2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

AECOM 1001 Bishop Street Suite 1600 Honolulu, HI 96813 ATTN: Ms. Alethea Ramos alethea.ramos@aecom.com September 14, 2021

SUBJECT: Red Hill Bulk Storage Facility, CTO 18F0126, Data Validation

Dear Ms. Ramos,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received from June 3<sup>rd</sup> & 4<sup>th</sup>, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

#### LDC Project #50747 C, D and E:

SDG # Fraction

95917/1D27023 96222/1E21031 96681/1F29037 Semivolatiles

The data validation was performed under Stage 2B & 4 validation guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Data validation was performed in accordance with the Work Plan/Scope of Work, Investigation and Remediation
  of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl
  Harbor-Hickam, O'ahu, Hawai'i (Revision 02, January 2017)
- Sampling and Analysis Plan, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 01, April 2017)
- Sampling and Analysis Plan, Addendum 01, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, September 2017)
- Sampling and Analysis Plan, Addendum 03, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, June 2018)
- U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019)
- DoD General Validation Guidelines (November 2019)
- U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020)
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Operations Manager/Senior Chemist

scuenco@lab-data.com

	525 pages-DL/	EM											At	tachr	nent	1																	
	90/10 2B/4 I	EDD	LD	C# 5	5074	47 ( <i>i</i>	AEC	ON	1 - H	lone	olul	u, F		Red	Hill	l Bu	ılk S	Stor	age	Fa	cilit	y, C	то	18F	-012	26)							
LDC	SDG#	DATE REC'D	(2) DATE DUE	SV (52																													
Matri	x: Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
С	95917/1D27023	06/03/21	06/17/21	2	0																												
D	96222/1E21031	06/04/21	06/18/21	1	0																												
D	96222/1E21031	06/04/21	06/18/21	1	0																												
Е	96681/1F29037	07/09/21	07/23/21	3	0																												
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Total	T/J/SC			7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7

# Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Red Hill Bulk Storage Facility, CTO 18F0126

**LDC Report Date:** September 14, 2021

Parameters: Semivolatiles

Validation Level: Stage 2B

**Laboratory:** APPL, Inc./Weck Laboratories, Inc.

Sample Delivery Group (SDG): 95917/1D27023

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
ERH1355	BA31078/1D27023-01	Water	04/21/21
ERH1356	BA31079/1D27023-02	Water	04/21/21

### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Work Plan/Scope of Work, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 02, January 2017), the Sampling and Analysis Plan, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 01, April 2017), the Sampling and Analysis Plan, Addendum 01, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, September 2017), the Sampling and Analysis Plan, Addendum 03, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, June 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), the DoD General Validation Guidelines (November 2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Semivolatile Organic Compounds (SVOCs) by Environmental Protection Agency (EPA) Method 525.2

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was not detected and the associated numerical value is approximate.
- X (Exclusion of data recommended): The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

### Qualification Code Reference

- a ICP Serial Dilution %D was not within control limits.
- b Presumed contamination from preparation (method blank).
- c Calibration %RSD, r, r<sup>2</sup>, %D or %R was noncompliant.
- d The analysis with this flag should not be used because another more technically sound analysis is available.
- e MS/MSD or Duplicate RPD was high.
- f Presumed contamination from FB or ER.
- g ICP ICS results were unsatisfactory.
- h Holding times were exceeded.
- i Internal standard performance was unsatisfactory.
- k Estimated Maximum Possible Concentration (HRGC/HRMS only)
- I LCS/LCSD %R was not within control limits.
- m Result exceeded the calibration range.
- o Cooler temperature or temperature blank was noncompliant and/or sample custody problems.
- p RPD between two columns was high (GC only).
- q MS/MSD recovery was not within control limits.
- s Surrogate recovery was not within control limits.
- t Presumed contamination from trip blank.
- v Unusual problems found with the data not defined elsewhere. Description of the problem can be found in the validation report.
- w LCS/LCSD RPD was high.
- y Chemical recovery was not within control limits (Radiochemistry only).

### I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
All samples in SDG 95917/1D27023 All analytes		12	7	UJ (all non-detects)	Р

### **II. GC/MS Instrument Performance Check**

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

### III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For analytes where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 30.0%.

In the case where the laboratory used a calibration curve to evaluate the analytes, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
03/13/21	2,6-Dinitrotoluene	40.27	All samples in SDG 95917/1D27023	UJ (all non-detects)	А

### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
05/06/21 (2135)	Diazinon Metolachlor Metribuzin	43 38 39	All samples in SDG 95917/1D27023	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	Α
05/06/21 (2229)	Endrin Methoxychlor	40 38	All samples in SDG 95917/1D27023	UJ (all non-detects) UJ (all non-detects)	А

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
05/07/21 (0855)	Bis(2-ethylhexyl)adipate Bis(2-ethylhexyl)phthalate Butylbenzylphthalate Di-n-octylphthalate	53 56 52 64	All samples in SDG 95917/1D27023	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	A
05/07/21 (0923)	Acetochlor Diazinon Metolachlor Metribuzin Prometryn	54 65 60 66 54	All samples in SDG 95917/1D27023	UJ (all non-detects)	А

Although the percent difference was grossly exceeded (>50%) for several analytes, using professional judgment, associated results were qualified as estimated instead of "X", since the percent differences were biased high and the associated results were not detected.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

### V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

### VI. Field Blanks

No field blanks were identified in this SDG.

### VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

### VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

### IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method with the following exceptions:

LCS ID	Analyte	Finding	Associated Samples	Flag	A or P
W1E0023-LCS	4,4'-DDD 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC alpha-Chlordane beta-BHC delta-BHC Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC gamma-Chlordane Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Methoxychlor Trifluralin	The laboratory indicated that these analytes were not spiked in the LCS mix analyzed for this SDG.	All samples in SDG 95917/1D27023	UJ (all non-detects)	P

Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
W1E0023-LCS (All samples in SDG 95917/1D27023)	Pentachlorophenol	22 (50-120)	UJ (all non-detects)	Р
W1E0023-LCS (All samples in SDG 95917/1D27023)	Captan	1.09 (70-130)	X (all non-detects)	Р

### X. Field Duplicates

No field duplicates were identified in this SDG.

### XI. Internal Standards

All internal standard areas and retention times were within QC limits.

### XII. Target Analyte Quantitation

Raw data were not reviewed for Stage 2B validation.

### XIII. Target Analyte Identification

Raw data were not reviewed for Stage 2B validation.

### **XIV. System Performance**

Raw data were not reviewed for Stage 2B validation.

### XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due LCS %R, data were recommended for exclusion in two samples.

Due to technical holding time, ICV %D, continuing calibration %D, LCS not spiked, and LCS %R, data were qualified as estimated in two samples.

### Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Data Qualification Summary - SDG 95917/1D27023

Sample	Analyte	Flag	A or P	Reason (Code)
ERH1355 ERH1356	All analytes except Captan	UJ (all non-detects)	Р	Technical holding time (h)
ERH1355 ERH1356	2,6-Dinitrotoluene	UJ (all non-detects)	А	Initial calibration verification (%D) (c)
ERH1355 ERH1356	Diazinon Metolachlor Metribuzin Endrin Methoxychlor	UJ (all non-detects)	А	Continuing calibration (%D) (c)
ERH1355 ERH1356	Bis(2-ethylhexyl)adipate Bis(2-ethylhexyl)phthalate Butylbenzylphthalate Di-n-octylphthalate Acetochlor Diazinon Metolachlor Metribuzin Prometryn	UJ (all non-detects)	Α	Continuing calibration (ending CCV %D) (c)
ERH1355 ERH1356	4,4'-DDD 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC alpha-Chlordane beta-BHC Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC gamma-Chlordane Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorobenzene Methoxychlor Propachlor Trifluralin	UJ (all non-detects)	P	Laboratory control samples (not spiked) (v)
ERH1355 ERH1356	Pentachlorophenol	UJ (all non-detects)	Р	Laboratory control samples (%R) (I)
ERH1355 ERH1356	Captan	X (all non-detects)	Р	Laboratory control samples (%R) (I)

Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 95917/1D27023

No Sample Data Qualified in this SDG

Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Field Blank Data Qualification Summary - SDG 95917/1D27023

No Sample Data Qualified in this SDG



**FINAL REPORT** 

APPL, Inc.

Project Number: 95917

Reported: 05/17/2021 15:09

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

### Sample Results

ample: BA31078, Alias: ERH1355 1D27023-01 (Water)				3	ampled: 04/21/2	1 9:15 by Clier
Analyte	Result	MRL	Units	DII	Analyzed	Qualific
nivolatile Organic Compounds by GC/MS						
lethod: EPA 525.2		Instr: GCMS16	5			
Batch ID: W1E0023 Preparation: EPA 525.	2/SPE	Prepared: 05/6	03/21 08:27			Analyst: m
2,4-Dinitrotoluene	ND VO	2.0	ug/l	1	05/07/21	U-0
2,6-Dinitrotoluene	ND	(C) 2.0	ug/l	1	05/07/21	U-C
4,4'-DDD	ND	0.10	ug/l	1	05/07/21	U-C
4,4'-DDE	ND	0.20	ug/l	1	05/07/21	U-C
4,4'-DDT	ND	<b>∛</b> 0.10	ug/l	1	05/07/21	U-0
Acenaphthene	ND	0.50	ug/l	1	05/07/21	U-6
Acenaphthylene	= ND	0.50	ug/l	1	05/07/21	U-
Acetochlor	ND ND	(C) <sub>0.10</sub>	ug/l	1	05/07/21	U-C
Alachior	ND	0.10	ug/l	1	05/07/21	U-0
Aldrin	ND	0.10	ug/l	1	05/07/21	U-6
aipha-BHC	ND	0.10	ug/l	1	05/07/21	U-0
alpha-Chlordane	ND	<b>₩</b> 0.10	ug/t	1	05/07/21	U-
Anthracene	ND	0.50	ug/l	1	05/07/21	U-
Atrazine	ND	0.10	ug/l	1	05/07/21	U-
Benzo (a) anthracene	ND	0.50	ug/l	1	05/07/21	U-
Benzo (a) pyrene	ND	0.10	ug/l	1	05/07/21	U-
Benzo (b) fluoranthene	ND	0.50	ug/l	1	05/07/21	U-
Benzo (g,h,i) perylene	ND	0.50	ug/l	1	05/07/21	U-
Benzo (k) fluoranthene	ND	0.50	ug/l	1	05/07/21	U-
beta-BHC	ND	(V) 0.20	ug/l	1	05/07/21	U-
Bis(2-ethylhexyl)adipate	= = ND	(6) 5.0	ug/l	1	05/07/21	U-
Bis(2-ethylhexyl)phthalate	ND	3.0	ug/l	1	05/07/21	U-
Bromacil	ND	0.50	ug/l	1	05/07/21	U-0
Butachlor	ND	0.10	ug/l	1	05/07/21	U-
Butyl benzyl phthalate	ND	(C) 20	ug/l	1	05/07/21	U-
Caffeine	ND 🕹	0.10	ug/l	1	05/07/21	U-
Captan	ND X (1	1.0	ug/l	1	05/07/21	BS-03, U-
Chlorpropham	ND UJ	(h) <sub>0.10</sub>	ug/l	1	05/07/21	U-
Chrysene	= ND	0.50	ug/l	1	05/07/21	U-I
Cyanazine	ND	0.10	ug/l	1	05/07/21	U-
delta-BHC	ND	0.10	ug/l	1	05/07/21	U-
Diazinon	- = - = ND	(c) 0.10	ug/l	1	05/07/21	U-
Dibenzo (a,h) anthracene	ND	0.50	ug/l	1	05/07/21	Ų-
Dieldrin	ND	(V) 0.20	ug/l	1	05/07/21	U-
Diethyl phthalate	ND 🕡	2.0	ug/l	1	05/07/21	U-



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611 Project Number: 95917

Reported:

05/17/2021 15:09

Project Manager: Libby Cheeseborough

Sample	Results

(Continued)

ample: BA31078, Alias: ERH1355 1D27023-01 (Water)				Si	ampieo: 04/21/a	(Continued)
Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
nivolatile Organic Compounds by GC/MS (Continued)						
lethod: EPA 525.2		Instr: GCMS16				
Batch ID: W1E0023 Preparation: EPA 525.2/SPE	UT	Prepared: 05/0	3/21 08:27			Analyst: rmr
Dimethoate	ND UT	0.20	ug/l	1	05/07/21	U-01
Dimethyl phthalate	ND	2.0	ug/l	1	05/07/21	U-01
Di-n-butyl phthalate	ND	2.0	ug/l	1	05/07/21	U-01
Di-n-octyl phthalate	ND	(C) 0.50	ug/l	1	05/07/21	U-01
Diphenamid	ND	0.10	ug/l	1	05/07/21	U-01
Disulfoton	ND	0.10	ug/i	1	05/07/21	Ų-01
Endosulfan I	ND	1.0	ug/l	1	05/07/21	U-01
Endosulfan II	ND	0.20	ug/l	1	05/07/21	U-01
Endosulfan sulfate	ND	0.20	ug/l	1	05/07/21	U-01
Endrin	ND	(C) <sub>0.20</sub> (V	<b>)</b> ug/l	1	05/07/21	U-01
Endrin aldehyde	ND	(V) <sub>0.20</sub>	ug/l	1	05/07/21	U-01
Endrin ketone	ND	<b>₩</b> 0.10	ug/l	1	05/07/21	U-01
EPTC	ND	0.10	ug/l	1	05/07/21	<b>U-0</b> 1
Ethion	ND	0.10	ug/l	1	05/07/21	U-01
Fluoranthene	ND	0.50	ug/l	1	05/07/21	U-01
Fluorene	ND	0.50	ug/l	1	05/07/21	U-01
gamma-BHC (Lindane)	ND	(V)0.10	ug/l	1	05/07/21	U <b>-0</b> 1
gamma-Chlordane	ND	0.10	ug/l	1	05/07/21	U <b>-0</b> 1
Heptachlor	- ND	0.10	ug/l	1	05/07/21	U-01
Heptachlor epoxide	ND	0.10	ug/l	1	05/07/21	U-01
Hexachlorobenzene	ND	0.10	ug/l	1	05/07/21	U-01
Hexachlorocyclopentadiene	ND	1.0	ug/l	1	05/07/21	U-01
Indeno (1,2,3-cd) pyrene	ND	0.50	ug/l	1	05/07/21	U-01
Methoxychlor	ND	(C) <sub>0.20</sub> (\	/ ) ug/l	1	05/07/21	U-01
Metolachlor	- ND	0.10	ug/i	1	05/07/21	U-01
Metribuzin	ОИ	0.10	ug/l	1	05/07/21	U <b>-0</b> 1
Molinate	ND	0.10	ug/l	1	05/07/21	U-0:
Naphthalene	ND	0.50	ug/l	1	05/07/21	U-01
Pentachloronitrobenzene (PCNB)	ND	0.10	ug/l	1	05/07/21	U-0
Pentach orophenol	ND	(I) <sub>1.0</sub>	ug/l	1	05/07/21	BS-03, U-01
Phenanthrene	ND	0.50	ug/l	1	05/07/21	U-01
Prometon	ND ND	0.10	ug/l	1	05/07/21	U-0^
Prometryn	ND	(C) <sub>0,10</sub>	ug/l	1	05/07/21	U-01
Propachlor	ND	(V)0.20	ug/l	1	05/07/21	U-01
Pyrene	ND V	0.50	ug/l	1	05/07/21	U-01
•	·	V	•		a .	



05/07/21

05/07/21

**FINAL REPORT** 

APPL, Inc.

Perylene-d12

Triphenyl phosphate

908 N. Temperance Avenue Clovis, CA 93611 Project Number: 95917

Reported:

05/17/2021 15:09

U-01

U-01

Project Manager: Libby Cheeseborough

Sa Sa	ample Results								(Continued)
Sample:	BA31078, Alias: ERH1355 1D27023-01 (Water)	The state of the s	A.F				S	ampled: 04/21/2	21 9:15 by Client (Continued)
Analyte			Result		MRL	Units	DII	Analyzed	Qualifler
Semivolatile (	Organic Compounds by GC/MS(	Continued)							
Method: EP	A 525.2			1	Instr: GCMS16	;			
Batch ID:	W1E0023	Preparation: EPA 525.2/SPE		47611	Prepared: 05/	03/21 08:27			Analyst: rmr
Simazine			ND	W (n)	0.10	ug/l	1	05/07/21	U-01
Terbacil			ND		2.0	ug/l	1	05/07/21	U-01
Thiobence	arb		ND.		0.10	ug/l	1	05/07/21	U-01
Trifluralin			ND	(Y	0.10	ug/l	1	05/07/21	U-01
Trithion			ND	₩ .	0.10	ug/l	1	05/07/21	U-01
Surrogate(s)									
1,3-Dimel	thyl-2-nitrobenzene		104%	Conc: 5.19	70-130			05/07/21	U-01

89% Conc: 4.44

123% Conc: 6.13

50-120

70-130



09142

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**FINAL REPORT** 

APPL, Inc.

1D27023

908 N. Temperance Avenue Clovis, CA 93611 Project Number: 95917

Reported:

05/17/2021 15:09

Project Manager: Libby Cheeseborough

Sample Results (Continued) Sampled: 04/21/21 9:45 by Client BA31079, Alias: ERH1356 Sample: 1D27023-02 (Water) MRL Units Dil Analyzed Qualifier Analyte Semivolatile Organic Compounds by GC/MS Instr: GCMS16 Method: EPA 525.2 Prepared: 05/03/21 08:27 Analyst: rmr Batch ID: W1E0023 Preparation: EPA 525.2/SPE 2.0 ua/l 05/07/21 U-01 2,4-Dinitrotoluene 2.0 05/07/21 U-01 ND 2,6-Dinitrotoluene ug/l 0.10 05/07/21 U-01 ua/l 4,4"-DDD ND 05/07/21 U-01 ND 0.20 ug/l 4.4'-DDE ND 0.10 ug/l 05/07/21 U-01 4,4'-DDT ND 0.50 05/07/21 U-01 ug/l Acenaphthene 0.50 05/07/21 U-01 ND ug/l Acenaphthylene 05/07/21 U-01 ND 0.10 ug/l Acetochlor 05/07/21 U-01 ND 0.10 ug/l Alachlor 05/07/21 U-01 ND 0.10 Aldrin ug/l 05/07/21 U-01 0.10 alpha-BHC ND ug/l U-01 05/07/21 ND 0.10 ug/l 1 alpha-Chlordane NĐ 0.50 05/07/21 U-01 ug/l Anthracene ND 0.10 ug/l 05/07/21 U-01 Atrazine 0.50 05/07/21 U-01 ND ug/l Benzo (a) anthracene 0.10 ug/l 05/07/21 U-01 ND Benzo (a) pyrene 05/07/21 U-01 ND 0.50 ua/l Benzo (b) fluoranthene 0.50 05/07/21 U-01 ND uo/l Benzo (g,h,i) perylene U-01 0,50 05/07/21 ND ug/l Benzo (k) fluoranthene ND 0.20 ug/l 05/07/21 U-01 bets-BHC 05/07/21 U-01 ND ug/l Bis(2-ethylhexyl)adipate ND 3.0 ug/l 05/07/21 U-01 Bis(2-ethylhexyl)phthalate 05/07/21 U-01 0.50 ug/l ND **Bromacil** 0.10 05/07/21 U-01 ug/l Butachlor ND 05/07/21 U-01 ND 2.0 Butyl benzyl phthalate ug/l 05/07/21 U-01 0.10 ND ug/l Caffeine ΝĐ 1.0 ug/l 05/07/21 BS-03, U-01 Captan 05/07/21 ND 0.10 U-01 Chlorpropham ug/l 0.50 05/07/21 U-01 ND ug/l Chrysene 05/07/21 U-01 0.10 ug/l ND Cyanazine 0.10 05/07/21 U-01 ND ug/l delta-8HC (C) 0:10 05/07/21 U-01 ND ug/l Diazinon 05/07/21 U-01 0.50 ug/l Dibenzo (a,h) anthracene ND 05/07/21 U-01 ND 0.20 ug/l Dieldrin 05/07/21 ND 2.0 ug/l U-01 Diethyl phthalate



FINAL REPORT

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611 Project Number: 95917

Reported:

05/17/2021 15:09

93611 Project Manager: Libby Cheeseborough

Sample:	BA31079, Alias: ERH1356					Sa	impled: 04/21/21	9:45 by Clien
	1D27023-02 (Water)							(Continued
Analyte			Result	MRL	Units	Dil	Analyzed	Qualifie
	Organic Compounds by GC/MS (C	ontinued)						
Viethod: EP/	X 525.2			Instr: GCMS16				
Batch ID:	W1E0023	Preparation: EPA 525.2/SPE		Prepared: 05/0	3/21 08:27			Analyst: m
Dimethoat	e e		ND WJ (	n) 0.20	ug/l	1	05/07/21	U-0
Dimethyl p	ohthalate		ND	2.0	ug/l	1	05/07/21	U-0
Di-n-butyl	phthalate		- ND	2.0	ug/l	1	05/07/21	U-0
Di-n-octyl	phthalate		ND	(C) 0.50	ug/l	1	05/07/21	U-C
Diphenam	iid		ND	0.10	ug/l	1	05/07/21	U-C
Disulfoton			ND	0.10	ug/l	1	05/07/21	U-C
Endosulfa	n ł		ND	(V) 1.0	ug/l	1	05/07/21	U-0
Endosulfa	n II		— ND	0.20	ug/l	1	05/07/21	U-C
Endosulfa	n sulfate		ND	0.20	ug/l	1	05/07/21	U-C
Endrin			ND	(C) 0.20 (V	/ ug/l	1	05/07/21	U-C
Endrin ald	ehyde		ND	0.20	ug/l	1	05/07/21	U-0
Endrin kel	tone		ND	<b>√</b> 0.10	ug/l	1	05/07/21	U-0
EPTC			ND	0.10	ug/l	1	05/07/21	U-0
Ethion			ND	0.10	ug/l	1	05/07/21	U-
Fluoranth	ene		ND	0.50	ug/l	1	05/07/21	U-
Fluorene			ND	0,50	ug/l	1	05/07/21	U-
gamma-B	HC (Lindane)		ND	(1) 0.10	ug/l	1	05/07/21	U-l
gamma-C			ND	0.10	ug/l	1	05/07/21	U-I
Heptachic			ND	0.10	ug/l	1	05/07/21	U-l
-	or epoxide		ND	0.10	ug/l	1	05/07/21	U-
•	robenzene		≅ ND	0.10	ug/l	1	05/07/21	U-
	rocyclopentadiene		ND	1.0	ug/l	1	05/07/21	U-
	,2,3-cd) pyrene		ND	0.50	ug/l	1	05/07/21	U-
Methoxyo			ND		V ) ug/l	1	05/07/21	U-i
Metolachi			ND	0.10	ug/l	1	05/07/21	U-
Metribuzi			ND	0.10	ug/l	1	05/07/21	U-
Molinate	!		ND	0.10	ug/l	1	05/07/21	U-
Naphthali			ND	0.50	ug/l	1	05/07/21	U-
-			ND	0.10	ug/i	1	05/07/21	U-
	pronitrobenzene (PCNB)		ND	(1) 1.0	ug/l	1	05/07/21	BS-03, U-
	prophenol		ND	0.50	ug/l	1	05/07/21	U-
Phenanth			= ND	0.10	ug/l	1	05/07/21	U-
Prometor			ND	( 0) 0.10	ug/l	1	05/07/21	U-
Prometry				0.10	ug/l	1	05/07/21	U-
Propachic	or — — — —		ND	0.50		1	05/07/21	U-(
Pyrene			ND 🔻	<b>∀</b> 0.50	ug/l	'	03/01/21	0-1



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611

Project Number: 95917

Project Manager: Libby Cheeseborough

Reported:

05/17/2021 15:09

Sample Results

(Continued)

AND DESCRIPTION OF THE PERSON		the state of the s							
Sample:	BA31079, Alias: ERH1356						Sa	ampled: 04/21/2	1 9:45 by Client
	1D27023-02 (Water)								(Continued)
Analyte			Result		MRL	Units	Dil	Analyzed	Qualifier
Semivolatile (	Organic Compounds by GC/MS (	Continued)							
Method: EP/	A 525.2			te	nstr: GCMS16				
Batch ID:	W1E0023	Preparation: EPA 525.2/SPE		and Control	repared: 05/0	3/21 08:27			Analyst: rmr
Simazine			ND	(4) (m)	0.10	ug/l	1	05/07/21	U-01
Terbacil			МĐ		2.0	ug/l	1	05/07/21	U-01
Thiobence	arb ——————		ND		0.10	ug/i	1	05/07/21	U-01
Trifluralin			ND	(v	0.10	ug/l	1	05/07/21	U-01
Trithion			ND	VV	0.10	ug/l	1	05/07/21	U-01
Surrogate(s)									
1,3-Dimet	hyl-2-nitrobenzene		105%	Conc: 5.24	70-130			05/07/21	U-01
Perylene-	d12		93%	Conc: 4.67	50-120			05/07/21	U-01
Triphenyl	phosphate		128%	Conc: 6.41	70-130			05/07/21	U-01

LOTHY

DG #abora ETH	t: 50747C2a VALIDATIO  #: 95917/1D27023  atory: APPL, Inc./Weck Laboratories,	St <u>c.</u> d 525.2)	age 2B				Date: 7/6 Page: 1 of Reviewer:
alluai	Validation Area				Comme	nts	
ı.	Sample receipt/Technical holding times	A ISW					
II.	GC/MS Instrument performance check	Δ					
III.	Initial calibration/ICV	A 15W	% 250	£ 30.	12	30/50	50,
IV.	Continuing calibration ending	SW			CW &	30/50	
V.	Laboratory Blanks	Δ					
VI.	Field blanks	N					
VII.	Surrogate spikes	Δ					
VIII.	Matrix spike/Matrix spike duplicates	2	U>				
IX.	Laboratory control samples	ಶಬ	LOS				
X.	Field duplicates	N					
XI.	Internal standards	Δ					
XII.	Target analyte quantitation	N					
XIII.	Target analyte identification	N				<u>.</u>	
XIV.	System performance	N				<u>.</u>	
XV.	Overall assessment of data	4					
ote:	N = Not provided/applicable R = F	No compounds tinsate Field blank	detected	D = Dup TB = Tri EB = Eq	licate p blank uipment blank	SB=Soul OTHER:	
	Client ID			Lab ID		Matrix	Date
$\neg \uparrow$		023-0	1	BA31078		Water	04/21/21
$\neg$		023 - 0		BA31079		Water	04/21/21

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(15 0022 - 81K)								
1150023-011-1				1				
	<del>                                     </del>							
	11E0023-BLK)	11E0023-BLK)	11E0023-BLK)	11E0023-BLK)	11E0023-BLK)	11E0023-BLK)	(IE 0023-BLK)	(IE 0023-BLK)

# **VALIDATION FINDINGS WORKSHEET**

# METHOD: GC/MS SVOA

	THE PERSON NAMED IN COLUMN NAM			
A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG, C30-Hopane	11. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o"-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ, Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK, Atrazine	M1. 1.4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1, 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Anline	PPPP, 3-Methylphenol	R1, 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethy/amine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO, 4-Nitroaniline	QQQ, Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	WWW. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4 Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethyinaphithalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-buty/phthalate	222. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopymolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	12. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC#: 50747C2~

### VALIDATION FINDINGS WORKSHEET Technical Holding Times

Page:_	/ of	
Reviewer:		F1

All circled dates have exceeded the technical holding times.

YN N/A Were all cooler temperatures within validation criteria?

METHOD : GC/			25.2)		<u> </u>	(h)	<u>}                                    </u>
Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Quali
AII	W		4 21 21	5 3 21	5/7/21	12	1-/4
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### **TECHNICAL HOLDING TIME CRITERIA**

Water: Extracted within 7 days, analyzed within 40 days. Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 50747C20

# **VALIDATION FINDINGS WORKSHEET** Initial Calibration Verification

Page: /of\_\_\_\_ Reviewer: FT\_\_\_\_

METHOD: GC/MS SVOA (EPA Method 525.2)

Phase see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

VAN N/A

Was an initial calibration verification standard analyzed after each ICAL for each instrument?

YN N/A

Were all %D within the validation criteria of ≤30 %D?

공기	Y N/A N/A	Was an initial calibration verification standard Were all %D within the validation criteria of <30	erification standard analyzed ation criteria of ≤30 %D ?	analyzed after each ICAL for each instrument? %D ?	instrument?	(a)
*	Date	Standard ID	Compound	Finding %D (Limit: <30.0%)	Associated Samples	Qualifications
	12/21/21	164	33	40.27	A11	1 t det/us/A N
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LDC# 50747c20

# **VALIDATION FINDINGS WORKSHEET** Continuing Calibration

Page: / of 냡 Reviewer:\_

METHOD: GC/MS SVOA (EPA Method 525.2)

X N N X X

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Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ? Were all %D and RRFs within the validation criteria of ≤30 %D and ≥0.05 RRF?

Stan CC/7	Standard ID	Compound Diazinan Matobachler	Finding %D (Limit: <30.0%) 42 28	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
ככתו	4	Metribuzin Endrin	94			J- /43/6 W
	Chical desired	MA-therychior	7) 22 74		.[[ ]	11 dut / 41/ A
	S. S. S.	ree pad		,	ī,	Cw Low
		<del>+</del> <del>-</del>	7		<b>→</b>	<b>&gt;</b>
\\ \frac{1}{2}	ccv7- closing	Acetochlor Diazinon	24 4.50	(0	- I <del>-</del>	11 am /43/2 M
		Metalachlor Metribuzin	د د			
		prometryn	X		7	*
Te: Ago	Bis (2 - ethy I he zug	Adipa[				
hough ults we ected	the percent differ ere qualified as es	Although the percent difference was grossly exceeded (≥50%) for several analytes, using profeesional judgment, associated results were qualified as estimated instead of "X" since the percent difference were biased high and the associated results were not detected	(≥50%) for several analy the percent difference we	rtes, using profeesional jude are biased high and the ass	yment, associated ociated results were not	

র

A. 0

LDC# 50747ela-

# VALIDATION FINDINGS WORKSHEET **Laboratory Control Samples (LCS)**

Reviewer: FT

METHOD: GC/MS SVOA (EPA Method 525.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a LCS required?

Y N N/A

Were the LCS/LCSD percent recoveries (%R) and the relative nercent differences (RDD) within

Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

*	OI OSOTOSOT	Compound	3	LCS %R (Limits)		LCSD %R (Limits)	SD imits)	$\square$	RPD (Limits)		Associated Samples	Qualifications
	WIE 0023-165	TT	22	(502/206)	ğ			Ļ	J	$\overline{}$	A 11	J-/41/P NO
		Captan	1.09	961-oL)	90	)	(		)	^	1	17/VP
		-		)	<u> </u>	)			)	^		/
				)	^	)	(	_	)	^		
	7	.do√	Pestrades		went	not (	not ( spilise	-9	in the	<i>(</i> ,	114	JH 45/4/1
		$ \mathcal{N} $	Les mix	Canaly 210	7290	) for	for ( this ) \$0G	90	<u></u>	^		
		Pesticides +	des +			o roxy do an abdione	o pendi	bdio	ME, (	^		
					_	nlor, t	17.1	14 14 14	Frithuralin	^		
					^	_			)			
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# Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Red Hill Bulk Storage Facility, CTO 18F0126

**LDC Report Date:** September 14, 2021

Parameters: Semivolatiles

Validation Level: Stage 2B & 4

**Laboratory:** APPL, Inc./Weck Laboratories, Inc.

Sample Delivery Group (SDG): 96222/1E21031

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
ERH1359	BA32813/1E21031-01	Water	05/19/21
ERH1360**	BA32814/1E21031-02**	Water	05/19/21
ERH1361	BA32815/1E21031-03	Water	05/19/21

<sup>\*\*</sup>Indicates sample underwent Stage 4 validation

#### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Work Plan/Scope of Work, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 02, January 2017), the Sampling and Analysis Plan, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 01, April 2017), the Sampling and Analysis Plan, Addendum 01, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, September 2017), the Sampling and Analysis Plan, Addendum 03, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, June 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), the DoD General Validation Guidelines (November 2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Semivolatile Organic Compounds (SVOCs) by Environmental Protection Agency (EPA) Method 525.2

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Stage 4 data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was not detected and the associated numerical value is approximate.
- X (Exclusion of data recommended): The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

### Qualification Code Reference

- a ICP Serial Dilution %D was not within control limits.
- b Presumed contamination from preparation (method blank).
- c Calibration %RSD, r, r<sup>2</sup>, %D or %R was noncompliant.
- d The analysis with this flag should not be used because another more technically sound analysis is available.
- e MS/MSD or Duplicate RPD was high.
- f Presumed contamination from FB or ER.
- g ICP ICS results were unsatisfactory.
- h Holding times were exceeded.
- i Internal standard performance was unsatisfactory.
- k Estimated Maximum Possible Concentration (HRGC/HRMS only)
- I LCS/LCSD %R was not within control limits.
- m Result exceeded the calibration range.
- o Cooler temperature or temperature blank was noncompliant and/or sample custody problems.
- p RPD between two columns was high (GC only).
- q MS/MSD recovery was not within control limits.
- s Surrogate recovery was not within control limits.
- t Presumed contamination from trip blank.
- v Unusual problems found with the data not defined elsewhere. Description of the problem can be found in the validation report.
- w LCS/LCSD RPD was high.
- y Chemical recovery was not within control limits (Radiochemistry only).

### I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
All samples in SDG 96222/1E21031	All analytes	13	7	UJ (all non-detects)	Р

### II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

### III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For analytes where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 30.0%.

In the case where the laboratory used a calibration curve to evaluate the analytes, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
03/13/21	2,6-Dinitrotoluene	40.27	All samples in SDG 96222/1E21031	UJ (all non-detects)	А

### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
06/09/21 (1555)	Di-n-octylphthalate Terbacil	33 33	All samples in SDG 96222/1E21031	UJ (all non-detects) UJ (all non-detects)	А
06/09/21 (1622)	Metribuzin	36	All samples in SDG 96222/1E21031	UJ (all non-detects)	А

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all analytes.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

### V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

#### VI. Field Blanks

No field blanks were identified in this SDG.

### VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

### VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

### IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method with the following exceptions:

LCS ID	Analyte	Finding	Associated Samples	Flag	A or P
W1F20002-LCS/LCSD	4,4'-DDD 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC alpha-Chlordane beta-BHC delta-BHC Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC gamma-Chlordane Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Methoxychlor Trifluralin	The laboratory indicated that these analytes were not spiked in the LCS mix analyzed for this SDG.	All samples in SDG 96222/1E21031	UJ (all non-detects)	P

Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

### X. Field Duplicates

No field duplicates were identified in this SDG.

### XI. Internal Standards

All internal standard areas and retention times were within QC limits.

### XII. Target Analyte Quantitation

All target analyte quantitations met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

### XIII. Target Analyte Identification

All target analyte identifications met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

### **XIV. System Performance**

The system performance was acceptable for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

### XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to technical holding time, ICV %D, continuing calibration %D, and LCS not spiked, data were qualified as estimated in three samples.

### Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Data Qualification Summary - SDG 96222/1E21031

Sample	Analyte	Flag	A or P	Reason (Code)
ERH1359 ERH1360** ERH1361	All analytes	UJ (all non-detects)	Р	Technical holding time (h)
ERH1359 ERH1360** ERH1361	2,6-Dinitrotoluene	UJ (all non-detects)	А	Initial calibration verification (%D) (c)
ERH1359 ERH1360** ERH1361	Di-n-octylphthalate Terbacil Metribuzin	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	А	Continuing calibration (%D) (c)
ERH1359 ERH1360** ERH1361	4,4'-DDD 4,4'-DDE 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC alpha-Chlordane beta-BHC Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC gamma-Chlordane Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Methoxychlor Trifluralin	UJ (all non-detects)	P	Laboratory control samples (not spiked) (v)

Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 96222/1E21031

No Sample Data Qualified in this SDG

Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Field Blank Data Qualification Summary - SDG 96222/1E21031

No Sample Data Qualified in this SDG



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611

Project Number: 96222

Project Manager: Libby Cheeseborough

Reported:

06/15/2021 14:28

Sample Results

ample: BA32813, Alias: ERH1359				2	ampled: 05/19/2	1 8:05 by Clien
1E21031-01 (Water)						
Analyte	Result	MRL	Units	Dii	Analyzed	Qualifie
nivolatile Organic Compounds by GC/MS						
lethod: EPA 525.2		Instr: GCMS16	;			
Batch ID: W1F0002 Preparation: EPA 5	525.2/SPE	Prepared: 06/6	01/21 08:28			Analyst: ra
2,4-Dinitrotoluene	ND 45(	- C - 3 39	ug/l	1	06/09/21	U-0
2,6-Dinitrotoluene	ND	2.0	ug/l	1	06/09/21	U-0
4,4'-DDD	ND	0,10	ug/l	1	06/09/21	U-0
4,4'-DDE	ND	0.20	ug/l	1	06/09/21	U-0
4,4'-DDT	ND ND	0.10	ug/l	1	06/09/21	U-C
Acenaphthene	ND	0.50	ug/l	1	06/09/21	U-0
Acenaphthylene	ND	0.50	ug/l	1	06/09/21	U-0
Acetochlor	ND	0.10	ug/l	1	06/09/21	U-0
Alachlor	ND	0.10	ug/l	1	06/09/21	U-0
Aldrin	ND	(V) 0.10	ug/l	1	06/09/21	U-(
alpha-BHC	ДИ	0.10	ug/l	1	06/09/21	Ų-(
alpha-Chlordane	ND	↓ 0.10	ug/l	1	06/09/21	U-(
Anthracene	_ ND	0.50	ug/l	1	06/09/21	U-(
Atrazine	ND	0.10	ug/l	1	06/09/21	U-(
Benzo (a) anthracene	ND	0.50	ug/l	1	06/09/21	U-C
Benzo (a) pyrene	ND	0.10	ug/l	1	06/09/21	U-C
Benzo (b) fluoranthene	= ND	0.50	ug/l	1	06/09/21	U-0
Benzo (g,h,i) perylene	ND	0.50	ug/l	1	06/09/21	U-6
Benzo (k) fluoranthene	ND	0.50	ug/l	1	06/09/21	Ų-(
beta-BHC	ND	(V) <sub>0.20</sub>	ug/t	1	06/09/21	U-(
Bis(2-ethylhexyl)adipate	ND	5.0	ug/l	1	06/09/21	U-C
Bis(2-ethylhexyl)phthalate	ND ND	3.0	ug/l	1	06/09/21	U-C
Bromacil	ND	0.50	ug/l	1	06/09/21	U-C
Butachlor	ND	0.10	ug/l	1	06/09/21	U-C
Butyl benzyl phthalate	ОИ	2.0	ug/l	1	06/09/21	U-C
Caffeine	= ND	0.10	ug/l	1	06/09/21	U-(
Captan	ND	1.0	ug/	1	06/09/21	U-C
Chlorpropham	ND	0.10	ug/l	1	06/09/21	U-C
Chrysene	ND	0.50	ug/l	1	06/09/21	U-C
Cyanazine	ND	0.10	ug/l	1	06/09/21	U-C
delta-BHC	ND	(V) 0.10	ug∕l	1	06/09/21	U-(
Diazinon	ND	0.10	ug/l	1	06/09/21	U-l
Dibenzo (a,h) anthracene	ND	0.50	ug/l	1	06/09/21	U-C
Dieldrin	ND	V (V)0.20	ug/l	1	06/09/21	U-0
		, ( )	- 0	-		



**FINAL REPORT** 

APPL, Inc.

Sample:

1E21031

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Project Manager: Libby Cheeseborough

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Sample	Results
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BA32813, Alias: ERH1359

(Continued)

Sampled: 05/19/21 8:05 by Client

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifler
emivolatile Organic Compounds by GC/	MS (Continued)		SCHOOL STREET				
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F0002	Preparation: EPA \$25.2/SPE	Je CI	Prepared: 06/0	1/21 08:28			Analyst: rmr
Diethyl phthalate		ND UJ (		ug/l	1	06/09/21	U-01
Dimethoate		ND	0.20	ug/l	1	06/09/21	U-01
Dimethyl phthalate		ND	2.0	ug/l	1	06/09/21	U-01
Di-n-butyl phthalate		ND	2,0	ug/l	1	06/09/21	U-01
Di-n-octyl phthalate		- ND	(C) 0.50	ug/l	1	06/09/21	U-01
Diphenamid		ND	0.10	ug/l	1	06/09/21	U-01
Disulfoton		ND	0.10	ug/l	1	06/09/21	U-01
Endosulfan I		ND	1.0	ug/l	1	06/09/21	U-01
Endosulfan II		- ND	0.20	ug/l	1	06/09/21	U-01
Endosulfan sulfate		ND	0.20	ug/l	1	06/09/21	U-01
Endrin		ND	0.20	ug/l	1	06/09/21	U-01
Endrin aldehyde		ND	0.20	ug/l	1	06/09/21	U-01
Endrin ketone		ND	<b>V</b> 0.10	ug/l	1	06/09/21	U-01
EPTC		ND	0.10	ug/l	1	06/09/21	Ų-01
Ethion		ND	0.10	ug/l	1	06/09/21	U-01
Fluoranthene		ND	0.50	ug/l	1	06/09/21	Ų-01
Fluorene		ND	0.50	ug/l	1	06/09/21	U-01
gamma-BHC (Lindane)		ND	(V) 0.10	ug/l	1	06/09/21	U-01
gamma-Chlordane		ND	0.10	ug/l	1	06/09/21	U-01
Heptachlor		ND	0.10	ug/l	1	06/09/21	U-01
Heptachlor epoxide		ND	0.10	ug/l	1	06/09/21	U-01
Hexachlorobenzene		- ND	0.10	ug/l	1	06/09/21	U-01
Hexachlorocyclopentadiene		ND	1.0	ug/l	1	06/09/21	U-01
Indeno (1,2,3-cd) pyrene		ND	0.50	ug/l	1	06/09/21	U-01
Methoxychlor		ВN	( ) 0.20	ugA	1	06/09/21	U-01
Metolachlor		ND	0.10	ug/l	1	06/09/21	U-01
Metribuzin		ND ND	(C) 0.10	ug/l	1	06/09/21	U-01
Molinate		ND	0.10	ug/l	1	06/09/21	U-01
Naphthalene		ND	0.50	ug/l	1	06/09/21	U-01
Pentachloronitrobenzene (PCNB)		ND	0.10	ug/l	1	06/09/21	U-01
Pentachlorophenol		ND	1.0	ug/l	1	06/09/21	U-01
Phenanthrene		ND	0.50	ug/l	1	06/09/21	U-01
Prometon		ND	0.10	ug/l	1	06/09/21	U-01
Prometryn		ND 🖠	0.10	ug/l	1	06/09/21	U-01



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APPL, Inc.

Project Number: 96222

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Project Manager: Libby Cheeseborough

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### Sample Results

(Continued)

Sample:	BA32813, Alias: ERH1359						S	ampled: 05/19/2	21 8:05 by Client
	1E21031-01 (Water)								(Continued)
Comments: P	re-Chiorination								
Analyte			Result		MRL	Units	Dil	Analyzed	Qualifier
emivolatile (	Organic Compounds by GC/MS (	Continued)							
Method: EP	A 525.2				Instr: GCMS16				
Batch ID:	W1F0002	Preparation: EPA 525.2/SPE		.1 .0( ) .	Prepared: 06/0	01/21 08:28			Analyst: rmr
Propachic	r		ND	WJ (h)(	0.20	ug/l	1	06/09/21	U-01
Pyrene			ND		0.50	ug/l	1	06/09/21	U-01
Simazine			ND		0.10	ug/l	1	06/09/21	U-01
Terbacil –			ND.	+ $+$ $+$ $+$	2.0	ug/l	1	06/09/21	U-01
Thiobence	arb		ND		0.10	ug/l	1	06/09/21	U-01
Trifluralin			ND	I Cy	0.10	ug/l	1	06/09/21	U-01
Trithion			ND	<b>₩</b>	0.10	ug/l	1	06/09/21	U-01
Surragate(s)									
1,3-Dimel	hyl-2-nitrobenzene		102%	Conc: 5.00	70-130			06/09/21	U-01
Perylene-	d12		101%	Conc: 4.98	50-120			06/09/21	U-01
Triphenyl	phosphate		117%	Conc: 5.74	70-130			06/09/21	U-01



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611 Project Number: 96222

Reported:

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Sample Results

Project Manager: Libby Cheeseborough

(Continued)

Sample: BA32814, Alias: ERH1360 1E21031-02 (Water) Comments: Pre-Chlorination				Sa	ampled: 05/19/2	1 8:55 by Client
Analyte	Result	MRL	Units	Dij	Analyzed	Qualifler
emivolatile Organic Compounds by GC/MS						
Method: EPA 525.2		Instr: GCMS16				
Batch ID: W1F0002 Preparation: EPA 525.2/SPE		Prepared: 06/0	71/21 08:28			Analyst: rmr
2,4-Dinitrotoluene	ND U	(b) (c) 2.0	ug/l	1	06/10/21	U-01
2,6-Dinitrotoluene	ND	2.0	ug/l	1	06/10/21	U-01
4,4´-DDD	ND	V J0.10	ug/l	1	06/10/21	U-01
4,4'-DDE	ND	0.20	ug/l	1	06/10/21	U-01
4,4'-DDT	MĐ	<b>⋄</b> 0.10	ug/l	1	06/10/21	U-01
Acenaphthene	ND	0.50	ug/l	1	06/10/21	U-01
Acenaphthylene	ND	0.50	ug/l	1	06/10/21	U-01
Acetochlor	ND	0.10	ug/i	1	06/10/21	U-01
Alachlor	ND	0.10	ug/l	1	06/10/21	U-01
Aldrin	ND	0.10	ug/l	1	06/10/21	U-01
alpha-BHC	ND	(V) 0.10	ug/l	1	06/10/21	U-01
alpha-Chlordane	ND	0.10	ug/l	1	06/10/21	U-01
Anthracene	NĐ	Z 0.50~	ug/l	1	06/10/21	U-01
Atrazine	ND	0.10	ug/l	1	06/10/21	U-01
Benzo (a) anthracene	ND	0.50	ug/l	1	06/10/21	U-01
Benzo (a) pyrene	ND	0.10	ug/l	1	06/10/21	U-01
Benzo (b) fluoranthene	ND	0.50	ug/l	1	06/10/21	U-01
Benzo (g,h,i) perylene	ND	0.50	ug/l	1	06/10/21	U-01
Benzo (k) fluoranthene	ND	0.50	ug/l	1	06/10/21	U-01
beta-BHC	ND	(V) 0.20	ug/l	1	06/10/21	U-01
Bis(2-ethylhexyl)adlpate	ND	5.0	ug/i	1	06/10/21	U-01
Bis(2-ethylhexyl)phthalate	— ND	3.0	ug/l	1	06/10/21	U-01
Bromacil	ND	0.50	ug/l	1	06/10/21	U-01
Butachlor	ND	0.10	ug/l	1	06/10/21	U-01
Butyl benzyl phthalate	ND	2.0	ug/l	1	06/10/21	U-01
Caffeine	= ≧ ND	0.10	ug/l	1	06/10/21	U-01
Captan	ND	1.0	ug/l	1	06/10/21	U-01
Chlorpropham	ND	0.10	ug/l	1	06/10/21	U-01
Chrysene	ND	0.50	ug/l	1	06/10/21	U-01
Cyanazine	ND	0.10	ug/l	1	06/10/21	U-01
delta-BHC	- ND	(V) <sub>0.10</sub>	ug/l	1	06/10/21	U-01
Diazinon	ND	0.10	ug/l	1	06/10/21	U-01
Dibenzo (a,h) anthracene	ND	0.50	ug/l	1	06/10/21	U-01
Dieldrin	ND 🖞	V (V) 0.20	ug/l	1	06/10/21	U-01
E21031				112	91421	Page 6 of



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APPL, Inc.

Sample:

Project Number: 96222

Reported:

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

06/15/2021 14:28



BA32814, Alias: ERH1360

(Continued)

Sampled: 05/19/21 8:55 by Client

Analyte		Result		MRL	Units	DII	Analyzed	Qualifie
nivolatile Organic Compounds by GC	C/MS (Continued)					South and the second		
ethod: EPA 525.2			In	str: GCMS16				
Batch ID: W1F0002	Preparation: EPA 525.2/SPE		CC 1 PI	repared: 06/0				Analyst: rm
Diethyl phthalate		ND 🔱	f(h)	2,0	ug/l	1	06/10/21	U-0
Dimethoate		ND		0.20	ug/l	1	06/10/21	U-0
Dimethyl phthalate		ND		2.0	ug/l	1	06/10/21	U-0
Di-n-butyl phthalate		ND		2.0	ug/i	1	06/10/21	U-0
Di-n-octyl phthalate		ND	(C)	0.50	ug/l	1	06/10/21	U-0
Diphenamid		ND		0.10	ug/l	1	06/10/21	U-0
Disulfoton		ND		0.10	ug/l	1	06/10/21	U-0
Endosulfan I		ND		1.0	ug/l	1	06/10/21	U-0
Endosulfan II		ND		0.20	ug/l	1	06/10/21	U-0
Endosulfan sulfate		ND		0.20	ug/l	1	06/10/21	U-0
Endrin		ND		0.20	ug/l	1	06/10/21	U-0
Endrin aldehyde		ND		0.20	ug/i	1	06/10/21	U-C
Endrin ketone		ND ND	1	0.10	ug/l	1	06/10/21	U-C
EPTC		ND		0.10	ug/l	1	06/10/21	U-C
Ethlon		ND		0.10	ug/l	1	06/10/21	U-C
Fluoranthene		ND		0.50	ug/l	1	06/10/21	U-0
Fluorene		ND		0.50	ug/l	1	06/10/21	U-C
gamma-BHC (Lindane)		ND	(V)	0.10	ug/l	1	06/10/21	U-C
gamma-Chlordane		ND		0.10	ug/l	1	06/10/21	U-(
Heptachlor		ND		0.10	ug/l	1	06/10/21	Ų-C
Heptachlor epoxide		ND		0.10	ug/l	1	06/10/21	U-C
Hexachlorobenzene		ND		0.10	ug/i	1	06/10/21	U-C
Hexachlorocyclopentadiene		ND	1	1.0	ug/l	1	06/10/21	U-C
Indeno (1,2,3-cd) pyrene		ND		0.50	ug/l	1	06/10/21	U-C
Methoxychlor		ND	- (v	0.20	ug/l	1	06/10/21	U-C
Metolachlor		MD		0.10	ug/l	1	06/10/21	U-C
Metribuzin		ND	(C	0.10	ug/l	1	06/10/21	U-C
Molinate		ND		0.10	ug/l	1	06/10/21	U-C
Naphthalene		ND		0.50	ug/l	1	06/10/21	U-C
Pentachloronitrobenzene (PCNB)		ND		0.10	ug/l	1	06/10/21	U-C
Pentachlorophenol		ND		1.0	ug/l	1	06/10/21	U-C
Phenanthrene		ND		0.50	ug/l	1	06/10/21	U-C
Prometon		ND		0.10	ug/l	1	06/10/21	U-C
Prometryn		ND	/ 1/	0.10	ug/l	1	06/10/21	U-6



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611

Project Number: 96222

Reported:

06/15/2021 14:28

Project Manager: Libby Cheeseborough

Sample Results
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(Continued)

Sample: BA32814, Alias: ERH1360						S	ampled: 05/19/2	1 8:55 by Client
1E21031-02 (Water) Comments: Pre-Chlorination								(Continued)
Analyte		Result		MRL	Units	Dil	Analyzed	Qualifler
Semivolatile Organic Compounds by GC/MS (	Continued)							
Method: EPA 525.2			10	nstr: GCMS16				
Batch ID: W1F0002	Preparation: EPA 525.2/SPE		J- 0 12	repared: 06/0	01/21 08:28			Analyst: rmr
Propachlor		ND	13 (V)C	V 0.20	ug/l	1	06/10/21	U-01
Pyrene		ND		0.50	ug/l	1	06/10/21	U-01
Simazine		ND		0.10	ug/l	1	06/10/21	U-01
Terbacil		ND	(c)	2.0	ug/l	1	06/10/21	U-01
Thiobencarb		- ND		0.10	ug/l	1	06/10/21	U-01
Trifluralin		ND	(V)	0.10	ug/l	1	06/10/21	U-01
Trithion		QИ	V V	0.10	ug/l	1	06/10/21	U-01
Surrogate(s)								
1,3-Dimethyl-2-nitrobenzene		100%	Conc: 5.12	70-130			06/10/21	U-01
Perylene-d12		99%	Conc: 5.11	50-120			06/10/21	U-01
Triphenyl phosphate		118%	Conc: 6.06	70-130			06/10/21	U-01



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue

Clovis, CA 93611

Project Number: 96222

Project Manager: Libby Cheeseborough

Reported:

06/15/2021 14:28

(Continued)



BA32815, Alias: ERH1361 Sampled: 05/19/21 9:10 by Client Sample: 1E21031-03 (Water) Comments: Field Blank Units Analyzed Qualifier Semivolatile Organic Compounds by GC/MS Instr: GCMS16 Method: EPA 525.2 Prepared: 06/01/21 08:28 Batch ID: W1F0002 Preparation: EPA 525.2/SPE Analyst: rmr 2,4-Dinitrotoluene ug/l 06/10/21 U-01 2.0 2.6-Dinitrotoluene ND 2.0 ug/l 06/10/21 U-01 0.10 ug/l 06/10/21 U-01 4,4'-DDD ND 4,4'-DDE ND 0.20 ug/l 06/10/21 U-01 4,4'-DDT ND 0.10 ug/l 06/10/21 U-01 ND 0.50 06/10/21 U-01 Acenaphthene ug/l ND 0.50 06/10/21 U-01 Acenaphthylene ug/l 06/10/21 Acetochlor ND 0.10 ug/l U-01 0.10 ug/l 06/10/21 U-01 Alachtor ND 0.10 ug/l 06/10/21 U-01 Aldrin ND 0.10 06/10/21 ND U-01 alpha-BHC ug/l 0.10 06/10/21 alpha-Chlordane ND ug/l U-01 Anthracene ND ug/l 06/10/21 U-01 ND 0.10 06/10/21 U-01 Atrazine ug/l Benzo (a) anthracene ND 0.50 ug/l 06/10/21 U-01 06/10/21 ND 0.10 U-01 Benzo (a) pyrene ua/l 0.50 06/10/21 U-01 Benzo (b) fluoranthene ND ug/l 06/10/21 U-01 ND 0.50 ug/l Benzo (g,h,i) perylene 0.50 06/10/21 Benzo (k) fluoranthene ND ug/l U-01 0.20 06/10/21 U-01 beta-BHC ND 06/10/21 Bis(2-ethylhexyl)adlpate ND 5.0 ug/l U-01 06/10/21 U-01 Bis(2-ethylhexyl)phthalate ND 3.0 ug/l ND 0.50 ug/l 06/10/21 U-01 Bromadi 0.10 06/10/21 U-01 Butachlor ND иа/1 U-01 06/10/21 Butyl benzyl phthalate ND 2.0 ug/l 06/10/21 Caffeine ND 0.10 ug/l U-01 06/10/21 Captan ND 1.0 ug/l U-01 ND 0.10 ug/l 06/10/21 U-01 Chlorpropham Chrysene 0.50 06/10/21 U-01 ND ug/l ND 0.10 ug/l 06/10/21 U-01 Cyanazine 06/10/21 delta-BHC ND ug/l U-01 ND 0.10 06/10/21 U-01 Diazinon ug/l 0.50 06/10/21 U-01 ND ugil Dibenzo (a,h) anthracene 0.20 06/10/21 Dieldrin ND ugñ U-01 1E21031 Page 9 of 19



**FINAL REPORT** 

APPL, Inc.

Project Number: 96222

Reported:

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

06/15/2021 14:28

Sa Sa	ample Results
Sample:	8A32815, Alias: ERH1361

(Continued)

Sampled: 05/19/21 9:10 by Client

Analyte		Result		MRL	Units	Dil	Analyzed	Qualific
mivolatile Organic Compounds by GC	/MS (Continued)							
Method: EPA 525.2			Instr	: GCMS16				
Batch ID: W1F0002	Preparation: EPA 525.2/SPE	, James		ared: 06/0	11/21 08:28			Analyst: rm
Diethyl phthalate		ND V	(h)	2.0	ug/l	1	06/10/21	U-0
Dimethoate		ND	'	0.20	ug/l	1	06/10/21	Ų-0
Dimethyl phthalate		ND		2.0	ug/l	1	06/10/21	U-0
Di-n-butyl phthalate		- ND		2.0	ug/l	1	06/10/21	U-0
Di-n-octyl phthalate		- ND	(c)	0.50	ug/l	1	06/10/21	U-0
Diphenamld		ND	- 1	0.10	ug/l	1	06/10/21	U-0
Disulfoton		ND		0.10	ug/l	1	06/10/21	U-0
Endosulfan I		ND	(V)	1.0	ug/l	1	06/10/21	U-0
Endosulfan il		- ND		0.20	ug/l	1	06/10/21	U-0
Endosulfan sulfate		ND		0.20	ug/l	1	06/10/21	U-0
Endrin		ND		0.20	ug/l	1	06/10/21	Ų-C
Endrin aldehyde		ND		0.20	ug/l	1	06/10/21	U-0
Endrin ketone		ND	- ↓	0.10	ug/l	1	06/10/21	U-0
EPTC		ND	-	0.10	ug/l	1	06/10/21	U-C
Ethion		ND		0.10	ug/l	1	06/10/21	U-C
Fluoranthene		ND		0.50	ug/l	1	06/10/21	U-C
Fluorene		ND		0.50	ug/l	1	06/10/21	U-(
gamma-BHC (Lindane)		ND	(v)	0,10	ug/l	1	06/10/21	U-C
gamma-Chlordane		ND		0.10	ug/l	1	06/10/21	U-0
Heptachlor		ND		0.10	ug/l	1	06/10/21	U-0
Heptachlor epoxide		ND		0.10	ug/l	1	06/10/21	U-(
Hexachlorobenzene		ND		0.10	ug/l	1	06/10/21	U-C
Hexachlorocyclopentadlene		DI	\	1.0	ug/l	1	06/10/21	U-0
Indeno (1,2,3-cd) pyrene		ND		0.50	ug/l	1	06/10/21	U-0
Methoxychlor		ND	(v)	0.20	ug/l	1	06/10/21	Ų-C
Metolachior		ND		0.10	ug/l	1	06/10/21	U-0
Metribuzin		ND	(0)	0.10	ug/l	1	06/10/21	U-(
Molinate		ND	(0)	0.10	ug/l	1	06/10/21	U-C
Naphthalene		ND		0.50	ug/l	1	06/10/21	U-0
Pentachloronitrobenzene (PCNB)		ND		0.10	ug/l	1	06/10/21	U-C
Pentachlorophenol		ND		1.0	ug/l	1	06/10/21	U-C
Phenanthrene		ND		0.50	ug/l	1	06/10/21	U-G
Prometon		ND	1, 9	0.10	ug/l	1	06/10/21	U-6
Prometryn		ND 🗸	√V °	0.10	ug/l	1	06/10/21	U-G



FINAL REPORT

APPL, Inc.

908 N. Temperance Avenue Clovis, CA 93611 Project Number: 96222

Reported:

06/15/2021 14:28

Project Manager: Libby Cheeseborough

Sa Sa	ample Results							1000-000	(Continued)
Sample:	BA32815, Alias: ERH1361 1E21031-03 (Water)						S	ampled: 05/19/2	1 9:10 by Client (Continued)
Analyte			Result		MRL	Units	DII	Analyzed	Qualifier
-	Organic Compounds by GC/MS (	Continued)	-						
Method: EP/	A 525.2				Instr: GCMS16				
Batch ID:	W1F0002	Preparation: EPA 525.2/SPE		Jan (1)	Prepared: 06/0	1/21 08:28			Analyst: rmr
Propachio	or		ND	M2 (V)	(1)0.20	ug/l	1	06/10/21	U-01
Pyrene			ND		0.50	ug/l	1	06/10/21	U-01
Simazine			ND		0.10	ug/l	1	06/10/21	U-01
Terbacil -			ND		<b>C</b> ) 2.0	ug/l	1	06/10/21	U-01
Thiobence	arb		ND		0.10	ug/l	1	06/10/21	U-01
Trifluralin			ND		V 0.10	ug/l	1	06/10/21	U-01
Trithion			ND	$\wedge$ $\wedge$	0.10	ug/l	1	06/10/21	U-01
Surrogatess)									
1,3-Dimet	thyl-2-nitrobenzene		100%	Conc. 4.98	70-130			06/10/21	U-01
Perylene-	d12		102%	Conc: 5.08	50-120			06/10/21	U-01
Triphenyl	phosphate		113%	Conc: 5.60	70-130			06/10/21	U-01

SDG _abor	#:50747D2a VALIDATION #:_96222/1E21031 ratory: APPL, Inc./Weck Laboratories, Inc.	St	LETENESS age 2B/4	S WORKSHEET	Re 2nd Re	Date: 9/9/2 Page: of eviewer: 1		
METHOD: GC/MS Semivolatiles (EPA Method 525.2)  The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.								
	Validation Area			Comme	nts			
1.	Sample receipt/Technical holding times	D 15W						
II.	GC/MS Instrument performance check	Δ	_					
III.	Initial calibration/ICV	A-15W	% PSD L	30, c2 1CV	±30			
IV.	Continuing calibration lending CCV	Sw		30, 12 1CN	20			
v.	Laboratory Blanks	A						
VI.	Field blanks	7						
VII.	Surrogate spikes	<b>A</b>						
VIII.	Matrix spike/Matrix spike duplicates	2	O>			N		
IX.	Laboratory control samples	5V <del>X</del>	45 n					
Х.	Field duplicates	N						
XI.	Internal standards	Δ		- 1				
XII.	Target analyte quantitation	4	Not reviewed for	Stage 2B validation.				
XIII.	Target analyte identification	7	Ĭ	Stage 2B validation.				
XIV.		Δ	Ĭ	Stage 2B validation.				
XV.		A						
Note:	A = Acceptable ND = No N = Not provided/applicable R = Rins	o compounds	s detected	D = Duplicate TB = Trip blank EB = Equipment blank	SB=Source OTHER:	e blank		
	Client ID			Lab ID	Matrix	Date		
1	ERH1359 \E 2	1031-0	21	BA32813	Water	05/19/21		
2		1031-6		BA32814**	Water	05/19/21		
3		1031-0		BA3281	1	1		
4								
5								
6								
7								
8								
9								
lotes:				1	9			
	w1 70002 - BLK/			-		-		
			i 1		1			

LDC#: 5074772a

### VALIDATION FINDINGS CHECKLIST

Page: /of //
Reviewer: //

Method: Semivolatiles (EPA Method 525.2)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				6
Were all technical holding times met?	MA	V		
Was cooler temperature criteria met?.	V			
II. GC/MS Instrument performance check				
Was a tune check performed prior to establishing and /or re-establishing an initial calbration?				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Ilia. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	1			
Were all percent relative standard deviations (%RSD) ≤ 30% ?	<b>V</b>			_
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each ICAL for each instrument?	/			
Were all percent difference (%D) ≤30%?		<b>V</b>		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at the beginning of each analysis batch?	r	,		
Were all percent differences (%D) of continuing calibration ≤ 30% ?		<b>V</b>		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	V			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	1			
Was there contamination in the laboratory blanks?				
VI. Field blanks		•		
Were field blanks identified in this SDG?		<b>V</b>		
Were target compounds detected in the field blanks?				
VII. Surrogate spikes				
Were all surrogate %R within QC limits?				
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			_	
If any percent recoveries (%R) was less than 10 percent, was a reanalysis performed to confirm %R?				
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?				

LDC#: 90747 DZa

### **VALIDATION FINDINGS CHECKLIST**

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		_		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			/	1
IX. Laboratory control samples				
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?				
Were target compounds detected in the field duplicates?				
XI. Internal standards				
Were internal standard area counts within +/-30% of the area of the most recent continuing calibration standard and +/-50% of the average peak area in the initial calbration? calibration standard?				
Were retention times within ± 30 seconds of the associated calibration standard?				
XII. Target analyte quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	/			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?				33
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Target analyte identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?				
Did compound spectra meet specified EPA "Functional Guidelines" criteria?				
Were chromatogram peaks verified and accounted for?				<u> </u>
XIV. System performance				
System performance was found to be acceptable.				
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	7			

# **VALIDATION FINDINGS WORKSHEET**

# METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	11. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o"-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1.2-Diphenylhydrazine	Q1. 4-Aminobiphenyt
J. N-Nitroso-di-n-propylamine	Lt. Diethylphthalate	NNN. Aniline	pppp. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT, 1-Methyldibenzothiophene (1MDT)	V1, 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
O. 2,4-Dichlorophenol	SS. Hexachiorobenzene	UUU.Benzo(b)thiophene	WWWW 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX, 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethyinaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2, 5-Nitro-o-toluidine

LDC #: 5074702a

### VALIDATION FINDINGS WORKSHEET Technical Holding Times

Page:_	of	
Reviewer:		7

All circled dates have exceeded the technical holding times.

YN N/A Were all cooler temperatures within validation criteria?

METHOD : GC/M		<u> </u>	thin validation criter		-		(A)
Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
All	V	no	5/19/21	6/1/2/	6 9 2	13	1-147/1
			1, 1	, ,	, , ,		AllND
			<u></u>				
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### **TECHNICAL HOLDING TIME CRITERIA**

Water: Extracted within 7 days, analyzed within 40 days. Soil: Extracted within 14 days, analyzed within 40 days.

LDC#: 5074702a

## **VALIDATION FINDINGS WORKSHEET** Initial Calibration Verification

Reviewer: FT Page:

METHOD: GC/MS SVOA (EPA Method 525.2)

Phease see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A

Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A

Were all %D within the validation criteria of ≤30 %D?

							 					 _			
Qualifications	ON A/24/ Jub+1	,													
Associated Samples	AII														
Finding %D (Limit: <30.0%)	40.27														
Compound	LT LT														
Standard ID	B														
Date	12 316	8071													
#															

LDC #: SOT4702a

## **VALIDATION FINDINGS WORKSHEET** Continuing Calibration

Page: \_\_\_of \_\_\_ Reviewer: \_\_\_FT\_\_\_

METHOD: GC/MS SVOA (EPA Method 525.2)

N N N X

Phase see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A

Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ? Were all %D and RRFs within the validation criteria of ≼20 %D and ≥0.05 RRF ?

Z 5 Qualifications 4 1t/w/4 1+ / us/ Associated Samples 2 3 Finding RRF (Limit: >0.05) Finding %D (Limit: <20.0%) 56 かっ Metribuzin Compound Terbaci 七十十 Standard ID 4 3 2 267 692 Date

LDC #: 507 4703a

# VALIDATION FINDINGS WORKSHEET **Laboratory Control Samples (LCS)**

Page: /of/ Reviewer: FT

METHOD: GC/MS SVOA (EPA Method 525.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A

Was a LCS required? Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

£ Qualifications 9/ cm Associated Samples 4 RPD (Limits) ), ), Propachlor y clopentadienc, (Propachlor, to Tripelly calls) and aly 350 not soikky LCSD %R (Limits) MIX 50G ( 4hr 14 Get Live (weake ) LCS %R (Limits) Pesticides Compound LCS/LCSD ID WI FOODS -Desil

LDC #: 50747D2a

# Initial Calibration Calculation Verification VALIDATION FINDINGS WORKSHEET

Page:  $_1$  of  $_1$ 

Reviewer: FT

METHOD: GCMS SVOA EPA Method 525.2

The calibration factors (RRFF), average RRFF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

RRF = (Ax)(Cis)/(Ais)(Cx)

Cx = Concentration of compound Ax = Area of compound

Where:

average RRF = sum of the RRFs/number of standards %RSD = 100 \* (S/X)

S = Standard deviation of the RRFs X = Mean of the RRFs

Ais = Area of associated internal standard

Cis = Concentration of internal Standard

Recalculated	%RSD		8.0967		5.6817	
Reported	%RSD		8.096651	:	5.681690	
Recalculated	Average RRF	(Initial)	2.199		1.364	
Reported	AverageRRF	(Initial)	2.199206		1.364008	
Recalculated		0.5 mg/L	2.2552		1.3437	
Reported		0.5 mg/L	2.255200		1.343700	
		Compound	6/2/2021 S (IS acenaphthene)	UU (IS phenanthrene)	DDD (IS Chrysene)1.34	
	Calibration	Date	6/2/2021			
		# Standard ID Date	ī.Ā	GCMS16		
		*				

LDC #: 50747D2a

# VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

Page: \_\_1\_\_ of \_\_1\_\_ Reviewer: \_\_\_ FT\_\_\_

METHOD: GCMS SVOA EPA Method 525.2

The calibration factors (RRFF), average RRFF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

RRF = (Ax)(Cis)/(Ais)(Cx)

Where: Ax = Area of compound Cx = Concentration of compound

average RRF = sum of the RRFs/number of standards %RSD = 100 \* (S/X)

S = Standard deviation of the RRFs X = Mean of the RRFs

Ais = Area of associated internal standard

Cis = Concentration of internal Standard

								:		
L					Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
		Calibration					AverageRRF	Average RRF	%RSD	%RSD
*	Standard ID	Date		Compound	0.5 mg/L	0.5 mg/L	(Initial)	(Initial)		
	ICAL	2/2/2021	SS	(IS acenaphthene)	0.433100	0.4331	0.436927	0.43693	4.128809	4.1288
	GCMS16		Ц							

LDC #: 50747D2a

# Initial Calibration Calculation Verification VALIDATION FINDINGS WORKSHEET

Page: \_\_1\_\_ of \_\_1\_\_

Reviewer: FT

METHOD: GCMS SVOA EPA Method 525.2

The calibration factors (RRFF), average RRFF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

RRF = (Ax)(Cis)/(Ais)(Cx)

average RRF = sum of the RRFs/number of standards %RSD = 100 \* (S/X)

Where:

Ax = Area of compound Cx = Concentration of compound

S = Standard deviation of the RRFs X = Mean of the RRFs

Ais = Area of associated internal standard

Cis = Concentration of internal Standard

					Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
		Calibration					AverageRRF	Average RRF	%RSD	%RSD
#	# Standard ID	Date	ပ	Compound	0.5 mg/L	0.5 mg/L	(Initial)	(Initial)		
	ICAL	5/24/2021	alpha BHC (	(IS acenaphthene)	0.2354	0.2354	0.258724	0.258724	7.723941	7.72394
	GCMS16		delta-BHC	delta-BHC (IS phenanthrene)	0.1156	0.1156	0.112666	0.112666	9.620711	9.62071

LDC#:\_50747D2a\_

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

Page:\_1\_\_\_of\_\_1\_\_ Reviewer:\_\_FT\_\_\_\_

Method: GCMS SVOA 525.2

weighted

Post Series	8	Concentration	0.01	0.02	0.1	0.2	0.4	1	2
	ε	Response	0.0124	0.024466	0.11243	0.23502	0.46852	1.064	2.0662
		Standard	1	2	8	4	9	9	2
		Compound	30	(IS phenanthrene)					
		System	GCMS-16						
	Calibration	Date	6/2/2021						

Regression Output	out	Reported
Constant	0.020055	0.003575
Std Err of Y Est		
R Squared	0.999272	0.997909
Degrees of Freedom		
X Coefficient(s)	1.030201	1.061141
Std Err of Coef.		
Correlation Coefficient	9696660	
Coefficient of Determination (r^2)	0.999272	0.997909

LDC#:\_50747D2a\_

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

Page: 1 of 1 Reviewer: FT

Method: GCMS SVOA 525.2

weighted

 ×	Concentration	0.1	0.2	0.4	0.8	1.6	2
ε	Response	0.00936	0.02218	0.05208	0.13624	0.3296	0.4156
	Standard	1	7	£	4	9	2
	Compound	33	(IS acenaphthene)				
	System	GCMS-16					
Calibration	Date	3/12/2021					

Reported **Regression Output** 

Constant	-0.025315	-0.016898
Std Err of Y Est		
R Squared	0.996648	0.991022
Degrees of Freedom		
X Coefficient(s)	0.219010	0.209107
Std Err of Coef.		
Correlation Coefficient	0.998323	
Coefficient of Determination (r^2)	0.996648	0.991022

LDC# 5074702a

# Continuing Calibration Results Verification VALIDATION FINDINGS WORKSHEET

Page: 1 of 1 Reviewer: FT

METHOD: GC/MS SVOA (EPA Method 525.2)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 \* (ave. RRF - RRF)/ave. RRF RRF =  $(A_{\nu})(C_{\nu})/(A_{\nu})(C_{\nu})$ 

ave. RRF = initial calibration average RRF RRF = continuing calibration RRF Where:

 $A_x$  = Area of compound,  $C_x$  = Concentration of compound,

 $A_{\rm k}$  = Area of associated internal standard  $C_{\rm k}$  = Concentration of internal standard

		i		(Amand)	Reported	Recalculated	Reported	Recalculated
**	Standard ID	Calibration Date	Compound (Internal Standard)	Average RRF (Initial)	RRF (CC)(Amt	RRF (CC) (Am)	<b>Å</b>	%R
-	रबा	[य प्र	(1st IS)	0. چی ۵	0.511	0.51	حما	7:01
	6 9 2	-	MM (2 <sup>rd</sup> IS)	1	0.539	G.579	801	Xal
	, Y		(3141S)	<b>^</b>	0.526	10.5%	501	105
	200		(4th IS)					
			(5) (2)					
			(St9)					
2	een 3	12 6 7	(31 151)	0.04	0.0354	७.०५८५	<i>\$</i> \$5	XX
	17.49		(2 <sup>nd</sup> IS)			•		
	-		(3 <sub>14</sub> (S)					
			(4 <sup>th</sup> IS)					
			(5th (5)					
			(6" 15)					
т	ספכל	12/6/9	Algha BHC (1st 1S)	0.1	201.0	201.0	701	Zai
	אונו	-	)	0.1	0.0873	0.0873	87	18
			(3 <sub>14</sub> IS)					
			(4 <sup>th</sup> IS)					
			(5th IS)					Ç
	1 1 4 3	6 9 2	EE (6" 1S)	1.0	1.05	1.05	40)	<b>\$01</b>

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

### LDC #: 50747 P VALIDATION FINDINGS WORKSHEET **Surrogate Results Verification**

Page:	1	_of_	1	
eviewer		FT		

METHOD: GC/MS SVOA (EPA Method 525.2)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS \* 100

Where: SF = Surrogate Found

SS = Surrogate Spiked

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
1,3-Dimethyl-2-nitrobenzene	5.0	4.9850	100	100	0
Perylene-d12	5.0	4.967	99	99	0
Triphenyl Phosphate	9.0	67532 FT	118	118	U
		5.8920			

Sample ID:

Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
				<u> </u>

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
<u> </u>					

# VALIDATION FINDINGS WORKSHEET LDC #. 50747020

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1 Reviewer: FT

METHOD: GC/MS SVOA (EPA Method 525.2)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 \* (SC/SA Where:

Where: SSC = Spike concentration SA = Spike added

RPD = I LCSC - LCSDC I \* 2/(LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: WIF GOOZ - LCS/V

		ated					\			_		
CS/ICSD	RPD	Recalculated	ì	6.0	<b>†</b>	0.6	7					
SOI		Reported	-	0.9	4	9.0	4					
CSD	Percent Recovery	Recalc	dلا	υVO	111	<u>(101</u>	)   					
31	Percent	Reported	Хþ	011	111	tol	11					
CS	Recovery	Recalc	م٦	11)	<b>401</b>	Sol	113					
01	Percent Recovery	Reported	47	111	101	105	113	•				
ike	ntration (2)	ICSD	4.89	5.44	5.5%	5.21	5.76					
Š	Concentration (May   L)	SOI	4.84	5.53	18.3	5.24	5.63					
pike	Added ( wa // )	1 CSD	6.5	<u>-</u>			<b>^</b>					
<i>S</i>	A &	SOI	5.0	8.0	5.0	6.0	8.0				120	
	Compound		99	111	TT	7.7	Tri Hijon					

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results. LDC #: 50147 020

### VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

Page:_	1	_of_	1	
eviewer.		ΕT	-	

METHOD: GC/MS SVOA (EPA Method 525.2)

$/_{\rm Y}$	7	N/A
$\overline{\mathcal{Z}}$	N	N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Conce	ntratio	$n = \frac{(A_{v})(I_{v})(V_{v})(DF)(2.0)}{(A_{w})(RRF)(V_{v})(V_{v})(%S)}$
A <sub>x</sub>	=	Area of the characteristic ion (EICP) for the compound to be measured
A <sub>is</sub>	=	Area of the characteristic ion (EICP) for the specific internal standard
l,	=	Amount of internal standard added in nanograms (ng)
V <sub>e</sub> :	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
$V_{\mathbb{F}_2}$	=	Volume of extract injected in microliters (ul)
$V_{t}$	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices

Example:
Sample I.D. WIF 0002 LCS:

ample I.D. <u>ω [ F 0 0, 0 2 LC )</u>: 5

Conc. = 1437181

=

2.19926 4.7578 mg/L

2.0	= Factor of 2 to accour	nt for GPC cleanup			
#	Sample ID	Compound	Reported Concentration	Calculated Concentration	Qualification
	les	5	4.7579	4.7578	
	- 76				
<u> </u>					
		<del> </del>			
		<u> </u>			
$\vdash$		<u> </u>			
	···				
$\vdash$					
				<u> </u>	

### Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Red Hill Bulk Storage Facility, CTO 18F0126

**LDC Report Date:** September 14, 2021

Parameters: Semivolatiles

Validation Level: Stage 2B

**Laboratory:** APPL, Inc./Weck Laboratories, Inc.

Sample Delivery Group (SDG): 96681/1F29037

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
ERH1434	BA35287/1F29037-01	Water	06/24/21
ERH1435	BA35288/1F29037-02	Water	06/24/21
ERH1436	BA35289/1F29037-03	Water	06/24/21

### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Work Plan/Scope of Work, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 02, January 2017), the Sampling and Analysis Plan, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 01, April 2017), the Sampling and Analysis Plan, Addendum 01, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, September 2017), the Sampling and Analysis Plan, Addendum 03, Investigation and Remediation of Releases and Groundwater Protection and Evaluation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, O'ahu, Hawai'i (Revision 00, June 2018), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), the DoD General Validation Guidelines (November 2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Semivolatile Organic Compounds (SVOCs) by Environmental Protection Agency (EPA) Method 525.2

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was not detected and the associated numerical value is approximate.
- X (Exclusion of data recommended): The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

### Qualification Code Reference

- a ICP Serial Dilution %D was not within control limits.
- b Presumed contamination from preparation (method blank).
- c Calibration %RSD, r, r<sup>2</sup>, %D or %R was noncompliant.
- d The analysis with this flag should not be used because another more technically sound analysis is available.
- e MS/MSD or Duplicate RPD was high.
- f Presumed contamination from FB or ER.
- g ICP ICS results were unsatisfactory.
- h Holding times were exceeded.
- i Internal standard performance was unsatisfactory.
- k Estimated Maximum Possible Concentration (HRGC/HRMS only)
- I LCS/LCSD %R was not within control limits.
- m Result exceeded the calibration range.
- o Cooler temperature or temperature blank was noncompliant and/or sample custody problems.
- p RPD between two columns was high (GC only).
- q MS/MSD recovery was not within control limits.
- s Surrogate recovery was not within control limits.
- t Presumed contamination from trip blank.
- v Unusual problems found with the data not defined elsewhere. Description of the problem can be found in the validation report.
- w LCS/LCSD RPD was high.
- y Chemical recovery was not within control limits (Radiochemistry only).

### I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

### II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

### III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 30.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

Average relative response factors (RRF) for all analytes were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
03/13/21	2,6-Dinitrotoluene	40.27	All samples in SDG 96681/1F29037	UJ (all non-detects)	,

### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
07/14/21 (2050)	Butachlor	35	All samples in SDG 96681/1F29037	UJ (all non-detects)	А
07/14/21 (2117)	Trifluralin	88	All samples in SDG 96681/1F29037	UJ (all non-detects)	А
07/14/21 (2144)	Aldrin	47	All samples in SDG 96681/1F29037	UJ (all non-detects)	А

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
07/15/21 (1053)	Trifluralin	86	All samples in SDG 96681/1F29037	UJ (all non-detects)	А

Although the percent difference was grossly exceeded (>50%) for several analytes, using professional judgment, associated results were qualified as estimated instead of "X", since the percent differences were biased high and the associated results were not detected.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

### V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

### VI. Field Blanks

No field blanks were identified in this SDG.

### VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

### VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

### IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method with the following exceptions:

LCS ID	Analyte	Finding	Flag	A or P
WIF1708-LCS/LCSD (All samples in SDG 96681/1F29037)	4,4'-DDD 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC alpha-Chlordane beta-BHC delta-BHC Dieldrin Endosulfan I Endosulfan II Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC gamma-Chlordane Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Methoxychlor Trifluralin	The laboratory indicated that these analytes were not spiked in the LCS mix analyzed for this SDG.	UJ (all non-detects)	P

Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Analyte	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
WIF1708-LCS/LCSD (All samples in SDG 96681/1F29037)	Acetochlor Bis(2-ethylhexyl)adipate Chlorpropham Metribuzin Pentachlorophenol Bis(2-ethylhexyl)phthalate	131 (70-130) 138 (70-130) 132 (70-130) 131 (50-120) 128 (50-120)	- 168 (70-130) - 130 (50-120) 132 (50-120) 133 (70-130)	NA	-

Relative percent differences (RPD) were within QC limits.

### X. Field Duplicates

No field duplicates were identified in this SDG.

### XI. Internal Standards

All internal standard areas and retention times were within QC limits.

### XII. Target Analyte Quantitation

Raw data were not reviewed for Stage 2B validation.

### XIII. Target Analyte Identification

Raw data were not reviewed for Stage 2B validation.

### **XIV. System Performance**

Raw data were not reviewed for Stage 2B validation.

### XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to ICV and continuing calibration %D and LCS not spiked, data were qualified as estimated in three samples.

### Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Data Qualification Summary - SDG 96681/1F29037

Sample	Analyte	Flag	A or P	Reason (Code)
ERH1434 ERH1435 ERH1436	2,6-Dinitrotoluene	UJ (all non-detects)	А	Initial calibration verification (%D) (c)
ERH1434 ERH1435 ERH1436	Butachlor Trifluralin Aldrin	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	А	Continuing calibration (%D) (c)
ERH1434 ERH1435 ERH1436	Trifluralin	UJ (all non-detects)	А	Continuing calibration (ending CCV %D) (c)
ERH1434 ERH1435 ERH1436	4,4'-DDD 4,4'-DDE 4,4'-DDE 4,4'-DDT Aldrin alpha-BHC alpha-Chlordane beta-BHC delta-BHC Dieldrin Endosulfan I Endosulfan sulfate Endrin Endrin aldehyde Endrin ketone gamma-BHC gamma-Chlordane Heptachlor Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Methoxychlor Propachlor Trifluralin	UJ (all non-detects)	P	Laboratory control samples (not spiked) (v)

Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 96681/1F29037

No Sample Data Qualified in this SDG

Red Hill Bulk Storage Facility, CTO 18F0126 Semivolatiles - Field Blank Data Qualification Summary - SDG 96681/1F29037

No Sample Data Qualified in this SDG



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue

Clovis, CA 93611

Project Number: 96681

Project Manager: Libby Cheeseborough

Reported:

07/16/2021 15:45



Sample:

BA35287, Alias: ERH1434 1F29037-01 (Water)

Sampled: 06/24/21 9:15 by Client

Comments: Pre-Chlorination

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC/MS							
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE		Prepared: 06/30/	/21 08:20			Analyst: rmr
2,4-Dinitrotoluene		ND	2.0	ug/l	1	07/15/21	U-01
2,6-Dinitrotoluene		ND 42 (	2.0	ug/l	1	07/15/21	U-01
4,4'-DDD		ND C	0.10	ug/l	1	07/15/21	U-01
4,4'-DDE		ND	0.20	ug/l	1	07/15/21	<b>U</b> -01
4,4'-DDT		ND V	0.10	ug/l	1	07/15/21	U-01
Acenaphthene		ND	0.50	ug/l	1	07/15/21	U-01
Acenaphthylene		ND	0.50	ug/l	1	07/15/21	U-01
Acetochlor		ND	0.10	ug/l	1	07/15/21	U-01
Alachlor		ND	0.10	ug/l	1	07/15/21	U-01
Aldrin		ND UJ (	/) (C)0.10	ug/l	1	07/15/21	U-01
alpha-BHC		ND	0.10	ug/l	1	07/15/21	U-01
alpha-Chlordane		ND 🗸 🗸	0.10	ug/l	1	07/15/21	U-01
Anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Atrazine		ND	0.10	ug/l	1	07/15/21	U-01
Benzo (a) anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (a) pyrene		ND	0.10	ug/l	1	07/15/21	U-01
Benzo (b) fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (g,h,i) perylene		ND	0.50	ug/l	1	07/15/21	<b>U</b> -01
Benzo (k) fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
beta-BHC		ND UT (	0.20	ug/l	1	07/15/21	U-01
Bis(2-ethylhexyl)adipate		ND	5.0	ug/l	1	07/15/21	U-01
Bis(2-ethylhexyl)phthalate		ND	3.0	ug/l	1	07/15/21	U-01
Bromacil		ND	0.50	ug/l	1	07/15/21	U-01
Butachlor		ND UT (	0.10	ug/l	1	07/15/21	U-01
Butyl benzyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Caffeine		ND	0.10	ug/l	1	07/15/21	U-01
Captan		ND	1.0	ug/l	1	07/15/21	U-01
Chlorpropham		ND	0.10	ug/l	1	07/15/21	U-01
Chrysene		ND	0.50	ug/l	1	07/15/21	U-01
Cyanazine		ND	0.10	ug/l	1	07/15/21	U-01
delta-BHC		ND UT (V	A Committee of the Comm	ug/l	1	07/15/21	U-01
Diazinon		ND	0.10	ug/l	1	07/15/21	U-01
Dibenzo (a,h) anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Dieldrin		ND WJ		ug/l	1	07/15/21	U-01
1F29037					1 091	42	Page 3 of 19



**FINAL REPORT** 

APPL, Inc.

908 N. Temperance Avenue

Clovis, CA 93611

Project Number: 96681

Reported:

07/16/2021 15:45

Project Manager: Libby Cheeseborough

(Continued)

Sample:

1F29037

Sample Results

8A35287, Alias: ERH1434

Sampled: 06/24/21 9:15 by Client

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1F29037-01 (Water) Comments: Pre-Chlorination							(Continued
Analyte		Result	MRL	Units	Dil	Analyzed	Qualifie
Semivolatile Organic Compounds by G	C/MS (Continued)						
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE		Prepared: 06/	30/21 08:20			Analyst: rm
Diethyl phthalate		ND	2.0	ug/ī	1	07/15/21	U-0
Dimethoate		ND	0.20	ug/l	1	07/15/21	U-0
Dimethyl phthalate		ND	2.0	ug/l	1	07/15/21	U-0.
Di-n-butyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Di-n-octyl phthalate		ND	0.50	ug/l	1	07/15/21	U-0:
Diphenamid		ND	0.10	ug/l	1	07/15/21	U-01
Disulfoton		ND	0.10	ug/l	1	07/15/21	U-0
Endosulfan I		ND UJ (V	1.0	ug/l	1	07/15/21	U-01
Endosulfan II		NÐ	0.20	ug/l	1	07/15/21	U-01
Endosulfan sulfate		ND	0.20	ug/l	1	07/15/21	U-01
Endrin		ND	0.20	ug/l	1	07/15/21	U-0
Endrin aldehyde		ND	0.20	ug/l	1	07/15/21	U-0
Endrin ketone		ND 🎶 🗸	0.10	ug/l	1	07/15/21	U-0
EPTC		ND	0.10	ug/l	1	07/15/21	U-0
Ethion		ND	0.10	ug/l	1	07/15/21	U-01
Fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
Fluorene		ND	0.50	ug/l	1	07/15/21	U-01
gamma-BHC (Lindane)		ND UJ (V	0.10	ug/l	1	07/15/21	U-0
gamma-Chlordane		ND	0.10	ug/l	1	07/15/21	U-01
Heptachlor		ND	0.10	ug/l	1	07/15/21	U-01
Heptachlor epoxide		ND	0.10	ug/l	1	07/15/21	U-01
Hexachlorobenzene		ND	0.10	ug/l	1	07/15/21	U-01
Hexachlorocyclopentadiene		ND ↓	1.0	ug/l	1	07/15/21	U-01
Indeno (1,2,3-cd) pyrene		ND	0.50	ug/l	1	07/15/21	U-01
Methoxychlor		ND UT (	¥	ug/l	1	07/15/21	U-01
Metolachlor		ND C	0.10	ug/l	1	07/15/21	U-01
Metribuzin		ND	0.10	ug/l	1	07/15/21	U-01
Molinate		ND	0.10	ug/l	1	07/15/21	
Naphthalene		ND	0.50	ug/l	1	07/15/21	U-01
Pentachloronitrobenzene (PCNB)		ND	0.10	-			U-01
Pentachlorophenol		ND	1.0	ug/l	1	07/15/21	U-01
Phenanthrene		ND		ug/l	1	07/15/21	U-01
Prometon			0.50	ug/1	1	07/15/21	U-01
		ND	0.10	ug/l	1	07/15/21	U-01
Prometryn		ND	0.10	ug/l	1	07/15/21	U-01

14859 Clark Avenue, City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax. (626) 336-2634



FINAL REPORT

APPL, Inc.

908 N. Temperance Avenue

Clovis, CA 93611

Project Number: 96681

Reported:

07/16/2021 15:45

Project Manager: Libby Cheeseborough

(Continued)

Sample:

Sample Results

BA35287, Alias: ERH1434

1F29037-01 (Water)

Sampled: 06/24/21 9:15 by Client

pica. 00/2-721 5:15 by Cheft

(Continued)

Comments: Pre-Chlorination							
Analyte		Result	MRL	Units	DII	Analyzed	Qualifler
Semivolatile Organic Compounds by GC/I	MS (Continued)						
Method: EPA 525.2			Instr: GCMS16	,			
Batch ID: W1F1708	Preparation: EPA 525.2/SPE	A = c A	Prepared: 06/	30/21 08:20			Analyst: rmr
Propachlor		ND 45 (V)	0.20	ug/l	1	07/15/21	U-01
Pyrene		ND	0.50	ug/l	1	07/15/21	U-01
Simazine		ND	0.10	ug/l	1	07/15/21	U-01
Terbacil		ND	2.0	ug/l	1	07/15/21	U-01
Thiobencarb		ND	0.10	ug/l	1	07/15/21	U-01
Trifluralin		ND UJ (C)	(V )0.10	ug/l	1	07/15/21	U-01
Trithion		ND	0.10	ug/l	1	07/15/21	U-01
Surmgate(s) 1,3-Dimethyl-2-nitrobenzene		104% Conc: 5.11	70-130			07/15/21	U-01
Perylene-d12		100% Conc: 4.95	50-120			07/15/21	U-01
Triphenyl phosphate		108% Conc: 5.31	70-130			07/15/21	U-01





**FINAL REPORT** 

APPL, Inc.

1F29037

908 N. Temperance Avenue

Clovis, CA 93611

Project Number: 96681

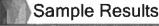
Project Manager: Libby Cheeseborough

Reported:

07/16/2021 15:45 (Continued)

Page 6 of 19

Sampled: 06/24/21 9:45 by Client



BA35288, Alias: ERH1435

1F29037-02 (Water)

Comments: Pre-Chlorination

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
nivolatile Organic Compounds by GC	/MS						
lethod: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE		Prepared: 06/3				Analyst: rmr
2,4-Dinitrotoluene		ND	2.0	ug/l	1	07/15/21	U-01
2,6-Dinitrotoluene		ND U	2.0	ug/l	1	07/15/21	U-01
4,4'-DDD		ND	(Y) 0.10	ug/l	1	07/15/21	U-01
4,4'-DDE		ND	0.20	ug/l	1	07/15/21	U-01
4,4'-DDT		ND V	0.10	ug/l	1	07/15/21	U-01
Acenaphthene		ND	0.50	ug/l	1	07/15/21	U-01
Acenaphthylene		ND	0.50	ug/l	1	07/15/21	U-01
Acetochlor		- ND	0.10	ug/l	1	07/15/21	U-01
Alachior		ND . H	(1)((1)	ug/l	1	07/15/21	U-01
Aldrin		ND U	CY)(C)0.10	ug/l	1	07/15/21	U-01
alpha-BHC		ND	0.10	ug/l	1	07/15/21	U-01
alpha-Chlordane		– ND	<b>∛</b> 0.10	ug/l	1	07/15/21	U-01
Anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Atrazine		ND	0.10	ug/l	1	07/15/21	U-01
Benzo (a) anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (a) pyrene		ND	0.10	ug/l	1	07/15/21	U-01
Benzo (b) fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (g,h,i) perylene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (k) fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
beta-BHC		ND U	( √ ) 0.20	ug/l	1	07/15/21	U-01
Bis(2-ethylhexyl)adipate		ND	5.0	ug/l	1	07/15/21	U-01
Bis(2-ethylhexyl)phthalate		ND	3.0	ug/l	1	07/15/21	U-01
Bromacil		ND	0.50	ug/l	1	07/15/21	U-01
Butachlor		ND UT	0.10	ug/l	1	07/15/21	U-01
Butyl benzyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Caffeine		ND	0.10	ug/l	1	07/15/21	U-01
Captan		ND	1.0	ug/l	1	07/15/21	U-01
Chlorpropham		ND	0,10	ug/l	1	07/15/21	U-01
Chrysene		ND	0.50	ug/l	1	07/15/21	U-01
Cyanazine		ND	0.10	ug/l	1	07/15/21	U-01
delta-BHC		ND UJ	0.10	ug/l	1	07/15/21	U-01
Diazinon		ND	0.10	ug/l	1	07/15/21	U-01
Dibenzo (a,h) anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Dieldrin		ND UJ		ug/l	1	07/15/21	U-01



**FINAL REPORT** 

APPL, Inc.

Project Number: 96681

Reported:

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

07/16/2021 15:45



### Sample Results

(Continued)

Sample:

1F29037

BA35288, Alias: ERH1435 1F29037-02 (Water)

Sampled: 06/24/21 9:45 by Client

(Continued)

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Comments: Pre-Chlorination							
Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
emivolatile Organic Compounds by GC/I	MS (Continued)						
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE		Prepared: 06/3	30/21 08:20			Analyst: rmr
Diethyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Dimethoate		ND	0.20	ug/l	1	07/15/21	U-01
Dimethyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Di-n-butyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Di-n-octyl phthalate		ND	0.50	ug/l	1	07/15/21	U-01
Diphenamid		ND	0.10	ug/l	1	07/15/21	U-01
Disulfoton		ND	0.10	ug/l	1	07/15/21	U-01
Endosulfan I		DY DN	1.0	ug/l	1	07/15/21	U-01
Endosulfan II		ND	0.20	ug/l	1	07/15/21	U-01
Endosulfan sulfate		ND	0.20	ug/l	1	07/15/21	U-01
Endrin		ND	0.20	ug/l	1	07/15/21	U-01
Endrin aldehyde		ND	0.20	ug/l	1	07/15/21	U-01
Endrin ketone		ND 🗸 🕦	0.10	ug/l	1	07/15/21	U-01
EPTC		ND	0.10	ug/l	1	07/15/21	U-01
Ethion		ND	0.10	ug/l	1	07/15/21	U-01
Fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
Fluorene		NĎ	0.50	ug/l	1	07/15/21	U-01
gamma-BHC (Lindane)		ND UT (V	0.10	ug/l	1	07/15/21	U-01
gamma-Chlordane		ND	0.10	ug/l	1	07/15/21	U-01
Heptachlor		ND	0.10	ug/l	1	07/15/21	U-01
Heptachlor epoxide		ND	0.10	ug/l	1	07/15/21	U-01
Hexachlorobenzene		ND	0.10	ug/l	1	07/15/21	U-01
Hexachlorocyclopentadiene		ND 🗸	1.0	ug/l	1	07/15/21	U-01
Indeno (1,2,3-cd) pyrene		ND	0.50	ug/l	1	07/15/21	U-01
Methoxychlor		ND UJ (	V ) 0.20	ug/l	1	07/15/21	U-01
Metolachlor		ND	0.10	ug/l	1	07/15/21	U-01
Metribuzin		ND	0.10	ug/l	1	07/15/21	U-01
Molinate		ND	0.10	ug/l	1	07/15/21	U-01
Naphthalene		ND	0.50	ug/l	1	07/15/21	U-01
Pentachloronitrobenzene (PCNB)		ND	0.10	ug/l	1	07/15/21	U-01
Pentachlorophenol		ND	1.0	ug/l	1	07/15/21	U-01
Phenanthrene		ND	0.50	ug/l	1	07/15/21	U-01
Prometon		ND	0.10	ug/l	1	07/15/21	U-01
Prometryn		ND	0.10	ug/l	1	07/15/21	U-01



**FINAL REPORT** 

APPL, Inc.

Project Number: 96681

Reported:

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

07/16/2021 15:45



### Sample Results

BA35288, Alias: ERH1435

(Continued)

Sample: 1F29037-02 (Water) Sampled: 06/24/21 9:45 by Client

(Continued)

Comments: Pre-Chlorination								
Analyte		Result		MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC/I	MS (Continued)							
Method: EPA 525.2				Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE			Prepared: 06/3	30/21 08:20			Analyst: rmr
Propachlor		ND	NJ(V)	0.20	ug/l	1	07/15/21	U-01
Pyrene		ND		0.50	ug/l	1	07/15/21	U-01
Simazine		ND		0.10	ug/l	1	07/15/21	U-01
Terbacil		ND		2.0	ug/l	1	07/15/21	U-01
Th obencarb		ND		0.10	ug/l	1	07/15/21	U-01
Trifluralin		ND		0.10	ug/l	1	07/15/21	U-01
Trithion		ND (	17(0)(1	/) 0.10	ug/l	1	07/15/21	U-01
1,3-Dimethyl-2-nitrobenzene		100%	Conc: 4.86	70-130			07/15/21	U-01
Perylene-d12		100%	Conc: 4.88	50-120			07/15/21	U-01
Triphenyl phosphate		110%	Conc: 5.34	70-130			07/15/21	U-01





FINAL REPORT

APPL, Inc. 908 N. Temperance Avenue Clovis, CA 93611 Project Number: 96681

Reported:

Project Manager: Libby Cheeseborough

07/16/2021 15:45



1F29037

### Sample Results

BA35289, Alias: ERH1435

(Continued)

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1F29037-03 (Water)

Sampled: 06/24/21 9:55 by Client

Comments:	Fiel	ы	RI	amk	

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC,	/MS						
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE		Prepared: 06/	30/21 08:20			Analyst: rmr
2,4-Dinitrotoluene		ND	2.0	ug/l	1	07/15/21	U-01
2,6-Dinitrotoluene		ND VIJ C	2.0	ug/l	1	07/15/21	U-01
4,4'-DDD		ND C	0.10	ug/l	1	07/15/21	U-01
4,4'-DDE		ND	0.20	ug/l	1	07/15/21	U-01
4,4'-DDT		ND 🖖 💠	0.10	ug/l	1	07/15/21	U-01
Acenaphthene		ND	0.50	ug/l	1	07/15/21	U-01
Acenaphthylene		ND	0.50	ug/l	1	07/15/21	U-01
Acetochlor		ND	0.10	ug/l	1	07/15/21	U-01
Alachlor		ND	0.10	ug/l	1	07/15/21	U-01
Aldrin		ND YJ (V	(c) 0.10	ug/l	1	07/15/21	U-01
alpha-BHC		ND	0.10	ug/l	1	07/15/21	U-01
alpha-Chlordane		ND 🗸 🏅	0.10	ug/l	1	07/15/21	U-01
Anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Atrazine		ND	0.10	ug/l	1	07/15/21	U-01
Benzo (a) anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (a) pyrene		ND	0.10	ug/l	1	07/15/21	U-01
Benzo (b) fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (g,h,i) perylene		ND	0.50	ug/l	1	07/15/21	U-01
Benzo (k) fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
beta-BHC		ND UT (	0.20	ug/l	1	07/15/21	U-01
Bis(2-ethylhexyl)adipate		ND	5.0	ug/l	1	07/15/21	U-01
Bis(2-ethylhexyl)phthalate		ND	3.0	ug/l	1	07/15/21	U-01
Bromacil		ND	0.50	ug/l	1	07/15/21	U-01
Butachlor		ND U3 (C	0.10	ug/l	1	07/15/21	U-01
Butyl benzyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Caffeine		ND	0.10	ug/l	1	07/15/21	U-01
Captan		ND	1.0	ug/l	1	07/15/21	U-01
Chlorpropham		ND	0.10	ug/l	1	07/15/21	U-01
Chrysene		ND	0.50	ug/l	1	07/15/21	U-01
Cyanazine		ND	0.10	ug/l	1	07/15/21	U-01
delta-BHC		ND UJ (V		ug/l	1	07/15/21	U-01
Diazinon		ND	0.10	ug/l	1	07/15/21	U-01
Dibenzo (a,h) anthracene		ND	0.50	ug/l	1	07/15/21	U-01
Dieldrin		ND UJ (V		ug/l	1	07/15/21	U-01

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FINAL REPORT

APPL, Inc.

Project Number: 96681

Reported:

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

07/16/2021 15:45



### Sample Results

(Continued)

Sample:

BA35289, Alias: ERH1435 1F29037-03 (Water)

Sampled: 06/24/21 9:55 by Client

(Continued)

Comments: Field Blank

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GO	C/MS (Continued)						
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE		Prepared: 06/3	0/21 08:20			Analyst: rmr
Diethyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Dimethoate		ND	0.20	ug/l	1	07/15/21	U-01
Dimethyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Di-n-butyl phthalate		ND	2.0	ug/l	1	07/15/21	U-01
Di-n-octyl phthalate		ND	0.50	ug/l	1	07/15/21	U-01
Diphenamid		ND	0.10	ug/l	1	07/15/21	U-01
Disulfoton		ND .	0.10	ug/l	1	07/15/21	U-01
Endosulfan I		ND VJ ( /	1.0	ug/l	1	07/15/21	U-01
Endosulfan II		ND	0.20	ug/i	1	07/15/21	U-01
Endosulfan sulfate		ND	0.20	ug/l	1	07/15/21	U-01
Endrin		ND	0.20	ug/l	1	07/15/21	Ų-01
Endrin aldehyde		ND	0.20	ug/l	1	07/15/21	U-01
Endrin ketone		ND 🗸 🔰	0.10	ug/l	1	07/15/21	U-01
EPTC		ND	0.10	ug/l	1	07/15/21	U-01
Ethion		ND	0.10	ug/l	1	07/15/21	U-01
Fluoranthene		ND	0.50	ug/l	1	07/15/21	U-01
Fluorene		ND	0.50	ug/l	1	07/15/21	U-01
gamma-BHC (Lindane)		ND UTS (V	0.10	ug/l	1	07/15/21	<b>U-</b> 01
gamma-Chlordane		ND	0.10	ug/l	1	07/15/21	U-01
Heptachlor		ND	0.10	ug/l	1	07/15/21	U-01
Heptachlor epoxide		ND	0.10	ug/l	1	07/15/21	U-01
Hexachlorobenzene		ND	0.10	ug/l	1	07/15/21	U-01
Hexachlorocyclopentadiene		ND 🗸	1.0	ug/l	1	07/15/21	U-01
Indeno (1,2,3-cd) pyrene		ND	0.50	ug/l	1	07/15/21	U-01
Methoxychlor		ND UT ()	0.20	ug/l	1	07/15/21	U-01
Metolachlor		ND	0.10	ug/l	1	07/15/21	U-01
Metribuzin		ND	0.10	ug/l	1	07/15/21	U-01
Molinate		ND	0.10	ug/l	1	07/15/21	U-01
Naphthalene		ND	0.50	ug/l	1	07/15/21	U-01
Pentachloronitrobenzene (PCNB)		ND	0.10	ug/l	1	07/15/21	U-01
Pentachlorophenol		ND	1.0	ug/l	1	07/15/21	U-01
Phenanthrene		ND	0.50	ug/l	1	07/15/21	U-01
Prometon		ND	0.10	ug/l	1	07/15/21	U-01
Prometryn		ND	0.10	ug/i	1	07/15/21	U-01

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1F29037

1091421

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FINAL REPORT

APPL, Inc.

Project Number: 96681

Reported:

908 N. Temperance Avenue Clovis, CA 93611

Project Manager: Libby Cheeseborough

07/16/2021 15:45



### Sample Results

(Continued)

Sample:

8A35289, Alias: ERH1435

1F29037-03 (Water)

Sampled: 06/24/21 9:55 by Client

(Continued)

Comments: Field Blank

Analyte		Result	MRL	Units	Dil	Analyzed	Qualifier
Semivolatile Organic Compounds by GC/MS (Co	ontinued)						
Method: EPA 525.2			Instr: GCMS16				
Batch ID: W1F1708	Preparation: EPA 525.2/SPE	um f.	Prepared: 06/3	0/21 08:20			Analyst: rmr
Propachlor		ND WJ (V	0.20	ug/l	1	07/15/21	U-01
Pyrene		ND	0.50	ug/l	1	07/15/21	U-01
Simazine		ND	0.10	ug/l	1	07/15/21	U-01
Terbacil		ND	2.0	ug/l	1	07/15/21	U-01
Thiobencarb		ND	0.10	ug/l	1	07/15/21	U-01
Trifluralin		ND	0.10	ug/l	1	07/15/21	U-01
Trithion		ND WJ (C	) (V) 0.10	ug/l	1	07/15/21	U-01
1,3-Dimethyl-2-nitrobenzene		104% Conc: 5.	07 70-130			07/15/21	U-01
Perylene-d12		102% Conc: 4.	98 50-120			07/15/21	U-01
Triphenyl phosphate		107% Conc: 5.	24 70-130			07/15/21	U-01



SDG Labor	#:50747E2a VALIDATIO #:_9\$681/1F29037 ratory: APPL, Inc./Weck Laboratories, Inc. AOD: GC/MS Semivolatiles (EPA Method	S <u>.</u>	PLE <b>TENES:</b> Stage 2B	SWORKSHEET	L/A	Date: \$\frac{8}{b}^2\right\rig
	amples listed below were reviewed for eation findings worksheets.	ach of the fe	ollowing valida	ition areas. Validation	findings are no	ted in attached
	Validation Area			Comme	nts	
I.	Sample receipt/Technical holding times	AΔ		<u>.</u>		
11.	GC/MS Instrument performance check	Δ				
10.	Initial calibration/ICV	A/A	الدم مر	±30 1	14 = 30	
IV.	Continuing calibration / en this	94			1U = 30 CU = 30	150
V.	Laboratory Blanks	7				
VI.	Field blanks	14				
VII.	Surrogate spikes	A				
VIII.	Matrix spike/Matrix spike duplicates	N				
IX.	Laboratory control samples	SW	LCS IP			
X.	Field duplicates	N				
XI,	Internal standards	•		181		12
XII.	Target analyte quantitation	N				
XIII.	Target analyte identification	N				
XIV.	System performance	N				
XV.	Overall assessment of data	A				
Note:	N = Not provided/applicable R = Rin	lo compounds nsate ield blank	s detected	D = Duplicate TB = Trip blank EB = Equipment blank	SB=Source OTHER:	blank
	Client ID			Lab ID	Matrix	Date
7	ERH1434	2 9031-	0	BA35287	Water	06/24/21
2	ERH1435	1 -	02	BA35288	Water	06/24/21
	ERH1436	<i>V</i> -	ዕን	BA35289	Water	06/24/21
4						
5						
6						
7						
8						
9						
Notes:						
<u> </u>	11F1708-Bik)					
<del>                                     </del>						
$\vdash \vdash$						
					<u></u>	

# VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopene	<ol> <li>Methyl methanesulfonate</li> </ol>
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	11. Ethyl methanesulfonate
C. 2-Chlorophenol	EE 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o"-Triethy/phosphorothioste
D. 1,3-Dichlorobenzene	FF, 3-Nitroaniine	HHH. Benzo(k)fluoranthene	JUJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichloroberzene	GG. Acenaphthene	III. Berzo(a)pyrene	KKKK Atrazine	Mf. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL Berzeidehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenoi	KKK Diberz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,l)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
L. 4-Methylphenol	KK, 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthatate	NNN. Antine	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K Hexachloroethane	MM. 4-Chiorophern/I-phenyl ether	OOO. N-Nitrosodimethy/amine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzane	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachiorostyrene
M. Isophorone	00. 4-Nitroaniline	QQQ, Berzył alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Ntrophenol	PP. 4,6-Dinitro-2-methy(phenol	RRR. Pyridine	TTTF. 1-Methykdibenzothkophene (1MDT)	V1. 1,4-phenylenediamine
0. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU. 2,3,4,6-Tetrachtorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR 4-Bromopherryf-phenylether	TTT. 1-Methymaphthalene	WWW. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzzo(b)thiophene	WWWW. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	U.U. Phenanthrene	WWW.Berzo(e)pyrene	YYYY. a.a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	W. Anthracene	XXX. 2,6-Dimethylnaphthalens	222Z. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Kirosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-buty/phthatate	222. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methyinaphthalene	YY. Fluoranthene	AAAA. Dibertzothiophene	C1. N-Ntrosomethy/ethy/amine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrena	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopymolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3*Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	12. Permethrin (cis/trans)
BB. 2-Nitroanline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

100# 50747ED

### **VALIDATION FINDINGS WORKSHEET** Initial Calibration Verification

Page: / of / Reviewer: FT

METHOD: GC/MS BNA (EPA Method 525.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "NA".

✓ N NA

Were all %D within the validation criteria of ≤30 %D?

10V 2 to Diritrotoluence 40.27 All TALL/A	Date	9	Standard ID	Compound	Finding %D (Limit: <30.0%)	Associated Samples	Qualifications
	12/2/6		ICA	2, 6-Dinitrotoluene	ı		THU FAUE /A NO
	gor						
		٦					
		П					
							57 Ven.
						20 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -	

LDC #: 50747E2a

## VALIDATION FINDINGS WORKSHEET Continuing Calibration

Page: 1 of 1 ᆫ Reviewer:\_\_

METHOD: GC/MS SVOA (EPA Method 525.2

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument? Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's? Were all %D and RRFs within the validation criteria of ≤30%D and ≥0.05 RRF?

*	Date	Standard ID	Compound	Finding %D (Limit: <30.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications	ns L
	7/14/21	ccv2	Butachlor	35		Ail	J+/UJ/A ND	
	2050							
							,	
	7/14/21	ccv3	Trifluralin	88		All	J+/UJ/A ND	
	2117							
	7777	7700	رند. اردار	[		= *	NA AUD	
	2144	**		Ť		₹		
	7/15/21	CCV-8 closing	Trifluralin	86 (≤ 50%)		ll <b>Y</b>	J+/UJ/A ND	
	1053							
		ADD TEXT BELOW						
		Although the perc	cent difference wa:	Although the percent difference was grossly exceeded ( 2	50%) for some ana	( ≥50%) for some analytes, using professional judgment,		
		associated result	associated results were quainted estil associated results were not detected.	stimateo instead of A kd.	since the percent of	merence were plased night and the		
								:

LDC# 5074762a

## **VALIDATION FINDINGS WORKSHEET** Laboratory Control Samples (LCS)

Page: 1 of 1 Reviewer: FT

METHOD: GC/MS BNA (EPA Method 525.2)

Physical entities as a LCS required?

YNNINA

Was a LCS required?

YNNINA

Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

4 Qualifications	JINGIP all NO					<b>~</b>				0/ Jay 1/1/	7														
Associated Samples	All					Ţ				M. A				j										!	
RPD (Limits)	( )	( )	( )	( )	( )	( )	( )	()	( )	( )	( )	( )	( )	( )	( )	()	( )	,	( )	( )	( )	( )	( )	( )	( )
LCSD %R (Limits)	(	(UE) -OL) 891	( )	(130 ( ps/ os)	671-as ) 741	(UE1-07) EE1		( )	(	( )	( )	( )	( )	( )	( )	( )	( )	1	( )	( )	( )	}(	( )	) ( )	( )
LC8 %R (Limits)	13 (70-137)	38	132 ( 4 )	(7) (50-12d)	(CS)-05) 84)	( )	( )	( )	( )	( )	( )	( )	( )	( )	( ) –	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
SD ID Compound	Acetochlor	Bis (2 -cthylheryl) adipate	Chloronoham'	Metributin	77	333				Tan 216, 21 Part	you vi rans														
# LCS/LCSD ID	WIF 1708-	alton							-														2.3		