

A LOND A A Inc.

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environmental consultants laboratory services

LABORATORY ANALYSIS REPORT

BTEX Analysis in SUMMA Canister Samples by Method EPA TO-15

Report Date: November 2, 2015 Client: AirKinetics, Inc.

Project Location: SCG - Aliso Canyon

Project No.: 14424

Date Received: November 2, 2015 Date Analyzed: November 2, 2015

ANALYSIS DESCRIPTION

Benzene, toluene, ethylbenzene, and xylenes were measured by gas chromatography/mass spectrometry (GC/MS) by Method EPA TO-15.

AtmAA Lab No.: Sample I.D.:	13065-11 Porter Ranch	13065-12 Holleigh Benson	13065-13 Porter Ranch Est.	13065-14 Sample	13065-15 Castlebay
	Community School	Park - BB Court :	Sesnon Inlet	Highlands 1	Elementary
Components		(Co	ncentration in ppb	(עי	
Benzene	1.22	0.89	1.05	0.66	0.67
Toluene	2.02	0.78	0.60	<0.6	<0.6
Ethylbenzene	<0.6	<0.6	<0.6	<0.6	<0.6
m + p-xylenes	<0.6	<0.6	<0.6	<0.6	<0.6
o-xylene	<0.6	<0.6	<0.6	<0.6	<0.6

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ANALYSIS DESCRIPTION

Benzene, toluene, ethylbenzene, and xylenes were measured by gas chromatography/mass spectrometry (GC/MS) by Method EPA TO-15.

AtmAA Lab No.: Sample I.D.:	13065-16 Starter Set	13065-17 Sample	13065-18 Sample	13065-19 Sample
Components	Preschool	Highlands 2 (Concentrati	SS9	S\$5
Components		(OOHOBINI BU	οπ περρονή	
Benzene	0.79	0.90	1.59	1.04
Toluene	0.77	1.20	0.81	<0.6
Ethylbenzene	<0.6	<0.6	<0.6	<0.6
m + p-xylenes	<0.6	<0.6	<0.6	<0.6
o-xylene	<0.6	<0.6	<0.6	<0.6



QUALITY ASSURANCE SUMMARY (Repeat Analysis)

Project Location: SCG - Aliso Canyon Date Received: November 2, 2015 Date Analyzed: November 2, 2015

Component	Sample ID	Repeat Run #1	Analysis Run #2 centration in	Mean Conc.	% Diff. From Mean
	•	(,	-10-4-7	
Benzene	Porter Ranch Community School	1.38	1.06	1.22	13
	Sample SS9	1.51	1.67	1.59	5.0
	Sample SS5	1.02	1.05	1.04	1.4
Toluene	Porter Ranch Community School	1.84	2.2	2.02	8.9
	Sample SS9	0.83	0.79	0.81	2.5
	Sample SS5	<0.6	<0.6	<0.6	
Ethylbenzene	Porter Ranch Community School	<0.6	<0.6	<0.6	
	Sample SS9	<0.6	<0.6	<0.6	·
	Sample SS5	<0.6	<0.6	<0.6	
m + p-xylenes	Porter Ranch Community School	<0.6	<0.6	<0.6	442
•	Sample SS9	<0.6	<0.6	<0.6	
•	Sample SS5	<0.6	<0.6	<0.6	
o-xylene	Porter Ranch Community School	<0.6	<0.6	<0.6	
-	Sample SS9	<0.6	<0.6	<0.6	
	Sample SS5	<0.6	<0.6	<0.6	

Nine SUMMA canister samples, laboratory numbers 13065-(11-19), were analyzed for BTEX. Agreement between repeat analyses is a measure of precision and is shown above in the column "% Difference from Mean". The average % difference from mean for 5 repeat measurements from nine SUMMA canister samples is 6.2%.





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LABORATORY ANALYSIS REPORT

Hydrogen Sulfide and Reduced Sulfur Compounds Analysis in Tedlar Bag Samples by Method SCAQMD 307.91

Report Date: November 2, 2015

Client: AirKinetics, Inc.

Project Location: SCG - Aliso Canyon

Project No.: 14424

Date Received: November 2, 2015 Date Analyzed: November 2, 2015

ANALYSIS DESCRIPTION

Hydrogen sulfide was analyzed by gas chromatography with a Hall electrolytic conductivity detector operated in the oxidative sulfur mode. All other components were measured by GC/ Mass Spec.

AtmAA Lab No.: Sample I.D.:	13065-2 Porter Ranch Community School	13065-3 Holleigh Benson Park - BB Court	13065-4 Porter Ranch Est. Sesnon Inlet	13065-5 Sample Highlands 1	13065-6 Castlebay Elementary
Components		(Co	oncentration in ppb	· · · · · · · · · · · · · · · · · · ·	
Hydrogen sulfide	<50	<50	<50	<50	NA
Carbonyl sulfide	<10	<10	<10	<10	NA
Methyl mercaptan	<10	<10	<10	<10	NA
Ethyl mercaptan	<10	<10	<10	<10	NA
Dimethyl sulfide	<10	<10	<10	<10	NA
Carbon disulfide	<10	<10	<10	<10	NA
isopropyl mercaptan	<10	<10	<10	<10	NA
n-propyl mercaptan	<10	<10	<10	<10	NA
Dimethyl disulfide	<10	<10	<10	<10	NA
TRS	<150	<150	<150	<150	NA

TRS - total reduced sulfur

NA - Not analyzed, bag received flat

LABORATORY ANALYSIS REPORT

Hydrogen Sulfide and Reduced Sulfur Compounds
Analysis in Tedlar Bag Samples by Method SCAQMD 307.91

Report Date: November 2, 2015

Client: AirKinetics, Inc.

Project Location: SCG - Aliso Canyon

Project No.: 14424

Date Received: November 2, 2015 Date Analyzed: November 2, 2015

ANALYSIS DESCRIPTION

Hydrogen sulfide was analyzed by gas chromatography with a Hall electrolytic conductivity detector operated in the oxidative sulfur mode. All other components were measured by GC/ Mass Spec.

AtmAA Lab No.: Sample I.D.:	13065-7 Starter Set	13065-8 Sample	13065-9 Sample	13065-10 Sample
Components	Preschool	Highlands 2 (Concentrati	988 (vdaa ni no	<u>\$</u> \$5
		1		
Hydrogen sulfide	<50	<50	NA	<50
Carbonyl sulfide	<10	<10	NA	<10
Methyl mercaptan	<10	<10	NA	<10
Ethyl mercaptan	<10	<10	NA	<10
Dimethyl sulfide	<10	<10	NA	<10
Carbon disulfide	<10	<10	NA	<10
isopropyl mercaptan	<10	<10	NA	<10
n-propyl mercaptan	<10	<10	NA	<10
Dimethyl disulfide	<10	<10	NA	<10
TRS	<150	<150	NA	<150

TRS - total reduced sulfur

NA - Not analyzed, bag received flat



QUALITY ASSURANCE SUMMARY (Repeat Analyses)

Project Location: SCG - Aliso Canyon
Date Received: November 2, 2015
Date Analyzed: November 2, 2015

	Sample ID	Repeat	Analysis Run #2	Mean	% Diff.
Components	שו	-	entration in	Conc.	From Mean
· · · · · · · · · · · · · · · · · · ·	_	,		rr~-,	
Hydrogen sulfide	Porter Ranch Community School	<50	<50	<50	
	Holleigh Bernson Park -BB Court	<50	<50	<50	
	Porter Ranch Estates - Sesnon Inlet	<50	<50	<50	
	Highlands 1	<50	<50	<50	
	Starter Set Preschool	<50	<50	<50	
	Highlands _. 2	<50	<50	<50	750
	Sample SS5	<50	. <50	<50	
Carbonyl sulfide	Sample SS5	<10	<10	<10	
Methyl mercaptan	Sample SS5	<10	<10	<10	
Ethyl mercaptan	Sample SS5	<10	<10	<10	tor of or
Dimethyl sulfide	Sample SS5	<10	<10	<10	
Carbon disulfide	Sample SS5	<10	<10	<10	
iso-propyl mercaptan	Sample SS5	<10	<10	<10	
n-propyl mercaptan	Sample SS5	<10	<10	<10	
Dimethyl disulfide	Sample SS5	<10	<10	<10	

Seven Tedlar bag samples, laboratory numbers 13065-(2-10), were analyzed for total reduced sulfur compounds. Agreement between repeat analyses is a measure of precision and is shown above in the column "% Difference from Mean". No % difference from mean can be calculated from the seven Tedlar bag samples.



13065-2

FLAT -6

Received by:

EMISSIONS CHARACTERIZATION AND TESTING SERVICES

REQUEST FOR ANALYSIS PURCHASE ORDER No.: SCG Account JOB NAME: SCG - Aliso Canyon ATMAA JOB No.: 14424 LABORATORY: **DATE SAMPLES EXPECTED DATE** WERE TRANSMITTED: 11/2/2015 OF RESULTS: 11/16/2015 SAMPLE MATRIX: Ambient Air TYPE OF ANALYSIS REQUIRED: Please analyze samples for Total Sulfur in accordance with SCAQMD Method 307-91 procedures. Please observe the maximum 24-hr holding time. Sample Collection Sample Sample Condition of Sample Sample / Run ID# _.Date__ Components Matrix Tedlar Bag Ambient Air Porter Ranch 11/01/15 (0305-0315)Community School Holleigh Bernson Park 11/01/15 Tedlar Bag Ambient Air - BB Court (0327 - 0337)Porter Ranch Estates -11/01/15 Tedlar Bag Ambient Air Sesnon Inlet (0346-0356)11/01/15 Tedlar Bag Ambient Air Highlands 1 (0403 - 0413)Castlebay Elementary 11/01/15 Tedlar Bag Ambient Air (0450-0500) $11/\overline{01/15}$ Starter Set Preschool Tedlar Bag Ambient Air (0507-0517)Highlands 2 11/01/15 Tedlar Bag Ambient Air (0525-0535)SS9 11/01/15 Tedlar Bag Ambient Air (0609 - 0619)11/01/15 SS5 **Tedlar Bag** Ambient Air 10 (0626-0636)Tedlar Bag * For Laboratory Comments (temp., labels, etc.) Samples Relinquished by: Date/Time: 11/2/15 @ **(O (O** Date/Time: 11/2/15 @ 1010 Transported by: Southern California Express (818) 223-3277 Transported to: ATMAA 23917 Craftsman Rd. Calabasas, CA 91302

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Date/Time: 1/-2-15 /2:45

13065/11

-17

158

-19

EMISSIONS CHARACTERIZATION AND TESTING SERVICES

REQUEST FOR A	ANAL	YSIS			
PURCHASE ORI	DER N	10.: <u>(SCG Acc</u>	mut)	JOB NAME:	SCG - Aliso Canyon
LABORATORY:	_	ATMAA		JOB No.:	14424
DATE SAMPLES WERE TRANSM		D:11/2/20		XPECTED DATE OF RESULTS:	11/16/2015
SAMPLE MATRI	IX:	Am	· · · · · · · · · · · · · · · · · · ·		
TYPE OF ANAL	YSIS I	REQUIRED: Pleas	se analyze samples	for BTEX in accor	dance with EPA method
TO-14 procedures	s and f	or speciated hydroca	rbons by EPA met	hod 18.	
		Sample Collection	Sample	Sample	
Sample / Run J		Date	Components	Matrix 5	Condition of Samples *
Porter Ranch		11/01/15	Tank # S7	Ambient Air	
Community Sch		(0305-0315)	T. 1 " CO		
Holleigh Bernson	Park	11/01/15	Tank # S2	Ambient Air	
- BB Court		(0327-0337)	- 1 1/ 010	<u> </u>	
Porter Ranch Esta		11/01/15	Tank # S19	Ambient Air	<u> </u>
Sesnon Inlet		(0346-0356)		<u> </u>	
Highlands 1		11/01/15	Tank # S31	Ambient Air	
		(0403-0413)			
Castlebay Elemer	ntary	11/01/15	Tank # S18	Ambient Air	
<u> </u>		(0450-0500)			
Starter Set Presch	hool	11/01/15	Tank # (S14)	Ambient Air	
		(0507-0517)			
Highlands 2		11/01/15	Tank # S28	Ambient Air	
		(0525-0535)			
SS9		11/01/15	Tank # S22	Ambient Air	
		(0609-0619)			
SS5		11/01/15	Tank # \$19	Ambient Air	
		(0626-0636)	\$13/	 	
				<u> </u>	
* For Laboratory Com	nments ((temp., lahels, etc.)	<u> </u>	٠	
zor nadoratory com			•		
Samples Relinquis	shed b	VI VAKULA I	ow	Date/Time:	11/2/15@ 1010
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		Calabasas, CA 9130			•
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LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in SUMMA Canister Samples

Report Date: November 2, 2015 Client: AirKinetics, Inc.

Site: So Cal Gas Location: Aliso Canyon

Project No.: 14424

Date Received: November 2, 2015 Date Analyzed: November 2, 2015

ANALYSIS DESCRIPTION

Hydrocarbon Speciation analysis was performed by flame ionization detection/gas chromatography (FID/GC), modified EPA-18.

AtmAA Lab No.: Sample ID:	13065-11 SUMMA S7			13065-13 SUMMA S19 in ppmv, con		13065-15 SUMMA S18
Methane	10.29	9.88	17.01	2.75	2.47	3.66
non-methane hydrocarbon analysis by carbon	s					
number grouping		•		n ppmv, as c		
Ethene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetylene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethane	0.33	0.30	0.59	<0.05	< 0.05	0.06
C3	0.03	0.02	0.04	< 0.03	< 0.03	< 0.03
Iso-Butane	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
N-Butane	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Iso-Pentane	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
N-Pentane	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02
C6	<0.02	<0.02	0.21	<0.02	< 0.02	<0.02
Hexane	< 0.02	<0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
			•			
TNMNE	0.09	0.06	1.38	<0.4	<0.4	<0.4
TNMHC	0.75	0.66	1.18	< 0.4	<0.4	<0.4

TNMNE - total non-methane, non-ethane, hydrocarbons as ppmvC.

TNMHC - total non-methane hydrocarbons as ppmvC.

LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in SUMMA Canister Samples

Report Date: November 2, 2015 Client: AirKinetics, Inc.

Site: So Cal Gas Location: Aliso Canyon

Project No.: 14424

Date Received: November 2, 2015 Date Analyzed: November 2, 2015

ANALYSIS DESCRIPTION

Hydrocarbon Speciation analysis was performed by flame ionization detection/gas chromatography (FID/GC), modified EPA-18.

AtmAA Lab No.: Sample ID:	13065-16 SUMMA S14	13065-17 SUMMA S28	13065-18 SUMMA S22	13065-19 SUMMA S19	(repeat) SUMMA S19		
	(Concentration in ppmv, component)						
Methane	4.45	3.15	416.6	1035	1056		
non-methane hydrocarbon analysis by carbon number grouping	s						
Ethene	< 0.05	< 0.05	< 0.05	<0.05	<0.05		
Acetylene	< 0.05	<0.05	<0.05	< 0.05	<0.05		
Ethane	0.08	0.06	15.58	38.51	38.94		
C3	< 0.03	< 0.03	0.90	2.13	2.16		
Iso-Butane	<0.02	< 0.02	0.08	0.20	0.19		
N-Butane	<0.02	< 0.02	0.09	0.17	0.17		
tso-Pentane	< 0.02	< 0.02	0.02	0.04	0.04		
N-Pentane	< 0.02	<0.02	0.02	0.02	0.02		
C6	< 0.02	<0.02	<0.02	< 0.02	<0.02		
Hexane	< 0.02	<0.02	<0.02	<0.02	<0.02		
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02		
TNMNE	<0.4	<0.4	3.58	8.17	8.22		
TNMHC	<0.4	<0.4	34.74	85.19	86.10		

TNMNE - total non-methane, non-ethane, hydrocarbons as ppmvC.

TNMHC - total non-methane hydrocarbons as ppmvC.



13065-2

FLAT -6

Received by:

EMISSIONS CHARACTERIZATION AND TESTING SERVICES REQUEST FOR ANALYSIS PURCHASE ORDER No.: (SCG Account JOB NAME: SCG - Aliso Canyon LABORATORY: **ATMAA** JOB No.: 14424 DATE SAMPLES **EXPECTED DATE** WERE TRANSMITTED: 11/2/2015 OF RESULTS: 11/16/2015 SAMPLE MATRIX: Ambient Air TYPE OF ANALYSIS REQUIRED: Please analyze samples for Total Sulfur in accordance with SCAQMD Method 307-91 procedures. Please observe the maximum 24-hr holding time. Sample Collection Sample Sample .Condition of Samples Date Sample / Run ID# Components Matrix Porter Ranch 11/01/15 Tedlar Bag Ambient Air (0305-0315)Community School Holleigh Bernson Park 11/01/15 Tedlar Bag Ambient Air - BB Court (0327 - 0337)Porter Ranch Estates -11/01/15 Tedlar Bag Ambient Air Sesnon Inlet (0346-0356)Highlands 1 11/01/15 **Tedlar Bag** Ambient Air (0403-0413)Castlebay Elementary 11/01/15 Tedlar Bag Ambient Air (0450-0500)Starter Set Preschool 11/01/15 Tedlar Bag Ambient Air (0507 - 0517)Highlands 2 11/01/15 Tedlar Bag Ambient Air (0525-0535)SS9 11/01/15 Tedlar Bag Ambient Air (0609 - 0619)SS5 11/01/15 Tedlar Bag Ambient Air (0626-0636)Tedlar Bag * For Laboratory Comments (temp., labels, etc.) MISTABIL Samples Relinquished by: Date/Time: 11/2/15 @ 1010 Date/Time: 11/2/15 @ 1010 Transported by: Southern California Express Transported to: **ATMAA** (818) 223-3277 23917 Craftsman Rd. Calabasas, CA 91302

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Date/Time: 1/-2-15 12:45

EMISSIONS CHARACTERIZATION AND TESTING SERVICES

	REQUEST FOR ANA	LYSIS			
	PURCHASE ORDER	No.: (SCG. Acc	mut)	JOB NAME:	SCG - Aliso Canyon
	LABORATORY:	ATMAA		JOB No.:	14424
	DATE SAMPLES WERE TRANSMITTI	ED:11/2/20		XPECTED DATE OF RESULTS:	11/16/2015
	SAMPLE MATRIX:	Am			
	TYPE OF ANALYSIS	REQUIRED: Pleas	se analyze samples	for BTEX in acco	rdance with EPA method
	TO-14 procedures and	for speciated hydroca	arbons by EPA met	hod 18.	
		·		· <u></u>	· · · · · · · · · · · · · · · · · · ·
	Sample//Run ID#	Sample Collection Date	Sample	Sample Matrix	Condition of Samples *
306511	Porter Ranch	11/01/15	Tank # S7	Ambient Air	
-12	Community School Holleigh Bernson Park - BB Court	(0305-0315) 11/01/15 (0327-0337)	Tank # S2	Ambient Air	
,13	Porter Ranch Estates - Sesnon Inlet	11/01/15 (0346-0356)	Tank # S19	Ambient Air	
-14	Highlands .1	11/01/15 (0403-0413)	Tank # S31	Ambient Air	
-15	Castlebay Elementary		Tank # S18	Ambient Air	
-16	Starter Set Preschool	11/01/15 (0507-0517)	Tank # (S14)	Ambient Air	
-17	Highlands 2	11/01/15 (0525-0535)	Tank # S28	Ambient Air	
15	SS9	11/01/15 (0609-0619)	Tank # S22	Ambient Air	
-19	SS5	11/01/15 (0626-0636)	Tank # S19 S/3 /	Ambient Air	
		(0020 0000)			
	* For Laboratory Comments	•	•		
	Samples Relinquished	by: MUNTAN	<u>four</u>	Date/Time:	11/2/15@ 1010
	Transported by:	Southern California	Express	Date/Time:	11/2/15 @ 1010
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		Calabasas, CA 9130)2	<u></u>	<u>.</u>
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