AtmAA Inc.
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environmental consultants
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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 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 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.:	13145-4	13145-9	13145-10
Sample I.D.:	Sample Highlands 1	Sample SS-3H	Sample SS-5
Components	*(Concentration in ppbv)*		
Hydrogen sulfide	<5	<5	<5
Carbonyl sulfide	<5	<5	<5
Methyl mercaptan	<5	<5	<5
Ethyl mercaptan	<5	<5	<5
Dimethyl sulfide	<5	<5	<5
Carbon disulfide	<5	<5	<5
isopropyl mercaptan	<5	<5	<5
t-butyl mercaptan	<5	<5	<5
n-propyl mercaptan	<5	<5	<5
Dimethyl disulfide	<5	<5	<5
Tetrahydrothiophene	<5	<5	<5
TRS	<65	<65	<65

TRS - total reduced sulfur

Michael L. Porter
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Location: SCG - Aliso Canyon
Date Received: November 10, 2015
Date Analyzed: November 10, 2015

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration in ppbv)			
Hydrogen sulfide	Sample SS-3H	<5	<5	<5	---
Carbonyl sulfide	Sample SS-3H	<5	<5	<5	---
Methyl mercaptan	Sample SS-3H	<5	<5	<5	---
Ethyl mercaptan	Sample SS-3H	<5	<5	<5	---
Dimethyl sulfide	Sample SS-3H	<5	<5	<5	---
Carbon disulfide	Sample SS-3H	<5	<5	<5	---
iso-propyl mercaptan	Sample SS-3H	<5	<5	<5	---
t-butyl mercaptan	Sample SS-3H	<5	<5	<5	---
n-propyl mercaptan	Sample SS-3H	<5	<5	<5	---
Dimethyl disulfide	Sample SS-3H	<5	<5	<5	---
Tetrahydrothiophene	Sample SS-3H	<5	<5	<5	---

Three Tedlar bag samples, laboratory numbers 13145-(4, 9, 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 3 Tedlar bag samples.

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LABORATORY ANALYSIS REPORT

BTEX Analysis in SUMMA Canister Samples by Method EPA TO-14

Report Date: November 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 2015

ANALYSIS DESCRIPTION

Benzene, toluene, ethylbenzene, and xylenes were measured by gas chromatography/ mass spectrometry (GC/MS) by Method EPA TO-14.

AtmAA Lab No.:	13145-12	13145-13	13145-14	13145-15
Sample I.D.:	Porter Ranch Community School	Holleigh Benson Park - BB Court	Porter Ranch Est. Sesnon Inlet	Sample Highlands 1
Components	*(Concentration in ppbv)*			
Benzene	0.37	0.73	3.68	5.55
Toluene	<0.3	0.35	1.52	0.92
Ethylbenzene	<0.3	<0.3	<0.3	<0.3
m + p-xylenes	<0.3	<0.3	0.77	0.47
o-xylene	<0.3	<0.3	<0.3	<0.3

Michael L. Porter
Laboratory Director

LABORATORY ANALYSIS REPORT

BTEX Analysis in SUMMA Canister Samples by Method EPA TO-14

Report Date: November 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 2015

ANALYSIS DESCRIPTION

Benzene, toluene, ethylbenzene, and xylenes were measured by gas chromatography/ mass spectrometry (GC/MS) by Method EPA TO-14.

AtmAA Lab No.:	13145-16	13145-17	13145-18	13145-19
Sample I.D.:	Sample Highlands 2	Castlebay Elementary	Starter Set Preschool	Porter Ridge Park
Components	*(Concentration in ppbv)*			
Benzene	1.39	0.64	0.80	0.66
Toluene	0.68	<0.3	<0.3	<0.3
Ethylbenzene	<0.3	<0.3	<0.3	<0.3
m + p-xylenes	0.31	<0.3	<0.3	<0.3
o-xylene	<0.3	<0.3	<0.3	<0.3

Michael L. Porter
Laboratory Director

LABORATORY ANALYSIS REPORT

BTEX Analysis in SUMMA Canister Samples by Method EPA TO-14

Report Date: November 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 2015

ANALYSIS DESCRIPTION

Benzene, toluene, ethylbenzene, and xylenes were measured by gas chromatography/ mass spectrometry (GC/MS) by Method EPA TO-14.

AtmAA Lab No.:	13145-20	13145-21	13145-22
Sample I.D.:	Sample SS-3H	Sample SS-5	Sample SF 2/5
Components	*(Concentration in ppbv)*		
Benzene	16.6	7.60	0.96
Toluene	9.68	3.84	0.42
Ethylbenzene	1.08	0.42	<0.3
m + p-xylenes	5.34	2.00	<0.3
o-xylene	1.52	0.50	<0.3

Michael L. Porter
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analysis)

Project Location: SCG - Aliso Canyon
Date Received: November 10, 2015
Date Analyzed: November 10, 2015

Component	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration in ppbv)			
Benzene	Porter Ranch Est. Sesnon Inlet	3.87	3.49	3.68	5.2
	Sample SS-3H	17.0	16.2	16.6	2.4
	Sample SS-5	7.91	7.30	7.60	4.0
Toluene	Porter Ranch Est. Sesnon Inlet	1.61	1.42	1.52	6.3
	Sample SS-3H	8.96	10.4	9.68	7.4
	Sample SS-5	3.71	3.96	3.84	3.2
Ethylbenzene	Porter Ranch Est. Sesnon Inlet	<0.3	<0.3	<0.3	---
	Sample SS-3H	1.03	1.14	1.08	5.1
	Sample SS-5	0.41	0.42	0.42	1.2
m + p-xylenes	Porter Ranch Est. Sesnon Inlet	0.82	0.72	0.77	6.5
	Sample SS-3H	5.08	5.60	5.34	4.9
	Sample SS-5	1.99	2.01	2.00	0.50
o-xylene	Porter Ranch Est. Sesnon Inlet	<0.3	<0.3	<0.3	---
	Sample SS-3H	1.48	1.56	1.52	2.6
	Sample SS-5	0.49	0.52	0.50	3.0

Eleven SUMMA canister samples, laboratory numbers 13145-(12-22), 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 13 repeat measurements from 11 SUMMA canister samples is 4.0%.

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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 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 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.:	13145-1	13145-2	13145-3	13145-4
Sample I.D.:	Porter Ranch Community School	Holleigh Benson Park - BB Court	Porter Ranch Est. Sesnon Inlet	Sample Highlands 1
Components	*(Concentration in ppbv)*			
Hydrogen sulfide	<5	<5	<5	<5
Carbonyl sulfide	<5	<5	<5	<5
Methyl mercaptan	<5	<5	<5	<5
Ethyl mercaptan	<5	<5	<5	<5
Dimethyl sulfide	<5	<5	<5	<5
Carbon disulfide	<5	<5	<5	<5
isopropyl mercaptan	<5	<5	<5	<5
n-propyl mercaptan	<5	<5	<5	<5
Dimethyl disulfide	<5	<5	<5	<5
TRS	<45	<45	<45	<45

TRS - total reduced sulfur

Michael L. Porter
Laboratory Director

LABORATORY ANALYSIS REPORT

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

Report Date: November 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 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.:	13145-5	13145-6	13145-7	13145-8
Sample I.D.:	Sample Highlands 2	Castlebay Elementary	Starter Set Preschool	Porter Ridge Park
Components	*(Concentration in ppbv)*			
Hydrogen sulfide	<5	<5	<5	<5
Carbonyl sulfide	<5	<5	<5	<5
Methyl mercaptan	<5	<5	<5	<5
Ethyl mercaptan	<5	<5	<5	<5
Dimethyl sulfide	<5	<5	<5	<5
Carbon disulfide	<5	<5	<5	<5
isopropyl mercaptan	<5	<5	<5	<5
n-propyl mercaptan	<5	<5	<5	<5
Dimethyl disulfide	<5	<5	<5	<5
TRS	<45	<45	<45	<45

TRS - total reduced sulfur

Michael L. Porter
Laboratory Director

LABORATORY ANALYSIS REPORT

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

Report Date: November 10, 2015
Client: AirKinetics, Inc.
Project Location: SCG - Aliso Canyon
Project No.: 14424
Date Received: November 10, 2015
Date Analyzed: November 10, 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.:	13145-9	13145-10	13145-11
Sample I.D.:	Sample SS-3H	Sample SS-5	Sample SF 2/5
Components	*(Concentration in ppbv)*		
Hydrogen sulfide	<5	<5	<5
Carbonyl sulfide	<5	<5	<5
Methyl mercaptan	<5	<5	<5
Ethyl mercaptan	<5	<5	<5
Dimethyl sulfide	<5	<5	<5
Carbon disulfide	<5	<5	<5
isopropyl mercaptan	<5	<5	<5
n-propyl mercaptan	<5	<5	<5
Dimethyl disulfide	<5	<5	<5
TRS	<45	<45	<45

TRS - total reduced sulfur

Michael L. Porter
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Location: SCG - Aliso Canyon
Date Received: November 10, 2015
Date Analyzed: November 10, 2015

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration in ppbv)			
Hydrogen sulfide	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
Carbonyl sulfide	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
Methyl mercaptan	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
Ethyl mercaptan	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
Dimethyl sulfide	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
Carbon disulfide	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
iso-propyl mercaptan	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
n-propyl mercaptan	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---
Dimethyl disulfide	Porter Ranch Est. Sesnon Inlet	<5	<5	<5	---
	Sample SS-3H	<5	<5	<5	---

Eleven Tedlar bag samples, laboratory numbers 13145-(1-11), 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 11 Tedlar bag samples.

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LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in SUMMA Canister Samples

Report Date: November 11, 2015
Client: AirKinetics, Inc.
Site: So Cal Gas
Location: Aliso Canyon
Project No.: 14424

Date Received: November 10, 2015
Date Analyzed: November 10, 2015

ANALYSIS DESCRIPTION

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

AtmAA Lab No.:	13145-12	(repeat)	13145-13	13145-14	13145-15	13145-16
Sample ID:	SUMMA S282	SUMMA S282	SUMMA S114	SUMMA S288	SUMMA S355	SUMMA S13
	(Concentration in ppmv, component)					
Methane	3.25	3.42	38.70	230.6	134.9	85.50
non-methane hydrocarbons analysis by carbon number grouping	(Concentration in ppmv, as component)					
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	0.05	0.05	1.49	9.04	5.27	3.32
C3	0.08	0.04	0.08	0.59	0.38	0.26
Iso-Butane	<0.02	<0.02	<0.02	0.06	0.03	<0.02
N-Butane	<0.02	<0.02	<0.02	0.05	0.03	<0.02
C4	<0.02	<0.02	0.05	<0.02	<0.02	0.06
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
C5	0.09	0.04	0.04	0.04	<0.02	0.02
C6	0.02	<0.02	0.02	0.02	<0.02	<0.02
C7	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TNMNE	0.81	0.32	0.76	2.53	1.38	1.12
TNMHC	0.91	0.42	3.74	20.61	11.92	7.76

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

Michael L. Porter
Laboratory Director

LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in SUMMA Canister Samples

Report Date: November 11, 2015
Client: AirKinetics, Inc.
Site: So Cal Gas
Location: Aliso Canyon
Project No.: 14424

Date Received: November 10, 2015
Date Analyzed: November 10, 2015

ANALYSIS DESCRIPTION

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

AtmAA Lab No.:	13145-17	13145-18	13145-19	13145-20	13145-21	13145-22	(repeat)
Sample ID:	SUMMA	SUMMA	SUMMA	SUMMA	SUMMA	SUMMA	SUMMA
	S18	S7	S14	S19	S133	S134	S134
	(Concentration in ppmv, component)						
Methane	17.02	6.92	4.24	1318	702.0	53.88	53.72
non-methane hydrocarbons analysis by carbon number grouping							
Ethene	<0.05	<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	<0.05
Ethane	0.62	0.20	0.07	50.82	27.08	2.03	2.10
C3	0.07	0.06	0.07	3.13	1.68	0.17	0.17
Iso-Butane	<0.02	<0.02	<0.02	0.32	0.04	<0.02	<0.02
N-Butane	<0.02	<0.02	<0.02	0.31	0.17	0.02	<0.02
C4	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Iso-Pentane	<0.02	<0.02	<0.02	0.08	0.14	<0.02	<0.02
N-Pentane	<0.02	<0.02	<0.02	0.06	0.04	<0.02	<0.02
C5	0.03	0.03	0.02	0.02	0.04	0.02	0.02
C6	<0.02	0.02	0.06	0.08	0.08	0.02	<0.02
C7	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
TNMNE	0.36	0.45	0.96	13.19	7.46	0.81	0.61
TNMHC	1.60	0.85	1.10	114.8	61.62	4.87	4.81

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

Michael L. Porter
Laboratory Director

AirKinetics, Inc.

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 WERE TRANSMITTED: EXPECTED DATE OF RESULTS:

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 / Run ID #	Sample Collection Date	Sample Components	Sample Matrix	Condition of Samples*
13145-1 Porter Ranch Community School	11-10-15 0300-0310	Tedlar Bag	Ambient Air	
-2 Holleigh Bernson Park - BB Court	11-10-15 0317-0327	Tedlar Bag	Ambient Air	
-3 Porter Ranch Estates - Sesnon Inlet	11-10-15 0335-0345	Tedlar Bag	Ambient Air	
-4 Highlands 1	11-10-15 0354-0404	Tedlar Bag	Ambient Air	
-5 Highlands 2	11-10-15 0432-0442	Tedlar Bag	Ambient Air	
-6 Castlebay Elementary	11-10-15 0451-0501	Tedlar Bag	Ambient Air	
-7 Starter Set Preschool	11-10-15 0509-0519	Tedlar Bag	Ambient Air	
-8 Porter Ridge Park (end of Sesnon)	11-10-15 0528-0538	Tedlar Bag	Ambient Air	
-9 ~~SS~~ SS-3H	11-10-15 0612-0622	Tedlar Bag	Ambient Air	
-10 SS-5	11-10-15 0631-0641	Tedlar Bag	Ambient Air	
-11 SF 2/5	11-10-15 0652-0702	Tedlar Bag	Ambient Air	
SF 2/5		Tedlar Bag	Ambient Air	

* For Laboratory Comments (temp., labels, etc.)

Samples Relinquished by: [signature] Date/Time: 11-10-15 0906

Transported by: [signature] Date/Time: 11-10-15 0906

Transported to: ATMAA (818) 223-3277
23917 Craftsman Rd.
Calabasas, CA 91302

Received by: [signature] Date/Time: 11/10/15 9:06

AirKinetics, Inc.

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 WERE TRANSMITTED: EXPECTED DATE OF RESULTS:

SAMPLE MATRIX: Ambient Air

TYPE OF ANALYSIS REQUIRED: Please analyze samples for BTEX in accordance with EPA method TO-14 procedures and for speciated hydrocarbons by EPA method 18.

	Sample / Run ID #	Sample Collection Date/Time	Sample Components	Sample Matrix	Condition of Samples *
13145-12	Porter Ranch Community School	11-10-15 0300-0310	Tank # 282	Ambient Air	
-13	Holleigh Bernson Park - BB Court	11-10-15 0317-0327	Tank # 114	Ambient Air	
-14	Porter Ranch Estates - Sesnon Inlet	11-10-15 0335-0345	Tank # 288	Ambient Air	
-15	Highlands 1	11-10-15 0354-0404	Tank # 355	Ambient Air	
-16	Highlands 2	11-10-15 0432-0442	Tank # S13	Ambient Air	
-17	Castlebay Elementary	11-10-15 0451-0501	Tank # 118	Ambient Air	
-18	Starter Set Preschool	11-10-15 0509-0519	Tank # S7	Ambient Air	
-19	Porter Ridge Park (end of Sesnon)	11-10-15 0528-0538	Tank # S14	Ambient Air	
-20	~~SS-5~~ SS-3H	11-10-15 0612-0622	Tank # S19	Ambient Air	
-21	SS-5	11-10-15 0631-0641	Tank # 133	Ambient Air	
-22	SF 2/5	11-10-15 0652-0702	Tank # 134	Ambient Air	
	SF 2/5		Tank #	Ambient Air	

* For Laboratory Comments (temp., labels, etc.)

Samples Relinquished by: Date/Time: 11-10-15 0906

Transported by: Date/Time: 11-10-15 0906

Transported to: ATMAA (818) 223-3277
23917 Craftsman Rd.
Calabasas, CA 91302

Received by: Date/Time: 11/10/15 9:06