

Annual Bioassessment Sampling Report

APPENDIX F

BIOASSESSMENT MONITORING AND SAMPLING SANTA SUSANA FIELD LABORATORY 2022

The National Pollutant Discharge Elimination System permit specifies that bioassessment monitoring will be performed at two locations (SSFL-001 [Outfall 001] and SSFL-006 [Outfall 006]) in the spring/summer of each year, approximately four to six weeks following the last significant rainfall event. This time period was established by, and is included in, the state-wide bioassessment protocols established by the State of California's Surface Water Ambient Monitoring Program (SWAMP 2016).

The permit specifies that visual assessment of the physical habitat conditions will be conducted and, if flow is present at either location, sampling will be conducted to assess the integrity of the benthic macroinvertebrate community at each site.

Rainfall amount for the 2021 through 2022 rain year was approximately 1 inch greater than average. Between July 2021 and June 2022, a total of 18.16 inches of rain was recorded at the Area I weather station. Average annual rainfall for the site vicinity is approximately 17 inches (Geosyntec and the Expert Panel, 2021). The latest significant rainfall event for the 2021 through 2022 rain year occurred on March 22, 2022 (total equals 1.02 inches; Figure 1).

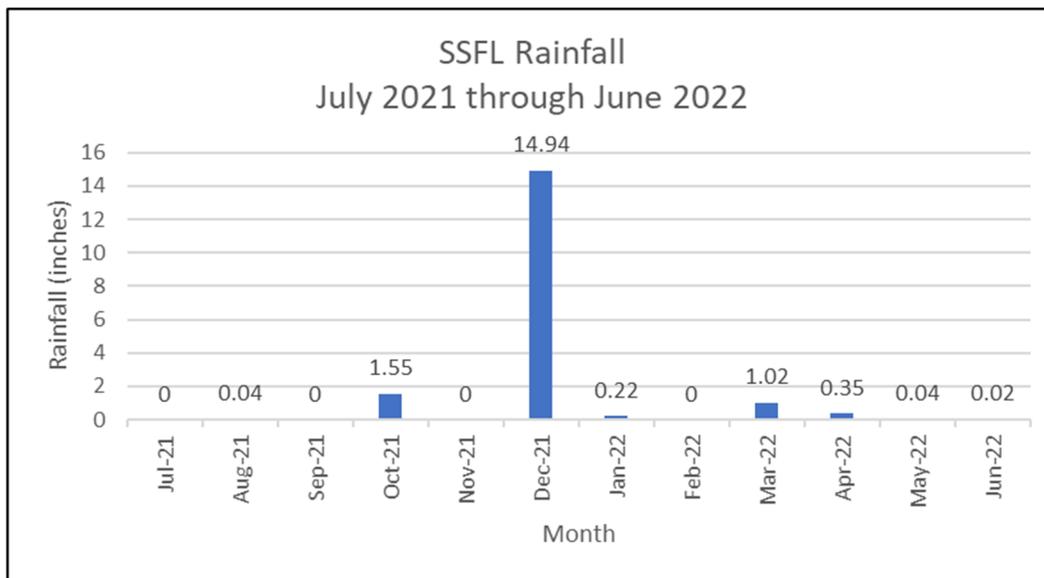


Figure 1. Rainfall measured at the Area I weather station between July 2021 and June 2022.

The Boeing Company (Boeing) conducted the annual bioassessment monitoring on May 3, 2022 to assess the physical habitat conditions and to determine if bioassessment samples could be collected. Neither SSFL-001 nor SSFL-006 had flow and both were completely dry across their entire reaches (Figure 2). Therefore, bioassessment sampling was not performed.

APPENDIX F

BIOASSESSMENT MONITORING AND SAMPLING
SANTA SUSANA FIELD LABORATORY
2022



SSFL-001, downstream



SSFL-001, upstream



SSFL-006, downstream



SSFL-006, upstream

Figure 2. Downstream and upstream views of SSFL-001 and SSFL-006.