

# Case Narrative

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

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## Job ID: 440-227298-1 (Continued)

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### Laboratory: TestAmerica Irvine (Continued)

interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 5310C: The continuing calibration blank (CCB) for analytical batch 440-518059 contained Total Organic Carbon above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method(s) SM 4500 S2 D: The following sample(s) was prepared outside of preparation holding time. Sulfide analysis was added to the job past the samples holding time. MW-1 (440-227298-1), MW-5 (440-227298-2), MW-9 (440-227298-3), MW-13R (440-227298-4), CM-10R (440-227298-5), DW-1 (440-227298-6), DW-5 (440-227298-7), Duplicate (440-227298-8) and LX-7 (440-227298-9).

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

### Organic Prep

Method(s) 3520C / 8270C-1,4-DXN: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-516868.

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

### VOA Prep

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

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-1**  
**Date Collected: 12/11/18 09:44**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-1**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 15:02	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Acrolein	ND		50	2.5	ug/L			12/12/18 12:06	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 12:06	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 15:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 15:02	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 15:02	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 15:02	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 15:02	1
Acetone	ND		20	10	ug/L			12/18/18 15:02	1
Acetonitrile	ND		20	10	ug/L			12/18/18 15:02	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 15:02	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 15:02	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 15:02	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 15:02	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 15:02	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 15:02	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 15:02	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 15:02	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 15:02	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 15:02	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 15:02	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 15:02	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 15:02	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-1**  
**Date Collected: 12/11/18 09:44**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-1**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 15:02	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 15:02	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Propionitrile	ND		20	10	ug/L			12/18/18 15:02	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 15:02	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 15:02	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 15:02	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 15:02	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 15:02	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 15:02	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 15:02	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 15:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 15:02	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.2	TJ	ug/L		7.21			12/18/18 15:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128		12/12/18 12:06	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/12/18 12:06	1
Toluene-d8 (Surr)	98		80 - 128		12/18/18 15:02	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/18/18 15:02	1
Dibromofluoromethane (Surr)	100		76 - 132		12/12/18 12:06	1
Dibromofluoromethane (Surr)	102		76 - 132		12/18/18 15:02	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.3		0.99	0.25	ug/L		12/13/18 11:00	12/14/18 19:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	52		30 - 120	12/13/18 11:00	12/14/18 19:35	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.85	J	1.0	0.50	mg/L			12/11/18 22:22	2
Nitrate as N	ND		0.22	0.11	mg/L			12/11/18 22:22	2
Chloride	87		10	5.0	mg/L			12/12/18 02:32	20
Fluoride	1.9		1.0	0.50	mg/L			12/11/18 22:22	2
Sulfate	860		50	25	mg/L			12/12/18 01:22	100

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.0		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 17:38	1
Calcium	210		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:38	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-1**  
**Date Collected: 12/11/18 09:44**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-1**  
**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	25		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:38	1
Magnesium	110		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 17:38	1
Manganese	1.4		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 17:38	1
Potassium	22		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 17:38	1
Sodium	220		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 17:38	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	3.4		0.20	0.10	mg/L			12/17/18 14:09	1
Chemical Oxygen Demand	62		20	10	mg/L			12/21/18 09:19	1
Total Dissolved Solids	2000		20	10	mg/L			12/18/18 08:31	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:32	1
Total Organic Carbon	19	^	0.10	0.050	mg/L			12/18/18 18:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	410		4.0	4.0	mg/L			12/13/18 09:41	1
Bicarbonate Alkalinity as CaCO3	410		4.0	4.0	mg/L			12/13/18 09:41	1
Carbon Dioxide, Free	21		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: MW-5**  
**Date Collected: 12/11/18 11:30**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-2**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 15:26	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Acrolein	ND		50	2.5	ug/L			12/12/18 12:30	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 12:30	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 15:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 15:26	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 15:26	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 15:26	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 15:26	1
Acetone	ND		20	10	ug/L			12/18/18 15:26	1
Acetonitrile	ND		20	10	ug/L			12/18/18 15:26	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 15:26	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 15:26	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-5**  
**Date Collected: 12/11/18 11:30**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-2**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 15:26	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 15:26	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 15:26	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 15:26	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 15:26	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 15:26	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 15:26	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 15:26	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 15:26	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 15:26	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 15:26	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 15:26	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 15:26	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Propionitrile	ND		20	10	ug/L			12/18/18 15:26	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
<b>t-Butanol</b>	<b>12</b>	<b>ID</b>	10	5.0	ug/L			12/18/18 15:26	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 15:26	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 15:26	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 15:26	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 15:26	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 15:26	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 15:26	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 15:26	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 15:26	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.7	TJ	ug/L		3.48			12/18/18 15:26	1
Unknown	9.0	TJ	ug/L		7.21			12/18/18 15:26	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-5**  
**Date Collected: 12/11/18 11:30**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-2**  
**Matrix: Water**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 128		12/12/18 12:30	1
4-Bromofluorobenzene (Surr)	93		80 - 120		12/12/18 12:30	1
Toluene-d8 (Surr)	98		80 - 128		12/18/18 15:26	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/18/18 15:26	1
Dibromofluoromethane (Surr)	100		76 - 132		12/12/18 12:30	1
Dibromofluoromethane (Surr)	101		76 - 132		12/18/18 15:26	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	9.1		1.0	0.26	ug/L		12/13/18 11:00	12/14/18 19:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	51		30 - 120	12/13/18 11:00	12/14/18 19:58	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	2.7		2.5	1.3	mg/L			12/11/18 22:36	5
Nitrate as N	ND		0.55	0.28	mg/L			12/11/18 22:36	5
Chloride	230		100	50	mg/L			12/11/18 22:50	200
Fluoride	2.7		2.5	1.3	mg/L			12/11/18 22:36	5
Sulfate	1400		100	50	mg/L			12/11/18 22:50	200

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 16:20	1
Calcium	400		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:20	1
Iron	32		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:20	1
Magnesium	190		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 16:20	1
Manganese	4.8		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 16:20	1
Potassium	29		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 16:20	1
Sodium	310		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 16:20	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	5.2		0.20	0.10	mg/L			12/17/18 14:23	1
Chemical Oxygen Demand	99		20	10	mg/L			12/21/18 09:19	1
Total Dissolved Solids	3500		20	10	mg/L			12/18/18 08:31	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:32	1
Total Organic Carbon	26		0.50	0.25	mg/L			12/20/18 09:07	5

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	700		4.0	4.0	mg/L			12/13/18 10:09	1
Bicarbonate Alkalinity as CaCO3	700		4.0	4.0	mg/L			12/13/18 10:09	1
Carbon Dioxide, Free	92		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: MW-9**  
**Date Collected: 12/11/18 13:50**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-3**  
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 15:50	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-9**  
**Date Collected: 12/11/18 13:50**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-3**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Acrolein	ND		50	2.5	ug/L			12/12/18 12:54	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 12:54	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 15:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 15:50	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 15:50	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 15:50	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 15:50	1
Acetone	ND		20	10	ug/L			12/18/18 15:50	1
Acetonitrile	ND		20	10	ug/L			12/18/18 15:50	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 15:50	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 15:50	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 15:50	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 15:50	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 15:50	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 15:50	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
<b>cis-1,2-Dichloroethene</b>	<b>0.75</b>		0.50	0.25	ug/L			12/18/18 15:50	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 15:50	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 15:50	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 15:50	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 15:50	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 15:50	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 15:50	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 15:50	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 15:50	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-9**  
**Date Collected: 12/11/18 13:50**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-3**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Methyl tert-butyl ether</b>	<b>1.0</b>		0.50	0.25	ug/L			12/18/18 15:50	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 15:50	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Propionitrile	ND		20	10	ug/L			12/18/18 15:50	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
<b>t-Butanol</b>	<b>18</b>	<b>ID</b>	10	5.0	ug/L			12/18/18 15:50	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
<b>Tetrahydrofuran</b>	<b>7.1</b>	<b>J</b>	10	5.0	ug/L			12/18/18 15:50	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 15:50	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 15:50	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 15:50	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 15:50	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 15:50	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 15:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 15:50	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.9	TJ	ug/L		7.21			12/18/18 15:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 128		12/12/18 12:54	1
4-Bromofluorobenzene (Surr)	91		80 - 120		12/12/18 12:54	1
Toluene-d8 (Surr)	96		80 - 128		12/18/18 15:50	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/18/18 15:50	1
Dibromofluoromethane (Surr)	100		76 - 132		12/12/18 12:54	1
Dibromofluoromethane (Surr)	108		76 - 132		12/18/18 15:50	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>18</b>		1.0	0.25	ug/L		12/13/18 11:00	12/14/18 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	48		30 - 120	12/13/18 11:00	12/14/18 20:21	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bromide</b>	<b>2.8</b>	<b>J</b>	5.0	2.5	mg/L			12/11/18 23:04	10
Nitrate as N	ND		1.1	0.55	mg/L			12/11/18 23:04	10
<b>Chloride</b>	<b>200</b>		5.0	2.5	mg/L			12/11/18 23:04	10
Fluoride	ND		5.0	2.5	mg/L			12/11/18 23:04	10
<b>Sulfate</b>	<b>1600</b>		100	50	mg/L			12/11/18 23:18	200

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>1.8</b>		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 17:19	1
<b>Calcium</b>	<b>420</b>		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:19	1
<b>Iron</b>	<b>52</b>		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:19	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-9**  
**Date Collected: 12/11/18 13:50**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-3**  
**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	220		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 17:19	1
Manganese	3.7		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 17:19	1
Potassium	33		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 17:19	1
Sodium	410		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 17:19	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	11		1.0	0.50	mg/L			12/17/18 14:29	5
Chemical Oxygen Demand	130		20	10	mg/L			12/21/18 09:19	1
Total Dissolved Solids	4000		50	25	mg/L			12/18/18 08:31	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:32	1
Total Organic Carbon	40		0.50	0.25	mg/L			01/02/19 08:29	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	830		4.0	4.0	mg/L			12/13/18 10:25	1
Bicarbonate Alkalinity as CaCO3	830		4.0	4.0	mg/L			12/13/18 10:25	1
Carbon Dioxide, Free	71		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: MW-13R**  
**Date Collected: 12/11/18 09:43**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-4**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 00:01	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Acrolein	ND		50	2.5	ug/L			12/12/18 13:19	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 13:19	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 00:01	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 00:01	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 00:01	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 00:01	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 00:01	1
Acetone	ND		20	10	ug/L			12/19/18 00:01	1
Acetonitrile	ND		20	10	ug/L			12/19/18 00:01	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 00:01	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 00:01	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 00:01	1

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# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-13R**

**Lab Sample ID: 440-227298-4**

**Date Collected: 12/11/18 09:43**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 00:01	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 00:01	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 00:01	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 00:01	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 00:01	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 00:01	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 00:01	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 00:01	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 00:01	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 00:01	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 00:01	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 00:01	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 00:01	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Propionitrile	ND		20	10	ug/L			12/19/18 00:01	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 00:01	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 00:01	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 00:01	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 00:01	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 00:01	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 00:01	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 00:01	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 00:01	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 00:01	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	200	T J	ug/L		2.58			12/19/18 00:01	1
Unknown	240	T J	ug/L		2.68			12/19/18 00:01	1
Unknown	3.5	T J	ug/L		3.44			12/19/18 00:01	1
Unknown	9.2	T J	ug/L		7.21			12/19/18 00:01	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-13R**

**Date Collected: 12/11/18 09:43**

**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-4**

**Matrix: Water**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/12/18 13:19	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/12/18 13:19	1
Toluene-d8 (Surr)	99		80 - 128		12/19/18 00:01	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/19/18 00:01	1
Dibromofluoromethane (Surr)	98		76 - 132		12/12/18 13:19	1
Dibromofluoromethane (Surr)	105		76 - 132		12/19/18 00:01	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	9.1		1.0	0.26	ug/L		12/13/18 11:00	12/14/18 20:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	53		30 - 120	12/13/18 11:00	12/14/18 20:44	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	2.4		0.50	0.25	mg/L			12/11/18 23:32	1
Nitrate as N	ND		0.11	0.055	mg/L			12/11/18 23:32	1
Chloride	190		25	13	mg/L			12/11/18 23:47	50
Fluoride	0.36	J	0.50	0.25	mg/L			12/11/18 23:32	1
Sulfate	180		25	13	mg/L			12/11/18 23:47	50

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.86		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 17:17	1
Calcium	74		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:17	1
Iron	0.087	J	0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:17	1
Magnesium	130		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 17:17	1
Manganese	ND		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 17:17	1
Potassium	28		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 17:17	1
Sodium	190		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 17:17	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	8.4		1.0	0.50	mg/L			12/17/18 15:30	5
Chemical Oxygen Demand	300		20	10	mg/L			12/21/18 09:20	1
Total Dissolved Solids	1500		10	5.0	mg/L			12/18/18 08:31	1
Total Sulfide	150	H	10	5.4	mg/L			12/31/18 16:33	200
Total Organic Carbon	27	^	1.0	0.50	mg/L			12/18/18 18:55	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	750		4.0	4.0	mg/L			12/13/18 10:40	1
Bicarbonate Alkalinity as CaCO3	700		4.0	4.0	mg/L			12/13/18 10:40	1
Carbon Dioxide, Free	26		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: CM-10R**

**Date Collected: 12/11/18 07:55**

**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-5**

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 00:26	1

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# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: CM-10R**

**Lab Sample ID: 440-227298-5**

**Date Collected: 12/11/18 07:55**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Acrolein	ND		50	2.5	ug/L			12/12/18 13:43	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 13:43	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 00:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 00:26	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 00:26	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 00:26	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 00:26	1
Acetone	ND		20	10	ug/L			12/19/18 00:26	1
Acetonitrile	ND		20	10	ug/L			12/19/18 00:26	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 00:26	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 00:26	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 00:26	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 00:26	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 00:26	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 00:26	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 00:26	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 00:26	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 00:26	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 00:26	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 00:26	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 00:26	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 00:26	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 00:26	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: CM-10R**

**Lab Sample ID: 440-227298-5**

**Date Collected: 12/11/18 07:55**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 00:26	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Propionitrile	ND		20	10	ug/L			12/19/18 00:26	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 00:26	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 00:26	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 00:26	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 00:26	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 00:26	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 00:26	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 00:26	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 00:26	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 00:26	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	10	TJ	ug/L		7.21			12/19/18 00:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/12/18 13:43	1
4-Bromofluorobenzene (Surr)	92		80 - 120		12/12/18 13:43	1
Toluene-d8 (Surr)	91		80 - 128		12/19/18 00:26	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/19/18 00:26	1
Dibromofluoromethane (Surr)	97		76 - 132		12/12/18 13:43	1
Dibromofluoromethane (Surr)	106		76 - 132		12/19/18 00:26	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/13/18 11:00	12/14/18 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	67		30 - 120	12/13/18 11:00	12/14/18 21:07	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/12/18 00:01	2
Nitrate as N	ND		0.22	0.11	mg/L			12/12/18 00:01	2
Chloride	11		1.0	0.50	mg/L			12/12/18 00:01	2
Fluoride	1.1		1.0	0.50	mg/L			12/12/18 00:01	2
Sulfate	1700		50	25	mg/L			12/12/18 00:15	100

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 17:15	1
Calcium	290		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:15	1
Iron	1.1		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 17:15	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: CM-10R**

**Date Collected: 12/11/18 07:55**

**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-5**

**Matrix: Water**

**Method: 6010B - Metals (ICP) - Total Recoverable (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	190		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 17:15	1
Manganese	0.56		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 17:15	1
Potassium	12		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 17:15	1
Sodium	230		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 17:15	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	11		1.0	0.50	mg/L			12/17/18 14:41	5
Chemical Oxygen Demand	19	J	20	10	mg/L			12/21/18 09:20	1
Total Dissolved Solids	3000		20	10	mg/L			12/18/18 08:31	1
Total Sulfide	0.061	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	2.5	^	0.10	0.050	mg/L			12/18/18 17:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	320		4.0	4.0	mg/L			12/13/18 10:49	1
Bicarbonate Alkalinity as CaCO3	320		4.0	4.0	mg/L			12/13/18 10:49	1
Carbon Dioxide, Free	30		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: DW-1**

**Date Collected: 12/11/18 12:50**

**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-6**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 20:51	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Acrolein	ND		50	2.5	ug/L			12/12/18 14:07	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 14:07	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 20:51	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 20:51	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 20:51	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 20:51	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 20:51	1
Acetone	ND		20	10	ug/L			12/18/18 20:51	1
Acetonitrile	ND		20	10	ug/L			12/18/18 20:51	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 20:51	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 20:51	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 20:51	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: DW-1**  
**Date Collected: 12/11/18 12:50**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-6**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 20:51	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 20:51	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 20:51	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 20:51	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 20:51	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 20:51	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 20:51	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 20:51	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 20:51	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 20:51	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 20:51	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 20:51	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 20:51	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Propionitrile	ND		20	10	ug/L			12/18/18 20:51	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 20:51	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 20:51	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 20:51	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 20:51	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 20:51	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 20:51	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 20:51	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 20:51	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 20:51	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/18/18 20:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 128		12/12/18 14:07	1
4-Bromofluorobenzene (Surr)	93		80 - 120		12/12/18 14:07	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: DW-1**  
**Date Collected: 12/11/18 12:50**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-6**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 128		12/18/18 20:51	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/18/18 20:51	1
Dibromofluoromethane (Surr)	99		76 - 132		12/12/18 14:07	1
Dibromofluoromethane (Surr)	109		76 - 132		12/18/18 20:51	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.26	ug/L		12/13/18 11:00	12/14/18 21:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	56		30 - 120	12/13/18 11:00	12/14/18 21:31	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		5.0	2.5	mg/L			12/12/18 01:36	10
Nitrate as N	ND		1.1	0.55	mg/L			12/12/18 01:36	10
Chloride	14		5.0	2.5	mg/L			12/12/18 01:36	10
Fluoride	3.6	J	5.0	2.5	mg/L			12/12/18 01:36	10
Sulfate	1700		100	50	mg/L			12/12/18 01:50	200

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 16:13	1
Calcium	2.9		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:13	1
Iron	ND		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:13	1
Magnesium	1.6		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 16:13	1
Manganese	ND		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 16:13	1
Potassium	2.1		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 16:13	1
Sodium	1000		2.5	1.3	mg/L		12/16/18 07:10	12/16/18 17:00	5

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	1.9		0.20	0.10	mg/L			12/17/18 14:47	1
Chemical Oxygen Demand	15	J	20	10	mg/L			12/21/18 11:37	1
Total Dissolved Solids	3300		50	25	mg/L			12/18/18 08:31	1
Total Sulfide	2.2	H	0.25	0.14	mg/L			12/31/18 16:33	5
Total Organic Carbon	2.6		0.10	0.050	mg/L			12/20/18 10:02	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	530		4.0	4.0	mg/L			12/13/18 11:01	1
Bicarbonate Alkalinity as CaCO3	440		4.0	4.0	mg/L			12/13/18 11:01	1
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: DW-5**  
**Date Collected: 12/11/18 12:40**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-7**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 21:14	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: DW-5**  
**Date Collected: 12/11/18 12:40**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-7**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		50	2.5	ug/L			12/12/18 14:31	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 14:31	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 21:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 21:14	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 21:14	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 21:14	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 21:14	1
Acetone	ND		20	10	ug/L			12/18/18 21:14	1
Acetonitrile	ND		20	10	ug/L			12/18/18 21:14	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 21:14	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 21:14	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 21:14	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 21:14	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 21:14	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 21:14	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 21:14	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 21:14	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 21:14	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 21:14	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 21:14	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 21:14	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 21:14	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 21:14	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 21:14	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: DW-5**  
**Date Collected: 12/11/18 12:40**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-7**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 21:14	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Propionitrile	ND		20	10	ug/L			12/18/18 21:14	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 21:14	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 21:14	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 21:14	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 21:14	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 21:14	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 21:14	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 21:14	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 21:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 21:14	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	5.8	T J	ug/L		5.79			12/18/18 21:14	1
Unknown	9.2	T J	ug/L		7.21			12/18/18 21:14	1
Benzene, (2-methylpropyl)-	7.2	T J N	ug/L		12.98	538-93-2		12/18/18 21:14	1
Benzene, (3-methyl-2-butenyl)-	6.5	T J N	ug/L		14.07	4489-84-3		12/18/18 21:14	1
1H-Indene, 2,3-dihydro-1,6-dimethyl-	6.7	T J N	ug/L		14.14	17059-48-2		12/18/18 21:14	1
Benzene, 1,2,4,5-tetramethyl-	23	T J N	ug/L		14.30	95-93-2		12/18/18 21:14	1
Benzene, pentamethyl-	9.8	T J N	ug/L		15.04	700-12-9		12/18/18 21:14	1
Benzene, pentamethyl-	5.5	T J N	ug/L		15.15	700-12-9		12/18/18 21:14	1
1H-Indene, 2,3-dihydro-4,7-dimethyl-	6.8	T J N	ug/L		15.91	6682-71-9		12/18/18 21:14	1
Unknown	5.4	T J	ug/L		16.13			12/18/18 21:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128		12/12/18 14:31	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/12/18 14:31	1
Toluene-d8 (Surr)	93		80 - 128		12/18/18 21:14	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/18/18 21:14	1
Dibromofluoromethane (Surr)	99		76 - 132		12/12/18 14:31	1
Dibromofluoromethane (Surr)	102		76 - 132		12/18/18 21:14	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/13/18 11:00	12/14/18 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	58		30 - 120	12/13/18 11:00	12/14/18 21:54	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/12/18 07:00	1
Nitrate as N	ND		0.11	0.055	mg/L			12/12/18 07:00	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: DW-5**  
**Date Collected: 12/11/18 12:40**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-7**  
**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		2.5	1.3	mg/L			12/12/18 07:14	5
Fluoride	3.6		0.50	0.25	mg/L			12/12/18 07:00	1
Sulfate	ND		0.50	0.25	mg/L			12/12/18 07:00	1

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.8		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 16:01	1
Calcium	5.6		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:01	1
Iron	0.13		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:01	1
Magnesium	0.96		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 16:01	1
Manganese	0.097		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 16:01	1
Potassium	0.96		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 16:01	1
Sodium	430		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 16:01	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.27		0.20	0.10	mg/L			12/17/18 14:52	1
Chemical Oxygen Demand	29		20	10	mg/L			12/21/18 11:37	1
Total Dissolved Solids	1100		10	5.0	mg/L			12/18/18 08:31	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	6.4	^	0.10	0.050	mg/L			12/18/18 16:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	950		4.0	4.0	mg/L			12/13/18 11:18	1
Bicarbonate Alkalinity as CaCO3	910		4.0	4.0	mg/L			12/13/18 11:18	1
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: Duplicate**  
**Date Collected: 12/11/18 00:01**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-8**  
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 22:26	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Acrolein	ND		50	2.5	ug/L			12/12/18 14:56	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 14:56	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 22:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 22:26	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:26	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 440-227298-8**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 22:26	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 22:26	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 22:26	1
Acetone	ND		20	10	ug/L			12/18/18 22:26	1
Acetonitrile	ND		20	10	ug/L			12/18/18 22:26	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 22:26	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 22:26	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 22:26	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 22:26	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 22:26	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 22:26	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 22:26	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 22:26	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 22:26	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 22:26	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 22:26	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 22:26	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 22:26	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 22:26	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 22:26	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Propionitrile	ND		20	10	ug/L			12/18/18 22:26	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
<b>t-Butanol</b>	<b>13</b>	<b>ID</b>	10	5.0	ug/L			12/18/18 22:26	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 22:26	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 22:26	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 22:26	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 22:26	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 22:26	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 22:26	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 440-227298-8**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 22:26	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 22:26	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.4	T J	ug/L		7.21			12/18/18 22:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/12/18 14:56	1
4-Bromofluorobenzene (Surr)	100		80 - 120		12/12/18 14:56	1
Toluene-d8 (Surr)	95		80 - 128		12/18/18 22:26	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/18/18 22:26	1
Dibromofluoromethane (Surr)	101		76 - 132		12/12/18 14:56	1
Dibromofluoromethane (Surr)	106		76 - 132		12/18/18 22:26	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	11		1.0	0.25	ug/L		12/13/18 11:00	12/14/18 22:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	64		30 - 120		12/13/18 11:00	12/14/18 22:17

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	3.4		2.5	1.3	mg/L			12/12/18 00:08	5
Nitrate as N	ND		0.55	0.28	mg/L			12/12/18 00:08	5
Chloride	230		100	50	mg/L			12/12/18 00:24	200
Fluoride	3.5		2.5	1.3	mg/L			12/12/18 00:08	5
Sulfate	1400		100	50	mg/L			12/12/18 00:24	200

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.2		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 16:23	1
Calcium	390		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:23	1
Iron	31		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 16:23	1
Magnesium	180		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 16:23	1
Manganese	4.6		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 16:23	1
Potassium	28		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 16:23	1
Sodium	310		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 16:23	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	5.2		0.20	0.10	mg/L			12/17/18 14:57	1
Chemical Oxygen Demand	100		20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	3400		20	10	mg/L			12/18/18 08:31	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	25		0.50	0.25	mg/L			01/02/19 08:45	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	710		4.0	4.0	mg/L			12/13/18 11:31	1
Bicarbonate Alkalinity as CaCO3	710		4.0	4.0	mg/L			12/13/18 11:31	1
Carbon Dioxide, Free	78		2.0	2.0	mg/L			12/26/18 15:49	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: LX-7**  
**Date Collected: 12/11/18 11:00**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-9**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 22:50	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Acrolein	ND		50	2.5	ug/L			12/12/18 15:20	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 15:20	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 22:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 22:50	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 22:50	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 22:50	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 22:50	1
Acetone	ND		20	10	ug/L			12/18/18 22:50	1
Acetonitrile	ND		20	10	ug/L			12/18/18 22:50	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 22:50	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 22:50	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 22:50	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 22:50	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 22:50	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 22:50	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
<b>cis-1,2-Dichloroethene</b>	<b>2.1</b>		0.50	0.25	ug/L			12/18/18 22:50	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 22:50	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 22:50	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 22:50	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 22:50	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 22:50	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 22:50	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 22:50	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: LX-7**  
**Date Collected: 12/11/18 11:00**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-9**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 22:50	1
<b>Methyl tert-butyl ether</b>	<b>2.1</b>		0.50	0.25	ug/L			12/18/18 22:50	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 22:50	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Propionitrile	ND		20	10	ug/L			12/18/18 22:50	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
<b>t-Butanol</b>	<b>150</b>		10	5.0	ug/L			12/18/18 22:50	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 22:50	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 22:50	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 22:50	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 22:50	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 22:50	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 22:50	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 22:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 22:50	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	24	T J	ug/L		5.71			12/18/18 22:50	1
Unknown	9.3	T J	ug/L		7.21			12/18/18 22:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 128		12/12/18 15:20	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/12/18 15:20	1
Toluene-d8 (Surr)	98		80 - 128		12/18/18 22:50	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/18/18 22:50	1
Dibromofluoromethane (Surr)	97		76 - 132		12/12/18 15:20	1
Dibromofluoromethane (Surr)	106		76 - 132		12/18/18 22:50	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>9.6</b>		0.99	0.25	ug/L		12/13/18 11:00	12/14/18 22:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	41		30 - 120	12/13/18 11:00	12/14/18 22:40	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bromide</b>	<b>5.6</b>	<b>J</b>	10	5.0	mg/L			12/12/18 00:41	20
Nitrate as N	ND		2.2	1.1	mg/L			12/12/18 00:41	20
<b>Chloride</b>	<b>510</b>		250	130	mg/L			12/12/18 00:58	500
Fluoride	ND		10	5.0	mg/L			12/12/18 00:41	20
<b>Sulfate</b>	<b>1400</b>		250	130	mg/L			12/12/18 00:58	500

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>9.2</b>		0.25	0.13	mg/L		12/18/18 07:30	12/19/18 18:17	5

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: LX-7**  
**Date Collected: 12/11/18 11:00**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-9**  
**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	180		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 18:17	5
Iron	3.2		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 18:17	5
Magnesium	87		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 18:17	5
Manganese	3.7		0.10	0.075	mg/L		12/18/18 07:30	12/19/18 18:17	5
Potassium	18		2.5	1.3	mg/L		12/18/18 07:30	12/19/18 18:17	5
Sodium	1300		2.5	1.3	mg/L		12/18/18 07:30	12/19/18 18:17	5

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.1		0.20	0.10	mg/L			12/17/18 15:03	1
Chemical Oxygen Demand	180		20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	5300		100	50	mg/L			12/18/18 08:31	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	59		1.0	0.50	mg/L			12/20/18 10:18	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	1700		4.0	4.0	mg/L			12/13/18 11:58	1
Bicarbonate Alkalinity as CaCO3	1700		4.0	4.0	mg/L			12/13/18 11:58	1
Carbon Dioxide, Free	110		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: Field Blank**

**Date Collected: 12/11/18 00:01**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-10**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 23:14	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Acrolein	ND		50	2.5	ug/L			12/12/18 15:44	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 15:44	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 23:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 23:14	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 23:14	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 23:14	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 23:14	1
Acetone	ND		20	10	ug/L			12/18/18 23:14	1
Acetonitrile	ND		20	10	ug/L			12/18/18 23:14	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 23:14	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227298-10**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 23:14	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 23:14	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 23:14	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 23:14	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 23:14	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 23:14	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 23:14	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 23:14	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 23:14	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 23:14	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 23:14	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 23:14	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 23:14	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 23:14	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Propionitrile	ND		20	10	ug/L			12/18/18 23:14	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 23:14	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 23:14	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 23:14	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 23:14	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 23:14	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 23:14	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 23:14	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 23:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 23:14	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.8	TJ	ug/L		7.21			12/18/18 23:14	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Client Sample ID: Field Blank

Date Collected: 12/11/18 00:01

Date Received: 12/11/18 17:00

## Lab Sample ID: 440-227298-10

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 128		12/12/18 15:44	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/12/18 15:44	1
Toluene-d8 (Surr)	94		80 - 128		12/18/18 23:14	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/18/18 23:14	1
Dibromofluoromethane (Surr)	101		76 - 132		12/12/18 15:44	1
Dibromofluoromethane (Surr)	102		76 - 132		12/18/18 23:14	1

## Client Sample ID: Trip Blank

Date Collected: 12/11/18 00:01

Date Received: 12/11/18 17:00

## Lab Sample ID: 440-227298-11

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 23:37	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Acrolein	ND		50	2.5	ug/L			12/12/18 16:09	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 16:09	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 23:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 23:37	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 23:37	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 23:37	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 23:37	1
Acetone	ND		20	10	ug/L			12/18/18 23:37	1
Acetonitrile	ND		20	10	ug/L			12/18/18 23:37	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 23:37	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 23:37	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 23:37	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 23:37	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 23:37	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 23:37	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:37	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227298-11**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 23:37	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 23:37	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 23:37	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 23:37	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 23:37	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 23:37	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 23:37	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 23:37	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 23:37	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Propionitrile	ND		20	10	ug/L			12/18/18 23:37	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 23:37	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 23:37	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 23:37	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 23:37	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 23:37	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 23:37	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 23:37	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 23:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 23:37	1

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Unknown	9.5	T J	ug/L		7.21			12/18/18 23:37	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Toluene-d8 (Surr)	99		80 - 128		12/12/18 16:09	1
4-Bromofluorobenzene (Surr)	92		80 - 120		12/12/18 16:09	1
Toluene-d8 (Surr)	96		80 - 128		12/18/18 23:37	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/18/18 23:37	1
Dibromofluoromethane (Surr)	104		76 - 132		12/12/18 16:09	1
Dibromofluoromethane (Surr)	103		76 - 132		12/18/18 23:37	1

TestAmerica Irvine

# Method Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
350.1	Nitrogen, Ammonia	MCAWW	TAL IRV
410.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 4500 CO2 C	Free Carbon Dioxide	SM	TAL IRV
SM 4500 S2 D	Sulfide, Total	SM	TAL IRV
SM 5310C	TOC	SM	TAL IRV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

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

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-1**  
**Date Collected: 12/11/18 09:44**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517782	12/18/18 15:02	TCN	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 12:06	RM	TAL IRV
Total/NA	Prep	3520C			1010 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 19:35	HN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516252	12/11/18 22:22	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516253	12/11/18 22:22	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516253	12/12/18 01:22	NTN	TAL IRV
Total/NA	Analysis	300.0		20			516253	12/12/18 02:32	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 17:38	TQN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	517678	12/17/18 14:09	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518694	12/21/18 09:19	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 09:41	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:32	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	518059	12/18/18 18:09	YZ	TAL IRV

**Client Sample ID: MW-5**  
**Date Collected: 12/11/18 11:30**  
**Date Received: 12/11/18 17:00**

**Lab Sample ID: 440-227298-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517782	12/18/18 15:26	TCN	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 12:30	RM	TAL IRV
Total/NA	Prep	3520C			955 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 19:58	HN	TAL IRV
Total/NA	Analysis	300.0		5	5 mL	1.0 mL	516252	12/11/18 22:36	NTN	TAL IRV
Total/NA	Analysis	300.0		5	5 mL	1.0 mL	516253	12/11/18 22:36	NTN	TAL IRV
Total/NA	Analysis	300.0		200			516253	12/11/18 22:50	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 16:20	TQN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	517678	12/17/18 14:23	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518694	12/21/18 09:19	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 10:09	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:32	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	518624	12/20/18 09:07	YZ	TAL IRV

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: MW-9**

**Lab Sample ID: 440-227298-3**

**Date Collected: 12/11/18 13:50**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517782	12/18/18 15:50	TCN	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 12:54	RM	TAL IRV
Total/NA	Prep	3520C			990 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 20:21	HN	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	516252	12/11/18 23:04	NTN	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	516253	12/11/18 23:04	NTN	TAL IRV
Total/NA	Analysis	300.0		200			516253	12/11/18 23:18	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 17:19	TQN	TAL IRV
Total/NA	Analysis	350.1		5	0.8 mL	8 mL	517678	12/17/18 14:29	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518694	12/21/18 09:19	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 10:25	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:32	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	520346	01/02/19 08:29	YZ	TAL IRV

**Client Sample ID: MW-13R**

**Lab Sample ID: 440-227298-4**

**Date Collected: 12/11/18 09:43**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 00:01	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 13:19	RM	TAL IRV
Total/NA	Prep	3520C			970 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 20:44	HN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	516252	12/11/18 23:32	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	516253	12/11/18 23:32	NTN	TAL IRV
Total/NA	Analysis	300.0		50			516253	12/11/18 23:47	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 17:17	TQN	TAL IRV
Total/NA	Analysis	350.1		5	0.8 mL	8 mL	517678	12/17/18 15:30	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518694	12/21/18 09:20	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 10:40	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		200	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	518059	12/18/18 18:55	YZ	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: CM-10R**

**Lab Sample ID: 440-227298-5**

**Date Collected: 12/11/18 07:55**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 00:26	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 13:43	RM	TAL IRV
Total/NA	Prep	3520C			1000 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 21:07	HN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516252	12/12/18 00:01	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516253	12/12/18 00:01	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516253	12/12/18 00:15	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 17:15	TQN	TAL IRV
Total/NA	Analysis	350.1		5	0.8 mL	8 mL	517678	12/17/18 14:41	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518694	12/21/18 09:20	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 10:49	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	518059	12/18/18 17:27	YZ	TAL IRV

**Client Sample ID: DW-1**

**Lab Sample ID: 440-227298-6**

**Date Collected: 12/11/18 12:50**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/18/18 20:51	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 14:07	RM	TAL IRV
Total/NA	Prep	3520C			965 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 21:31	HN	TAL IRV
Total/NA	Analysis	300.0		10			516252	12/12/18 01:36	NTN	TAL IRV
Total/NA	Analysis	300.0		10			516253	12/12/18 01:36	NTN	TAL IRV
Total/NA	Analysis	300.0		200			516253	12/12/18 01:50	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 16:13	TQN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		5			517461	12/16/18 17:00	TQN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	517678	12/17/18 14:47	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518742	12/21/18 11:37	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 11:01	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		5	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	518624	12/20/18 10:02	YZ	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: DW-5**

**Lab Sample ID: 440-227298-7**

**Date Collected: 12/11/18 12:40**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/18/18 21:14	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 14:31	RM	TAL IRV
Total/NA	Prep	3520C			995 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 21:54	HN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	516252	12/12/18 07:00	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	516253	12/12/18 07:00	NTN	TAL IRV
Total/NA	Analysis	300.0		5			516253	12/12/18 07:14	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 16:01	TQN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	517678	12/17/18 14:52	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518742	12/21/18 11:37	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 11:18	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	518059	12/18/18 16:42	YZ	TAL IRV

**Client Sample ID: Duplicate**

**Lab Sample ID: 440-227298-8**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/18/18 22:26	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 14:56	RM	TAL IRV
Total/NA	Prep	3520C			1000 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 22:17	HN	TAL IRV
Total/NA	Analysis	300.0		5			516254	12/12/18 00:08	NTN	TAL IRV
Total/NA	Analysis	300.0		5			516255	12/12/18 00:08	NTN	TAL IRV
Total/NA	Analysis	300.0		200			516255	12/12/18 00:24	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517351	12/16/18 07:10	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 16:23	TQN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	517678	12/17/18 14:57	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 11:31	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	520346	01/02/19 08:45	YZ	TAL IRV

TestAmerica Irvine



# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Client Sample ID: LX-7**

**Lab Sample ID: 440-227298-9**

**Date Collected: 12/11/18 11:00**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/18/18 22:50	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 15:20	RM	TAL IRV
Total/NA	Prep	3520C			1010 mL	1.0 mL	516868	12/13/18 11:00	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517172	12/14/18 22:40	HN	TAL IRV
Total/NA	Analysis	300.0		20			516254	12/12/18 00:41	NTN	TAL IRV
Total/NA	Analysis	300.0		20			516255	12/12/18 00:41	NTN	TAL IRV
Total/NA	Analysis	300.0		500			516255	12/12/18 00:58	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517804	12/18/18 07:30	KE	TAL IRV
Total Recoverable	Analysis	6010B		5			518257	12/19/18 18:17	P1R	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	517678	12/17/18 15:03	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516890	12/13/18 11:58	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	517815	12/18/18 08:31	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	518624	12/20/18 10:18	YZ	TAL IRV

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227298-10**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/18/18 23:14	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 15:44	RM	TAL IRV

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227298-11**

**Date Collected: 12/11/18 00:01**

**Matrix: Water**

**Date Received: 12/11/18 17:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/18/18 23:37	OH1	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	516445	12/12/18 16:09	RM	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-516445/3**  
**Matrix: Water**  
**Analysis Batch: 516445**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		50	2.5	ug/L			12/12/18 07:39	1
Acrylonitrile	ND		50	1.0	ug/L			12/12/18 07:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128		12/12/18 07:39	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/12/18 07:39	1
Dibromofluoromethane (Surr)	102		76 - 132		12/12/18 07:39	1

**Lab Sample ID: LCS 440-516445/4**  
**Matrix: Water**  
**Analysis Batch: 516445**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	25.8	J	ug/L		103	10 - 145
Acrylonitrile	250	249		ug/L		99	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	92		80 - 128
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-227295-D-1 MS**  
**Matrix: Water**  
**Analysis Batch: 516445**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	ND	F1	25.0	ND	F1	ug/L		0	10 - 147
Acrylonitrile	ND		250	223		ug/L		89	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	95		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

**Lab Sample ID: 440-227295-D-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 516445**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	ND	F1	25.0	ND	F1	ug/L		0	10 - 147	NC	40
Acrylonitrile	ND		250	229		ug/L		92	38 - 144	3	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 128
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517782/4**

**Matrix: Water**

**Analysis Batch: 517782**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 08:15	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 08:15	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 08:15	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 08:15	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 08:15	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 08:15	1
Acetone	ND		20	10	ug/L			12/18/18 08:15	1
Acetonitrile	ND		20	10	ug/L			12/18/18 08:15	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 08:15	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 08:15	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 08:15	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 08:15	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 08:15	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 08:15	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 08:15	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 08:15	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 08:15	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 08:15	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 08:15	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 08:15	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 08:15	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 08:15	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517782/4**  
**Matrix: Water**  
**Analysis Batch: 517782**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 08:15	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Propionitrile	ND		20	10	ug/L			12/18/18 08:15	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 08:15	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 08:15	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 08:15	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 08:15	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 08:15	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 08:15	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 08:15	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 08:15	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 08:15	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/18/18 08:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 128		12/18/18 08:15	1
4-Bromofluorobenzene (Surr)	104		80 - 120		12/18/18 08:15	1
Dibromofluoromethane (Surr)	98		76 - 132		12/18/18 08:15	1

**Lab Sample ID: LCS 440-517782/5**  
**Matrix: Water**  
**Analysis Batch: 517782**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	25.0	24.8		ug/L		99	63 - 130
1,1,1,2-Tetrachloroethane	25.0	23.4		ug/L		94	60 - 141
1,1,1-Trichloroethane	25.0	21.4		ug/L		85	70 - 130
1,1,2,2-Tetrachloroethane	25.0	24.1		ug/L		96	63 - 130
1,1,2-Trichloroethane	25.0	24.6		ug/L		98	70 - 130
1,1-Dichloroethane	25.0	23.4		ug/L		94	64 - 130
1,1-Dichloroethene	25.0	21.1		ug/L		84	70 - 130
1,1-Dichloropropene	25.0	21.3		ug/L		85	70 - 130
1,2,4-Trichlorobenzene	25.0	20.8		ug/L		83	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	23.5		ug/L		94	52 - 140
1,2-Dichlorobenzene	25.0	22.1		ug/L		88	70 - 130
1,2-Dichloroethane	25.0	21.8		ug/L		87	57 - 138
1,2-Dichloropropane	25.0	25.3		ug/L		101	67 - 130
1,3-Dichlorobenzene	25.0	22.7		ug/L		91	70 - 130

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-517782/5

Matrix: Water

Analysis Batch: 517782

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	25.0	23.7		ug/L		95	70 - 130
1,4-Dichlorobenzene	25.0	22.4		ug/L		90	70 - 130
2,2-Dichloropropane	25.0	22.4		ug/L		90	68 - 141
2-Hexanone	25.0	28.1		ug/L		113	10 - 150
Acetone	25.0	24.2		ug/L		97	10 - 150
Acrolein	25.0	22.2		ug/L		89	10 - 145
Acrylonitrile	250	248		ug/L		99	48 - 140
Benzene	25.0	22.1		ug/L		88	68 - 130
Bromoform	25.0	23.3		ug/L		93	60 - 148
Bromomethane	25.0	22.1		ug/L		88	64 - 139
Carbon disulfide	25.0	19.0		ug/L		76	52 - 136
Carbon tetrachloride	25.0	20.6		ug/L		83	60 - 150
Chlorobenzene	25.0	21.9		ug/L		88	70 - 130
Bromochloromethane	25.0	22.6		ug/L		90	70 - 130
Chloroethane	25.0	22.1		ug/L		88	64 - 135
Chloroform	25.0	22.6		ug/L		91	70 - 130
Chloromethane	25.0	18.7		ug/L		75	47 - 140
cis-1,2-Dichloroethene	25.0	21.7		ug/L		87	70 - 133
cis-1,3-Dichloropropene	25.0	25.5		ug/L		102	70 - 133
Dibromochloromethane	25.0	23.2		ug/L		93	69 - 145
Dibromomethane	25.0	20.7		ug/L		83	70 - 130
Bromodichloromethane	25.0	23.3		ug/L		93	70 - 132
Dichlorodifluoromethane	25.0	13.5		ug/L		54	29 - 150
Ethylbenzene	25.0	22.3		ug/L		89	70 - 130
m,p-Xylene	25.0	22.6		ug/L		90	70 - 130
Methylene Chloride	25.0	20.8		ug/L		83	52 - 130
Methyl tert-butyl ether	25.0	23.3		ug/L		93	63 - 131
Naphthalene	25.0	20.1		ug/L		80	60 - 140
o-Xylene	25.0	21.8		ug/L		87	70 - 130
Styrene	25.0	22.3		ug/L		89	70 - 134
t-Butanol	250	244		ug/L		98	70 - 130
Tetrachloroethene	25.0	20.8		ug/L		83	70 - 130
Toluene	25.0	22.2		ug/L		89	70 - 130
trans-1,2-Dichloroethene	25.0	21.6		ug/L		86	70 - 130
trans-1,3-Dichloropropene	25.0	25.2		ug/L		101	70 - 132
Trichloroethene	25.0	20.8		ug/L		83	70 - 130
Trichlorofluoromethane	25.0	20.5		ug/L		82	60 - 150
Vinyl acetate	25.0	27.2		ug/L		109	48 - 140
Vinyl chloride	25.0	18.6		ug/L		74	59 - 133
1,2-Dibromoethane (EDB)	25.0	22.4		ug/L		90	70 - 130
2-Butanone (MEK)	25.0	22.9		ug/L		92	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	27.7		ug/L		111	59 - 149

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	95		80 - 128
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227295-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517782**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	ND		25.0	24.5		ug/L		98	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	23.4		ug/L		94	60 - 149
1,1,1-Trichloroethane	ND		25.0	22.2		ug/L		89	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	25.5		ug/L		102	63 - 130
1,1,2-Trichloroethane	ND		25.0	25.0		ug/L		100	70 - 130
1,1-Dichloroethane	ND		25.0	23.2		ug/L		93	65 - 130
1,1-Dichloroethene	ND		25.0	21.9		ug/L		88	70 - 130
1,1-Dichloropropene	ND		25.0	22.2		ug/L		89	64 - 130
1,2,4-Trichlorobenzene	0.49	J	25.0	21.6		ug/L		85	60 - 140
1,2-Dibromo-3-Chloropropane	ND		25.0	24.2		ug/L		97	48 - 140
1,2-Dichlorobenzene	ND		25.0	22.0		ug/L		88	70 - 130
1,2-Dichloroethane	ND		25.0	22.3		ug/L		89	56 - 146
1,2-Dichloropropane	ND		25.0	25.5		ug/L		102	69 - 130
1,3-Dichlorobenzene	ND		25.0	22.4		ug/L		89	70 - 130
1,3-Dichloropropane	ND		25.0	24.7		ug/L		99	70 - 130
1,4-Dichlorobenzene	ND		25.0	22.3		ug/L		89	70 - 130
2,2-Dichloropropane	ND		25.0	23.2		ug/L		93	69 - 138
2-Hexanone	ND		25.0	29.7		ug/L		119	10 - 150
Acetone	ND		25.0	29.0		ug/L		116	10 - 150
Acrolein	ND		25.0	19.9		ug/L		80	10 - 147
Acrylonitrile	ND		250	272		ug/L		109	38 - 144
Benzene	ND		25.0	22.5		ug/L		90	66 - 130
Bromoform	ND		25.0	23.6		ug/L		94	59 - 150
Bromomethane	ND		25.0	23.1		ug/L		92	62 - 131
Carbon disulfide	ND		25.0	21.0		ug/L		84	49 - 140
Carbon tetrachloride	ND		25.0	22.0		ug/L		88	60 - 150
Chlorobenzene	ND		25.0	21.7		ug/L		87	70 - 130
Bromochloromethane	ND		25.0	23.6		ug/L		94	70 - 130
Chloroethane	ND		25.0	23.7		ug/L		95	68 - 130
Chloroform	ND		25.0	23.0		ug/L		92	70 - 130
Chloromethane	ND		25.0	21.0		ug/L		84	39 - 144
cis-1,2-Dichloroethene	ND		25.0	22.2		ug/L		89	70 - 130
cis-1,3-Dichloropropene	ND		25.0	25.1		ug/L		100	70 - 133
Dibromochloromethane	ND		25.0	23.7		ug/L		95	70 - 148
Dibromomethane	ND		25.0	21.7		ug/L		87	70 - 130
Bromodichloromethane	ND		25.0	24.0		ug/L		96	70 - 138
Dichlorodifluoromethane	ND		25.0	17.1		ug/L		68	25 - 142
Ethylbenzene	ND		25.0	22.4		ug/L		90	70 - 130
m,p-Xylene	ND		25.0	22.2		ug/L		89	70 - 133
Methylene Chloride	ND		25.0	21.4		ug/L		86	52 - 130
Methyl tert-butyl ether	ND		25.0	24.4		ug/L		98	70 - 130
Naphthalene	1.1		25.0	20.9		ug/L		79	60 - 140
o-Xylene	ND		25.0	21.5		ug/L		86	70 - 133
Styrene	ND		25.0	21.9		ug/L		88	29 - 150
t-Butanol	ND		250	239		ug/L		96	70 - 130
Tetrachloroethene	ND		25.0	21.1		ug/L		84	70 - 137
Toluene	ND		25.0	21.9		ug/L		88	70 - 130
trans-1,2-Dichloroethene	ND		25.0	22.2		ug/L		89	70 - 130

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227295-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517782**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	ND		25.0	25.8		ug/L		103	70 - 138
Trichloroethene	ND		25.0	21.3		ug/L		85	70 - 130
Trichlorofluoromethane	ND		25.0	22.2		ug/L		89	60 - 150
Vinyl acetate	ND		25.0	28.9		ug/L		116	23 - 150
Vinyl chloride	ND		25.0	20.6		ug/L		83	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	22.9		ug/L		92	70 - 131
2-Butanone (MEK)	ND		25.0	26.9		ug/L		108	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.4		ug/L		118	52 - 150

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Toluene-d8 (Surr)	97		80 - 128
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-227295-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 517782**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	ND		25.0	24.3		ug/L		97	60 - 130	1	30
1,1,1,2-Tetrachloroethane	ND		25.0	22.6		ug/L		90	60 - 149	3	20
1,1,1-Trichloroethane	ND		25.0	21.4		ug/L		86	70 - 130	4	20
1,1,2,2-Tetrachloroethane	ND		25.0	24.1		ug/L		96	63 - 130	6	30
1,1,2-Trichloroethane	ND		25.0	23.5		ug/L		94	70 - 130	6	25
1,1-Dichloroethane	ND		25.0	22.1		ug/L		88	65 - 130	5	20
1,1-Dichloroethene	ND		25.0	21.4		ug/L		86	70 - 130	2	20
1,1-Dichloropropene	ND		25.0	21.3		ug/L		85	64 - 130	4	20
1,2,4-Trichlorobenzene	0.49	J	25.0	21.3		ug/L		83	60 - 140	1	20
1,2-Dibromo-3-Chloropropane	ND		25.0	22.6		ug/L		90	48 - 140	7	30
1,2-Dichlorobenzene	ND		25.0	21.5		ug/L		86	70 - 130	3	20
1,2-Dichloroethane	ND		25.0	21.0		ug/L		84	56 - 146	6	20
1,2-Dichloropropane	ND		25.0	24.2		ug/L		97	69 - 130	5	20
1,3-Dichlorobenzene	ND		25.0	22.2		ug/L		89	70 - 130	1	20
1,3-Dichloropropane	ND		25.0	22.8		ug/L		91	70 - 130	8	25
1,4-Dichlorobenzene	ND		25.0	22.3		ug/L		89	70 - 130	0	20
2,2-Dichloropropane	ND		25.0	21.8		ug/L		87	69 - 138	6	25
2-Hexanone	ND		25.0	27.8		ug/L		111	10 - 150	6	35
Acetone	ND		25.0	25.1		ug/L		100	10 - 150	14	35
Acrolein	ND		25.0	18.1		ug/L		72	10 - 147	9	40
Acrylonitrile	ND		25.0	24.6		ug/L		98	38 - 144	10	40
Benzene	ND		25.0	21.4		ug/L		85	66 - 130	5	20
Bromoform	ND		25.0	22.6		ug/L		90	59 - 150	4	25
Bromomethane	ND		25.0	21.5		ug/L		86	62 - 131	7	25
Carbon disulfide	ND		25.0	19.8		ug/L		79	49 - 140	6	20
Carbon tetrachloride	ND		25.0	21.2		ug/L		85	60 - 150	4	25
Chlorobenzene	ND		25.0	21.1		ug/L		84	70 - 130	3	20
Bromochloromethane	ND		25.0	21.5		ug/L		86	70 - 130	9	25
Chloroethane	ND		25.0	22.2		ug/L		89	68 - 130	6	25

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227295-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 517782**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	ND		25.0	21.7		ug/L		87	70 - 130	6	20
Chloromethane	ND		25.0	19.6		ug/L		78	39 - 144	7	25
cis-1,2-Dichloroethene	ND		25.0	20.8		ug/L		83	70 - 130	7	20
cis-1,3-Dichloropropene	ND		25.0	24.2		ug/L		97	70 - 133	4	20
Dibromochloromethane	ND		25.0	22.6		ug/L		90	70 - 148	5	25
Dibromomethane	ND		25.0	20.8		ug/L		83	70 - 130	4	25
Bromodichloromethane	ND		25.0	22.7		ug/L		91	70 - 138	6	20
Dichlorodifluoromethane	ND		25.0	16.1		ug/L		64	25 - 142	6	30
Ethylbenzene	ND		25.0	21.9		ug/L		88	70 - 130	2	20
m,p-Xylene	ND		25.0	21.8		ug/L		87	70 - 133	2	25
Methylene Chloride	ND		25.0	20.2		ug/L		81	52 - 130	6	20
Methyl tert-butyl ether	ND		25.0	22.6		ug/L		90	70 - 130	8	25
Naphthalene	1.1		25.0	21.1		ug/L		80	60 - 140	1	30
o-Xylene	ND		25.0	21.0		ug/L		84	70 - 133	2	20
Styrene	ND		25.0	21.6		ug/L		86	29 - 150	2	35
t-Butanol	ND		250	225		ug/L		90	70 - 130	6	25
Tetrachloroethene	ND		25.0	20.6		ug/L		83	70 - 137	2	20
Toluene	ND		25.0	21.3		ug/L		85	70 - 130	3	20
trans-1,2-Dichloroethene	ND		25.0	21.1		ug/L		84	70 - 130	5	20
trans-1,3-Dichloropropene	ND		25.0	23.6		ug/L		95	70 - 138	9	25
Trichloroethene	ND		25.0	20.9		ug/L		83	70 - 130	2	20
Trichlorofluoromethane	ND		25.0	20.9		ug/L		84	60 - 150	6	25
Vinyl acetate	ND		25.0	26.6		ug/L		107	23 - 150	8	30
Vinyl chloride	ND		25.0	19.0		ug/L		76	50 - 137	8	30
1,2-Dibromoethane (EDB)	ND		25.0	22.0		ug/L		88	70 - 131	4	25
2-Butanone (MEK)	ND		25.0	21.9		ug/L		88	48 - 140	21	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.6		ug/L		110	52 - 150	6	35
			<b>MSD</b>	<b>MSD</b>							
<b>Surrogate</b>			<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
<i>Toluene-d8 (Surr)</i>			98		80 - 128						
<i>4-Bromofluorobenzene (Surr)</i>			104		80 - 120						
<i>Dibromofluoromethane (Surr)</i>			96		76 - 132						

**Lab Sample ID: MB 440-517983/4**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 18:52	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 18:52	1

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517983/4**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 18:52	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Acetone	ND		20	10	ug/L			12/18/18 18:52	1
Acetonitrile	ND		20	10	ug/L			12/18/18 18:52	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 18:52	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 18:52	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 18:52	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 18:52	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Propionitrile	ND		20	10	ug/L			12/18/18 18:52	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 18:52	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 18:52	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517983/4**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 18:52	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 18:52	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 18:52	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/18/18 18:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 128		12/18/18 18:52	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/18/18 18:52	1
Dibromofluoromethane (Surr)	101		76 - 132		12/18/18 18:52	1

**Lab Sample ID: LCS 440-517983/5**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	25.0	23.9		ug/L		96	63 - 130
1,1,1,2-Tetrachloroethane	25.0	26.1		ug/L		104	60 - 141
1,1,1-Trichloroethane	25.0	27.5		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	25.0	21.6		ug/L		86	63 - 130
1,1,2-Trichloroethane	25.0	23.8		ug/L		95	70 - 130
1,1-Dichloroethane	25.0	24.4		ug/L		98	64 - 130
1,1-Dichloroethene	25.0	23.5		ug/L		94	70 - 130
1,1-Dichloropropene	25.0	23.6		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	25.0	21.3		ug/L		85	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	23.8		ug/L		95	52 - 140
1,2-Dichlorobenzene	25.0	22.6		ug/L		91	70 - 130
1,2-Dichloroethane	25.0	27.1		ug/L		109	57 - 138
1,2-Dichloropropane	25.0	24.0		ug/L		96	67 - 130
1,3-Dichlorobenzene	25.0	23.4		ug/L		94	70 - 130
1,3-Dichloropropane	25.0	23.5		ug/L		94	70 - 130
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	70 - 130
2,2-Dichloropropane	25.0	26.7		ug/L		107	68 - 141
2-Hexanone	25.0	28.3		ug/L		113	10 - 150
Acetone	25.0	30.0		ug/L		120	10 - 150
Acrolein	25.0	20.4		ug/L		81	10 - 145
Acrylonitrile	25.0	25.6		ug/L		102	48 - 140
Benzene	25.0	23.2		ug/L		93	68 - 130
Bromoform	25.0	26.8		ug/L		107	60 - 148
Bromomethane	25.0	23.0		ug/L		92	64 - 139

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517983/5**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon disulfide	25.0	20.3		ug/L		81	52 - 136
Carbon tetrachloride	25.0	27.9		ug/L		112	60 - 150
Chlorobenzene	25.0	22.9		ug/L		92	70 - 130
Bromochloromethane	25.0	24.9		ug/L		100	70 - 130
Chloroethane	25.0	22.4		ug/L		90	64 - 135
Chloroform	25.0	26.1		ug/L		104	70 - 130
Chloromethane	25.0	18.6		ug/L		75	47 - 140
cis-1,2-Dichloroethene	25.0	23.6		ug/L		94	70 - 133
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	70 - 133
Dibromochloromethane	25.0	26.3		ug/L		105	69 - 145
Dibromomethane	25.0	23.4		ug/L		94	70 - 130
Bromodichloromethane	25.0	27.7		ug/L		111	70 - 132
Dichlorodifluoromethane	25.0	17.2		ug/L		69	29 - 150
Ethylbenzene	25.0	23.5		ug/L		94	70 - 130
m,p-Xylene	25.0	23.8		ug/L		95	70 - 130
Methylene Chloride	25.0	22.8		ug/L		91	52 - 130
Methyl tert-butyl ether	25.0	25.3		ug/L		101	63 - 131
Naphthalene	25.0	20.3		ug/L		81	60 - 140
o-Xylene	25.0	23.0		ug/L		92	70 - 130
Styrene	25.0	23.9		ug/L		96	70 - 134
t-Butanol	250	270		ug/L		108	70 - 130
Tetrachloroethene	25.0	23.0		ug/L		92	70 - 130
Toluene	25.0	22.3		ug/L		89	70 - 130
trans-1,2-Dichloroethene	25.0	23.9		ug/L		96	70 - 130
trans-1,3-Dichloropropene	25.0	26.2		ug/L		105	70 - 132
Trichloroethene	25.0	24.6		ug/L		99	70 - 130
Trichlorofluoromethane	25.0	27.8		ug/L		111	60 - 150
Vinyl acetate	25.0	27.6		ug/L		110	48 - 140
Vinyl chloride	25.0	20.5		ug/L		82	59 - 133
1,2-Dibromoethane (EDB)	25.0	23.6		ug/L		94	70 - 130
2-Butanone (MEK)	25.0	27.7		ug/L		111	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	27.1		ug/L		108	59 - 149

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	92		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132

**Lab Sample ID: 440-227298-6 MS**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: DW-1**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	ND		25.0	23.4		ug/L		94	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	24.3		ug/L		97	60 - 149
1,1,1-Trichloroethane	ND		25.0	25.2		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	20.7		ug/L		83	63 - 130
1,1,2-Trichloroethane	ND		25.0	22.1		ug/L		89	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-6 MS**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: DW-1**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	ND		25.0	22.4		ug/L		90	65 - 130
1,1-Dichloroethene	ND		25.0	21.6		ug/L		86	70 - 130
1,1-Dichloropropene	ND		25.0	21.5		ug/L		86	64 - 130
1,2,4-Trichlorobenzene	ND		25.0	21.6		ug/L		86	60 - 140
1,2-Dibromo-3-Chloropropane	ND		25.0	22.4		ug/L		90	48 - 140
1,2-Dichlorobenzene	ND		25.0	22.1		ug/L		88	70 - 130
1,2-Dichloroethane	ND		25.0	25.2		ug/L		101	56 - 146
1,2-Dichloropropane	ND		25.0	22.6		ug/L		90	69 - 130
1,3-Dichlorobenzene	ND		25.0	22.7		ug/L		91	70 - 130
1,3-Dichloropropane	ND		25.0	21.7		ug/L		87	70 - 130
1,4-Dichlorobenzene	ND		25.0	22.5		ug/L		90	70 - 130
2,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 138
2-Hexanone	ND		25.0	26.2		ug/L		105	10 - 150
Acetone	ND		25.0	26.0		ug/L		104	10 - 150
Acrolein	ND		25.0	16.8		ug/L		67	10 - 147
Acrylonitrile	ND		250	229		ug/L		92	38 - 144
Benzene	ND		25.0	21.2		ug/L		85	66 - 130
Bromoform	ND		25.0	24.6		ug/L		98	59 - 150
Bromomethane	ND		25.0	21.0		ug/L		84	62 - 131
Carbon disulfide	ND		25.0	19.1		ug/L		76	49 - 140
Carbon tetrachloride	ND		25.0	25.5		ug/L		102	60 - 150
Chlorobenzene	ND		25.0	21.8		ug/L		87	70 - 130
Bromochloromethane	ND		25.0	23.4		ug/L		93	70 - 130
Chloroethane	ND		25.0	20.2		ug/L		81	68 - 130
Chloroform	ND		25.0	23.7		ug/L		95	70 - 130
Chloromethane	ND		25.0	18.1		ug/L		72	39 - 144
cis-1,2-Dichloroethene	ND		25.0	21.7		ug/L		87	70 - 130
cis-1,3-Dichloropropene	ND		25.0	23.8		ug/L		95	70 - 133
Dibromochloromethane	ND		25.0	24.1		ug/L		96	70 - 148
Dibromomethane	ND		25.0	21.3		ug/L		85	70 - 130
Bromodichloromethane	ND		25.0	24.8		ug/L		99	70 - 138
Dichlorodifluoromethane	ND		25.0	16.7		ug/L		67	25 - 142
Ethylbenzene	ND		25.0	22.2		ug/L		89	70 - 130
m,p-Xylene	ND		25.0	22.3		ug/L		89	70 - 133
Methylene Chloride	ND		25.0	19.8		ug/L		79	52 - 130
Methyl tert-butyl ether	ND		25.0	23.6		ug/L		95	70 - 130
Naphthalene	ND		25.0	20.1		ug/L		80	60 - 140
o-Xylene	ND		25.0	21.7		ug/L		87	70 - 133
Styrene	ND		25.0	22.5		ug/L		90	29 - 150
t-Butanol	ND		250	253		ug/L		101	70 - 130
Tetrachloroethene	ND		25.0	22.0		ug/L		88	70 - 137
Toluene	ND		25.0	21.1		ug/L		84	70 - 130
trans-1,2-Dichloroethene	ND		25.0	22.1		ug/L		88	70 - 130
trans-1,3-Dichloropropene	ND		25.0	24.2		ug/L		97	70 - 138
Trichloroethene	ND		25.0	22.3		ug/L		89	70 - 130
Trichlorofluoromethane	ND		25.0	25.7		ug/L		103	60 - 150
Vinyl acetate	ND		25.0	25.8		ug/L		103	23 - 150
Vinyl chloride	ND		25.0	18.8		ug/L		75	50 - 137

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-6 MS**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: DW-1**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	21.6		ug/L		86	70 - 131
2-Butanone (MEK)	ND		25.0	22.6		ug/L		90	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	25.9		ug/L		104	52 - 150
<b>Surrogate</b>		<b>MS MS</b>							
		<b>%Recovery Qualifier</b>							<b>Limits</b>
Toluene-d8 (Surr)		94							80 - 128
4-Bromofluorobenzene (Surr)		97							80 - 120
Dibromofluoromethane (Surr)		103							76 - 132

**Lab Sample ID: 440-227298-6 MSD**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: DW-1**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	ND		25.0	23.6		ug/L		95	60 - 130	1	30
1,1,1,2-Tetrachloroethane	ND		25.0	24.5		ug/L		98	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	26.4		ug/L		106	70 - 130	5	20
1,1,2,2-Tetrachloroethane	ND		25.0	19.8		ug/L		79	63 - 130	4	30
1,1,2-Trichloroethane	ND		25.0	21.4		ug/L		86	70 - 130	3	25
1,1-Dichloroethane	ND		25.0	23.3		ug/L		93	65 - 130	4	20
1,1-Dichloroethene	ND		25.0	22.6		ug/L		91	70 - 130	5	20
1,1-Dichloropropene	ND		25.0	22.6		ug/L		90	64 - 130	5	20
1,2,4-Trichlorobenzene	ND		25.0	21.2		ug/L		85	60 - 140	2	20
1,2-Dibromo-3-Chloropropane	ND		25.0	22.8		ug/L		91	48 - 140	2	30
1,2-Dichlorobenzene	ND		25.0	21.1		ug/L		84	70 - 130	5	20
1,2-Dichloroethane	ND		25.0	25.5		ug/L		102	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	23.3		ug/L		93	69 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	22.0		ug/L		88	70 - 130	3	20
1,3-Dichloropropane	ND		25.0	21.6		ug/L		86	70 - 130	0	25
1,4-Dichlorobenzene	ND		25.0	22.1		ug/L		88	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	26.2		ug/L		105	69 - 138	2	25
2-Hexanone	ND		25.0	25.9		ug/L		104	10 - 150	1	35
Acetone	ND		25.0	28.2		ug/L		113	10 - 150	8	35
Acrolein	ND		25.0	19.7		ug/L		79	10 - 147	16	40
Acrylonitrile	ND		25.0	23.1		ug/L		92	38 - 144	1	40
Benzene	ND		25.0	21.9		ug/L		88	66 - 130	3	20
Bromoform	ND		25.0	24.1		ug/L		96	59 - 150	2	25
Bromomethane	ND		25.0	21.7		ug/L		87	62 - 131	3	25
Carbon disulfide	ND		25.0	19.6		ug/L		78	49 - 140	3	20
Carbon tetrachloride	ND		25.0	26.9		ug/L		108	60 - 150	5	25
Chlorobenzene	ND		25.0	21.7		ug/L		87	70 - 130	1	20
Bromochloromethane	ND		25.0	24.2		ug/L		97	70 - 130	4	25
Chloroethane	ND		25.0	21.6		ug/L		86	68 - 130	7	25
Chloroform	ND		25.0	24.4		ug/L		97	70 - 130	3	20
Chloromethane	ND		25.0	19.0		ug/L		76	39 - 144	5	25
cis-1,2-Dichloroethene	ND		25.0	22.3		ug/L		89	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	23.1		ug/L		92	70 - 133	3	20
Dibromochloromethane	ND		25.0	24.3		ug/L		97	70 - 148	1	25

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 517983**

**Client Sample ID: DW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dibromomethane	ND		25.0	21.3		ug/L		85	70 - 130	0	25
Bromodichloromethane	ND		25.0	26.0		ug/L		104	70 - 138	5	20
Dichlorodifluoromethane	ND		25.0	16.7		ug/L		67	25 - 142	0	30
Ethylbenzene	ND		25.0	22.6		ug/L		91	70 - 130	2	20
m,p-Xylene	ND		25.0	22.0		ug/L		88	70 - 133	1	25
Methylene Chloride	ND		25.0	20.5		ug/L		82	52 - 130	3	20
Methyl tert-butyl ether	ND		25.0	23.5		ug/L		94	70 - 130	1	25
Naphthalene	ND		25.0	19.7		ug/L		79	60 - 140	2	30
o-Xylene	ND		25.0	21.6		ug/L		86	70 - 133	0	20
Styrene	ND		25.0	22.0		ug/L		88	29 - 150	2	35
t-Butanol	ND		250	258		ug/L		103	70 - 130	2	25
Tetrachloroethene	ND		25.0	22.3		ug/L		89	70 - 137	1	20
Toluene	ND		25.0	20.8		ug/L		83	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	23.2		ug/L		93	70 - 130	5	20
trans-1,3-Dichloropropene	ND		25.0	23.5		ug/L		94	70 - 138	3	25
Trichloroethene	ND		25.0	23.7		ug/L		95	70 - 130	6	20
Trichlorofluoromethane	ND		25.0	26.5		ug/L		106	60 - 150	3	25
Vinyl acetate	ND		25.0	26.2		ug/L		105	23 - 150	1	30
Vinyl chloride	ND		25.0	19.5		ug/L		78	50 - 137	4	30
1,2-Dibromoethane (EDB)	ND		25.0	20.9		ug/L		84	70 - 131	3	25
2-Butanone (MEK)	ND		25.0	22.7		ug/L		91	48 - 140	1	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	24.9		ug/L		100	52 - 150	4	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-516868/1-A**  
**Matrix: Water**  
**Analysis Batch: 517172**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 516868**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/13/18 11:00	12/14/18 18:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	58		30 - 120	12/13/18 11:00	12/14/18 18:25	1

**Lab Sample ID: LCS 440-516868/2-A**  
**Matrix: Water**  
**Analysis Batch: 517172**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516868**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.00	1.32		ug/L		66	35 - 120

TestAmerica Irvine



# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-516868/2-A**  
**Matrix: Water**  
**Analysis Batch: 517172**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516868**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dioxane-d8 (Surr)	57		30 - 120

**Lab Sample ID: LCSD 440-516868/3-A**  
**Matrix: Water**  
**Analysis Batch: 517172**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 516868**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.00	1.38		ug/L		69	35 - 120	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dioxane-d8 (Surr)	61		30 - 120

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-516252/6**  
**Matrix: Water**  
**Analysis Batch: 516252**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/11/18 11:41	1

**Lab Sample ID: LCS 440-516252/5**  
**Matrix: Water**  
**Analysis Batch: 516252**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.21		mg/L		107	90 - 110

**Lab Sample ID: 440-227227-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 516252**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.53		1.13	1.68		mg/L		102	80 - 120

**Lab Sample ID: 440-227227-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 516252**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.53		1.13	1.67		mg/L		101	80 - 120	0	20

**Lab Sample ID: MB 440-516253/6**  
**Matrix: Water**  
**Analysis Batch: 516253**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/11/18 11:41	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 440-516253/6**  
**Matrix: Water**  
**Analysis Batch: 516253**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/11/18 11:41	1
Fluoride	ND		0.50	0.25	mg/L			12/11/18 11:41	1
Sulfate	ND		0.50	0.25	mg/L			12/11/18 11:41	1

**Lab Sample ID: LCS 440-516253/5**  
**Matrix: Water**  
**Analysis Batch: 516253**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	5.27		mg/L		105	90 - 110
Chloride	5.00	5.07		mg/L		101	90 - 110
Fluoride	5.00	4.57		mg/L		91	90 - 110
Sulfate	5.00	4.99		mg/L		100	90 - 110

**Lab Sample ID: 440-227227-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 516253**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		5.00	5.02		mg/L		100	80 - 120
Chloride	7.0		5.00	12.0		mg/L		101	80 - 120
Fluoride	0.28	J	5.00	4.93		mg/L		93	80 - 120
Sulfate	110	E	5.00	114	E 4	mg/L		135	80 - 120

**Lab Sample ID: 440-227227-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 516253**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Bromide	ND		5.00	4.99		mg/L		100	80 - 120	1	20
Chloride	7.0		5.00	11.9		mg/L		99	80 - 120	1	20
Fluoride	0.28	J	5.00	4.90		mg/L		92	80 - 120	1	20
Sulfate	110	E	5.00	114	E 4	mg/L		130	80 - 120	0	20

**Lab Sample ID: MB 440-516254/6**  
**Matrix: Water**  
**Analysis Batch: 516254**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/11/18 11:46	1

**Lab Sample ID: LCS 440-516254/5**  
**Matrix: Water**  
**Analysis Batch: 516254**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.14		mg/L		101	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 440-227051-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 516254**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	42		22.6	66.4		mg/L		106	80 - 120

**Lab Sample ID: 440-227051-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 516254**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	42		22.6	66.6		mg/L		107	80 - 120	0	20

**Lab Sample ID: MB 440-516255/6**  
**Matrix: Water**  
**Analysis Batch: 516255**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/11/18 11:46	1
Chloride	ND		0.50	0.25	mg/L			12/11/18 11:46	1
Fluoride	ND		0.50	0.25	mg/L			12/11/18 11:46	1
Sulfate	ND		0.50	0.25	mg/L			12/11/18 11:46	1

**Lab Sample ID: LCS 440-516255/5**  
**Matrix: Water**  
**Analysis Batch: 516255**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	5.11		mg/L		102	90 - 110
Chloride	5.00	4.91		mg/L		98	90 - 110
Fluoride	5.00	4.58		mg/L		92	90 - 110
Sulfate	5.00	4.89		mg/L		98	90 - 110

**Lab Sample ID: 440-227051-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 516255**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		100	101		mg/L		101	80 - 120
Chloride	260		100	375		mg/L		118	80 - 120
Fluoride	ND		100	91.5		mg/L		91	80 - 120
Sulfate	650		100	766	4	mg/L		111	80 - 120

**Lab Sample ID: 440-227051-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 516255**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		100	100		mg/L		100	80 - 120	1	20
Chloride	260		100	376		mg/L		120	80 - 120	0	20
Fluoride	ND		100	92.0		mg/L		92	80 - 120	0	20
Sulfate	650		100	769	4	mg/L		114	80 - 120	0	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-517351/1-A**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517351**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/16/18 07:10	12/16/18 15:34	1
Calcium	ND		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 15:34	1
Iron	ND		0.10	0.050	mg/L		12/16/18 07:10	12/16/18 15:34	1
Magnesium	ND		0.020	0.010	mg/L		12/16/18 07:10	12/16/18 15:34	1
Manganese	ND		0.020	0.015	mg/L		12/16/18 07:10	12/16/18 15:34	1
Potassium	ND		0.50	0.25	mg/L		12/16/18 07:10	12/16/18 15:34	1
Sodium	ND		0.50	0.26	mg/L		12/16/18 07:10	12/16/18 15:34	1

**Lab Sample ID: LCS 440-517351/2-A**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517351**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	0.500	0.484		mg/L		97	80 - 120
Calcium	2.50	2.49		mg/L		100	80 - 120
Iron	0.500	0.489		mg/L		98	80 - 120
Magnesium	2.50	2.47		mg/L		99	80 - 120
Manganese	0.500	0.494		mg/L		99	80 - 120
Potassium	5.00	4.81		mg/L		96	80 - 120
Sodium	5.00	5.06		mg/L		101	80 - 120

**Lab Sample ID: 440-227298-7 MS**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: DW-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517351**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	2.8		0.500	3.04	4	mg/L		54	75 - 125
Calcium	5.6		2.50	7.59		mg/L		79	75 - 125
Iron	0.13		0.500	0.620		mg/L		97	75 - 125
Magnesium	0.96		2.50	3.26		mg/L		92	75 - 125
Manganese	0.097		0.500	0.570		mg/L		95	75 - 125
Potassium	0.96		5.00	5.77		mg/L		96	75 - 125
Sodium	430		5.00	397	4	mg/L		-654	75 - 125

**Lab Sample ID: 440-227298-7 MSD**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: DW-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517351**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	2.8		0.500	3.11	4	mg/L		68	75 - 125	2	20
Calcium	5.6		2.50	7.66		mg/L		82	75 - 125	1	20
Iron	0.13		0.500	0.607		mg/L		95	75 - 125	2	20
Magnesium	0.96		2.50	3.25		mg/L		91	75 - 125	0	20
Manganese	0.097		0.500	0.568		mg/L		94	75 - 125	0	20
Potassium	0.96		5.00	5.81		mg/L		97	75 - 125	1	20
Sodium	430		5.00	405	4	mg/L		-510	75 - 125	2	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: MB 440-517804/1-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 17:47	1
Calcium	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 17:47	1
Iron	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 17:47	1
Magnesium	ND		0.020	0.010	mg/L		12/18/18 07:30	12/19/18 17:47	1
Manganese	ND		0.020	0.015	mg/L		12/18/18 07:30	12/19/18 17:47	1
Potassium	ND		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 17:47	1
Sodium	ND		0.50	0.26	mg/L		12/18/18 07:30	12/19/18 17:47	1

**Lab Sample ID: LCS 440-517804/2-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.983		mg/L		98	80 - 120
Calcium	5.00	4.84		mg/L		97	80 - 120
Iron	1.00	1.01		mg/L		101	80 - 120
Magnesium	5.00	4.89		mg/L		98	80 - 120
Manganese	1.00	0.986		mg/L		99	80 - 120
Potassium	10.0	9.53		mg/L		95	80 - 120
Sodium	10.0	9.61		mg/L		96	80 - 120

**Lab Sample ID: 440-226841-N-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.038	J	1.00	1.06		mg/L		102	75 - 125
Calcium	28		5.00	32.9	4	mg/L		106	75 - 125
Iron	67		1.00	61.3	4	mg/L		-576	75 - 125
Magnesium	21		5.00	26.7	4	mg/L		107	75 - 125
Manganese	1.1		1.00	2.11		mg/L		99	75 - 125
Potassium	17		10.0	26.8		mg/L		99	75 - 125
Sodium	9.7		10.0	19.9		mg/L		102	75 - 125

**Lab Sample ID: 440-226841-N-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	0.038	J	1.00	1.06		mg/L		102	75 - 125	0	20
Calcium	28		5.00	34.4	4	mg/L		135	75 - 125	4	20
Iron	67		1.00	54.4	4	mg/L		-1263	75 - 125	12	20
Magnesium	21		5.00	25.4	4	mg/L		81	75 - 125	5	20
Manganese	1.1		1.00	2.08		mg/L		96	75 - 125	1	20
Potassium	17		10.0	26.7		mg/L		98	75 - 125	0	20
Sodium	9.7		10.0	20.4		mg/L		107	75 - 125	3	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 350.1 - Nitrogen, Ammonia

**Lab Sample ID: MB 440-517678/10**  
**Matrix: Water**  
**Analysis Batch: 517678**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.20	0.10	mg/L			12/17/18 13:21	1

**Lab Sample ID: LCS 440-517678/11**  
**Matrix: Water**  
**Analysis Batch: 517678**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.00	5.05		mg/L		101	90 - 110

**Lab Sample ID: MRL 440-517678/9**  
**Matrix: Water**  
**Analysis Batch: 517678**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.200	0.151	J	mg/L		76	50 - 150

**Lab Sample ID: 440-227295-I-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517678**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.72		5.00	5.67		mg/L		99	90 - 110

**Lab Sample ID: 440-227295-I-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 517678**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia (as N)	0.72		5.00	5.61		mg/L		98	90 - 110	1	15

## Method: 410.4 - COD

**Lab Sample ID: MB 440-518694/3**  
**Matrix: Water**  
**Analysis Batch: 518694**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/21/18 09:17	1

**Lab Sample ID: LCS 440-518694/4**  
**Matrix: Water**  
**Analysis Batch: 518694**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	210		mg/L		105	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: 410.4 - COD (Continued)

**Lab Sample ID: 440-228241-A-1 MS**

**Matrix: Water**

**Analysis Batch: 518694**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	93		200	279		mg/L		93	70 - 120

**Lab Sample ID: 440-228241-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 518694**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	93		200	288		mg/L		97	70 - 120	3	15

**Lab Sample ID: 440-228241-A-1 DU**

**Matrix: Water**

**Analysis Batch: 518694**

**Client Sample ID: Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chemical Oxygen Demand	93		97.2		mg/L		4	15

**Lab Sample ID: MB 440-518742/3**

**Matrix: Water**

**Analysis Batch: 518742**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/21/18 11:35	1

**Lab Sample ID: LCS 440-518742/4**

**Matrix: Water**

**Analysis Batch: 518742**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	208		mg/L		104	90 - 110

**Lab Sample ID: 440-227298-7 MS**

**Matrix: Water**

**Analysis Batch: 518742**

**Client Sample ID: DW-5**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	29		200	222		mg/L		97	70 - 120

**Lab Sample ID: 440-227298-7 MSD**

**Matrix: Water**

**Analysis Batch: 518742**

**Client Sample ID: DW-5**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	29		200	224		mg/L		98	70 - 120	1	15

**Lab Sample ID: MB 440-518916/3**

**Matrix: Water**

**Analysis Batch: 518916**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/22/18 11:40	1

TestAmerica Irvine



# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Lab Sample ID: LCS 440-518916/4**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	206		mg/L		103	90 - 110

**Lab Sample ID: 440-227566-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	17	J	200	211		mg/L		97	70 - 120

**Lab Sample ID: 440-227566-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	17	J	200	206		mg/L		94	70 - 120	3	15

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-516890/3**  
**Matrix: Water**  
**Analysis Batch: 516890**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/13/18 07:39	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/13/18 07:39	1

**Lab Sample ID: LCS 440-516890/2**  
**Matrix: Water**  
**Analysis Batch: 516890**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	80.7	78.7		mg/L		97	80 - 120

**Lab Sample ID: 440-227298-1 DU**  
**Matrix: Water**  
**Analysis Batch: 516890**

**Client Sample ID: MW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	410		412		mg/L		0.1	20
Bicarbonate Alkalinity as CaCO3	410		412		mg/L		0.1	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 440-517815/1**  
**Matrix: Water**  
**Analysis Batch: 517815**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	5.0	mg/L			12/18/18 08:31	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 440-517815/2  
Matrix: Water  
Analysis Batch: 517815

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	968		mg/L		97	90 - 110

Lab Sample ID: 440-227298-1 DU  
Matrix: Water  
Analysis Batch: 517815

Client Sample ID: MW-1  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2000		2010		mg/L		2	5

## Method: SM 4500 CO2 C - Free Carbon Dioxide

Lab Sample ID: MB 440-519373/1  
Matrix: Water  
Analysis Batch: 519373

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/26/18 15:49	1

Lab Sample ID: 440-227295-H-4 DU  
Matrix: Water  
Analysis Batch: 519373

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Carbon Dioxide, Free	120		124		mg/L		1	20

## Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 440-520227/3  
Matrix: Water  
Analysis Batch: 520227

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Sulfide	ND		0.050	0.027	mg/L			12/31/18 16:31	1

Lab Sample ID: LCS 440-520227/4  
Matrix: Water  
Analysis Batch: 520227

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.500	0.455		mg/L		91	80 - 120

Lab Sample ID: LCSD 440-520227/5  
Matrix: Water  
Analysis Batch: 520227

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	0.500	0.463		mg/L		93	80 - 120	2	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: SM 4500 S2 D - Sulfide, Total (Continued)

**Lab Sample ID: 550-115481-E-1 MS**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.086	F1	0.500	0.694		mg/L		122	70 - 130

**Lab Sample ID: 550-115481-E-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	0.086	F1	0.500	0.783	F1	mg/L		139	70 - 130	12	30

## Method: SM 5310C - TOC

**Lab Sample ID: MB 440-518059/8**  
**Matrix: Water**  
**Analysis Batch: 518059**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.10	0.050	mg/L			12/18/18 15:23	1

**Lab Sample ID: LCS 440-518059/7**  
**Matrix: Water**  
**Analysis Batch: 518059**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.96		mg/L		100	90 - 110

**Lab Sample ID: MRL 440-518059/4**  
**Matrix: Water**  
**Analysis Batch: 518059**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.100	0.0774	J	mg/L		77	50 - 150

**Lab Sample ID: 440-227610-G-1 MS**  
**Matrix: Water**  
**Analysis Batch: 518059**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2.3	^	10.0	12.9		mg/L		107	80 - 120

**Lab Sample ID: 440-227610-G-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 518059**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2.3	^	10.0	12.8		mg/L		105	80 - 120	1	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Method: SM 5310C - TOC (Continued)

**Lab Sample ID: MB 440-518624/6**  
**Matrix: Water**  
**Analysis Batch: 518624**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.10	0.050	mg/L			12/20/18 07:30	1

**Lab Sample ID: LCS 440-518624/5**  
**Matrix: Water**  
**Analysis Batch: 518624**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.70		mg/L		97	90 - 110

**Lab Sample ID: MRL 440-518624/4**  
**Matrix: Water**  
**Analysis Batch: 518624**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.100	0.0673	J	mg/L		67	50 - 150

**Lab Sample ID: 440-227777-G-2 MS**  
**Matrix: Water**  
**Analysis Batch: 518624**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.35		10.0	9.88		mg/L		95	80 - 120

**Lab Sample ID: 440-227777-G-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 518624**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Organic Carbon	0.35		10.0	9.81		mg/L		95	80 - 120	1	20

**Lab Sample ID: MB 440-520346/6**  
**Matrix: Water**  
**Analysis Batch: 520346**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.10	0.050	mg/L			01/02/19 07:55	1

**Lab Sample ID: LCS 440-520346/5**  
**Matrix: Water**  
**Analysis Batch: 520346**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.28		mg/L		93	90 - 110

**Lab Sample ID: MRL 440-520346/4**  
**Matrix: Water**  
**Analysis Batch: 520346**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.100	0.0729	J	mg/L		73	50 - 150

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

**Lab Sample ID: 440-227298-3 MS**  
**Matrix: Water**  
**Analysis Batch: 520346**

**Client Sample ID: MW-9**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	40		50.0	83.9		mg/L		88	80 - 120

**Lab Sample ID: 440-227298-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 520346**

**Client Sample ID: MW-9**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	40		50.0	89.8		mg/L		100	80 - 120	7	20



# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## GC/MS VOA

### Analysis Batch: 516445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	8260B	
440-227298-2	MW-5	Total/NA	Water	8260B	
440-227298-3	MW-9	Total/NA	Water	8260B	
440-227298-4	MW-13R	Total/NA	Water	8260B	
440-227298-5	CM-10R	Total/NA	Water	8260B	
440-227298-6	DW-1	Total/NA	Water	8260B	
440-227298-7	DW-5	Total/NA	Water	8260B	
440-227298-8	Duplicate	Total/NA	Water	8260B	
440-227298-9	LX-7	Total/NA	Water	8260B	
440-227298-10	Field Blank	Total/NA	Water	8260B	
440-227298-11	Trip Blank	Total/NA	Water	8260B	
MB 440-516445/3	Method Blank	Total/NA	Water	8260B	
LCS 440-516445/4	Lab Control Sample	Total/NA	Water	8260B	
440-227295-D-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-227295-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 517782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	8260B	
440-227298-2	MW-5	Total/NA	Water	8260B	
440-227298-3	MW-9	Total/NA	Water	8260B	
MB 440-517782/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517782/5	Lab Control Sample	Total/NA	Water	8260B	
440-227295-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-227295-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 517983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-4	MW-13R	Total/NA	Water	8260B	
440-227298-5	CM-10R	Total/NA	Water	8260B	
440-227298-6	DW-1	Total/NA	Water	8260B	
440-227298-7	DW-5	Total/NA	Water	8260B	
440-227298-8	Duplicate	Total/NA	Water	8260B	
440-227298-9	LX-7	Total/NA	Water	8260B	
440-227298-10	Field Blank	Total/NA	Water	8260B	
440-227298-11	Trip Blank	Total/NA	Water	8260B	
MB 440-517983/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517983/5	Lab Control Sample	Total/NA	Water	8260B	
440-227298-6 MS	DW-1	Total/NA	Water	8260B	
440-227298-6 MSD	DW-1	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 516868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	3520C	
440-227298-2	MW-5	Total/NA	Water	3520C	
440-227298-3	MW-9	Total/NA	Water	3520C	
440-227298-4	MW-13R	Total/NA	Water	3520C	
440-227298-5	CM-10R	Total/NA	Water	3520C	

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## GC/MS Semi VOA (Continued)

### Prep Batch: 516868 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-6	DW-1	Total/NA	Water	3520C	
440-227298-7	DW-5	Total/NA	Water	3520C	
440-227298-8	Duplicate	Total/NA	Water	3520C	
440-227298-9	LX-7	Total/NA	Water	3520C	
MB 440-516868/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-516868/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-516868/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 517172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	8270C	516868
440-227298-2	MW-5	Total/NA	Water	8270C	516868
440-227298-3	MW-9	Total/NA	Water	8270C	516868
440-227298-4	MW-13R	Total/NA	Water	8270C	516868
440-227298-5	CM-10R	Total/NA	Water	8270C	516868
440-227298-6	DW-1	Total/NA	Water	8270C	516868
440-227298-7	DW-5	Total/NA	Water	8270C	516868
440-227298-8	Duplicate	Total/NA	Water	8270C	516868
440-227298-9	LX-7	Total/NA	Water	8270C	516868
MB 440-516868/1-A	Method Blank	Total/NA	Water	8270C	516868
LCS 440-516868/2-A	Lab Control Sample	Total/NA	Water	8270C	516868
LCSD 440-516868/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	516868

## HPLC/IC

### Analysis Batch: 516252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	300.0	
440-227298-2	MW-5	Total/NA	Water	300.0	
440-227298-3	MW-9	Total/NA	Water	300.0	
440-227298-4	MW-13R	Total/NA	Water	300.0	
440-227298-5	CM-10R	Total/NA	Water	300.0	
440-227298-6	DW-1	Total/NA	Water	300.0	
440-227298-7	DW-5	Total/NA	Water	300.0	
MB 440-516252/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516252/5	Lab Control Sample	Total/NA	Water	300.0	
440-227227-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
440-227227-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 516253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	300.0	
440-227298-1	MW-1	Total/NA	Water	300.0	
440-227298-1	MW-1	Total/NA	Water	300.0	
440-227298-2	MW-5	Total/NA	Water	300.0	
440-227298-2	MW-5	Total/NA	Water	300.0	
440-227298-3	MW-9	Total/NA	Water	300.0	
440-227298-3	MW-9	Total/NA	Water	300.0	
440-227298-4	MW-13R	Total/NA	Water	300.0	
440-227298-4	MW-13R	Total/NA	Water	300.0	

TestAmerica Irvine



# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## HPLC/IC (Continued)

### Analysis Batch: 516253 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-5	CM-10R	Total/NA	Water	300.0	
440-227298-5	CM-10R	Total/NA	Water	300.0	
440-227298-6	DW-1	Total/NA	Water	300.0	
440-227298-6	DW-1	Total/NA	Water	300.0	
440-227298-7	DW-5	Total/NA	Water	300.0	
440-227298-7	DW-5	Total/NA	Water	300.0	
MB 440-516253/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516253/5	Lab Control Sample	Total/NA	Water	300.0	
440-227227-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
440-227227-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 516254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-8	Duplicate	Total/NA	Water	300.0	
440-227298-9	LX-7	Total/NA	Water	300.0	
MB 440-516254/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516254/5	Lab Control Sample	Total/NA	Water	300.0	
440-227051-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-227051-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 516255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-8	Duplicate	Total/NA	Water	300.0	
440-227298-8	Duplicate	Total/NA	Water	300.0	
440-227298-9	LX-7	Total/NA	Water	300.0	
440-227298-9	LX-7	Total/NA	Water	300.0	
MB 440-516255/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516255/5	Lab Control Sample	Total/NA	Water	300.0	
440-227051-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-227051-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

## Metals

### Prep Batch: 517351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total Recoverable	Water	3005A	
440-227298-2	MW-5	Total Recoverable	Water	3005A	
440-227298-3	MW-9	Total Recoverable	Water	3005A	
440-227298-4	MW-13R	Total Recoverable	Water	3005A	
440-227298-5	CM-10R	Total Recoverable	Water	3005A	
440-227298-6	DW-1	Total Recoverable	Water	3005A	
440-227298-7	DW-5	Total Recoverable	Water	3005A	
440-227298-8	Duplicate	Total Recoverable	Water	3005A	
MB 440-517351/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517351/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-227298-7 MS	DW-5	Total Recoverable	Water	3005A	
440-227298-7 MSD	DW-5	Total Recoverable	Water	3005A	

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Metals (Continued)

### Analysis Batch: 517461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total Recoverable	Water	6010B	517351
440-227298-2	MW-5	Total Recoverable	Water	6010B	517351
440-227298-3	MW-9	Total Recoverable	Water	6010B	517351
440-227298-4	MW-13R	Total Recoverable	Water	6010B	517351
440-227298-5	CM-10R	Total Recoverable	Water	6010B	517351
440-227298-6	DW-1	Total Recoverable	Water	6010B	517351
440-227298-6	DW-1	Total Recoverable	Water	6010B	517351
440-227298-7	DW-5	Total Recoverable	Water	6010B	517351
440-227298-8	Duplicate	Total Recoverable	Water	6010B	517351
MB 440-517351/1-A	Method Blank	Total Recoverable	Water	6010B	517351
LCS 440-517351/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517351
440-227298-7 MS	DW-5	Total Recoverable	Water	6010B	517351
440-227298-7 MSD	DW-5	Total Recoverable	Water	6010B	517351

### Prep Batch: 517804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-9	LX-7	Total Recoverable	Water	3005A	
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	3005A	
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 518257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-9	LX-7	Total Recoverable	Water	6010B	517804
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	6010B	517804
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517804
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	6010B	517804
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	517804

## General Chemistry

### Analysis Batch: 516890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	SM 2320B	
440-227298-2	MW-5	Total/NA	Water	SM 2320B	
440-227298-3	MW-9	Total/NA	Water	SM 2320B	
440-227298-4	MW-13R	Total/NA	Water	SM 2320B	
440-227298-5	CM-10R	Total/NA	Water	SM 2320B	
440-227298-6	DW-1	Total/NA	Water	SM 2320B	
440-227298-7	DW-5	Total/NA	Water	SM 2320B	
440-227298-8	Duplicate	Total/NA	Water	SM 2320B	
440-227298-9	LX-7	Total/NA	Water	SM 2320B	
MB 440-516890/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-516890/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-227298-1 DU	MW-1	Total/NA	Water	SM 2320B	

### Analysis Batch: 517678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	350.1	

TestAmerica Irvine

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## General Chemistry (Continued)

### Analysis Batch: 517678 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-2	MW-5	Total/NA	Water	350.1	
440-227298-3	MW-9	Total/NA	Water	350.1	
440-227298-4	MW-13R	Total/NA	Water	350.1	
440-227298-5	CM-10R	Total/NA	Water	350.1	
440-227298-6	DW-1	Total/NA	Water	350.1	
440-227298-7	DW-5	Total/NA	Water	350.1	
440-227298-8	Duplicate	Total/NA	Water	350.1	
440-227298-9	LX-7	Total/NA	Water	350.1	
MB 440-517678/10	Method Blank	Total/NA	Water	350.1	
LCS 440-517678/11	Lab Control Sample	Total/NA	Water	350.1	
MRL 440-517678/9	Lab Control Sample	Total/NA	Water	350.1	
440-227295-I-1 MS	Matrix Spike	Total/NA	Water	350.1	
440-227295-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

### Analysis Batch: 517815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	SM 2540C	
440-227298-2	MW-5	Total/NA	Water	SM 2540C	
440-227298-3	MW-9	Total/NA	Water	SM 2540C	
440-227298-4	MW-13R	Total/NA	Water	SM 2540C	
440-227298-5	CM-10R	Total/NA	Water	SM 2540C	
440-227298-6	DW-1	Total/NA	Water	SM 2540C	
440-227298-7	DW-5	Total/NA	Water	SM 2540C	
440-227298-8	Duplicate	Total/NA	Water	SM 2540C	
440-227298-9	LX-7	Total/NA	Water	SM 2540C	
MB 440-517815/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-517815/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-227298-1 DU	MW-1	Total/NA	Water	SM 2540C	

### Analysis Batch: 518059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	SM 5310C	
440-227298-4	MW-13R	Total/NA	Water	SM 5310C	
440-227298-5	CM-10R	Total/NA	Water	SM 5310C	
440-227298-7	DW-5	Total/NA	Water	SM 5310C	
MB 440-518059/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-518059/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-518059/4	Lab Control Sample	Total/NA	Water	SM 5310C	
440-227610-G-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-227610-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 518624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-2	MW-5	Total/NA	Water	SM 5310C	
440-227298-6	DW-1	Total/NA	Water	SM 5310C	
440-227298-9	LX-7	Total/NA	Water	SM 5310C	
MB 440-518624/6	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-518624/5	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-518624/4	Lab Control Sample	Total/NA	Water	SM 5310C	
440-227777-G-2 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-227777-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

TestAmerica Irvine

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Analysis Batch: 518694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	410.4	
440-227298-2	MW-5	Total/NA	Water	410.4	
440-227298-3	MW-9	Total/NA	Water	410.4	
440-227298-4	MW-13R	Total/NA	Water	410.4	
440-227298-5	CM-10R	Total/NA	Water	410.4	
MB 440-518694/3	Method Blank	Total/NA	Water	410.4	
LCS 440-518694/4	Lab Control Sample	Total/NA	Water	410.4	
440-228241-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-228241-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	
440-228241-A-1 DU	Duplicate	Total/NA	Water	410.4	

## Analysis Batch: 518742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-6	DW-1	Total/NA	Water	410.4	
440-227298-7	DW-5	Total/NA	Water	410.4	
MB 440-518742/3	Method Blank	Total/NA	Water	410.4	
LCS 440-518742/4	Lab Control Sample	Total/NA	Water	410.4	
440-227298-7 MS	DW-5	Total/NA	Water	410.4	
440-227298-7 MSD	DW-5	Total/NA	Water	410.4	

## Analysis Batch: 518916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-8	Duplicate	Total/NA	Water	410.4	
440-227298-9	LX-7	Total/NA	Water	410.4	
MB 440-518916/3	Method Blank	Total/NA	Water	410.4	
LCS 440-518916/4	Lab Control Sample	Total/NA	Water	410.4	
440-227566-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-227566-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

## Analysis Batch: 519373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	SM 4500 CO2 C	
440-227298-2	MW-5	Total/NA	Water	SM 4500 CO2 C	
440-227298-3	MW-9	Total/NA	Water	SM 4500 CO2 C	
440-227298-4	MW-13R	Total/NA	Water	SM 4500 CO2 C	
440-227298-5	CM-10R	Total/NA	Water	SM 4500 CO2 C	
440-227298-6	DW-1	Total/NA	Water	SM 4500 CO2 C	
440-227298-7	DW-5	Total/NA	Water	SM 4500 CO2 C	
440-227298-8	Duplicate	Total/NA	Water	SM 4500 CO2 C	
440-227298-9	LX-7	Total/NA	Water	SM 4500 CO2 C	
MB 440-519373/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-227295-H-4 DU	Duplicate	Total/NA	Water	SM 4500 CO2 C	

## Analysis Batch: 520227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-1	MW-1	Total/NA	Water	SM 4500 S2 D	
440-227298-2	MW-5	Total/NA	Water	SM 4500 S2 D	
440-227298-3	MW-9	Total/NA	Water	SM 4500 S2 D	
440-227298-4	MW-13R	Total/NA	Water	SM 4500 S2 D	
440-227298-5	CM-10R	Total/NA	Water	SM 4500 S2 D	
440-227298-6	DW-1	Total/NA	Water	SM 4500 S2 D	
440-227298-7	DW-5	Total/NA	Water	SM 4500 S2 D	
440-227298-8	Duplicate	Total/NA	Water	SM 4500 S2 D	

TestAmerica Irvine

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## General Chemistry (Continued)

### Analysis Batch: 520227 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-9	LX-7	Total/NA	Water	SM 4500 S2 D	
MB 440-520227/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-520227/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 440-520227/5	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
550-115481-E-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
550-115481-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 520346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227298-3	MW-9	Total/NA	Water	SM 5310C	
440-227298-8	Duplicate	Total/NA	Water	SM 5310C	
MB 440-520346/6	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-520346/5	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-520346/4	Lab Control Sample	Total/NA	Water	SM 5310C	
440-227298-3 MS	MW-9	Total/NA	Water	SM 5310C	
440-227298-3 MSD	MW-9	Total/NA	Water	SM 5310C	

# Definitions/Glossary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
ID	Analyte identified by RT & presence of single mass ion
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
T	Result is a tentatively identified compound (TIC) and an estimated value.
N	Presumptive evidence of material.

### HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

TestAmerica Irvine

# Definitions/Glossary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

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## Glossary (Continued)

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Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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# Accreditation/Certification Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227298-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

**TestAmerica Irvine**  
 17461 Merian Ave  
 Suite 100  
 Irvine, CA 92614  
 Phone: 949.761.1022 Fax:

**Chain of Custody Record** 208043

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING  
 TestAmerica Laboratories, Inc.  
 TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
 Company Name: GALA Republic  
 Address: 415 W. Bowers St.  
 City/State/Zip: S.D. CA 92107  
 Phone: 858-451-1136  
 Fax: 858-451-1087  
 Project Name: Republic Services  
 Site: Sunshine Cyn. Landfill  
 P.O.#

**Project Manager:** Kyle Weichard  
 Tel/Fax: 858-451-1136

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact: J. Mills**  
 Lab Contact: R. Tomes vs  
 Date: 12-11-18  
 Carrier: TA

COC No. of COCs  
 Sampler: BS, MC  
 For Lab Use Only:  
 Walk-in Client  
 Lab Sampling.  
 Job / SDG No.:

Barcode: 440-227298 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Dichlorodifluoro	Methylene	Other	Carrier	Material	Sample Spc
MW-1	12/11/18	0944	G	GW	13	X	X	X	X	X	TA	Carbon Dioxide	
MW-5	1120				13	X	X	X	X	X	TA	Carbon Dioxide	
MW-9	1350				13	X	X	X	X	X	TA	Carbon Dioxide	
MW-13R	0943				13	X	X	X	X	X	TA	Carbon Dioxide	
CM-101R	0955				13	X	X	X	X	X	TA	Carbon Dioxide	
DW-1	1250				13	X	X	X	X	X	TA	Carbon Dioxide	
DW-5	1240				13	X	X	X	X	X	TA	Carbon Dioxide	
Duplicate LX-7	---				13	X	X	X	X	X	TA	Carbon Dioxide	
Field Blank	1100				13	X	X	X	X	X	TA	Carbon Dioxide	
Tap Blank	---				13	X	X	X	X	X	TA	Carbon Dioxide	

*Handwritten notes in table:*  
 MW-1 to DW-5: **TA**  
 Duplicate LX-7: **TA**  
 Field Blank: **TA**  
 Tap Blank: **TA**  
 Right side of table: **TA** (repeated for each row)

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
 Possible Hazard Identification: Please List any EPA Hazardous Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard  Flammable  Skin Irritant  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

1.2/12.4, 2.4/2.6 1888  
 2.4/2.4

**Special Instructions/QC Requirements & Comments:**

Custody Seal No.  Yes  No  
 Relinquished by: *[Signature]*  
 Relinquished by: *[Signature]*  
 Relinquished by: *[Signature]*

Cooler Temp. (°C): Obs'd **1** Cor'd **1**

Received by: *[Signature]* Date/Time: 12.11.18 1425  
 Company: TA IRV  
 Received by: *[Signature]* Date/Time: 12.11.18 1700  
 Company: TA IRV

Therm ID No. \_\_\_\_\_  
 Date/Time: 12/11/18 1700  
 Company: TA-IRV



# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-227298-1

**Login Number: 227298**

**List Number: 1**

**Creator: Soderblom, Tim**

**List Source: TestAmerica Irvine**

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



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-227497-1

Client Project/Site: Republic Sunshine Canyon

For:

Geo-Logic Associates

11415 West Bernardo Court

Suite 200

San Diego, California 92127

Attn: Kyle Welchans



Authorized for release by:

12/31/2018 5:19:07 PM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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# Sample Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-227497-1	MW-2A	Water	12/12/18 10:10	12/12/18 17:55
440-227497-2	MW-2B	Water	12/12/18 08:50	12/12/18 17:55
440-227497-3	DW-4	Water	12/12/18 07:59	12/12/18 17:55
440-227497-4	PZ-4	Water	12/12/18 11:57	12/12/18 17:55
440-227497-5	Subdrain (N)	Water	12/12/18 14:00	12/12/18 17:55
440-227497-6	Field Blank	Water	12/12/18 00:01	12/12/18 17:55
440-227497-7	Trip Blank	Water	12/12/18 00:01	12/12/18 17:55



# Case Narrative

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Job ID: 440-227497-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-227497-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/12/2018 5:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.6° C, 1.4° C and 4.9° C.

#### GC/MS VOA

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

#### GC/MS Semi VOA

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

#### HPLC/IC

Method(s) 300.0: The following samples were diluted due to the nature of the sample matrix: MW-2A (440-227497-1), MW-2B (440-227497-2), DW-4 (440-227497-3) and Subdrain (N) (440-227497-5). Elevated reporting limits (RLs) are provided.

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

#### Metals

Method(s) 3005A: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of 3: Subdrain (N) (440-227497-5). The sample(s) was preserved to the appropriate pH in the laboratory.

1.0mL HNO3 12/16/18 @ 6:54 to 7:03  
HNO3 lot#0000203839

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

#### General Chemistry

Method(s) SM 4500 S2 D: The following samples were analyzed outside of analytical holding time due to login error; analysis was added to the job past the samples holding time: MW-2A (440-227497-1), MW-2B (440-227497-2), DW-4 (440-227497-3), PZ-4 (440-227497-4) and (CCV 440-520227/29).

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

#### Organic Prep

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

#### VOA Prep

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



# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: MW-2A**

**Date Collected: 12/12/18 10:10**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-1**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 00:50	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Acrolein	ND		50	2.5	ug/L			12/13/18 10:36	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 10:36	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 00:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 00:50	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 00:50	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 00:50	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 00:50	1
Acetone	ND		20	10	ug/L			12/19/18 00:50	1
Acetonitrile	ND		20	10	ug/L			12/19/18 00:50	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 00:50	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 00:50	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 00:50	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 00:50	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 00:50	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 00:50	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 00:50	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 00:50	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 00:50	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 00:50	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 00:50	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 00:50	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 00:50	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: MW-2A**

**Date Collected: 12/12/18 10:10**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-1**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 00:50	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 00:50	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Propionitrile	ND		20	10	ug/L			12/19/18 00:50	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 00:50	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 00:50	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 00:50	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 00:50	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 00:50	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 00:50	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 00:50	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 00:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 00:50	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.6	TJ	ug/L		7.21			12/19/18 00:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 128		12/13/18 10:36	1
4-Bromofluorobenzene (Surr)	92		80 - 120		12/13/18 10:36	1
Toluene-d8 (Surr)	95		80 - 128		12/19/18 00:50	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/19/18 00:50	1
Dibromofluoromethane (Surr)	99		76 - 132		12/13/18 10:36	1
Dibromofluoromethane (Surr)	103		76 - 132		12/19/18 00:50	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/14/18 12:51	12/17/18 14:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	75		30 - 120	12/14/18 12:51	12/17/18 14:05	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/12/18 21:17	2
Nitrate as N	ND		0.22	0.11	mg/L			12/12/18 21:17	2
Chloride	14		1.0	0.50	mg/L			12/12/18 21:17	2
Fluoride	0.96	J	1.0	0.50	mg/L			12/12/18 21:17	2
Sulfate	1500		50	25	mg/L			12/12/18 21:31	100

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.57		0.050	0.025	mg/L		12/16/18 07:18	12/16/18 14:20	1
Calcium	200		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:20	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: MW-2A**

**Date Collected: 12/12/18 10:10**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-1**

**Matrix: Water**

**Method: 6010B - Metals (ICP) - Total Recoverable (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	3.6		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:20	1
Magnesium	120		0.020	0.010	mg/L		12/16/18 07:18	12/16/18 14:20	1
Manganese	0.45		0.020	0.015	mg/L		12/16/18 07:18	12/16/18 14:20	1
Potassium	4.9		0.50	0.25	mg/L		12/16/18 07:18	12/16/18 14:20	1
Sodium	370		0.50	0.26	mg/L		12/16/18 07:18	12/16/18 14:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.8		0.20	0.10	mg/L			12/21/18 14:26	1
Chemical Oxygen Demand	13	J	20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	2600		20	10	mg/L			12/17/18 13:00	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	2.2		0.10	0.050	mg/L			12/14/18 11:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	330		4.0	4.0	mg/L			12/13/18 05:47	1
Bicarbonate Alkalinity as CaCO3	330		4.0	4.0	mg/L			12/13/18 05:47	1
Carbon Dioxide, Free	45		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: MW-2B**

**Date Collected: 12/12/18 08:50**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-2**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 01:13	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Acrolein	ND		50	2.5	ug/L			12/13/18 11:51	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 11:51	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 01:13	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 01:13	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 01:13	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 01:13	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 01:13	1
Acetone	ND		20	10	ug/L			12/19/18 01:13	1
Acetonitrile	ND		20	10	ug/L			12/19/18 01:13	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 01:13	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 01:13	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: MW-2B**

**Date Collected: 12/12/18 08:50**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-2**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 01:13	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 01:13	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 01:13	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 01:13	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 01:13	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 01:13	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 01:13	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 01:13	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 01:13	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 01:13	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 01:13	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 01:13	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 01:13	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Propionitrile	ND		20	10	ug/L			12/19/18 01:13	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 01:13	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 01:13	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 01:13	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 01:13	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 01:13	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 01:13	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 01:13	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 01:13	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 01:13	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.8	TJ	ug/L		7.21			12/19/18 01:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 128		12/13/18 11:51	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: MW-2B**

**Date Collected: 12/12/18 08:50**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-2**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/18 11:51	1
Toluene-d8 (Surr)	96		80 - 128		12/19/18 01:13	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/19/18 01:13	1
Dibromofluoromethane (Surr)	99		76 - 132		12/13/18 11:51	1
Dibromofluoromethane (Surr)	105		76 - 132		12/19/18 01:13	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.99	0.25	ug/L		12/14/18 12:51	12/17/18 14:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	34		30 - 120	12/14/18 12:51	12/17/18 14:28	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/12/18 21:45	2
Nitrate as N	ND		0.22	0.11	mg/L			12/12/18 21:45	2
Chloride	13		1.0	0.50	mg/L			12/12/18 21:45	2
Fluoride	1.1		1.0	0.50	mg/L			12/12/18 21:45	2
Sulfate	1500		50	25	mg/L			12/12/18 21:59	100

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.57		0.050	0.025	mg/L		12/16/18 07:18	12/16/18 14:38	1
Calcium	170		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:38	1
Iron	2.0		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:38	1
Magnesium	110		0.020	0.010	mg/L		12/16/18 07:18	12/16/18 14:38	1
Manganese	0.12		0.020	0.015	mg/L		12/16/18 07:18	12/16/18 14:38	1
Potassium	4.3		0.50	0.25	mg/L		12/16/18 07:18	12/16/18 14:38	1
Sodium	420		0.50	0.26	mg/L		12/16/18 07:18	12/16/18 14:38	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	3.2		0.20	0.10	mg/L			12/21/18 14:31	1
Chemical Oxygen Demand	36		20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	2600		20	10	mg/L			12/17/18 13:00	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	1.5		0.10	0.050	mg/L			12/14/18 11:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	330		4.0	4.0	mg/L			12/13/18 06:06	1
Bicarbonate Alkalinity as CaCO3	330		4.0	4.0	mg/L			12/13/18 06:06	1
Carbon Dioxide, Free	17		2.0	2.0	mg/L			12/26/18 15:49	1

**Client Sample ID: DW-4**

**Date Collected: 12/12/18 07:59**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-3**

**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 01:37	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: DW-4**  
**Date Collected: 12/12/18 07:59**  
**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-3**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Acrolein	ND		50	2.5	ug/L			12/13/18 12:16	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 12:16	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 01:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 01:37	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 01:37	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 01:37	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 01:37	1
Acetone	ND		20	10	ug/L			12/19/18 01:37	1
Acetonitrile	ND		20	10	ug/L			12/19/18 01:37	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 01:37	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 01:37	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 01:37	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 01:37	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 01:37	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 01:37	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 01:37	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 01:37	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 01:37	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 01:37	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 01:37	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 01:37	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 01:37	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 01:37	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: DW-4**  
**Date Collected: 12/12/18 07:59**  
**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-3**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 01:37	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Propionitrile	ND		20	10	ug/L			12/19/18 01:37	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 01:37	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 01:37	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 01:37	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 01:37	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 01:37	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 01:37	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 01:37	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 01:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 01:37	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.4	TJ	ug/L		7.21			12/19/18 01:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 128		12/13/18 12:16	1
4-Bromofluorobenzene (Surr)	91		80 - 120		12/13/18 12:16	1
Toluene-d8 (Surr)	95		80 - 128		12/19/18 01:37	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/19/18 01:37	1
Dibromofluoromethane (Surr)	101		76 - 132		12/13/18 12:16	1
Dibromofluoromethane (Surr)	105		76 - 132		12/19/18 01:37	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.99	0.25	ug/L		12/14/18 12:51	12/17/18 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	73		30 - 120		12/14/18 12:51	12/17/18 14:51

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/12/18 22:13	2
Nitrate as N	ND		0.22	0.11	mg/L			12/12/18 22:13	2
<b>Chloride</b>	<b>13</b>		1.0	0.50	mg/L			12/12/18 22:13	2
Fluoride	ND		1.0	0.50	mg/L			12/12/18 22:13	2
<b>Sulfate</b>	<b>1700</b>		50	25	mg/L			12/12/18 22:27	100

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>0.61</b>		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 15:21	2
<b>Calcium</b>	<b>180</b>		0.20	0.10	mg/L		12/16/18 07:18	12/16/18 15:21	2
<b>Iron</b>	<b>1.6</b>		0.20	0.10	mg/L		12/16/18 07:18	12/16/18 15:21	2

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: DW-4**  
**Date Collected: 12/12/18 07:59**  
**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-3**  
**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	130		0.040	0.020	mg/L		12/16/18 07:18	12/16/18 15:21	2
Manganese	0.12		0.040	0.030	mg/L		12/16/18 07:18	12/16/18 15:21	2
Potassium	4.1		1.0	0.50	mg/L		12/16/18 07:18	12/16/18 15:21	2
Sodium	470		1.0	0.52	mg/L		12/16/18 07:18	12/16/18 15:21	2

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	4.2		0.20	0.10	mg/L			12/21/18 14:37	1
Chemical Oxygen Demand	12	J	20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	2900		20	10	mg/L			12/17/18 13:00	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	1.6		0.10	0.050	mg/L			12/14/18 12:00	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	340		4.0	4.0	mg/L			12/13/18 06:16	1
Bicarbonate Alkalinity as CaCO3	340		4.0	4.0	mg/L			12/13/18 06:16	1
Carbon Dioxide, Free	14		2.0	2.0	mg/L			12/27/18 15:04	1

**Client Sample ID: PZ-4**  
**Date Collected: 12/12/18 11:57**  
**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-4**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 02:01	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Acrolein	ND		50	2.5	ug/L			12/13/18 12:41	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 12:41	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 02:01	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 02:01	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 02:01	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 02:01	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 02:01	1
Acetone	ND		20	10	ug/L			12/19/18 02:01	1
Acetonitrile	ND		20	10	ug/L			12/19/18 02:01	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 02:01	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 02:01	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 02:01	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: PZ-4**

**Date Collected: 12/12/18 11:57**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-4**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 02:01	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 02:01	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 02:01	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 02:01	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 02:01	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 02:01	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 02:01	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 02:01	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 02:01	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 02:01	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 02:01	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 02:01	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 02:01	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Propionitrile	ND		20	10	ug/L			12/19/18 02:01	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 02:01	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 02:01	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 02:01	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 02:01	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 02:01	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 02:01	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 02:01	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 02:01	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 02:01	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.6	T J	ug/L		7.21			12/19/18 02:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 128		12/13/18 12:41	1
4-Bromofluorobenzene (Surr)	89		80 - 120		12/13/18 12:41	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: PZ-4**  
**Date Collected: 12/12/18 11:57**  
**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-4**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 128		12/19/18 02:01	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/19/18 02:01	1
Dibromofluoromethane (Surr)	102		76 - 132		12/13/18 12:41	1
Dibromofluoromethane (Surr)	101		76 - 132		12/19/18 02:01	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/14/18 12:51	12/17/18 15:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	71		30 - 120	12/14/18 12:51	12/17/18 15:14	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/12/18 22:41	1
Nitrate as N	ND		0.11	0.055	mg/L			12/12/18 22:41	1
Chloride	8.4		0.50	0.25	mg/L			12/12/18 22:41	1
Fluoride	1.2		0.50	0.25	mg/L			12/12/18 22:41	1

## Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	570		25	13	mg/L			12/12/18 23:25	50

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.17		0.050	0.025	mg/L		12/16/18 07:18	12/16/18 14:43	1
Calcium	130		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:43	1
Iron	0.89		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:43	1
Magnesium	78		0.020	0.010	mg/L		12/16/18 07:18	12/16/18 14:43	1
Manganese	0.11		0.020	0.015	mg/L		12/16/18 07:18	12/16/18 14:43	1
Potassium	4.2		0.50	0.25	mg/L		12/16/18 07:18	12/16/18 14:43	1
Sodium	99		0.50	0.26	mg/L		12/16/18 07:18	12/16/18 14:43	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.20	0.10	mg/L			12/21/18 14:42	1
Chemical Oxygen Demand	16	J	20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	1200		10	5.0	mg/L			12/17/18 13:00	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:33	1
Total Organic Carbon	0.99		0.10	0.050	mg/L			12/14/18 12:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	330		4.0	4.0	mg/L			12/13/18 06:25	1
Bicarbonate Alkalinity as CaCO3	330		4.0	4.0	mg/L			12/13/18 06:25	1
Carbon Dioxide, Free	19		2.0	2.0	mg/L			12/26/18 15:49	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: Subdrain (N)**

**Lab Sample ID: 440-227497-5**

**Date Collected: 12/12/18 14:00**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 02:24	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Acrolein	ND		50	2.5	ug/L			12/13/18 13:07	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 13:07	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 02:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 02:24	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 02:24	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 02:24	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 02:24	1
Acetone	ND		20	10	ug/L			12/19/18 02:24	1
Acetonitrile	ND		20	10	ug/L			12/19/18 02:24	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 02:24	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 02:24	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 02:24	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 02:24	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 02:24	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 02:24	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
<b>cis-1,2-Dichloroethene</b>	<b>1.5</b>		0.50	0.25	ug/L			12/19/18 02:24	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 02:24	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 02:24	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 02:24	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 02:24	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 02:24	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 02:24	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 02:24	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: Subdrain (N)**

**Lab Sample ID: 440-227497-5**

**Date Collected: 12/12/18 14:00**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 02:24	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 02:24	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Propionitrile	ND		20	10	ug/L			12/19/18 02:24	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
<b>t-Butanol</b>	<b>53</b>		10	5.0	ug/L			12/19/18 02:24	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
<b>Tetrahydrofuran</b>	<b>16</b>		10	5.0	ug/L			12/19/18 02:24	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:24	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 02:24	1
<b>Trichloroethene</b>	<b>0.25 J</b>		0.50	0.25	ug/L			12/19/18 02:24	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 02:24	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 02:24	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 02:24	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 02:24	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 02:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 02:24	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Silane, fluorotrimethyl-	2.7	T J N	ug/L		3.47	420-56-4		12/19/18 02:24	1
Unknown	3.8	T J	ug/L		5.71			12/19/18 02:24	1
Unknown	9.5	T J	ug/L		7.21			12/19/18 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 128		12/13/18 13:07	1
4-Bromofluorobenzene (Surr)	91		80 - 120		12/13/18 13:07	1
Toluene-d8 (Surr)	97		80 - 128		12/19/18 02:24	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/19/18 02:24	1
Dibromofluoromethane (Surr)	97		76 - 132		12/13/18 13:07	1
Dibromofluoromethane (Surr)	104		76 - 132		12/19/18 02:24	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>48</b>		5.3	1.3	ug/L		12/14/18 12:51	12/18/18 15:44	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	67		30 - 120	12/14/18 12:51	12/18/18 15:44	5

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bromide</b>	<b>6.1</b>		5.0	2.5	mg/L			12/13/18 00:37	10
Nitrate as N	ND		1.1	0.55	mg/L			12/13/18 00:37	10
<b>Chloride</b>	<b>440</b>		50	25	mg/L			12/13/18 01:47	100
Fluoride	ND		5.0	2.5	mg/L			12/13/18 00:37	10
<b>Sulfate</b>	<b>2000</b>		50	25	mg/L			12/13/18 01:47	100

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: Subdrain (N)**

**Lab Sample ID: 440-227497-5**

Date Collected: 12/12/18 14:00

Matrix: Water

Date Received: 12/12/18 17:55

**Method: 6010B - Metals (ICP) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7		0.25	0.13	mg/L		12/18/18 07:30	12/19/18 18:20	5
Calcium	600		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 18:20	5
Iron	99		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 18:20	5
Magnesium	270		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 18:20	5
Manganese	15		0.10	0.075	mg/L		12/18/18 07:30	12/19/18 18:20	5
Potassium	22		2.5	1.3	mg/L		12/18/18 07:30	12/19/18 18:20	5
Sodium	350		2.5	1.3	mg/L		12/18/18 07:30	12/19/18 18:20	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	4.3		0.20	0.10	mg/L			12/21/18 14:56	1
Chemical Oxygen Demand	240		20	10	mg/L			12/22/18 11:41	1
Total Dissolved Solids	4800		50	25	mg/L			12/17/18 13:00	1
Total Sulfide	ND	H	0.050	0.027	mg/L			12/31/18 16:34	1
Total Organic Carbon	77		1.0	0.50	mg/L			12/14/18 12:53	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	820		4.0	4.0	mg/L			12/13/18 06:40	1
Bicarbonate Alkalinity as CaCO3	820		4.0	4.0	mg/L			12/13/18 06:40	1
Carbon Dioxide, Free	130		2.0	2.0	mg/L			12/26/18 15:56	1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227497-6**

Date Collected: 12/12/18 00:01

Matrix: Water

Date Received: 12/12/18 17:55

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 02:48	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Acrolein	ND		50	2.5	ug/L			12/13/18 13:32	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 13:32	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 02:48	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 02:48	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 02:48	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 02:48	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 02:48	1
Acetone	ND		20	10	ug/L			12/19/18 02:48	1
Acetonitrile	ND		20	10	ug/L			12/19/18 02:48	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227497-6**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		5.0	2.5	ug/L			12/19/18 02:48	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 02:48	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 02:48	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 02:48	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 02:48	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 02:48	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 02:48	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 02:48	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 02:48	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 02:48	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 02:48	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 02:48	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 02:48	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 02:48	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 02:48	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Propionitrile	ND		20	10	ug/L			12/19/18 02:48	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 02:48	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 02:48	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 02:48	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 02:48	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 02:48	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 02:48	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 02:48	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 02:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 02:48	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.3	TJ	ug/L		7.21			12/19/18 02:48	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Client Sample ID: Field Blank

Date Collected: 12/12/18 00:01

Date Received: 12/12/18 17:55

## Lab Sample ID: 440-227497-6

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 128		12/13/18 13:32	1
4-Bromofluorobenzene (Surr)	91		80 - 120		12/13/18 13:32	1
Toluene-d8 (Surr)	96		80 - 128		12/19/18 02:48	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/19/18 02:48	1
Dibromofluoromethane (Surr)	98		76 - 132		12/13/18 13:32	1
Dibromofluoromethane (Surr)	105		76 - 132		12/19/18 02:48	1

## Client Sample ID: Trip Blank

Date Collected: 12/12/18 00:01

Date Received: 12/12/18 17:55

## Lab Sample ID: 440-227497-7

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 03:12	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Acrolein	ND		50	2.5	ug/L			12/13/18 13:57	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 13:57	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 03:12	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 03:12	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 03:12	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 03:12	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 03:12	1
Acetone	ND		20	10	ug/L			12/19/18 03:12	1
Acetonitrile	ND		20	10	ug/L			12/19/18 03:12	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 03:12	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 03:12	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 03:12	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 03:12	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 03:12	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 03:12	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 03:12	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227497-7**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 03:12	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 03:12	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 03:12	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 03:12	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 03:12	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 03:12	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 03:12	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 03:12	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 03:12	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Propionitrile	ND		20	10	ug/L			12/19/18 03:12	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 03:12	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 03:12	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 03:12	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 03:12	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 03:12	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 03:12	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 03:12	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 03:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 03:12	1

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Unknown	9.7	T J	ug/L		7.21			12/19/18 03:12	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Toluene-d8 (Surr)	96		80 - 128		12/13/18 13:57	1
4-Bromofluorobenzene (Surr)	91		80 - 120		12/13/18 13:57	1
Toluene-d8 (Surr)	94		80 - 128		12/19/18 03:12	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/19/18 03:12	1
Dibromofluoromethane (Surr)	99		76 - 132		12/13/18 13:57	1
Dibromofluoromethane (Surr)	105		76 - 132		12/19/18 03:12	1

TestAmerica Irvine

# Method Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
350.1	Nitrogen, Ammonia	MCAWW	TAL IRV
410.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 4500 CO2 C	Free Carbon Dioxide	SM	TAL IRV
SM 4500 S2 D	Sulfide, Total	SM	TAL IRV
SM 5310C	TOC	SM	TAL IRV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

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

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: MW-2A**

**Date Collected: 12/12/18 10:10**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 10:36	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 00:50	OH1	TAL IRV
Total/NA	Prep	3520C			1005 mL	1.0 mL	517164	12/14/18 12:51	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 14:05	L1B	TAL IRV
Total/NA	Analysis	300.0		2			516500	12/12/18 21:17	NTN	TAL IRV
Total/NA	Analysis	300.0		2			516501	12/12/18 21:17	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516501	12/12/18 21:31	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517353	12/16/18 07:18	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517594	12/16/18 14:20	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 14:26	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516776	12/13/18 05:47	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517472	12/17/18 13:00	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	517284	12/14/18 11:36	YZ	TAL IRV

**Client Sample ID: MW-2B**

**Date Collected: 12/12/18 08:50**

**Date Received: 12/12/18 17:55**

**Lab Sample ID: 440-227497-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 11:51	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 01:13	OH1	TAL IRV
Total/NA	Prep	3520C			1015 mL	1.0 mL	517164	12/14/18 12:51	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 14:28	L1B	TAL IRV
Total/NA	Analysis	300.0		2			516500	12/12/18 21:45	NTN	TAL IRV
Total/NA	Analysis	300.0		2			516501	12/12/18 21:45	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516501	12/12/18 21:59	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517353	12/16/18 07:18	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517594	12/16/18 14:38	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 14:31	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516776	12/13/18 06:06	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517472	12/17/18 13:00	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	517284	12/14/18 11:48	YZ	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Client Sample ID: DW-4**

**Lab Sample ID: 440-227497-3**

**Date Collected: 12/12/18 07:59**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 12:16	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 01:37	OH1	TAL IRV
Total/NA	Prep	3520C			1015 mL	1.0 mL	517164	12/14/18 12:51	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 14:51	L1B	TAL IRV
Total/NA	Analysis	300.0		2			516500	12/12/18 22:13	NTN	TAL IRV
Total/NA	Analysis	300.0		2			516501	12/12/18 22:13	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516501	12/12/18 22:27	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517353	12/16/18 07:18	KE	TAL IRV
Total Recoverable	Analysis	6010B		2			517594	12/16/18 15:21	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 14:37	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516776	12/13/18 06:16	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	517472	12/17/18 13:00	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	519628	12/27/18 15:04	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	517284	12/14/18 12:00	YZ	TAL IRV

**Client Sample ID: PZ-4**

**Lab Sample ID: 440-227497-4**

**Date Collected: 12/12/18 11:57**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 12:41	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 02:01	OH1	TAL IRV
Total/NA	Prep	3520C			1005 mL	1.0 mL	517164	12/14/18 12:51	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 15:14	L1B	TAL IRV
Total/NA	Analysis	300.0		1			516500	12/12/18 22:41	NTN	TAL IRV
Total/NA	Analysis	300.0		1			516501	12/12/18 22:41	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	50			516501	12/12/18 23:25	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517353	12/16/18 07:18	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517594	12/16/18 14:43	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 14:42	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516776	12/13/18 06:25	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	517472	12/17/18 13:00	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:49	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:33	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	517284	12/14/18 12:12	YZ	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Client Sample ID: Subdrain (N)

Lab Sample ID: 440-227497-5

Date Collected: 12/12/18 14:00

Matrix: Water

Date Received: 12/12/18 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 13:07	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 02:24	OH1	TAL IRV
Total/NA	Prep	3520C			950 mL	1.0 mL	517164	12/14/18 12:51	JAA	TAL IRV
Total/NA	Analysis	8270C		5			517809	12/18/18 15:44	HN	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	516500	12/13/18 00:37	NTN	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	516501	12/13/18 00:37	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516501	12/13/18 01:47	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517804	12/18/18 07:30	KE	TAL IRV
Total Recoverable	Analysis	6010B		5			518257	12/19/18 18:20	P1R	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 14:56	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:41	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			516776	12/13/18 06:40	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	517472	12/17/18 13:00	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1			519373	12/26/18 15:56	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	520227	12/31/18 16:34	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	517284	12/14/18 12:53	YZ	TAL IRV

## Client Sample ID: Field Blank

Lab Sample ID: 440-227497-6

Date Collected: 12/12/18 00:01

Matrix: Water

Date Received: 12/12/18 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 13:32	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 02:48	OH1	TAL IRV

## Client Sample ID: Trip Blank

Lab Sample ID: 440-227497-7

Date Collected: 12/12/18 00:01

Matrix: Water

Date Received: 12/12/18 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 13:57	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 03:12	OH1	TAL IRV

### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-516755/6**  
**Matrix: Water**  
**Analysis Batch: 516755**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		50	2.5	ug/L			12/13/18 09:20	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 09:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 128		12/13/18 09:20	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/18 09:20	1
Dibromofluoromethane (Surr)	102		76 - 132		12/13/18 09:20	1

**Lab Sample ID: LCS 440-516755/7**  
**Matrix: Water**  
**Analysis Batch: 516755**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	17.5	J	ug/L		70	10 - 145
Acrylonitrile	250	199		ug/L		80	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	90		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132

**Lab Sample ID: 440-227497-1 MS**  
**Matrix: Water**  
**Analysis Batch: 516755**

**Client Sample ID: MW-2A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	ND		25.0	20.2	J	ug/L		81	10 - 147
Acrylonitrile	ND		250	209		ug/L		83	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-227497-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 516755**

**Client Sample ID: MW-2A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	ND		25.0	20.1	J	ug/L		80	10 - 147	0	40
Acrylonitrile	ND		250	207		ug/L		83	38 - 144	1	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	94		80 - 128
4-Bromofluorobenzene (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517983/4**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 18:52	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 18:52	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 18:52	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Acetone	ND		20	10	ug/L			12/18/18 18:52	1
Acetonitrile	ND		20	10	ug/L			12/18/18 18:52	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 18:52	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 18:52	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 18:52	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517983/4**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 18:52	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Propionitrile	ND		20	10	ug/L			12/18/18 18:52	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 18:52	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 18:52	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 18:52	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 18:52	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 18:52	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/18/18 18:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 128		12/18/18 18:52	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/18/18 18:52	1
Dibromofluoromethane (Surr)	101		76 - 132		12/18/18 18:52	1

**Lab Sample ID: LCS 440-517983/5**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	25.0	23.9		ug/L		96	63 - 130
1,1,1,2-Tetrachloroethane	25.0	26.1		ug/L		104	60 - 141
1,1,1-Trichloroethane	25.0	27.5		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	25.0	21.6		ug/L		86	63 - 130
1,1,2-Trichloroethane	25.0	23.8		ug/L		95	70 - 130
1,1-Dichloroethane	25.0	24.4		ug/L		98	64 - 130
1,1-Dichloroethene	25.0	23.5		ug/L		94	70 - 130
1,1-Dichloropropene	25.0	23.6		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	25.0	21.3		ug/L		85	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	23.8		ug/L		95	52 - 140
1,2-Dichlorobenzene	25.0	22.6		ug/L		91	70 - 130
1,2-Dichloroethane	25.0	27.1		ug/L		109	57 - 138
1,2-Dichloropropane	25.0	24.0		ug/L		96	67 - 130
1,3-Dichlorobenzene	25.0	23.4		ug/L		94	70 - 130

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517983/5**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	25.0	23.5		ug/L		94	70 - 130
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	70 - 130
2,2-Dichloropropane	25.0	26.7		ug/L		107	68 - 141
2-Hexanone	25.0	28.3		ug/L		113	10 - 150
Acetone	25.0	30.0		ug/L		120	10 - 150
Acrolein	25.0	20.4		ug/L		81	10 - 145
Acrylonitrile	250	256		ug/L		102	48 - 140
Benzene	25.0	23.2		ug/L		93	68 - 130
Bromoform	25.0	26.8		ug/L		107	60 - 148
Bromomethane	25.0	23.0		ug/L		92	64 - 139
Carbon disulfide	25.0	20.3		ug/L		81	52 - 136
Carbon tetrachloride	25.0	27.9		ug/L		112	60 - 150
Chlorobenzene	25.0	22.9		ug/L		92	70 - 130
Bromochloromethane	25.0	24.9		ug/L		100	70 - 130
Chloroethane	25.0	22.4		ug/L		90	64 - 135
Chloroform	25.0	26.1		ug/L		104	70 - 130
Chloromethane	25.0	18.6		ug/L		75	47 - 140
cis-1,2-Dichloroethene	25.0	23.6		ug/L		94	70 - 133
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	70 - 133
Dibromochloromethane	25.0	26.3		ug/L		105	69 - 145
Dibromomethane	25.0	23.4		ug/L		94	70 - 130
Bromodichloromethane	25.0	27.7		ug/L		111	70 - 132
Dichlorodifluoromethane	25.0	17.2		ug/L		69	29 - 150
Ethylbenzene	25.0	23.5		ug/L		94	70 - 130
m,p-Xylene	25.0	23.8		ug/L		95	70 - 130
Methylene Chloride	25.0	22.8		ug/L		91	52 - 130
Methyl tert-butyl ether	25.0	25.3		ug/L		101	63 - 131
Naphthalene	25.0	20.3		ug/L		81	60 - 140
o-Xylene	25.0	23.0		ug/L		92	70 - 130
Styrene	25.0	23.9		ug/L		96	70 - 134
t-Butanol	250	270		ug/L		108	70 - 130
Tetrachloroethene	25.0	23.0		ug/L		92	70 - 130
Toluene	25.0	22.3		ug/L		89	70 - 130
trans-1,2-Dichloroethene	25.0	23.9		ug/L		96	70 - 130
trans-1,3-Dichloropropene	25.0	26.2		ug/L		105	70 - 132
Trichloroethene	25.0	24.6		ug/L		99	70 - 130
Trichlorofluoromethane	25.0	27.8		ug/L		111	60 - 150
Vinyl acetate	25.0	27.6		ug/L		110	48 - 140
Vinyl chloride	25.0	20.5		ug/L		82	59 - 133
1,2-Dibromoethane (EDB)	25.0	23.6		ug/L		94	70 - 130
2-Butanone (MEK)	25.0	27.7		ug/L		111	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	27.1		ug/L		108	59 - 149

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	92		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-A-6 MS**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	ND		25.0	23.4		ug/L		94	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	24.3		ug/L		97	60 - 149
1,1,1-Trichloroethane	ND		25.0	25.2		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	20.7		ug/L		83	63 - 130
1,1,2-Trichloroethane	ND		25.0	22.1		ug/L		89	70 - 130
1,1-Dichloroethane	ND		25.0	22.4		ug/L		90	65 - 130
1,1-Dichloroethene	ND		25.0	21.6		ug/L		86	70 - 130
1,1-Dichloropropene	ND		25.0	21.5		ug/L		86	64 - 130
1,2,4-Trichlorobenzene	ND		25.0	21.6		ug/L		86	60 - 140
1,2-Dibromo-3-Chloropropane	ND		25.0	22.4		ug/L		90	48 - 140
1,2-Dichlorobenzene	ND		25.0	22.1		ug/L		88	70 - 130
1,2-Dichloroethane	ND		25.0	25.2		ug/L		101	56 - 146
1,2-Dichloropropane	ND		25.0	22.6		ug/L		90	69 - 130
1,3-Dichlorobenzene	ND		25.0	22.7		ug/L		91	70 - 130
1,3-Dichloropropane	ND		25.0	21.7		ug/L		87	70 - 130
1,4-Dichlorobenzene	ND		25.0	22.5		ug/L		90	70 - 130
2,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 138
2-Hexanone	ND		25.0	26.2		ug/L		105	10 - 150
Acetone	ND		25.0	26.0		ug/L		104	10 - 150
Acrolein	ND		25.0	16.8		ug/L		67	10 - 147
Acrylonitrile	ND		250	229		ug/L		92	38 - 144
Benzene	ND		25.0	21.2		ug/L		85	66 - 130
Bromoform	ND		25.0	24.6		ug/L		98	59 - 150
Bromomethane	ND		25.0	21.0		ug/L		84	62 - 131
Carbon disulfide	ND		25.0	19.1		ug/L		76	49 - 140
Carbon tetrachloride	ND		25.0	25.5		ug/L		102	60 - 150
Chlorobenzene	ND		25.0	21.8		ug/L		87	70 - 130
Bromochloromethane	ND		25.0	23.4		ug/L		93	70 - 130
Chloroethane	ND		25.0	20.2		ug/L		81	68 - 130
Chloroform	ND		25.0	23.7		ug/L		95	70 - 130
Chloromethane	ND		25.0	18.1		ug/L		72	39 - 144
cis-1,2-Dichloroethene	ND		25.0	21.7		ug/L		87	70 - 130
cis-1,3-Dichloropropene	ND		25.0	23.8		ug/L		95	70 - 133
Dibromochloromethane	ND		25.0	24.1		ug/L		96	70 - 148
Dibromomethane	ND		25.0	21.3		ug/L		85	70 - 130
Bromodichloromethane	ND		25.0	24.8		ug/L		99	70 - 138
Dichlorodifluoromethane	ND		25.0	16.7		ug/L		67	25 - 142
Ethylbenzene	ND		25.0	22.2		ug/L		89	70 - 130
m,p-Xylene	ND		25.0	22.3		ug/L		89	70 - 133
Methylene Chloride	ND		25.0	19.8		ug/L		79	52 - 130
Methyl tert-butyl ether	ND		25.0	23.6		ug/L		95	70 - 130
Naphthalene	ND		25.0	20.1		ug/L		80	60 - 140
o-Xylene	ND		25.0	21.7		ug/L		87	70 - 133
Styrene	ND		25.0	22.5		ug/L		90	29 - 150
t-Butanol	ND		250	253		ug/L		101	70 - 130
Tetrachloroethene	ND		25.0	22.0		ug/L		88	70 - 137
Toluene	ND		25.0	21.1		ug/L		84	70 - 130
trans-1,2-Dichloroethene	ND		25.0	22.1		ug/L		88	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-A-6 MS**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	ND		25.0	24.2		ug/L		97	70 - 138
Trichloroethene	ND		25.0	22.3		ug/L		89	70 - 130
Trichlorofluoromethane	ND		25.0	25.7		ug/L		103	60 - 150
Vinyl acetate	ND		25.0	25.8		ug/L		103	23 - 150
Vinyl chloride	ND		25.0	18.8		ug/L		75	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	21.6		ug/L		86	70 - 131
2-Butanone (MEK)	ND		25.0	22.6		ug/L		90	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	25.9		ug/L		104	52 - 150

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Toluene-d8 (Surr)	94		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	103		76 - 132

**Lab Sample ID: 440-227298-A-6 MSD**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	ND		25.0	23.6		ug/L		95	60 - 130	1	30
1,1,1,2-Tetrachloroethane	ND		25.0	24.5		ug/L		98	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	26.4		ug/L		106	70 - 130	5	20
1,1,2,2-Tetrachloroethane	ND		25.0	19.8		ug/L		79	63 - 130	4	30
1,1,2-Trichloroethane	ND		25.0	21.4		ug/L		86	70 - 130	3	25
1,1-Dichloroethane	ND		25.0	23.3		ug/L		93	65 - 130	4	20
1,1-Dichloroethene	ND		25.0	22.6		ug/L		91	70 - 130	5	20
1,1-Dichloropropene	ND		25.0	22.6		ug/L		90	64 - 130	5	20
1,2,4-Trichlorobenzene	ND		25.0	21.2		ug/L		85	60 - 140	2	20
1,2-Dibromo-3-Chloropropane	ND		25.0	22.8		ug/L		91	48 - 140	2	30
1,2-Dichlorobenzene	ND		25.0	21.1		ug/L		84	70 - 130	5	20
1,2-Dichloroethane	ND		25.0	25.5		ug/L		102	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	23.3		ug/L		93	69 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	22.0		ug/L		88	70 - 130	3	20
1,3-Dichloropropane	ND		25.0	21.6		ug/L		86	70 - 130	0	25
1,4-Dichlorobenzene	ND		25.0	22.1		ug/L		88	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	26.2		ug/L		105	69 - 138	2	25
2-Hexanone	ND		25.0	25.9		ug/L		104	10 - 150	1	35
Acetone	ND		25.0	28.2		ug/L		113	10 - 150	8	35
Acrolein	ND		25.0	19.7		ug/L		79	10 - 147	16	40
Acrylonitrile	ND		25.0	23.1		ug/L		92	38 - 144	1	40
Benzene	ND		25.0	21.9		ug/L		88	66 - 130	3	20
Bromoform	ND		25.0	24.1		ug/L		96	59 - 150	2	25
Bromomethane	ND		25.0	21.7		ug/L		87	62 - 131	3	25
Carbon disulfide	ND		25.0	19.6		ug/L		78	49 - 140	3	20
Carbon tetrachloride	ND		25.0	26.9		ug/L		108	60 - 150	5	25
Chlorobenzene	ND		25.0	21.7		ug/L		87	70 - 130	1	20
Bromochloromethane	ND		25.0	24.2		ug/L		97	70 - 130	4	25
Chloroethane	ND		25.0	21.6		ug/L		86	68 - 130	7	25

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-A-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloroform	ND		25.0	24.4		ug/L		97	70 - 130	3	20
Chloromethane	ND		25.0	19.0		ug/L		76	39 - 144	5	25
cis-1,2-Dichloroethene	ND		25.0	22.3		ug/L		89	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	23.1		ug/L		92	70 - 133	3	20
Dibromochloromethane	ND		25.0	24.3		ug/L		97	70 - 148	1	25
Dibromomethane	ND		25.0	21.3		ug/L		85	70 - 130	0	25
Bromodichloromethane	ND		25.0	26.0		ug/L		104	70 - 138	5	20
Dichlorodifluoromethane	ND		25.0	16.7		ug/L		67	25 - 142	0	30
Ethylbenzene	ND		25.0	22.6		ug/L		91	70 - 130	2	20
m,p-Xylene	ND		25.0	22.0		ug/L		88	70 - 133	1	25
Methylene Chloride	ND		25.0	20.5		ug/L		82	52 - 130	3	20
Methyl tert-butyl ether	ND		25.0	23.5		ug/L		94	70 - 130	1	25
Naphthalene	ND		25.0	19.7		ug/L		79	60 - 140	2	30
o-Xylene	ND		25.0	21.6		ug/L		86	70 - 133	0	20
Styrene	ND		25.0	22.0		ug/L		88	29 - 150	2	35
t-Butanol	ND		250	258		ug/L		103	70 - 130	2	25
Tetrachloroethene	ND		25.0	22.3		ug/L		89	70 - 137	1	20
Toluene	ND		25.0	20.8		ug/L		83	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	23.2		ug/L		93	70 - 130	5	20
trans-1,3-Dichloropropene	ND		25.0	23.5		ug/L		94	70 - 138	3	25
Trichloroethene	ND		25.0	23.7		ug/L		95	70 - 130	6	20
Trichlorofluoromethane	ND		25.0	26.5		ug/L		106	60 - 150	3	25
Vinyl acetate	ND		25.0	26.2		ug/L		105	23 - 150	1	30
Vinyl chloride	ND		25.0	19.5		ug/L		78	50 - 137	4	30
1,2-Dibromoethane (EDB)	ND		25.0	20.9		ug/L		84	70 - 131	3	25
2-Butanone (MEK)	ND		25.0	22.7		ug/L		91	48 - 140	1	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	24.9		ug/L		100	52 - 150	4	35
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
<i>Toluene-d8 (Surr)</i>		93		80 - 128							
<i>4-Bromofluorobenzene (Surr)</i>		96		80 - 120							
<i>Dibromofluoromethane (Surr)</i>		104		76 - 132							

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-517164/1-A**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		1.0	0.25	ug/L		12/14/18 12:51	12/17/18 11:23	1
		<b>MB</b>							
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>1,4-Dioxane-d8 (Surr)</i>		71		30 - 120			12/14/18 12:51	12/17/18 11:23	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517164/3-A**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	2.00	1.70		ug/L		85	35 - 120
<b>Surrogate</b>		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>				<b>Limits</b>
1,4-Dioxane-d8 (Surr)		76					30 - 120

**Lab Sample ID: 440-227502-E-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	ND		1.98	1.80		ug/L		91	35 - 120
<b>Surrogate</b>		<b>MS %Recovery</b>		<b>MS Qualifier</b>					<b>Limits</b>
1,4-Dioxane-d8 (Surr)		75							30 - 120

**Lab Sample ID: 440-227502-E-4-B MSD**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	ND		1.99	1.73		ug/L		87	35 - 120	4	25
<b>Surrogate</b>		<b>MSD %Recovery</b>		<b>MSD Qualifier</b>					<b>Limits</b>		<b>Limit</b>
1,4-Dioxane-d8 (Surr)		75							30 - 120		

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-516500/6**  
**Matrix: Water**  
**Analysis Batch: 516500**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/12/18 11:51	1

**Lab Sample ID: LCS 440-516500/5**  
**Matrix: Water**  
**Analysis Batch: 516500**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Nitrate as N	1.13	1.17		mg/L		104	90 - 110

**Lab Sample ID: 440-227497-4 MS**  
**Matrix: Water**  
**Analysis Batch: 516500**

**Client Sample ID: PZ-4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Nitrate as N	ND		1.13	1.08		mg/L		95	80 - 120

TestAmerica Irvine



# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 440-227497-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 516500**

**Client Sample ID: PZ-4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		1.13	1.10		mg/L		98	80 - 120	2	20

**Lab Sample ID: MB 440-516501/6**  
**Matrix: Water**  
**Analysis Batch: 516501**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/12/18 11:51	1
Chloride	ND		0.50	0.25	mg/L			12/12/18 11:51	1
Fluoride	ND		0.50	0.25	mg/L			12/12/18 11:51	1
Sulfate	ND		0.50	0.25	mg/L			12/12/18 11:51	1

**Lab Sample ID: LCS 440-516501/5**  
**Matrix: Water**  
**Analysis Batch: 516501**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	5.10		mg/L		102	90 - 110
Chloride	5.00	4.86		mg/L		97	90 - 110
Fluoride	5.00	4.66		mg/L		93	90 - 110
Sulfate	5.00	4.88		mg/L		98	90 - 110

**Lab Sample ID: 440-227497-4 MS**  
**Matrix: Water**  
**Analysis Batch: 516501**

**Client Sample ID: PZ-4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		5.00	4.66		mg/L		93	80 - 120
Chloride	8.4		5.00	13.0		mg/L		92	80 - 120
Fluoride	1.2		5.00	5.70		mg/L		90	80 - 120
Sulfate	750	E	5.00	745	E 4	mg/L		-36	80 - 120

**Lab Sample ID: 440-227497-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 516501**

**Client Sample ID: PZ-4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	4.94		mg/L		99	80 - 120	6	20
Chloride	8.4		5.00	13.1		mg/L		94	80 - 120	1	20
Fluoride	1.2		5.00	5.70		mg/L		90	80 - 120	0	20
Sulfate	750	E	5.00	743	E 4	mg/L		-67	80 - 120	0	20

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-517353/1-A**  
**Matrix: Water**  
**Analysis Batch: 517594**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517353**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/16/18 07:18	12/16/18 14:15	1
Calcium	ND		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:15	1
Iron	ND		0.10	0.050	mg/L		12/16/18 07:18	12/16/18 14:15	1
Magnesium	ND		0.020	0.010	mg/L		12/16/18 07:18	12/16/18 14:15	1
Manganese	ND		0.020	0.015	mg/L		12/16/18 07:18	12/16/18 14:15	1
Potassium	ND		0.50	0.25	mg/L		12/16/18 07:18	12/16/18 14:15	1
Sodium	ND		0.50	0.26	mg/L		12/16/18 07:18	12/16/18 14:15	1

**Lab Sample ID: LCS 440-517353/2-A**  
**Matrix: Water**  
**Analysis Batch: 517594**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517353**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	0.500	0.471		mg/L		94	80 - 120
Calcium	2.50	2.43		mg/L		97	80 - 120
Iron	0.500	0.484		mg/L		97	80 - 120
Magnesium	2.50	2.42		mg/L		97	80 - 120
Manganese	0.500	0.483		mg/L		97	80 - 120
Potassium	5.00	4.76		mg/L		95	80 - 120
Sodium	5.00	4.96		mg/L		99	80 - 120

**Lab Sample ID: 440-227497-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517594**

**Client Sample ID: MW-2A**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517353**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.57		0.500	1.12		mg/L		110	75 - 125
Calcium	200		2.50	213	4	mg/L		492	75 - 125
Iron	3.6		0.500	4.31	4	mg/L		142	75 - 125
Magnesium	120		2.50	127	4	mg/L		408	75 - 125
Manganese	0.45		0.500	0.965		mg/L		102	75 - 125
Potassium	4.9		5.00	10.4		mg/L		111	75 - 125
Sodium	370		5.00	400	4	mg/L		530	75 - 125

**Lab Sample ID: 440-227497-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 517594**

**Client Sample ID: MW-2A**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517353**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	0.57		0.500	1.09		mg/L		104	75 - 125	3	20
Calcium	200		2.50	202	4	mg/L		72	75 - 125	5	20
Iron	3.6		0.500	4.09	4	mg/L		97	75 - 125	5	20
Magnesium	120		2.50	120	4	mg/L		112	75 - 125	6	20
Manganese	0.45		0.500	0.937		mg/L		97	75 - 125	3	20
Potassium	4.9		5.00	10.2		mg/L		105	75 - 125	3	20
Sodium	370		5.00	379	4	mg/L		112	75 - 125	5	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: MB 440-517804/1-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 17:47	1
Calcium	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 17:47	1
Iron	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 17:47	1
Magnesium	ND		0.020	0.010	mg/L		12/18/18 07:30	12/19/18 17:47	1
Manganese	ND		0.020	0.015	mg/L		12/18/18 07:30	12/19/18 17:47	1
Potassium	ND		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 17:47	1
Sodium	ND		0.50	0.26	mg/L		12/18/18 07:30	12/19/18 17:47	1

**Lab Sample ID: LCS 440-517804/2-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	0.983		mg/L		98	80 - 120
Calcium	5.00	4.84		mg/L		97	80 - 120
Iron	1.00	1.01		mg/L		101	80 - 120
Magnesium	5.00	4.89		mg/L		98	80 - 120
Manganese	1.00	0.986		mg/L		99	80 - 120
Potassium	10.0	9.53		mg/L		95	80 - 120
Sodium	10.0	9.61		mg/L		96	80 - 120

**Lab Sample ID: 440-226841-N-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.038	J	1.00	1.06		mg/L		102	75 - 125
Calcium	28		5.00	32.9	4	mg/L		106	75 - 125
Iron	67		1.00	61.3	4	mg/L		-576	75 - 125
Magnesium	21		5.00	26.7	4	mg/L		107	75 - 125
Manganese	1.1		1.00	2.11		mg/L		99	75 - 125
Potassium	17		10.0	26.8		mg/L		99	75 - 125
Sodium	9.7		10.0	19.9		mg/L		102	75 - 125

**Lab Sample ID: 440-226841-N-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	0.038	J	1.00	1.06		mg/L		102	75 - 125	0	20
Calcium	28		5.00	34.4	4	mg/L		135	75 - 125	4	20
Iron	67		1.00	54.4	4	mg/L		-1263	75 - 125	12	20
Magnesium	21		5.00	25.4	4	mg/L		81	75 - 125	5	20
Manganese	1.1		1.00	2.08		mg/L		96	75 - 125	1	20
Potassium	17		10.0	26.7		mg/L		98	75 - 125	0	20
Sodium	9.7		10.0	20.4		mg/L		107	75 - 125	3	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 350.1 - Nitrogen, Ammonia

**Lab Sample ID: MB 440-518887/10**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.20	0.10	mg/L			12/21/18 13:54	1

**Lab Sample ID: LCS 440-518887/11**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.00	5.16		mg/L		103	90 - 110

**Lab Sample ID: MRL 440-518887/9**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.200	0.182	J	mg/L		91	50 - 150

**Lab Sample ID: 440-227321-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	3.0	F1	5.00	6.60	F1	mg/L		72	90 - 110

**Lab Sample ID: 440-227321-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia (as N)	3.0	F1	5.00	7.14	F1	mg/L		83	90 - 110	8	15

## Method: 410.4 - COD

**Lab Sample ID: MB 440-518916/3**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/22/18 11:40	1

**Lab Sample ID: LCS 440-518916/4**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	206		mg/L		103	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: 410.4 - COD (Continued)

**Lab Sample ID: 440-227566-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	17	J	200	211		mg/L		97	70 - 120

**Lab Sample ID: 440-227566-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 518916**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	17	J	200	206		mg/L		94	70 - 120	3	15

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-516776/3**  
**Matrix: Water**  
**Analysis Batch: 516776**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/13/18 05:38	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/13/18 05:38	1

**Lab Sample ID: LCS 440-516776/2**  
**Matrix: Water**  
**Analysis Batch: 516776**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	80.7	78.4		mg/L		97	80 - 120

**Lab Sample ID: 440-227497-1 DU**  
**Matrix: Water**  
**Analysis Batch: 516776**

**Client Sample ID: MW-2A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	330		328		mg/L		0.4	20
Bicarbonate Alkalinity as CaCO3	330		328		mg/L		0.4	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 440-517472/1**  
**Matrix: Water**  
**Analysis Batch: 517472**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	5.0	mg/L			12/17/18 10:00	1

**Lab Sample ID: LCS 440-517472/2**  
**Matrix: Water**  
**Analysis Batch: 517472**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	982		mg/L		98	90 - 110

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

**Lab Sample ID: 440-227597-A-1 DU**  
**Matrix: Water**  
**Analysis Batch: 517472**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	220		217		mg/L		0.5	5

## Method: SM 4500 CO2 C - Free Carbon Dioxide

**Lab Sample ID: MB 440-519373/1**  
**Matrix: Water**  
**Analysis Batch: 519373**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/26/18 15:49	1

**Lab Sample ID: 440-227295-H-4 DU**  
**Matrix: Water**  
**Analysis Batch: 519373**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Carbon Dioxide, Free	120		124		mg/L		1	20

**Lab Sample ID: MB 440-519628/1**  
**Matrix: Water**  
**Analysis Batch: 519628**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/27/18 15:04	1

**Lab Sample ID: 440-227604-H-1 DU**  
**Matrix: Water**  
**Analysis Batch: 519628**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Carbon Dioxide, Free	16		15.7		mg/L		0	20

## Method: SM 4500 S2 D - Sulfide, Total

**Lab Sample ID: MB 440-520227/3**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Sulfide	ND		0.050	0.027	mg/L			12/31/18 16:31	1

**Lab Sample ID: LCS 440-520227/4**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Sulfide	0.500	0.455		mg/L		91	80 - 120

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: SM 4500 S2 D - Sulfide, Total (Continued)

**Lab Sample ID: LCSD 440-520227/5**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	0.500	0.463		mg/L		93	80 - 120	2	20

**Lab Sample ID: 550-115481-E-1 MS**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.086	F1	0.500	0.694		mg/L		122	70 - 130

**Lab Sample ID: 550-115481-E-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 520227**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	0.086	F1	0.500	0.783	F1	mg/L		139	70 - 130	12	30

## Method: SM 5310C - TOC

**Lab Sample ID: MB 440-517284/6**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.10	0.050	mg/L			12/14/18 08:02	1

**Lab Sample ID: LCS 440-517284/5**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

**Lab Sample ID: MRL 440-517284/4**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.100	0.0881	J	mg/L		88	50 - 150

**Lab Sample ID: 580-82472-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	5.7		10.0	15.4		mg/L		97	80 - 120

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Method: SM 5310C - TOC (Continued)

Lab Sample ID: 580-82472-A-1 MSD  
 Matrix: Water  
 Analysis Batch: 517284

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	5.7		10.0	15.8		mg/L		101	80 - 120	3	20

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

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## GC/MS VOA

### Analysis Batch: 516755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	8260B	
440-227497-2	MW-2B	Total/NA	Water	8260B	
440-227497-3	DW-4	Total/NA	Water	8260B	
440-227497-4	PZ-4	Total/NA	Water	8260B	
440-227497-5	Subdrain (N)	Total/NA	Water	8260B	
440-227497-6	Field Blank	Total/NA	Water	8260B	
440-227497-7	Trip Blank	Total/NA	Water	8260B	
MB 440-516755/6	Method Blank	Total/NA	Water	8260B	
LCS 440-516755/7	Lab Control Sample	Total/NA	Water	8260B	
440-227497-1 MS	MW-2A	Total/NA	Water	8260B	
440-227497-1 MSD	MW-2A	Total/NA	Water	8260B	

### Analysis Batch: 517983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	8260B	
440-227497-2	MW-2B	Total/NA	Water	8260B	
440-227497-3	DW-4	Total/NA	Water	8260B	
440-227497-4	PZ-4	Total/NA	Water	8260B	
440-227497-5	Subdrain (N)	Total/NA	Water	8260B	
440-227497-6	Field Blank	Total/NA	Water	8260B	
440-227497-7	Trip Blank	Total/NA	Water	8260B	
MB 440-517983/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517983/5	Lab Control Sample	Total/NA	Water	8260B	
440-227298-A-6 MS	Matrix Spike	Total/NA	Water	8260B	
440-227298-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 517164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	3520C	
440-227497-2	MW-2B	Total/NA	Water	3520C	
440-227497-3	DW-4	Total/NA	Water	3520C	
440-227497-4	PZ-4	Total/NA	Water	3520C	
440-227497-5	Subdrain (N)	Total/NA	Water	3520C	
MB 440-517164/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-517164/3-A	Lab Control Sample	Total/NA	Water	3520C	
440-227502-E-4-A MS	Matrix Spike	Total/NA	Water	3520C	
440-227502-E-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

### Analysis Batch: 517530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	8270C	517164
440-227497-2	MW-2B	Total/NA	Water	8270C	517164
440-227497-3	DW-4	Total/NA	Water	8270C	517164
440-227497-4	PZ-4	Total/NA	Water	8270C	517164
MB 440-517164/1-A	Method Blank	Total/NA	Water	8270C	517164
LCS 440-517164/3-A	Lab Control Sample	Total/NA	Water	8270C	517164
440-227502-E-4-A MS	Matrix Spike	Total/NA	Water	8270C	517164
440-227502-E-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	517164

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 517809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-5	Subdrain (N)	Total/NA	Water	8270C	517164

## HPLC/IC

### Analysis Batch: 516500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	300.0	
440-227497-2	MW-2B	Total/NA	Water	300.0	
440-227497-3	DW-4	Total/NA	Water	300.0	
440-227497-4	PZ-4	Total/NA	Water	300.0	
440-227497-5	Subdrain (N)	Total/NA	Water	300.0	
MB 440-516500/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516500/5	Lab Control Sample	Total/NA	Water	300.0	
440-227497-4 MS	PZ-4	Total/NA	Water	300.0	
440-227497-4 MSD	PZ-4	Total/NA	Water	300.0	

### Analysis Batch: 516501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	300.0	
440-227497-1	MW-2A	Total/NA	Water	300.0	
440-227497-2	MW-2B	Total/NA	Water	300.0	
440-227497-2	MW-2B	Total/NA	Water	300.0	
440-227497-3	DW-4	Total/NA	Water	300.0	
440-227497-3	DW-4	Total/NA	Water	300.0	
440-227497-4	PZ-4	Total/NA	Water	300.0	
440-227497-4 - DL	PZ-4	Total/NA	Water	300.0	
440-227497-5	Subdrain (N)	Total/NA	Water	300.0	
440-227497-5	Subdrain (N)	Total/NA	Water	300.0	
MB 440-516501/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516501/5	Lab Control Sample	Total/NA	Water	300.0	
440-227497-4 MS	PZ-4	Total/NA	Water	300.0	
440-227497-4 MSD	PZ-4	Total/NA	Water	300.0	

## Metals

### Prep Batch: 517353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total Recoverable	Water	3005A	
440-227497-2	MW-2B	Total Recoverable	Water	3005A	
440-227497-3	DW-4	Total Recoverable	Water	3005A	
440-227497-4	PZ-4	Total Recoverable	Water	3005A	
MB 440-517353/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517353/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-227497-1 MS	MW-2A	Total Recoverable	Water	3005A	
440-227497-1 MSD	MW-2A	Total Recoverable	Water	3005A	

### Analysis Batch: 517594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total Recoverable	Water	6010B	517353
440-227497-2	MW-2B	Total Recoverable	Water	6010B	517353

TestAmerica Irvine

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Metals (Continued)

### Analysis Batch: 517594 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-3	DW-4	Total Recoverable	Water	6010B	517353
440-227497-4	PZ-4	Total Recoverable	Water	6010B	517353
MB 440-517353/1-A	Method Blank	Total Recoverable	Water	6010B	517353
LCS 440-517353/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517353
440-227497-1 MS	MW-2A	Total Recoverable	Water	6010B	517353
440-227497-1 MSD	MW-2A	Total Recoverable	Water	6010B	517353

### Prep Batch: 517804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-5	Subdrain (N)	Total Recoverable	Water	3005A	
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	3005A	
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 518257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-5	Subdrain (N)	Total Recoverable	Water	6010B	517804
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	6010B	517804
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517804
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	6010B	517804
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	517804

## General Chemistry

### Analysis Batch: 516776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	SM 2320B	
440-227497-2	MW-2B	Total/NA	Water	SM 2320B	
440-227497-3	DW-4	Total/NA	Water	SM 2320B	
440-227497-4	PZ-4	Total/NA	Water	SM 2320B	
440-227497-5	Subdrain (N)	Total/NA	Water	SM 2320B	
MB 440-516776/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-516776/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-227497-1 DU	MW-2A	Total/NA	Water	SM 2320B	

### Analysis Batch: 517284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	SM 5310C	
440-227497-2	MW-2B	Total/NA	Water	SM 5310C	
440-227497-3	DW-4	Total/NA	Water	SM 5310C	
440-227497-4	PZ-4	Total/NA	Water	SM 5310C	
440-227497-5	Subdrain (N)	Total/NA	Water	SM 5310C	
MB 440-517284/6	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-517284/5	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-517284/4	Lab Control Sample	Total/NA	Water	SM 5310C	
580-82472-A-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
580-82472-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

TestAmerica Irvine

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## General Chemistry (Continued)

### Analysis Batch: 517472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	SM 2540C	
440-227497-2	MW-2B	Total/NA	Water	SM 2540C	
440-227497-3	DW-4	Total/NA	Water	SM 2540C	
440-227497-4	PZ-4	Total/NA	Water	SM 2540C	
440-227497-5	Subdrain (N)	Total/NA	Water	SM 2540C	
MB 440-517472/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-517472/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-227597-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

### Analysis Batch: 518887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	350.1	
440-227497-2	MW-2B	Total/NA	Water	350.1	
440-227497-3	DW-4	Total/NA	Water	350.1	
440-227497-4	PZ-4	Total/NA	Water	350.1	
440-227497-5	Subdrain (N)	Total/NA	Water	350.1	
MB 440-518887/10	Method Blank	Total/NA	Water	350.1	
LCS 440-518887/11	Lab Control Sample	Total/NA	Water	350.1	
MRL 440-518887/9	Lab Control Sample	Total/NA	Water	350.1	
440-227321-A-1 MS	Matrix Spike	Total/NA	Water	350.1	
440-227321-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

### Analysis Batch: 518916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	410.4	
440-227497-2	MW-2B	Total/NA	Water	410.4	
440-227497-3	DW-4	Total/NA	Water	410.4	
440-227497-4	PZ-4	Total/NA	Water	410.4	
440-227497-5	Subdrain (N)	Total/NA	Water	410.4	
MB 440-518916/3	Method Blank	Total/NA	Water	410.4	
LCS 440-518916/4	Lab Control Sample	Total/NA	Water	410.4	
440-227566-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-227566-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

### Analysis Batch: 519373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	SM 4500 CO2 C	
440-227497-2	MW-2B	Total/NA	Water	SM 4500 CO2 C	
440-227497-4	PZ-4	Total/NA	Water	SM 4500 CO2 C	
440-227497-5	Subdrain (N)	Total/NA	Water	SM 4500 CO2 C	
MB 440-519373/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-227295-H-4 DU	Duplicate	Total/NA	Water	SM 4500 CO2 C	

### Analysis Batch: 519628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-3	DW-4	Total/NA	Water	SM 4500 CO2 C	
MB 440-519628/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-227604-H-1 DU	Duplicate	Total/NA	Water	SM 4500 CO2 C	

TestAmerica Irvine

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## General Chemistry (Continued)

### Analysis Batch: 520227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227497-1	MW-2A	Total/NA	Water	SM 4500 S2 D	
440-227497-2	MW-2B	Total/NA	Water	SM 4500 S2 D	
440-227497-3	DW-4	Total/NA	Water	SM 4500 S2 D	
440-227497-4	PZ-4	Total/NA	Water	SM 4500 S2 D	
440-227497-5	Subdrain (N)	Total/NA	Water	SM 4500 S2 D	
MB 440-520227/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-520227/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 440-520227/5	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
550-115481-E-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
550-115481-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

# Definitions/Glossary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Qualifiers

### GC/MS VOA

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

### GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
T	Result is a tentatively identified compound (TIC) and an estimated value.
N	Presumptive evidence of material.

### HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
H	Sample was prepped or analyzed beyond the specified holding time

## Glossary

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

TestAmerica Irvine



# Accreditation/Certification Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227497-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

**TestAmerica Irvine**  
 17451 Derian Ave  
 Suite 100  
 Irvine, CA 92614  
 Phone: 949.261.1822 Fax:

**Chain of Custody Record**

209417

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING  
 TestAmerica Laboratories, Inc.  
 TAL-8210 (07/13)

See note at top of CV  
 bottle empty for all  
 VOCs 826

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: **Kyle Welchans** Date: **12-12-18**  
 Tel/Fax: **952-451-1136** Carrier: **TIA**  
 Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Client Contact: **Geo-Logix Associates**  
 Address: **11415 W. Bernardo Ct Suite 200**  
 City/State/Zip: **San Diego, CA 92127**  
 Phone: **619-451-1136**  
 Fax:  
 Project Name: **Remobil Service**  
 Site: **Sunshine Canyon Landfill**  
 P O #

Site Contact: **Taha Mills** Lab Contact: **Taha Mills**  
 Lab Contact: **Taha Mills**  
 Perform MS / MSD (Y / N)  Filtered Sample (Y / N)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Other								
MW-2A	12/12/18	10:10	G	GW	13	X	X	EPA 340.2 Fluoride EPA 415.1 Total Organic Carbon EPA 300.0 Nitrite/Nitrate EPA 350.2 Ammonia EPA 310.1 Total Phosphorus EPA 310.2 Total Phosphate EPA 310.3 Total Nitrogen EPA 310.4 COD EPA 310.5 Total Chloride EPA 310.6 Total Sulfide EPA 310.7 Total Sulfate EPA 310.8 Total Hardness EPA 310.9 Total Solids EPA 310.10 Total Suspended Solids EPA 310.11 Total Dissolved Solids EPA 310.12 Total Soluble Solids EPA 310.13 Total Volatile Solids EPA 310.14 Total Fixed Solids EPA 310.15 Total Solids EPA 310.16 Total Solids EPA 310.17 Total Solids EPA 310.18 Total Solids EPA 310.19 Total Solids EPA 310.20 Total Solids EPA 310.21 Total Solids EPA 310.22 Total Solids EPA 310.23 Total Solids EPA 310.24 Total Solids EPA 310.25 Total Solids EPA 310.26 Total Solids EPA 310.27 Total Solids EPA 310.28 Total Solids EPA 310.29 Total Solids EPA 310.30 Total Solids EPA 310.31 Total Solids EPA 310.32 Total Solids EPA 310.33 Total Solids EPA 310.34 Total Solids EPA 310.35 Total Solids EPA 310.36 Total Solids EPA 310.37 Total Solids EPA 310.38 Total Solids EPA 310.39 Total Solids EPA 310.40 Total Solids EPA 310.41 Total Solids EPA 310.42 Total Solids EPA 310.43 Total Solids EPA 310.44 Total Solids EPA 310.45 Total Solids EPA 310.46 Total Solids EPA 310.47 Total Solids EPA 310.48 Total Solids EPA 310.49 Total Solids EPA 310.50 Total Solids EPA 310.51 Total Solids EPA 310.52 Total Solids EPA 310.53 Total Solids EPA 310.54 Total Solids EPA 310.55 Total Solids EPA 310.56 Total Solids EPA 310.57 Total Solids EPA 310.58 Total Solids EPA 310.59 Total Solids EPA 310.60 Total Solids EPA 310.61 Total Solids EPA 310.62 Total Solids EPA 310.63 Total Solids EPA 310.64 Total Solids EPA 310.65 Total Solids EPA 310.66 Total Solids EPA 310.67 Total Solids EPA 310.68 Total Solids EPA 310.69 Total Solids EPA 310.70 Total Solids EPA 310.71 Total Solids EPA 310.72 Total Solids EPA 310.73 Total Solids EPA 310.74 Total Solids EPA 310.75 Total Solids EPA 310.76 Total Solids EPA 310.77 Total Solids EPA 310.78 Total Solids EPA 310.79 Total Solids EPA 310.80 Total Solids EPA 310.81 Total Solids EPA 310.82 Total Solids EPA 310.83 Total Solids EPA 310.84 Total Solids EPA 310.85 Total Solids EPA 310.86 Total Solids EPA 310.87 Total Solids EPA 310.88 Total Solids EPA 310.89 Total Solids EPA 310.90 Total Solids EPA 310.91 Total Solids EPA 310.92 Total Solids EPA 310.93 Total Solids EPA 310.94 Total Solids EPA 310.95 Total Solids EPA 310.96 Total Solids EPA 310.97 Total Solids EPA 310.98 Total Solids EPA 310.99 Total Solids EPA 310.100 Total Solids	X	X	X	X	X	X	X	
MW-2B		08:50				X	X									
DW-4		07:59				X	X									
PZ-4		11:57				X	X									
Sub-chain (2)	12/18/18	14:00	G	MW	13	X	X									
Field Blank						X	X									
Tap Blank						X	X									



Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
 Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Custody Seal No.: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_  
 Relinquished by: **[Signature]** Company: **TA IRV** Date/Time: **12/12/18 1440**  
 Relinquished by: **[Signature]** Company: **TA IRV** Date/Time: **12/12/18 1440**  
 Relinquished by: **[Signature]** Company: **TA IRV** Date/Time: **12/12/18 1755**

1-2/14 4.7/4.9 0.4/0.6



# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-227497-1

**Login Number: 227497**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

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



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-227501-1

Client Project/Site: Republic Sunshine Canyon

For:

Geo-Logic Associates

11415 West Bernardo Court

Suite 200

San Diego, California 92127

Attn: Kyle Welchans



Authorized for release by:

12/26/2018 12:45:07 PM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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# Sample Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-227501-1	Deep Leachate	Water	12/12/18 08:50	12/12/18 17:55
440-227501-2	Field Blank	Water	12/12/18 00:01	12/12/18 17:55
440-227501-3	Trip Blank	Water	12/12/18 00:01	12/12/18 17:55

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# Case Narrative

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Job ID: 440-227501-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-227501-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/12/2018 5:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.6° C, 1.4° C and 4.9° C.

#### GC/MS VOA

Method(s) 8260B: The following sample was diluted due to the abundance of non-target analytes: Deep Leachate (440-227501-1). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH of 6 was outside the required criteria when verified by the laboratory, and corrective action was not possible: Deep Leachate (440-227501-1). The sample was analyzed within 7 days per EPA recommendation.

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

#### GC/MS Semi VOA

Method(s) 8270C LL: The continuing calibration verification (CCV) associated with batch 440-517525 recovered above the upper control limit for 4-Chloroaniline and N-Nitrosodimethylamine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8270C LL: The percent recovery of Benzidine in the laboratory control sample (LCS) for preparation batch 440-517158 and analytical batch 440-517525 was below the acceptance limits. Per the EPA method, this compound is subject to oxidative loss during sample preparation and as a consequence yields erratic recoveries. As a result, Benzidine is reported with possible low bias for the following samples: (LCS 440-517158/2-A) and (LCSD 440-517158/3-A)

Method(s) 8270C LL: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 440-517158 and analytical batch 440-517525 recovered outside control limits for the following analytes: 3,3'-Dichlorobenzidine and Benzoic acid. These analytes are classified as a poor performers as it historically do not yield the same consistency in recovery as other analytes from the preparation method.

Method(s) 8270C LL: The following sample required a dilution due to the nature of the sample matrix: Deep Leachate (440-227501-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270C: The continuing calibration verification (CCV) associated with batch 440-517600 recovered above the upper control limit for alpha,alpha-Dimethyl phenethylamine and Phorate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8270C: The following sample was diluted due to the abundance of non-target analytes: Deep Leachate (440-227501-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270C: The following sample required a dilution due to the nature of the sample matrix: Deep Leachate (440-227501-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

#### GC Semi VOA

Method(s) 8082: Surrogate recovery for the following sample was outside control limits: Deep Leachate (440-227501-1). Evidence of matrix interference is present, heavy emulsion during extraction process; therefore, re-extraction and re-analysis was not performed.



# Case Narrative

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Job ID: 440-227501-1 (Continued)

### Laboratory: TestAmerica Irvine (Continued)

Method(s) 8082: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-516759 and analytical batch 440-516821. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-516759/4-A)

Method(s) 8081A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-516759 and analytical batch 440-516766. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-516759/2-A)

Method(s) 8081A: Surrogate recovery for the following sample was outside control limits: Deep Leachate (440-227501-1). Evidence of matrix interference is present, heavy emulsion during extraction process; therefore, re-extraction and re-analysis was not performed.

Method(s) 8141A: The continuing calibration verification (CCV) associated with batch 265656 recovered above the upper control limit for Chlorpyrifos, Demeton, Dichlorvos, Dimethoate, Disulfoton, Fenthion, Methyl parathion, 0,0,0-TEPP, Ronnel, and Trichloronate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8141A: The continuing calibration verification (CCV) associated with batch 265686 recovered above the upper control limit for Chlorpyrifos, Coumaphos, Demeton Total, Demeton-s Dichlorvos, Dimethoate, Disulfoton, Fenthion, Malathion, Methyl Parathion, 0,0,0-TEPP, Ronnel and Trichloronate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8141A: EPN recovered low on one column due to matrix of sample. Results are ND for samples and LCS passed. Results were reported as is.(CCV 180-265686/8)

Method(s) 8151A: The continuing calibration verification (CCV) associated with batch 180-265912 recovered above the upper control limit for MCPP and Dalapon. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

### Metals

Method(s) 3005A: The following sample was diluted due to the nature of the sample matrix: Deep Leachate (440-227501-1). Elevated reporting limits (RLs) are provided.

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

### General Chemistry

Method(s) SM 4500 S2 D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 440-516975 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) Distill/CN: The following sample was pretreated for sulfide: Deep Leachate (440-227501-1).

This sample matrix is opaque in color, and was difficult to determine the presence of sulfide using lead acetate test strips. 5 ml of lead acetate was added as a precautionary measure to prevent any trace sulfide from interfering with color development.

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

### Organic Prep

Method(s) 3510C/8081-8082: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-516759.

Method(s) 3510C/8081-8082: The following sample was diluted due to the nature of the sample matrix: Deep Leachate (440-227501-1) at 100mL. Elevated reporting limits (RLs) are provided.

## Case Narrative

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

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### Job ID: 440-227501-1 (Continued)

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#### Laboratory: TestAmerica Irvine (Continued)

Method(s) 3520C/ 8270C-1,4-DXN: The following sample was diluted due to the nature of the sample matrix: Deep Leachate (440-227501-1) at 50 ml. Elevated reporting limits (RLs) are provided.

Method(s) 3520C/8270C\_LL : The following sample was diluted due to the nature of the sample matrix: Deep Leachate (440-227501-1) at 50 ml. Elevated reporting limits (RLs) are provided.

Method(s) 3520C/8270C: The following sample was diluted due to the nature of the sample matrix: Deep Leachate (440-227501-1) at 50 ml. Elevated reporting limits (RLs) are provided.

Method(s) 3520C/8270C\_LL: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-517158.

Method(s) 3520C/8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-517162.

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-265642.

Method(s) 8151A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-265649.

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

#### VOA Prep

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

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		500	200	ug/L			12/15/18 03:15	500
1,1,1,2-Tetrachloroethane	ND		250	130	ug/L			12/15/18 03:15	500
Acrolein	ND		25000	1300	ug/L			12/15/18 12:25	500
Acrylonitrile	ND		25000	500	ug/L			12/15/18 12:25	500
1,1,1-Trichloroethane	ND		250	130	ug/L			12/15/18 03:15	500
1,1,2,2-Tetrachloroethane	ND		250	130	ug/L			12/15/18 03:15	500
1,1,2-Trichloroethane	ND		250	130	ug/L			12/15/18 03:15	500
1,1-Dichloroethane	ND		250	130	ug/L			12/15/18 03:15	500
1,1-Dichloroethene	ND		250	130	ug/L			12/15/18 03:15	500
1,1-Dichloropropene	ND		250	130	ug/L			12/15/18 03:15	500
1,2,4-Trichlorobenzene	ND		500	200	ug/L			12/15/18 03:15	500
1,2-Dibromo-3-Chloropropane	ND		500	250	ug/L			12/15/18 03:15	500
1,2-Dichlorobenzene	ND		250	130	ug/L			12/15/18 03:15	500
1,2-Dichloroethane	ND		250	130	ug/L			12/15/18 03:15	500
1,2-Dichloropropane	ND		250	130	ug/L			12/15/18 03:15	500
1,3-Dichlorobenzene	ND		250	130	ug/L			12/15/18 03:15	500
1,3-Dichloropropane	ND		250	130	ug/L			12/15/18 03:15	500
<b>1,4-Dichlorobenzene</b>	<b>550</b>		250	130	ug/L			12/15/18 03:15	500
2,2-Dichloropropane	ND		500	200	ug/L			12/15/18 03:15	500
2-Chloro-1,3-butadiene	ND		500	250	ug/L			12/15/18 03:15	500
2-Hexanone	ND		2500	1300	ug/L			12/15/18 03:15	500
Acetonitrile	ND		10000	5000	ug/L			12/15/18 03:15	500
Acrolein	ND		2500	1300	ug/L			12/15/18 03:15	500
Acrylonitrile	ND		1000	500	ug/L			12/15/18 03:15	500
Benzene	ND		250	130	ug/L			12/15/18 03:15	500
Allyl chloride	ND		500	250	ug/L			12/15/18 03:15	500
Bromoform	ND		500	200	ug/L			12/15/18 03:15	500
Bromomethane	ND		250	130	ug/L			12/15/18 03:15	500
Carbon disulfide	ND		500	250	ug/L			12/15/18 03:15	500
Carbon tetrachloride	ND		250	130	ug/L			12/15/18 03:15	500
Chlorobenzene	ND		250	130	ug/L			12/15/18 03:15	500
Bromochloromethane	ND		250	130	ug/L			12/15/18 03:15	500
Chloroethane	ND		500	200	ug/L			12/15/18 03:15	500
Chloroform	ND		250	130	ug/L			12/15/18 03:15	500
Chloromethane	ND		250	130	ug/L			12/15/18 03:15	500
cis-1,2-Dichloroethene	ND		250	130	ug/L			12/15/18 03:15	500
cis-1,3-Dichloropropene	ND		250	130	ug/L			12/15/18 03:15	500
Dibromochloromethane	ND		250	130	ug/L			12/15/18 03:15	500
Dibromomethane	ND		250	130	ug/L			12/15/18 03:15	500
Bromodichloromethane	ND		250	130	ug/L			12/15/18 03:15	500
Dichlorodifluoromethane	ND		500	200	ug/L			12/15/18 03:15	500
Ethyl methacrylate	ND		1000	500	ug/L			12/15/18 03:15	500
<b>Ethylbenzene</b>	<b>300</b>		250	130	ug/L			12/15/18 03:15	500
Iodomethane	ND		1000	500	ug/L			12/15/18 03:15	500
<b>Isobutyl alcohol</b>	<b>53000</b>		13000	6300	ug/L			12/15/18 03:15	500
<b>m,p-Xylene</b>	<b>630</b>		500	250	ug/L			12/15/18 03:15	500
Methylacrylonitrile	ND		5000	1300	ug/L			12/15/18 03:15	500
Methyl methacrylate	ND		1000	500	ug/L			12/15/18 03:15	500
Methylene Chloride	ND		1000	440	ug/L			12/15/18 03:15	500

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		250	130	ug/L			12/15/18 03:15	500
<b>Naphthalene</b>	<b>390</b>	<b>J</b>	500	200	ug/L			12/15/18 03:15	500
<b>o-Xylene</b>	<b>320</b>		250	130	ug/L			12/15/18 03:15	500
Propionitrile	ND		10000	5000	ug/L			12/15/18 03:15	500
<b>Styrene</b>	<b>270</b>		250	130	ug/L			12/15/18 03:15	500
<b>t-Butanol</b>	<b>6300</b>		5000	2500	ug/L			12/15/18 03:15	500
Tetrachloroethene	ND		250	130	ug/L			12/15/18 03:15	500
<b>Tetrahydrofuran</b>	<b>3900</b>	<b>J</b>	5000	2500	ug/L			12/15/18 03:15	500
<b>Toluene</b>	<b>280</b>		250	130	ug/L			12/15/18 03:15	500
trans-1,2-Dichloroethene	ND		250	130	ug/L			12/15/18 03:15	500
trans-1,3-Dichloropropene	ND		250	130	ug/L			12/15/18 03:15	500
trans-1,4-Dichloro-2-butene	ND		2500	1300	ug/L			12/15/18 03:15	500
Trichloroethene	ND		250	130	ug/L			12/15/18 03:15	500
Trichlorofluoromethane	ND		250	130	ug/L			12/15/18 03:15	500
Vinyl acetate	ND		2000	1000	ug/L			12/15/18 03:15	500
Vinyl chloride	ND		250	130	ug/L			12/15/18 03:15	500
1,2-Dibromoethane (EDB)	ND		250	130	ug/L			12/15/18 03:15	500
<b>2-Butanone (MEK)</b>	<b>47000</b>		2500	1300	ug/L			12/15/18 03:15	500
<b>4-Methyl-2-pentanone (MIBK)</b>	<b>1300</b>	<b>J</b>	2500	1300	ug/L			12/15/18 03:15	500

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	6700	T J	ug/L		3.89			12/15/18 03:15	500
Unknown	17000	T J	ug/L		7.40			12/15/18 03:15	500
Butanoic acid, ethyl ester	11000	T J N	ug/L		9.60	105-54-4		12/15/18 03:15	500
Unknown	60000	T J	ug/L		12.43			12/15/18 03:15	500
Unknown	7100	T J	ug/L		12.88			12/15/18 03:15	500
D-Limonene	33000	T J N	ug/L		13.15	5989-27-5		12/15/18 03:15	500
Eucalyptol	10000	T J N	ug/L		13.23	470-82-6		12/15/18 03:15	500
Unknown	20000	T J	ug/L		13.61			12/15/18 03:15	500
Hexanoic acid, butyl ester	9700	T J N	ug/L		14.57	626-82-4		12/15/18 03:15	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 128		12/15/18 12:25	500
4-Bromofluorobenzene (Surr)	103		80 - 120		12/15/18 12:25	500
Toluene-d8 (Surr)	102		80 - 128		12/15/18 03:15	500
4-Bromofluorobenzene (Surr)	109		80 - 120		12/15/18 03:15	500
Dibromofluoromethane (Surr)	100		76 - 132		12/15/18 12:25	500
Dibromofluoromethane (Surr)	112		76 - 132		12/15/18 03:15	500

## Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Acetone</b>	<b>41000</b>		20000	10000	ug/L			12/19/18 11:27	1000

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	8900	T J	ug/L		6.64			12/19/18 11:27	1000
Unknown	8100	T J	ug/L		6.87			12/19/18 11:27	1000
Butanoic acid, ethyl ester	6700	T J N	ug/L		9.09	105-54-4		12/19/18 11:27	1000
Butanoic acid, propyl ester	14000	T J N	ug/L		10.62	105-66-8		12/19/18 11:27	1000
Butanoic acid, butyl ester	36000	T J N	ug/L		12.17	109-21-7		12/19/18 11:27	1000
D-Limonene	37000	T J N	ug/L		12.98	5989-27-5		12/19/18 11:27	1000

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

## Method: 8260B - Volatile Organic Compounds (GC/MS) - DL (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	15000	T J	ug/L		13.57			12/19/18 11:27	1000
Unknown	15000	T J	ug/L		14.59			12/19/18 11:27	1000
Cyclotrisiloxane, hexamethyl-	7100	T J N	ug/L		15.88	541-05-9		12/19/18 11:27	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128					12/19/18 11:27	1000
4-Bromofluorobenzene (Surr)	100		80 - 120					12/19/18 11:27	1000
Dibromofluoromethane (Surr)	101		76 - 132					12/19/18 11:27	1000

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		200	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
1,2-Dichlorobenzene	ND		100	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
1,2-Diphenylhydrazine(as Azobenzene)	ND		200	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
1,3-Dichlorobenzene	ND		100	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
<b>1,4-Dichlorobenzene</b>	<b>2400</b>		100	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,4,5-Trichlorophenol	ND		400	60	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,4,6-Trichlorophenol	ND		200	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,4-Dichlorophenol	ND		400	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,4-Dimethylphenol	ND		400	100	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,4-Dinitrophenol	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,4-Dinitrotoluene	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
2,6-Dinitrotoluene	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
2-Chloronaphthalene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
2-Chlorophenol	ND		200	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
<b>2-Methylnaphthalene</b>	<b>370</b>		200	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
2-Methylphenol	ND		400	60	ug/L		12/14/18 12:26	12/17/18 17:00	10
2-Nitroaniline	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
2-Nitrophenol	ND		400	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
3,3'-Dichlorobenzidine	ND *		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
3-Methylphenol + 4-Methylphenol	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
3-Nitroaniline	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
4,6-Dinitro-2-methylphenol	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
4-Bromophenyl phenyl ether	ND		200	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
4-Chloro-3-methylphenol	ND		400	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
4-Chloroaniline	ND		400	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
4-Chlorophenyl phenyl ether	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
4-Nitroaniline	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
4-Nitrophenol	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
<b>Acenaphthene</b>	<b>87 J</b>		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Acenaphthylene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Aniline	ND		2000	150	ug/L		12/14/18 12:26	12/17/18 17:00	10
Anthracene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzidine	ND *		2000	1000	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzo[a]anthracene	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzo[a]pyrene	ND		400	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzo[b]fluoranthene	ND		400	60	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzo[g,h,i]perylene	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzoic acid	ND	*	2000	800	ug/L		12/14/18 12:26	12/17/18 17:00	10
Benzyl alcohol	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
bis (2-chloroisopropyl) ether	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Bis(2-chloroethoxy)methane	ND		100	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
Bis(2-chloroethyl)ether	ND		100	10	ug/L		12/14/18 12:26	12/17/18 17:00	10
Bis(2-ethylhexyl) phthalate	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
Butyl benzyl phthalate	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
Chrysene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Dibenz(a,h)anthracene	ND		100	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
<b>Dibenzofuran</b>	<b>41</b>	<b>J</b>	100	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
<b>Diethyl phthalate</b>	<b>49</b>	<b>J</b>	200	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
Dimethyl phthalate	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Di-n-butyl phthalate	ND		400	100	ug/L		12/14/18 12:26	12/17/18 17:00	10
Di-n-octyl phthalate	ND		1000	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
Fluoranthene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Fluorene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Hexachlorobenzene	ND		200	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Hexachlorobutadiene	ND		400	100	ug/L		12/14/18 12:26	12/17/18 17:00	10
Hexachlorocyclopentadiene	ND		1000	400	ug/L		12/14/18 12:26	12/17/18 17:00	10
Hexachloroethane	ND		600	100	ug/L		12/14/18 12:26	12/17/18 17:00	10
Indeno[1,2,3-cd]pyrene	ND		400	80	ug/L		12/14/18 12:26	12/17/18 17:00	10
Isophorone	ND		200	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
<b>Naphthalene</b>	<b>1600</b>		200	10	ug/L		12/14/18 12:26	12/17/18 17:00	10
Nitrobenzene	ND		200	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
N-Nitrosodimethylamine	ND		400	60	ug/L		12/14/18 12:26	12/17/18 17:00	10
N-Nitrosodi-n-propylamine	ND		400	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
N-Nitrosodiphenylamine	ND		200	40	ug/L		12/14/18 12:26	12/17/18 17:00	10
Pentachlorophenol	ND		400	200	ug/L		12/14/18 12:26	12/17/18 17:00	10
Phenanthrene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10
Pyrene	ND		100	20	ug/L		12/14/18 12:26	12/17/18 17:00	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	69		40 - 120	12/14/18 12:26	12/17/18 17:00	10
2-Fluorobiphenyl	54		50 - 120	12/14/18 12:26	12/17/18 17:00	10
2-Fluorophenol (Surr)	0	X	30 - 120	12/14/18 12:26	12/17/18 17:00	10
Nitrobenzene-d5 (Surr)	0	X	45 - 120	12/14/18 12:26	12/17/18 17:00	10
Phenol-d6 (Surr)	0	X	35 - 120	12/14/18 12:26	12/17/18 17:00	10
Terphenyl-d14 (Surr)	63		37 - 144	12/14/18 12:26	12/17/18 17:00	10

**Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Phenol</b>	<b>24000</b>		1000	100	ug/L		12/14/18 12:26	12/17/18 18:12	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	49		40 - 120	12/14/18 12:26	12/17/18 18:12	50
2-Fluorobiphenyl	44	X	50 - 120	12/14/18 12:26	12/17/18 18:12	50
2-Fluorophenol (Surr)	0	X	30 - 120	12/14/18 12:26	12/17/18 18:12	50
Nitrobenzene-d5 (Surr)	138	X	45 - 120	12/14/18 12:26	12/17/18 18:12	50
Phenol-d6 (Surr)	0	X	35 - 120	12/14/18 12:26	12/17/18 18:12	50

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	59		37 - 144	12/14/18 12:26	12/17/18 18:12	50

**Method: 8270C - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		2000	500	ug/L		12/14/18 12:33	12/17/18 22:01	10
<b>1,4-Dioxane</b>	<b>300</b>		20	5.0	ug/L		12/14/18 12:51	12/17/18 16:00	1
1,4-Naphthoquinone	ND		2000	800	ug/L		12/14/18 12:33	12/17/18 22:01	10
1,4-phenylenediamine	ND		12000	5000	ug/L		12/14/18 12:33	12/17/18 22:01	10
1-Naphthylamine	ND		3000	1100	ug/L		12/14/18 12:33	12/17/18 22:01	10
2,3,4,6-Tetrachlorophenol	ND		3000	900	ug/L		12/14/18 12:33	12/17/18 22:01	10
2,6-Dichlorophenol	ND		3000	400	ug/L		12/14/18 12:33	12/17/18 22:01	10
2-Acetylaminofluorene	ND		2000	600	ug/L		12/14/18 12:33	12/17/18 22:01	10
2-Naphthylamine	ND		5000	2400	ug/L		12/14/18 12:33	12/17/18 22:01	10
3,3'-Dimethylbenzidine	ND		5000	2000	ug/L		12/14/18 12:33	12/17/18 22:01	10
3-Methylcholanthrene	ND		5000	1500	ug/L		12/14/18 12:33	12/17/18 22:01	10
4-Aminobiphenyl	ND		5000	2400	ug/L		12/14/18 12:33	12/17/18 22:01	10
5-Nitro-o-toluidine	ND		2000	600	ug/L		12/14/18 12:33	12/17/18 22:01	10
7,12-Dimethylbenz(a)anthracene	ND		2000	800	ug/L		12/14/18 12:33	12/17/18 22:01	10
<b>Acetophenone</b>	<b>1900</b>	<b>J</b>	3000	400	ug/L		12/14/18 12:33	12/17/18 22:01	10
alpha,alpha-Dimethyl phenethylamine	ND		12000	6800	ug/L		12/14/18 12:33	12/21/18 13:25	10
Diallate	ND		3000	640	ug/L		12/14/18 12:33	12/17/18 22:01	10
Dimethyl aminoazobenzene	ND		2000	800	ug/L		12/14/18 12:33	12/17/18 22:01	10
Diphenylamine	ND		2000	600	ug/L		12/14/18 12:33	12/17/18 22:01	10
Ethyl 4,4'-Dichlorobenzilate	ND		2000	500	ug/L		12/14/18 12:33	12/17/18 22:01	10
Ethyl methanesulfonate	ND		2000	600	ug/L		12/14/18 12:33	12/17/18 22:01	10
Isodrin	ND		2000	500	ug/L		12/14/18 12:33	12/17/18 22:01	10
Isosafrole	ND		3000	1200	ug/L		12/14/18 12:33	12/17/18 22:01	10
Methapyrilene	ND		4000	1000	ug/L		12/14/18 12:33	12/17/18 22:01	10
Methyl methanesulfonate	ND		3000	460	ug/L		12/14/18 12:33	12/17/18 22:01	10
N-Nitrosodiethylamine	ND		2000	600	ug/L		12/14/18 12:33	12/17/18 22:01	10
N-Nitrosodi-n-butylamine	ND		2000	660	ug/L		12/14/18 12:33	12/17/18 22:01	10
N-Nitrosomethylethylamine	ND		2000	500	ug/L		12/14/18 12:33	12/17/18 22:01	10
N-Nitrosopiperidine	ND		2000	740	ug/L		12/14/18 12:33	12/17/18 22:01	10
N-Nitrosopyrrolidine	ND		2000	620	ug/L		12/14/18 12:33	12/17/18 22:01	10
o,o',o"-Triethylphosphorothioate	ND		3000	620	ug/L		12/14/18 12:33	12/17/18 22:01	10
o-Toluidine	ND		2000	500	ug/L		12/14/18 12:33	12/17/18 22:01	10
Pentachlorobenzene	ND		2000	600	ug/L		12/14/18 12:33	12/17/18 22:01	10
Pentachloronitrobenzene	ND		2000	500	ug/L		12/14/18 12:33	12/17/18 22:01	10
Phenacetin	ND		2000	700	ug/L		12/14/18 12:33	12/17/18 22:01	10
Phorate	ND		2000	1000	ug/L		12/14/18 12:33	12/17/18 22:01	10
Pronamide	ND		3000	1000	ug/L		12/14/18 12:33	12/17/18 22:01	10
Safrole, Total	ND		2000	740	ug/L		12/14/18 12:33	12/17/18 22:01	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	68		30 - 120	12/14/18 12:51	12/17/18 16:00	1
2,4,6-Tribromophenol (Surr)	88		40 - 120	12/14/18 12:33	12/17/18 22:01	10
2-Fluorobiphenyl	69		50 - 120	12/14/18 12:33	12/17/18 22:01	10
2-Fluorophenol (Surr)	73		30 - 120	12/14/18 12:33	12/17/18 22:01	10
Nitrobenzene-d5 (Surr)	104		45 - 120	12/14/18 12:33	12/17/18 22:01	10

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6 (Surr)	89		35 - 120	12/14/18 12:33	12/17/18 22:01	10
Terphenyl-d14 (Surr)	79		10 - 150	12/14/18 12:33	12/17/18 22:01	10

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kepone	ND		20000	7000	ug/L		12/14/18 12:33	12/20/18 19:20	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	112		40 - 120	12/14/18 12:33	12/20/18 19:20	10
2-Fluorobiphenyl	78		50 - 120	12/14/18 12:33	12/20/18 19:20	10
2-Fluorophenol (Surr)	100		30 - 120	12/14/18 12:33	12/20/18 19:20	10
Nitrobenzene-d5 (Surr)	123	X	45 - 120	12/14/18 12:33	12/20/18 19:20	10
Phenol-d6 (Surr)	94		35 - 120	12/14/18 12:33	12/20/18 19:20	10
Terphenyl-d14 (Surr)	90		10 - 150	12/14/18 12:33	12/20/18 19:20	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
4,4'-DDE	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
4,4'-DDT	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Aldrin	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
alpha-BHC	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
beta-BHC	ND		1.0	0.30	ug/L		12/13/18 06:14	12/13/18 13:46	1
Chlordane (technical)	ND		10	2.0	ug/L		12/13/18 06:14	12/13/18 13:46	1
delta-BHC	ND		2.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Dieldrin	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Endosulfan I	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Endosulfan II	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Endosulfan sulfate	ND		2.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Endrin	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Endrin aldehyde	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Endrin ketone	ND		1.0	0.40	ug/L		12/13/18 06:14	12/13/18 13:46	1
gamma-BHC (Lindane)	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Heptachlor	ND		1.0	0.30	ug/L		12/13/18 06:14	12/13/18 13:46	1
Heptachlor epoxide	ND		1.0	0.30	ug/L		12/13/18 06:14	12/13/18 13:46	1
Methoxychlor	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 13:46	1
Toxaphene	ND		50	5.0	ug/L		12/13/18 06:14	12/13/18 13:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	31		10 - 123	12/13/18 06:14	12/13/18 13:46	1
DCB Decachlorobiphenyl (Surr)	25	X	28 - 108	12/13/18 06:14	12/13/18 13:46	1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1
Aroclor 1221	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1
Aroclor 1232	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1
Aroclor 1242	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1
Aroclor 1248	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1
Aroclor 1254	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1260	ND		10	2.5	ug/L		12/13/18 06:14	12/13/18 11:54	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl (Surr)	23	X	29 - 115				12/13/18 06:14	12/13/18 11:54	1

## Method: 8141A - Organophosphorous Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Azinphos-methyl	ND		1.0	0.26	ug/L		12/14/18 10:50	12/17/18 07:58	1
Bolstar	ND		1.0	0.14	ug/L		12/14/18 10:50	12/17/18 07:58	1
Chlorpyrifos	ND		1.0	0.23	ug/L		12/14/18 10:50	12/17/18 07:58	1
Coumaphos	ND		1.0	0.14	ug/L		12/14/18 10:50	12/17/18 07:58	1
Demeton, Total	ND		2.0	0.16	ug/L		12/14/18 10:50	12/17/18 07:58	1
Diazinon	ND		1.0	0.18	ug/L		12/14/18 10:50	12/17/18 07:58	1
Dichlorvos	ND		1.0	0.12	ug/L		12/14/18 10:50	12/17/18 07:58	1
Dimethoate	ND		1.0	0.22	ug/L		12/14/18 10:50	12/17/18 07:58	1
Disulfoton	ND		1.0	0.24	ug/L		12/14/18 10:50	12/17/18 07:58	1
EPN	ND		1.0	0.26	ug/L		12/14/18 10:50	12/17/18 07:58	1
Famphur	ND		1.0	0.11	ug/L		12/14/18 10:50	12/17/18 07:58	1
Fensulfothion	ND		1.0	0.29	ug/L		12/14/18 10:50	12/17/18 07:58	1
Fenthion	ND		1.0	0.11	ug/L		12/14/18 10:50	12/17/18 07:58	1
Malathion	ND		1.0	0.22	ug/L		12/14/18 10:50	12/17/18 07:58	1
Methyl parathion	ND		1.0	0.17	ug/L		12/14/18 10:50	12/17/18 07:58	1
Mevinphos	ND		1.0	0.45	ug/L		12/14/18 10:50	12/17/18 07:58	1
O,O,O-Triethyl phosphorothioate	ND		1.0	0.16	ug/L		12/14/18 10:50	12/17/18 07:58	1
Parathion	ND		1.0	0.20	ug/L		12/14/18 10:50	12/17/18 07:58	1
Phorate	ND		1.0	0.18	ug/L		12/14/18 10:50	12/17/18 07:58	1
Ronnel	ND		1.0	0.23	ug/L		12/14/18 10:50	12/17/18 07:58	1
Stirophos	ND		1.0	0.17	ug/L		12/14/18 10:50	12/17/18 07:58	1
Sulfotepp	ND		1.0	0.16	ug/L		12/14/18 10:50	12/17/18 07:58	1
Tokuthion	ND		1.0	0.22	ug/L		12/14/18 10:50	12/17/18 07:58	1
Trichloronate	ND		1.0	0.26	ug/L		12/14/18 10:50	12/17/18 07:58	1
Mocap	ND		1.0	0.16	ug/L		12/14/18 10:50	12/17/18 07:58	1
Thionazin	ND		1.0	0.37	ug/L		12/14/18 10:50	12/17/18 07:58	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Triphenylphosphate	110		79 - 116				12/14/18 10:50	12/17/18 07:58	1
Tributyl phosphate	90		55 - 106				12/14/18 10:50	12/17/18 07:58	1

## Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		1.0	0.21	ug/L		12/14/18 14:30	12/18/18 23:32	20
2,4-D	ND		4.1	0.76	ug/L		12/14/18 14:30	12/18/18 23:32	20
2,4-DB	ND		4.1	0.91	ug/L		12/14/18 14:30	12/18/18 23:32	20
Dalapon	ND		5.1	3.7	ug/L		12/14/18 14:30	12/18/18 23:32	20
Dicamba	ND		2.0	0.69	ug/L		12/14/18 14:30	12/18/18 23:32	20
Dichlorprop	ND		4.1	1.0	ug/L		12/14/18 14:30	12/18/18 23:32	20
Dinoseb	ND		0.92	0.58	ug/L		12/14/18 14:30	12/18/18 23:32	20
MCPA	ND		410	140	ug/L		12/14/18 14:30	12/18/18 23:32	20
MCPP	ND		410	300	ug/L		12/14/18 14:30	12/18/18 23:32	20
Pentachlorophenol	ND		0.51	0.24	ug/L		12/14/18 14:30	12/18/18 23:32	20

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

Date Collected: 12/12/18 08:50

Matrix: Water

Date Received: 12/12/18 17:55

### Method: 8151A - Herbicides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		1.0	0.26	ug/L		12/14/18 14:30	12/18/18 23:32	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	97		20 - 105				12/14/18 14:30	12/18/18 23:32	20

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.42		0.050	0.030	mg/L		12/18/18 07:30	12/19/18 16:02	1
Arsenic	0.43		0.050	0.045	mg/L		12/18/18 07:30	12/19/18 16:02	1
Barium	0.33		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 16:02	1
Beryllium	0.038		0.010	0.0050	mg/L		12/18/18 07:30	12/19/18 16:02	1
Cadmium	ND		0.025	0.013	mg/L		12/18/18 07:30	12/19/18 16:02	1
Chromium	0.73		0.025	0.013	mg/L		12/18/18 07:30	12/19/18 16:02	1
Cobalt	ND		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 16:02	1
Copper	ND		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 16:02	1
Lead	ND		0.025	0.019	mg/L		12/18/18 07:30	12/19/18 16:02	1
Nickel	0.15		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 16:02	1
Selenium	ND		0.050	0.044	mg/L		12/18/18 07:30	12/19/18 16:02	1
Silver	ND		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 16:02	1
Thallium	ND		0.050	0.040	mg/L		12/18/18 07:30	12/19/18 16:02	1
Tin	ND		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 16:02	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0037		0.0010	0.00050	mg/L		12/18/18 10:57	12/18/18 16:51	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.019	J	0.025	0.013	mg/L		12/19/18 21:01	12/20/18 23:00	1
Total Sulfide	0.44		0.050	0.027	mg/L			12/13/18 17:10	1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227501-2**

Date Collected: 12/12/18 00:01

Matrix: Water

Date Received: 12/12/18 17:55

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 04:00	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Acrolein	ND		50	2.5	ug/L			12/13/18 14:22	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 14:22	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 04:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 04:00	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:00	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227501-2**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 04:00	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 04:00	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 04:00	1
Acetonitrile	ND		20	10	ug/L			12/19/18 04:00	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 04:00	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 04:00	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 04:00	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 04:00	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 04:00	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 04:00	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 04:00	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 04:00	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 04:00	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 04:00	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 04:00	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 04:00	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 04:00	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 04:00	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 04:00	1
<b>Naphthalene</b>	<b>6.2</b>		1.0	0.40	ug/L			12/19/18 04:00	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Propionitrile	ND		20	10	ug/L			12/19/18 04:00	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 04:00	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 04:00	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 04:00	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:00	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 04:00	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Client Sample ID: Field Blank

Date Collected: 12/12/18 00:01

Date Received: 12/12/18 17:55

## Lab Sample ID: 440-227501-2

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 04:00	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 04:00	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 04:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 04:00	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.0	T J	ug/L		5.71			12/19/18 04:00	1
Butanoic acid, butyl ester	26	T J N	ug/L		12.46	109-21-7		12/19/18 04:00	1
Unknown	55	T J	ug/L		12.90			12/19/18 04:00	1
Limonene	23	T J N	ug/L		13.19	138-86-3		12/19/18 04:00	1
Unknown	46	T J	ug/L		13.64			12/19/18 04:00	1
Unknown	17	T J	ug/L		14.02			12/19/18 04:00	1
Unknown	100	T J	ug/L		14.59			12/19/18 04:00	1
Camphor	13	T J N	ug/L		14.69	76-22-2		12/19/18 04:00	1
Unknown	23	T J	ug/L		15.57			12/19/18 04:00	1
Unknown	14	T J	ug/L		15.95			12/19/18 04:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 128		12/13/18 14:22	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/18 14:22	1
Toluene-d8 (Surr)	100		80 - 128		12/19/18 04:00	1
4-Bromofluorobenzene (Surr)	101		80 - 120		12/19/18 04:00	1
Dibromofluoromethane (Surr)	100		76 - 132		12/13/18 14:22	1
Dibromofluoromethane (Surr)	97		76 - 132		12/19/18 04:00	1

### Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:07	1
Acetone	ND		20	10	ug/L			12/19/18 11:07	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 11:07	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	3.0	T J	ug/L		5.71			12/19/18 11:07	1
Unknown	8.8	T J	ug/L		7.21			12/19/18 11:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/19/18 11:07	1
4-Bromofluorobenzene (Surr)	100		80 - 120		12/19/18 11:07	1
Dibromofluoromethane (Surr)	99		76 - 132		12/19/18 11:07	1

## Client Sample ID: Trip Blank

Date Collected: 12/12/18 00:01

Date Received: 12/12/18 17:55

## Lab Sample ID: 440-227501-3

Matrix: Water

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 04:24	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Acrolein	ND		50	2.5	ug/L			12/13/18 14:47	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 14:47	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227501-3**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 04:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 04:24	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 04:24	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 04:24	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 04:24	1
Acetone	ND		20	10	ug/L			12/19/18 04:24	1
Acetonitrile	ND		20	10	ug/L			12/19/18 04:24	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 04:24	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 04:24	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 04:24	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 04:24	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 04:24	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 04:24	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 04:24	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 04:24	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 04:24	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 04:24	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 04:24	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 04:24	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 04:24	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 04:24	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 04:24	1
<b>Naphthalene</b>	<b>0.51</b>	<b>J</b>	1.0	0.40	ug/L			12/19/18 04:24	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Propionitrile	ND		20	10	ug/L			12/19/18 04:24	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227501-3**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 04:24	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 04:24	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 04:24	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 04:24	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 04:24	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 04:24	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 04:24	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 04:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 04:24	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	6.9	T J	ug/L		5.71			12/19/18 04:24	1
Unknown	8.6	T J	ug/L		7.21			12/19/18 04:24	1
Unknown	2.7	T J	ug/L		12.46			12/19/18 04:24	1
Unknown	5.9	T J	ug/L		12.90			12/19/18 04:24	1
Unknown	4.0	T J	ug/L		13.64			12/19/18 04:24	1
Hexanoic acid, butyl ester	13	T J N	ug/L		14.59	626-82-4		12/19/18 04:24	1
Unknown	4.5	T J	ug/L		15.57			12/19/18 04:24	1
Unknown	4.6	T J	ug/L		15.95			12/19/18 04:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 128		12/13/18 14:47	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/18 14:47	1
Toluene-d8 (Surr)	101		80 - 128		12/19/18 04:24	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/19/18 04:24	1
Dibromofluoromethane (Surr)	100		76 - 132		12/13/18 14:47	1
Dibromofluoromethane (Surr)	96		76 - 132		12/19/18 04:24	1



# Method Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL IRV
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL IRV
8141A	Organophosphorous Pesticides (GC)	SW846	TAL PIT
8151A	Herbicides (GC)	SW846	TAL PIT
6010B	Metals (ICP)	SW846	TAL IRV
7470A	Mercury (CVAA)	SW846	TAL IRV
SM 4500 CN E	Cyanide, Total	SM	TAL IRV
SM 4500 S2 D	Sulfide, Total	SM	TAL IRV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PIT
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
7470A	Preparation, Mercury	SW846	TAL IRV
8151A	Extraction (Herbicides)	SW846	TAL PIT
Distill/CN	Distillation, Cyanide	None	TAL IRV

#### Protocol References:

None = None

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

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

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Deep Leachate**

**Lab Sample ID: 440-227501-1**

**Date Collected: 12/12/18 08:50**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	10 mL	10 mL	517236	12/15/18 03:15	GMA	TAL IRV
Total/NA	Analysis	8260B	DL	1000	10 mL	10 mL	518077	12/19/18 11:27	RM	TAL IRV
Total/NA	Analysis	8260B		500	10 mL	10 mL	517299	12/15/18 12:25	AYL	TAL IRV
Total/NA	Prep	3520C			50 mL	1.0 mL	517164	12/14/18 12:51	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 16:00	L1B	TAL IRV
Total/NA	Prep	3520C			50 mL	2.0 mL	517162	12/14/18 12:33	JAA	TAL IRV
Total/NA	Analysis	8270C		10			518725	12/21/18 13:25	HN	TAL IRV
Total/NA	Prep	3520C			50 mL	2.0 mL	517162	12/14/18 12:33	JAA	TAL IRV
Total/NA	Analysis	8270C		10	1 mL	1.0 mL	517600	12/17/18 22:01	HN	TAL IRV
Total/NA	Prep	3520C	RA		50 mL	2.0 mL	517162	12/14/18 12:33	JAA	TAL IRV
Total/NA	Analysis	8270C	RA	10			518498	12/20/18 19:20	L1B	TAL IRV
Total/NA	Prep	3520C			50 mL	2.0 mL	517158	12/14/18 12:26	JAA	TAL IRV
Total/NA	Analysis	8270C LL		10	1 mL	1.0 mL	517525	12/17/18 17:00	L1B	TAL IRV
Total/NA	Prep	3520C	DL		50 mL	2.0 mL	517158	12/14/18 12:26	JAA	TAL IRV
Total/NA	Analysis	8270C LL	DL	50			517525	12/17/18 18:12	L1B	TAL IRV
Total/NA	Prep	3510C			100 mL	2 mL	516759	12/13/18 06:14	L1H	TAL IRV
Total/NA	Analysis	8081A		1			516766	12/13/18 13:46	D1D	TAL IRV
Total/NA	Prep	3510C			100 mL	2 mL	516759	12/13/18 06:14	L1H	TAL IRV
Total/NA	Analysis	8082		1			516821	12/13/18 11:54	D1D	TAL IRV
Total/NA	Prep	3510C			980 mL	5.0 mL	265642	12/14/18 10:50	CBY	TAL PIT
Total/NA	Analysis	8141A		1			265686	12/17/18 07:58	JMO	TAL PIT
Total/NA	Prep	8151A			980 mL	10.0 mL	265649	12/14/18 14:30	CBY	TAL PIT
Total/NA	Analysis	8151A		20			265912	12/18/18 23:32	JBF	TAL PIT
Total Recoverable	Prep	3005A			5 mL	25 mL	517804	12/18/18 07:30	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			518223	12/19/18 16:02	VS	TAL IRV
Total/NA	Prep	7470A			4 mL	20 mL	517737	12/18/18 10:57	DB	TAL IRV
Total/NA	Analysis	7470A		1			518005	12/18/18 16:51	DB	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	518275	12/19/18 21:01	QTN	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			518610	12/20/18 23:00	QTN	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	516975	12/13/18 17:10	KMY	TAL IRV

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227501-2**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 14:22	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 04:00	OH1	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	518076	12/19/18 11:07	RM	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227501-3**

**Date Collected: 12/12/18 00:01**

**Matrix: Water**

**Date Received: 12/12/18 17:55**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516755	12/13/18 14:47	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517983	12/19/18 04:24	OH1	TAL IRV

## Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-516755/6**

**Matrix: Water**

**Analysis Batch: 516755**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		50	2.5	ug/L			12/13/18 09:20	1
Acrylonitrile	ND		50	1.0	ug/L			12/13/18 09:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 128		12/13/18 09:20	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/18 09:20	1
Dibromofluoromethane (Surr)	102		76 - 132		12/13/18 09:20	1

**Lab Sample ID: LCS 440-516755/7**

**Matrix: Water**

**Analysis Batch: 516755**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	17.5	J	ug/L		70	10 - 145
Acrylonitrile	250	199		ug/L		80	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	90		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132

**Lab Sample ID: 440-227497-E-1 MS**

**Matrix: Water**

**Analysis Batch: 516755**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	ND		25.0	20.2	J	ug/L		81	10 - 147
Acrylonitrile	ND		250	209		ug/L		83	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-227497-F-1 MSD**

**Matrix: Water**

**Analysis Batch: 516755**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	ND		25.0	20.1	J	ug/L		80	10 - 147	0	40
Acrylonitrile	ND		250	207		ug/L		83	38 - 144	1	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	94		80 - 128
4-Bromofluorobenzene (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517236/4**  
**Matrix: Water**  
**Analysis Batch: 517236**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/14/18 19:19	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/14/18 19:19	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/14/18 19:19	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/14/18 19:19	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/14/18 19:19	1
2-Hexanone	ND		5.0	2.5	ug/L			12/14/18 19:19	1
Acetone	ND		20	10	ug/L			12/14/18 19:19	1
Acetonitrile	ND		20	10	ug/L			12/14/18 19:19	1
Acrolein	ND		5.0	2.5	ug/L			12/14/18 19:19	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/14/18 19:19	1
Benzene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Allyl chloride	ND		1.0	0.50	ug/L			12/14/18 19:19	1
Bromoform	ND		1.0	0.40	ug/L			12/14/18 19:19	1
Bromomethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/14/18 19:19	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Chloroethane	ND		1.0	0.40	ug/L			12/14/18 19:19	1
Chloroform	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Chloromethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Dibromomethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/14/18 19:19	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/14/18 19:19	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Iodomethane	ND		2.0	1.0	ug/L			12/14/18 19:19	1
Isobutyl alcohol	ND		25	13	ug/L			12/14/18 19:19	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/14/18 19:19	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/14/18 19:19	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/14/18 19:19	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/14/18 19:19	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517236/4**  
**Matrix: Water**  
**Analysis Batch: 517236**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Naphthalene	ND		1.0	0.40	ug/L			12/14/18 19:19	1
o-Xylene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Propionitrile	ND		20	10	ug/L			12/14/18 19:19	1
Styrene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
t-Butanol	ND		10	5.0	ug/L			12/14/18 19:19	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/14/18 19:19	1
Toluene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/14/18 19:19	1
Trichloroethene	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/14/18 19:19	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/14/18 19:19	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/14/18 19:19	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/14/18 19:19	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/14/18 19:19	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/14/18 19:19	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Dimethyl disulfide	5.54		ug/L		8.98	624-92-0		12/14/18 19:19	1
Tentatively Identified Compound	None		ug/L					12/14/18 19:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 128		12/14/18 19:19	1
4-Bromofluorobenzene (Surr)	106		80 - 120		12/14/18 19:19	1
Dibromofluoromethane (Surr)	106		76 - 132		12/14/18 19:19	1

**Lab Sample ID: LCS 440-517236/5**  
**Matrix: Water**  
**Analysis Batch: 517236**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	25.0	26.0		ug/L		104	63 - 130
1,1,1,2-Tetrachloroethane	25.0	26.1		ug/L		104	60 - 141
1,1,1-Trichloroethane	25.0	27.1		ug/L		108	70 - 130
1,1,2,2-Tetrachloroethane	25.0	28.9		ug/L		116	63 - 130
1,1,2-Trichloroethane	25.0	27.0		ug/L		108	70 - 130
1,1-Dichloroethane	25.0	27.4		ug/L		110	64 - 130
1,1-Dichloroethene	25.0	27.4		ug/L		110	70 - 130
1,1-Dichloropropene	25.0	26.8		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	25.0	28.3		ug/L		113	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	30.8		ug/L		123	52 - 140
1,2-Dichlorobenzene	25.0	26.8		ug/L		107	70 - 130
1,2-Dichloroethane	25.0	30.4		ug/L		122	57 - 138
1,2-Dichloropropane	25.0	28.5		ug/L		114	67 - 130

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517236/5**

**Matrix: Water**

**Analysis Batch: 517236**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130
1,3-Dichloropropane	25.0	24.8		ug/L		99	70 - 130
1,4-Dichlorobenzene	25.0	26.2		ug/L		105	70 - 130
2,2-Dichloropropane	25.0	26.7		ug/L		107	68 - 141
2-Hexanone	25.0	29.2		ug/L		117	10 - 150
Acetone	25.0	31.4		ug/L		126	10 - 150
Acrolein	25.0	24.7		ug/L		99	10 - 145
Acrylonitrile	250	285		ug/L		114	48 - 140
Benzene	25.0	26.2		ug/L		105	68 - 130
Bromoform	25.0	27.2		ug/L		109	60 - 148
Bromomethane	25.0	24.8		ug/L		99	64 - 139
Carbon disulfide	25.0	25.8		ug/L		103	52 - 136
Carbon tetrachloride	25.0	27.2		ug/L		109	60 - 150
Chlorobenzene	25.0	25.5		ug/L		102	70 - 130
Bromochloromethane	25.0	27.0		ug/L		108	70 - 130
Chloroethane	25.0	25.3		ug/L		101	64 - 135
Chloroform	25.0	26.8		ug/L		107	70 - 130
Chloromethane	25.0	22.9		ug/L		92	47 - 140
cis-1,2-Dichloroethene	25.0	27.6		ug/L		111	70 - 133
cis-1,3-Dichloropropene	25.0	27.9		ug/L		112	70 - 133
Dibromochloromethane	25.0	26.7		ug/L		107	69 - 145
Dibromomethane	25.0	28.1		ug/L		112	70 - 130
Bromodichloromethane	25.0	28.3		ug/L		113	70 - 132
Dichlorodifluoromethane	25.0	21.6		ug/L		86	29 - 150
Ethylbenzene	25.0	24.2		ug/L		97	70 - 130
m,p-Xylene	25.0	24.6		ug/L		98	70 - 130
Methylene Chloride	25.0	24.5		ug/L		98	52 - 130
Methyl tert-butyl ether	25.0	26.8		ug/L		107	63 - 131
Naphthalene	25.0	28.9		ug/L		115	60 - 140
o-Xylene	25.0	25.0		ug/L		100	70 - 130
Styrene	25.0	24.9		ug/L		100	70 - 134
t-Butanol	250	256		ug/L		103	70 - 130
Tetrachloroethene	25.0	24.8		ug/L		99	70 - 130
Toluene	25.0	24.6		ug/L		98	70 - 130
trans-1,2-Dichloroethene	25.0	28.1		ug/L		112	70 - 130
trans-1,3-Dichloropropene	25.0	27.3		ug/L		109	70 - 132
Trichloroethene	25.0	27.2		ug/L		109	70 - 130
Trichlorofluoromethane	25.0	25.0		ug/L		100	60 - 150
Vinyl acetate	25.0	30.0		ug/L		120	48 - 140
Vinyl chloride	25.0	21.9		ug/L		88	59 - 133
1,2-Dibromoethane (EDB)	25.0	26.3		ug/L		105	70 - 130
2-Butanone (MEK)	25.0	29.2		ug/L		117	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	30.2		ug/L		121	59 - 149

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 128
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132

TestAmerica Irvine



# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

Lab Sample ID: 440-227505-C-4 MS

Matrix: Water

Analysis Batch: 517236

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	ND		25.0	24.5		ug/L		98	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	25.7		ug/L		103	60 - 149
1,1,1-Trichloroethane	ND		25.0	27.4		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	27.5		ug/L		110	63 - 130
1,1,2-Trichloroethane	ND		25.0	26.7		ug/L		107	70 - 130
1,1-Dichloroethane	ND		25.0	27.1		ug/L		108	65 - 130
1,1-Dichloroethene	4.6		25.0	31.4		ug/L		107	70 - 130
1,1-Dichloropropene	ND		25.0	26.4		ug/L		106	64 - 130
1,2,4-Trichlorobenzene	ND		25.0	26.6		ug/L		106	60 - 140
1,2-Dibromo-3-Chloropropane	ND		25.0	28.9		ug/L		116	48 - 140
1,2-Dichlorobenzene	ND		25.0	25.3		ug/L		101	70 - 130
1,2-Dichloroethane	ND		25.0	29.6		ug/L		118	56 - 146
1,2-Dichloropropane	ND		25.0	28.0		ug/L		112	69 - 130
1,3-Dichlorobenzene	ND		25.0	24.9		ug/L		99	70 - 130
1,3-Dichloropropane	ND		25.0	24.3		ug/L		97	70 - 130
1,4-Dichlorobenzene	ND		25.0	24.9		ug/L		99	70 - 130
2,2-Dichloropropane	ND		25.0	27.1		ug/L		108	69 - 138
2-Hexanone	ND		25.0	27.4		ug/L		109	10 - 150
Acetone	ND		25.0	28.1		ug/L		113	10 - 150
Acrolein	ND		25.0	25.8		ug/L		103	10 - 147
Acrylonitrile	ND		250	270		ug/L		108	38 - 144
Benzene	ND		25.0	25.8		ug/L		103	66 - 130
Bromoform	ND		25.0	26.7		ug/L		107	59 - 150
Bromomethane	ND		25.0	23.8		ug/L		95	62 - 131
Carbon disulfide	ND		25.0	25.1		ug/L		101	49 - 140
Carbon tetrachloride	ND		25.0	27.0		ug/L		108	60 - 150
Chlorobenzene	ND		25.0	24.6		ug/L		99	70 - 130
Bromochloromethane	ND		25.0	26.4		ug/L		105	70 - 130
Chloroethane	ND		25.0	24.4		ug/L		97	68 - 130
Chloroform	ND		25.0	26.1		ug/L		104	70 - 130
Chloromethane	ND		25.0	22.4		ug/L		90	39 - 144
cis-1,2-Dichloroethene	ND		25.0	26.8		ug/L		107	70 - 130
cis-1,3-Dichloropropene	ND		25.0	27.1		ug/L		108	70 - 133
Dibromochloromethane	ND		25.0	26.1		ug/L		104	70 - 148
Dibromomethane	ND		25.0	27.1		ug/L		108	70 - 130
Bromodichloromethane	ND		25.0	27.7		ug/L		111	70 - 138
Dichlorodifluoromethane	ND		25.0	21.2		ug/L		85	25 - 142
Ethylbenzene	ND		25.0	23.6		ug/L		94	70 - 130
m,p-Xylene	ND		25.0	23.8		ug/L		95	70 - 133
Methylene Chloride	ND		25.0	23.3		ug/L		93	52 - 130
Methyl tert-butyl ether	ND		25.0	26.6		ug/L		106	70 - 130
Naphthalene	ND		25.0	25.1		ug/L		100	60 - 140
o-Xylene	ND		25.0	24.4		ug/L		98	70 - 133
Styrene	ND		25.0	19.9		ug/L		80	29 - 150
t-Butanol	ND		250	259		ug/L		104	70 - 130
Tetrachloroethene	ND		25.0	24.8		ug/L		99	70 - 137
Toluene	ND		25.0	23.7		ug/L		95	70 - 130
trans-1,2-Dichloroethene	ND		25.0	27.4		ug/L		110	70 - 130
trans-1,3-Dichloropropene	ND		25.0	26.1		ug/L		104	70 - 138
Trichloroethene	26		25.0	51.2		ug/L		102	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227505-C-4 MS**

**Matrix: Water**

**Analysis Batch: 517236**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	ND		25.0	24.9		ug/L		100	60 - 150
Vinyl acetate	ND		25.0	28.6		ug/L		115	23 - 150
Vinyl chloride	ND		25.0	21.5		ug/L		86	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	25.1		ug/L		100	70 - 131
2-Butanone (MEK)	ND		25.0	26.1		ug/L		104	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.3		ug/L		117	52 - 150

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Toluene-d8 (Surr)	98		80 - 128
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132

**Lab Sample ID: 440-227505-C-4 MSD**

**Matrix: Water**

**Analysis Batch: 517236**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	ND		25.0	27.0		ug/L		108	60 - 130	10	30
1,1,1,2-Tetrachloroethane	ND		25.0	26.3		ug/L		105	60 - 149	2	20
1,1,1-Trichloroethane	ND		25.0	27.7		ug/L		111	70 - 130	1	20
1,1,1,2,2-Tetrachloroethane	ND		25.0	29.0		ug/L		116	63 - 130	5	30
1,1,2-Trichloroethane	ND		25.0	27.8		ug/L		111	70 - 130	4	25
1,1-Dichloroethane	ND		25.0	27.8		ug/L		111	65 - 130	2	20
1,1-Dichloroethene	4.6		25.0	32.6		ug/L		112	70 - 130	4	20
1,1-Dichloropropene	ND		25.0	27.1		ug/L		108	64 - 130	3	20
1,2,4-Trichlorobenzene	ND		25.0	27.9		ug/L		111	60 - 140	5	20
1,2-Dibromo-3-Chloropropane	ND		25.0	31.7		ug/L		127	48 - 140	9	30
1,2-Dichlorobenzene	ND		25.0	26.0		ug/L		104	70 - 130	3	20
1,2-Dichloroethane	ND		25.0	31.2		ug/L		125	56 - 146	5	20
1,2-Dichloropropane	ND		25.0	28.6		ug/L		115	69 - 130	2	20
1,3-Dichlorobenzene	ND		25.0	24.7		ug/L		99	70 - 130	1	20
1,3-Dichloropropane	ND		25.0	24.9		ug/L		100	70 - 130	2	25
1,4-Dichlorobenzene	ND		25.0	25.6		ug/L		102	70 - 130	3	20
2,2-Dichloropropane	ND		25.0	26.1		ug/L		104	69 - 138	4	25
2-Hexanone	ND		25.0	31.6		ug/L		127	10 - 150	14	35
Acetone	ND		25.0	30.0		ug/L		120	10 - 150	6	35
Acrolein	ND		25.0	27.7		ug/L		111	10 - 147	7	40
Acrylonitrile	ND		25.0	299		ug/L		120	38 - 144	10	40
Benzene	ND		25.0	26.6		ug/L		106	66 - 130	3	20
Bromoform	ND		25.0	27.8		ug/L		111	59 - 150	4	25
Bromomethane	ND		25.0	23.0		ug/L		92	62 - 131	3	25
Carbon disulfide	ND		25.0	25.7		ug/L		103	49 - 140	2	20
Carbon tetrachloride	ND		25.0	27.6		ug/L		110	60 - 150	2	25
Chlorobenzene	ND		25.0	25.2		ug/L		101	70 - 130	2	20
Bromochloromethane	ND		25.0	27.6		ug/L		110	70 - 130	4	25
Chloroethane	ND		25.0	25.4		ug/L		102	68 - 130	4	25
Chloroform	ND		25.0	27.4		ug/L		110	70 - 130	5	20
Chloromethane	ND		25.0	22.6		ug/L		91	39 - 144	1	25

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227505-C-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 517236**

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
cis-1,2-Dichloroethene	ND		25.0	27.6		ug/L		110	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	28.3		ug/L		113	70 - 133	4	20
Dibromochloromethane	ND		25.0	26.7		ug/L		107	70 - 148	3	25
Dibromomethane	ND		25.0	28.7		ug/L		115	70 - 130	6	25
Bromodichloromethane	ND		25.0	28.5		ug/L		114	70 - 138	3	20
Dichlorodifluoromethane	ND		25.0	22.0		ug/L		88	25 - 142	4	30
Ethylbenzene	ND		25.0	24.1		ug/L		96	70 - 130	2	20
m,p-Xylene	ND		25.0	24.3		ug/L		97	70 - 133	2	25
Methylene Chloride	ND		25.0	24.8		ug/L		99	52 - 130	6	20
Methyl tert-butyl ether	ND		25.0	27.0		ug/L		108	70 - 130	2	25
Naphthalene	ND		25.0	27.7		ug/L		111	60 - 140	10	30
o-Xylene	ND		25.0	24.9		ug/L		100	70 - 133	2	20
Styrene	ND		25.0	20.6		ug/L		82	29 - 150	3	35
t-Butanol	ND		250	260		ug/L		104	70 - 130	0	25
Tetrachloroethene	ND		25.0	25.5		ug/L		102	70 - 137	3	20
Toluene	ND		25.0	24.5		ug/L		98	70 - 130	3	20
trans-1,2-Dichloroethene	ND		25.0	28.1		ug/L		112	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	27.1		ug/L		108	70 - 138	4	25
Trichloroethene	26		25.0	52.5		ug/L		107	70 - 130	2	20
Trichlorofluoromethane	ND		25.0	25.6		ug/L		102	60 - 150	3	25
Vinyl acetate	ND		25.0	31.1		ug/L		124	23 - 150	8	30
Vinyl chloride	ND		25.0	21.9		ug/L		87	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	26.6		ug/L		106	70 - 131	6	25
2-Butanone (MEK)	ND		25.0	28.5		ug/L		114	48 - 140	9	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	31.9		ug/L		128	52 - 150	9	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	99		80 - 128
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	109		76 - 132

**Lab Sample ID: MB 440-517299/4**  
**Matrix: Water**  
**Analysis Batch: 517299**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acrolein	ND		50	2.5	ug/L			12/15/18 09:39	1
Acrylonitrile	ND		50	1.0	ug/L			12/15/18 09:39	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	105		80 - 128		12/15/18 09:39	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/15/18 09:39	1
Dibromofluoromethane (Surr)	101		76 - 132		12/15/18 09:39	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517299/6**

**Matrix: Water**

**Analysis Batch: 517299**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	22.3	J	ug/L		89	10 - 145
Acrylonitrile	250	237		ug/L		95	48 - 140
Surrogate		LCS %Recovery	LCS Qualifier	Limits			
Toluene-d8 (Surr)		100		80 - 128			
4-Bromofluorobenzene (Surr)		98		80 - 120			
Dibromofluoromethane (Surr)		100		76 - 132			

**Lab Sample ID: LCSD 440-517299/7**

**Matrix: Water**

**Analysis Batch: 517299**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	25.0	25.2	J	ug/L		101	10 - 145	12	30
Acrylonitrile	250	251		ug/L		100	48 - 140	6	30
Surrogate		LCSD %Recovery	LCSD Qualifier	Limits					
Toluene-d8 (Surr)		101		80 - 128					
4-Bromofluorobenzene (Surr)		104		80 - 120					
Dibromofluoromethane (Surr)		99		76 - 132					

**Lab Sample ID: 550-114911-A-2 MS**

**Matrix: Water**

**Analysis Batch: 517299**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	ND		25.0	24.4	J	ug/L		98	10 - 147
Acrylonitrile	ND		250	252		ug/L		101	38 - 144
Surrogate		MS %Recovery	MS Qualifier	Limits					
Toluene-d8 (Surr)		103		80 - 128					
4-Bromofluorobenzene (Surr)		107		80 - 120					
Dibromofluoromethane (Surr)		98		76 - 132					

**Lab Sample ID: 550-114911-A-2 MSD**

**Matrix: Water**

**Analysis Batch: 517299**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	ND		25.0	26.6	J	ug/L		106	10 - 147	8	40
Acrylonitrile	ND		250	278		ug/L		111	38 - 144	10	40
Surrogate		MSD %Recovery	MSD Qualifier	Limits							
Toluene-d8 (Surr)		99		80 - 128							
4-Bromofluorobenzene (Surr)		102		80 - 120							
Dibromofluoromethane (Surr)		98		76 - 132							

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517983/4**

**Matrix: Water**

**Analysis Batch: 517983**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/18/18 18:52	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/18/18 18:52	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/18/18 18:52	1
2-Hexanone	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Acetone	ND		20	10	ug/L			12/18/18 18:52	1
Acetonitrile	ND		20	10	ug/L			12/18/18 18:52	1
Acrolein	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Benzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Allyl chloride	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Bromoform	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Bromomethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chloroethane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Chloroform	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Chloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dibromomethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/18/18 18:52	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Iodomethane	ND		2.0	1.0	ug/L			12/18/18 18:52	1
Isobutyl alcohol	ND		25	13	ug/L			12/18/18 18:52	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/18/18 18:52	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/18/18 18:52	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/18/18 18:52	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/18/18 18:52	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517983/4**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.40	ug/L			12/18/18 18:52	1
o-Xylene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Propionitrile	ND		20	10	ug/L			12/18/18 18:52	1
Styrene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
t-Butanol	ND		10	5.0	ug/L			12/18/18 18:52	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/18/18 18:52	1
Toluene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/18/18 18:52	1
Trichloroethene	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/18/18 18:52	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/18/18 18:52	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/18/18 18:52	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/18/18 18:52	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/18/18 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/18 18:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 128		12/18/18 18:52	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/18/18 18:52	1
Dibromofluoromethane (Surr)	101		76 - 132		12/18/18 18:52	1

**Lab Sample ID: LCS 440-517983/5**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	25.0	23.9		ug/L		96	63 - 130
1,1,1,2-Tetrachloroethane	25.0	26.1		ug/L		104	60 - 141
1,1,1-Trichloroethane	25.0	27.5		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	25.0	21.6		ug/L		86	63 - 130
1,1,2-Trichloroethane	25.0	23.8		ug/L		95	70 - 130
1,1-Dichloroethane	25.0	24.4		ug/L		98	64 - 130
1,1-Dichloroethene	25.0	23.5		ug/L		94	70 - 130
1,1-Dichloropropene	25.0	23.6		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	25.0	21.3		ug/L		85	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	23.8		ug/L		95	52 - 140
1,2-Dichlorobenzene	25.0	22.6		ug/L		91	70 - 130
1,2-Dichloroethane	25.0	27.1		ug/L		109	57 - 138
1,2-Dichloropropane	25.0	24.0		ug/L		96	67 - 130
1,3-Dichlorobenzene	25.0	23.4		ug/L		94	70 - 130
1,3-Dichloropropane	25.0	23.5		ug/L		94	70 - 130
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	70 - 130
2,2-Dichloropropane	25.0	26.7		ug/L		107	68 - 141
2-Hexanone	25.0	28.3		ug/L		113	10 - 150
Acetone	25.0	30.0		ug/L		120	10 - 150

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-517983/5

Matrix: Water

Analysis Batch: 517983

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	20.4		ug/L		81	10 - 145
Acrylonitrile	250	256		ug/L		102	48 - 140
Benzene	25.0	23.2		ug/L		93	68 - 130
Bromoform	25.0	26.8		ug/L		107	60 - 148
Bromomethane	25.0	23.0		ug/L		92	64 - 139
Carbon disulfide	25.0	20.3		ug/L		81	52 - 136
Carbon tetrachloride	25.0	27.9		ug/L		112	60 - 150
Chlorobenzene	25.0	22.9		ug/L		92	70 - 130
Bromochloromethane	25.0	24.9		ug/L		100	70 - 130
Chloroethane	25.0	22.4		ug/L		90	64 - 135
Chloroform	25.0	26.1		ug/L		104	70 - 130
Chloromethane	25.0	18.6		ug/L		75	47 - 140
cis-1,2-Dichloroethene	25.0	23.6		ug/L		94	70 - 133
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	70 - 133
Dibromochloromethane	25.0	26.3		ug/L		105	69 - 145
Dibromomethane	25.0	23.4		ug/L		94	70 - 130
Bromodichloromethane	25.0	27.7		ug/L		111	70 - 132
Dichlorodifluoromethane	25.0	17.2		ug/L		69	29 - 150
Ethylbenzene	25.0	23.5		ug/L		94	70 - 130
m,p-Xylene	25.0	23.8		ug/L		95	70 - 130
Methylene Chloride	25.0	22.8		ug/L		91	52 - 130
Methyl tert-butyl ether	25.0	25.3		ug/L		101	63 - 131
Naphthalene	25.0	20.3		ug/L		81	60 - 140
o-Xylene	25.0	23.0		ug/L		92	70 - 130
Styrene	25.0	23.9		ug/L		96	70 - 134
t-Butanol	250	270		ug/L		108	70 - 130
Tetrachloroethene	25.0	23.0		ug/L		92	70 - 130
Toluene	25.0	22.3		ug/L		89	70 - 130
trans-1,2-Dichloroethene	25.0	23.9		ug/L		96	70 - 130
trans-1,3-Dichloropropene	25.0	26.2		ug/L		105	70 - 132
Trichloroethene	25.0	24.6		ug/L		99	70 - 130
Trichlorofluoromethane	25.0	27.8		ug/L		111	60 - 150
Vinyl acetate	25.0	27.6		ug/L		110	48 - 140
Vinyl chloride	25.0	20.5		ug/L		82	59 - 133
1,2-Dibromoethane (EDB)	25.0	23.6		ug/L		94	70 - 130
2-Butanone (MEK)	25.0	27.7		ug/L		111	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	27.1		ug/L		108	59 - 149

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	92		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132



# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-227298-A-6 MS

Matrix: Water

Analysis Batch: 517983

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	ND		25.0	23.4		ug/L		94	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	24.3		ug/L		97	60 - 149
1,1,1-Trichloroethane	ND		25.0	25.2		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	20.7		ug/L		83	63 - 130
1,1,2-Trichloroethane	ND		25.0	22.1		ug/L		89	70 - 130
1,1-Dichloroethane	ND		25.0	22.4		ug/L		90	65 - 130
1,1-Dichloroethene	ND		25.0	21.6		ug/L		86	70 - 130
1,1-Dichloropropene	ND		25.0	21.5		ug/L		86	64 - 130
1,2,4-Trichlorobenzene	ND		25.0	21.6		ug/L		86	60 - 140
1,2-Dibromo-3-Chloropropane	ND		25.0	22.4		ug/L		90	48 - 140
1,2-Dichlorobenzene	ND		25.0	22.1		ug/L		88	70 - 130
1,2-Dichloroethane	ND		25.0	25.2		ug/L		101	56 - 146
1,2-Dichloropropane	ND		25.0	22.6		ug/L		90	69 - 130
1,3-Dichlorobenzene	ND		25.0	22.7		ug/L		91	70 - 130
1,3-Dichloropropane	ND		25.0	21.7		ug/L		87	70 - 130
1,4-Dichlorobenzene	ND		25.0	22.5		ug/L		90	70 - 130
2,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 138
2-Hexanone	ND		25.0	26.2		ug/L		105	10 - 150
Acetone	ND		25.0	26.0		ug/L		104	10 - 150
Acrolein	ND		25.0	16.8		ug/L		67	10 - 147
Acrylonitrile	ND		250	229		ug/L		92	38 - 144
Benzene	ND		25.0	21.2		ug/L		85	66 - 130
Bromoform	ND		25.0	24.6		ug/L		98	59 - 150
Bromomethane	ND		25.0	21.0		ug/L		84	62 - 131
Carbon disulfide	ND		25.0	19.1		ug/L		76	49 - 140
Carbon tetrachloride	ND		25.0	25.5		ug/L		102	60 - 150
Chlorobenzene	ND		25.0	21.8		ug/L		87	70 - 130
Bromochloromethane	ND		25.0	23.4		ug/L		93	70 - 130
Chloroethane	ND		25.0	20.2		ug/L		81	68 - 130
Chloroform	ND		25.0	23.7		ug/L		95	70 - 130
Chloromethane	ND		25.0	18.1		ug/L		72	39 - 144
cis-1,2-Dichloroethene	ND		25.0	21.7		ug/L		87	70 - 130
cis-1,3-Dichloropropene	ND		25.0	23.8		ug/L		95	70 - 133
Dibromochloromethane	ND		25.0	24.1		ug/L		96	70 - 148
Dibromomethane	ND		25.0	21.3		ug/L		85	70 - 130
Bromodichloromethane	ND		25.0	24.8		ug/L		99	70 - 138
Dichlorodifluoromethane	ND		25.0	16.7		ug/L		67	25 - 142
Ethylbenzene	ND		25.0	22.2		ug/L		89	70 - 130
m,p-Xylene	ND		25.0	22.3		ug/L		89	70 - 133
Methylene Chloride	ND		25.0	19.8		ug/L		79	52 - 130
Methyl tert-butyl ether	ND		25.0	23.6		ug/L		95	70 - 130
Naphthalene	ND		25.0	20.1		ug/L		80	60 - 140
o-Xylene	ND		25.0	21.7		ug/L		87	70 - 133
Styrene	ND		25.0	22.5		ug/L		90	29 - 150
t-Butanol	ND		250	253		ug/L		101	70 - 130
Tetrachloroethene	ND		25.0	22.0		ug/L		88	70 - 137
Toluene	ND		25.0	21.1		ug/L		84	70 - 130
trans-1,2-Dichloroethene	ND		25.0	22.1		ug/L		88	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-A-6 MS**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	ND		25.0	24.2		ug/L		97	70 - 138
Trichloroethene	ND		25.0	22.3		ug/L		89	70 - 130
Trichlorofluoromethane	ND		25.0	25.7		ug/L		103	60 - 150
Vinyl acetate	ND		25.0	25.8		ug/L		103	23 - 150
Vinyl chloride	ND		25.0	18.8		ug/L		75	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	21.6		ug/L		86	70 - 131
2-Butanone (MEK)	ND		25.0	22.6		ug/L		90	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	25.9		ug/L		104	52 - 150

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Toluene-d8 (Surr)	94		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	103		76 - 132

**Lab Sample ID: 440-227298-A-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	ND		25.0	23.6		ug/L		95	60 - 130	1	30
1,1,1,2-Tetrachloroethane	ND		25.0	24.5		ug/L		98	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	26.4		ug/L		106	70 - 130	5	20
1,1,2,2-Tetrachloroethane	ND		25.0	19.8		ug/L		79	63 - 130	4	30
1,1,2-Trichloroethane	ND		25.0	21.4		ug/L		86	70 - 130	3	25
1,1-Dichloroethane	ND		25.0	23.3		ug/L		93	65 - 130	4	20
1,1-Dichloroethene	ND		25.0	22.6		ug/L		91	70 - 130	5	20
1,1-Dichloropropene	ND		25.0	22.6		ug/L		90	64 - 130	5	20
1,2,4-Trichlorobenzene	ND		25.0	21.2		ug/L		85	60 - 140	2	20
1,2-Dibromo-3-Chloropropane	ND		25.0	22.8		ug/L		91	48 - 140	2	30
1,2-Dichlorobenzene	ND		25.0	21.1		ug/L		84	70 - 130	5	20
1,2-Dichloroethane	ND		25.0	25.5		ug/L		102	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	23.3		ug/L		93	69 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	22.0		ug/L		88	70 - 130	3	20
1,3-Dichloropropane	ND		25.0	21.6		ug/L		86	70 - 130	0	25
1,4-Dichlorobenzene	ND		25.0	22.1		ug/L		88	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	26.2		ug/L		105	69 - 138	2	25
2-Hexanone	ND		25.0	25.9		ug/L		104	10 - 150	1	35
Acetone	ND		25.0	28.2		ug/L		113	10 - 150	8	35
Acrolein	ND		25.0	19.7		ug/L		79	10 - 147	16	40
Acrylonitrile	ND		25.0	23.1		ug/L		92	38 - 144	1	40
Benzene	ND		25.0	21.9		ug/L		88	66 - 130	3	20
Bromoform	ND		25.0	24.1		ug/L		96	59 - 150	2	25
Bromomethane	ND		25.0	21.7		ug/L		87	62 - 131	3	25
Carbon disulfide	ND		25.0	19.6		ug/L		78	49 - 140	3	20
Carbon tetrachloride	ND		25.0	26.9		ug/L		108	60 - 150	5	25
Chlorobenzene	ND		25.0	21.7		ug/L		87	70 - 130	1	20
Bromochloromethane	ND		25.0	24.2		ug/L		97	70 - 130	4	25
Chloroethane	ND		25.0	21.6		ug/L		86	68 - 130	7	25

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227298-A-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 517983**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	ND		25.0	24.4		ug/L		97	70 - 130	3	20
Chloromethane	ND		25.0	19.0		ug/L		76	39 - 144	5	25
cis-1,2-Dichloroethene	ND		25.0	22.3		ug/L		89	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	23.1		ug/L		92	70 - 133	3	20
Dibromochloromethane	ND		25.0	24.3		ug/L		97	70 - 148	1	25
Dibromomethane	ND		25.0	21.3		ug/L		85	70 - 130	0	25
Bromodichloromethane	ND		25.0	26.0		ug/L		104	70 - 138	5	20
Dichlorodifluoromethane	ND		25.0	16.7		ug/L		67	25 - 142	0	30
Ethylbenzene	ND		25.0	22.6		ug/L		91	70 - 130	2	20
m,p-Xylene	ND		25.0	22.0		ug/L		88	70 - 133	1	25
Methylene Chloride	ND		25.0	20.5		ug/L		82	52 - 130	3	20
Methyl tert-butyl ether	ND		25.0	23.5		ug/L		94	70 - 130	1	25
Naphthalene	ND		25.0	19.7		ug/L		79	60 - 140	2	30
o-Xylene	ND		25.0	21.6		ug/L		86	70 - 133	0	20
Styrene	ND		25.0	22.0		ug/L		88	29 - 150	2	35
t-Butanol	ND		250	258		ug/L		103	70 - 130	2	25
Tetrachloroethene	ND		25.0	22.3		ug/L		89	70 - 137	1	20
Toluene	ND		25.0	20.8		ug/L		83	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	23.2		ug/L		93	70 - 130	5	20
trans-1,3-Dichloropropene	ND		25.0	23.5		ug/L		94	70 - 138	3	25
Trichloroethene	ND		25.0	23.7		ug/L		95	70 - 130	6	20
Trichlorofluoromethane	ND		25.0	26.5		ug/L		106	60 - 150	3	25
Vinyl acetate	ND		25.0	26.2		ug/L		105	23 - 150	1	30
Vinyl chloride	ND		25.0	19.5		ug/L		78	50 - 137	4	30
1,2-Dibromoethane (EDB)	ND		25.0	20.9		ug/L		84	70 - 131	3	25
2-Butanone (MEK)	ND		25.0	22.7		ug/L		91	48 - 140	1	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	24.9		ug/L		100	52 - 150	4	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

**Lab Sample ID: MB 440-518076/4**  
**Matrix: Water**  
**Analysis Batch: 518076**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Acetone	ND		20	10	ug/L			12/19/18 08:18	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 08:18	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	4.64	T J	ug/L		5.71			12/19/18 08:18	1

Surrogate	MB %Recovery	MB Qualifier	MSD Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 128		12/19/18 08:18	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-518076/4**  
**Matrix: Water**  
**Analysis Batch: 518076**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	102		80 - 120		12/19/18 08:18	1
Dibromofluoromethane (Surr)	97		76 - 132		12/19/18 08:18	1

**Lab Sample ID: LCS 440-518076/5**  
**Matrix: Water**  
**Analysis Batch: 518076**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	25.0	27.7		ug/L		111	10 - 150
2-Butanone (MEK)	25.0	25.6		ug/L		102	44 - 150

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	97		80 - 128
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

**Lab Sample ID: 440-227633-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 518076**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		25.0	26.0		ug/L		104	10 - 150
2-Butanone (MEK)	ND		25.0	20.9		ug/L		83	48 - 140

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	97		80 - 128
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-227633-B-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 518076**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acetone	ND		25.0	29.6		ug/L		119	10 - 150	13	35
2-Butanone (MEK)	ND		25.0	24.4		ug/L		98	48 - 140	16	40

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	94		80 - 128
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-518077/4**  
**Matrix: Water**  
**Analysis Batch: 518077**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	10	ug/L			12/19/18 08:30	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/19/18 08:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128		12/19/18 08:30	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/19/18 08:30	1
Dibromofluoromethane (Surr)	106		76 - 132		12/19/18 08:30	1

**Lab Sample ID: LCS 440-518077/5**  
**Matrix: Water**  
**Analysis Batch: 518077**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	25.0	22.5		ug/L		90	10 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	96		80 - 128
4-Bromofluorobenzene (Surr)	107		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132

**Lab Sample ID: 440-227650-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 518077**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		25.0	26.4		ug/L		106	10 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 128
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	103		76 - 132

**Lab Sample ID: 440-227650-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 518077**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acetone	ND		25.0	25.0		ug/L		100	10 - 150	6	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	92		80 - 128
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-517162/1-A**  
**Matrix: Water**  
**Analysis Batch: 517600**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517162**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		10	2.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
1,4-Naphthoquinone	ND		10	4.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
1,4-phenylenediamine	ND		60	25	ug/L		12/14/18 12:33	12/17/18 15:57	1
1-Naphthylamine	ND		15	5.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
2,3,4,6-Tetrachlorophenol	ND		15	4.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
2,6-Dichlorophenol	ND		15	2.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
2-Acetylaminofluorene	ND		10	3.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
2-Naphthylamine	ND		25	12	ug/L		12/14/18 12:33	12/17/18 15:57	1
3,3'-Dimethylbenzidine	ND		25	10	ug/L		12/14/18 12:33	12/17/18 15:57	1
3-Methylcholanthrene	ND		25	7.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
4-Aminobiphenyl	ND		25	12	ug/L		12/14/18 12:33	12/17/18 15:57	1
5-Nitro-o-toluidine	ND		10	3.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
7,12-Dimethylbenz(a)anthracene	ND		10	4.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Acetophenone	ND		15	2.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
alpha,alpha-Dimethyl phenethylamine	ND		60	34	ug/L		12/14/18 12:33	12/17/18 15:57	1
Diallate	ND		15	3.2	ug/L		12/14/18 12:33	12/17/18 15:57	1
Dimethyl aminoazobenzene	ND		10	4.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Diphenylamine	ND		10	3.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Ethyl 4,4'-Dichlorobenzilate	ND		10	2.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
Ethyl methanesulfonate	ND		10	3.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Isodrin	ND		10	2.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
Isosafrole	ND		15	6.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Kepone	ND		100	35	ug/L		12/14/18 12:33	12/17/18 15:57	1
Methapyrilene	ND		20	5.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Methyl methanesulfonate	ND		15	2.3	ug/L		12/14/18 12:33	12/17/18 15:57	1
N-Nitrosodiethylamine	ND		10	3.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
N-Nitrosodi-n-butylamine	ND		10	3.3	ug/L		12/14/18 12:33	12/17/18 15:57	1
N-Nitrosomethylethylamine	ND		10	2.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
N-Nitrosopiperidine	ND		10	3.7	ug/L		12/14/18 12:33	12/17/18 15:57	1
N-Nitrosopyrrolidine	ND		10	3.1	ug/L		12/14/18 12:33	12/17/18 15:57	1
o,o',o"-Triethylphosphorothioate	ND		15	3.1	ug/L		12/14/18 12:33	12/17/18 15:57	1
o-Toluidine	ND		10	2.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
Pentachlorobenzene	ND		10	3.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Pentachloronitrobenzene	ND		10	2.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
Phenacetin	ND		10	3.5	ug/L		12/14/18 12:33	12/17/18 15:57	1
Phorate	ND		10	5.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Pronamide	ND		15	5.0	ug/L		12/14/18 12:33	12/17/18 15:57	1
Safrole, Total	ND		10	3.7	ug/L		12/14/18 12:33	12/17/18 15:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	80		40 - 120	12/14/18 12:33	12/17/18 15:57	1
2-Fluorobiphenyl	70		50 - 120	12/14/18 12:33	12/17/18 15:57	1
2-Fluorophenol (Surr)	67		30 - 120	12/14/18 12:33	12/17/18 15:57	1
Nitrobenzene-d5 (Surr)	76		45 - 120	12/14/18 12:33	12/17/18 15:57	1
Phenol-d6 (Surr)	75		35 - 120	12/14/18 12:33	12/17/18 15:57	1
Terphenyl-d14 (Surr)	84		10 - 150	12/14/18 12:33	12/17/18 15:57	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-517162/1-A**  
**Matrix: Water**  
**Analysis Batch: 518725**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517162**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4,5-Tetrachlorobenzene	ND		10	2.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
1,4-Naphthoquinone	ND		10	4.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
1,4-phenylenediamine	ND		60	25	ug/L		12/14/18 12:33	12/21/18 13:00	1
1-Naphthylamine	ND		15	5.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
2,3,4,6-Tetrachlorophenol	ND		15	4.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
2,6-Dichlorophenol	ND		15	2.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
2-Acetylaminofluorene	ND		10	3.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
2-Naphthylamine	ND		25	12	ug/L		12/14/18 12:33	12/21/18 13:00	1
3,3'-Dimethylbenzidine	ND		25	10	ug/L		12/14/18 12:33	12/21/18 13:00	1
3-Methylcholanthrene	ND		25	7.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
4-Aminobiphenyl	ND		25	12	ug/L		12/14/18 12:33	12/21/18 13:00	1
5-Nitro-o-toluidine	ND		10	3.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
7,12-Dimethylbenz(a)anthracene	ND		10	4.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Acetophenone	ND		15	2.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
alpha,alpha-Dimethyl phenethylamine	ND		60	34	ug/L		12/14/18 12:33	12/21/18 13:00	1
Diallate	ND		15	3.2	ug/L		12/14/18 12:33	12/21/18 13:00	1
Dimethyl aminoazobenzene	ND		10	4.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Diphenylamine	ND		10	3.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Ethyl 4,4'-Dichlorobenzilate	ND		10	2.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
Ethyl methanesulfonate	ND		10	3.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Isodrin	ND		10	2.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
Isosafrole	ND		15	6.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Kepone	ND		100	35	ug/L		12/14/18 12:33	12/21/18 13:00	1
Methapyrilene	ND		20	5.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Methyl methanesulfonate	ND		15	2.3	ug/L		12/14/18 12:33	12/21/18 13:00	1
N-Nitrosodiethylamine	ND		10	3.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
N-Nitrosodi-n-butylamine	ND		10	3.3	ug/L		12/14/18 12:33	12/21/18 13:00	1
N-Nitrosomethylethylamine	ND		10	2.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
N-Nitrosopiperidine	ND		10	3.7	ug/L		12/14/18 12:33	12/21/18 13:00	1
N-Nitrosopyrrolidine	ND		10	3.1	ug/L		12/14/18 12:33	12/21/18 13:00	1
o,o',o"-Triethylphosphorothioate	ND		15	3.1	ug/L		12/14/18 12:33	12/21/18 13:00	1
o-Toluidine	ND		10	2.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
Pentachlorobenzene	ND		10	3.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Pentachloronitrobenzene	ND		10	2.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
Phenacetin	ND		10	3.5	ug/L		12/14/18 12:33	12/21/18 13:00	1
Phorate	ND		10	5.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Pronamide	ND		15	5.0	ug/L		12/14/18 12:33	12/21/18 13:00	1
Safrole, Total	ND		10	3.7	ug/L		12/14/18 12:33	12/21/18 13:00	1

**Lab Sample ID: LCS 440-517162/2-A**  
**Matrix: Water**  
**Analysis Batch: 517600**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517162**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4,5-Tetrachlorobenzene	100	81.8		ug/L		82	50 - 93
2,6-Dichlorophenol	100	85.5		ug/L		86	49 - 112
Diphenylamine	85.0	74.7		ug/L		88	60 - 140

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517162/2-A**  
**Matrix: Water**  
**Analysis Batch: 517600**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517162**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	93		40 - 120
2-Fluorobiphenyl	83		50 - 120
2-Fluorophenol (Surr)	74		30 - 120
Nitrobenzene-d5 (Surr)	89		45 - 120
Phenol-d6 (Surr)	84		35 - 120
Terphenyl-d14 (Surr)	97		10 - 150

**Lab Sample ID: LCSD 440-517162/3-A**  
**Matrix: Water**  
**Analysis Batch: 517600**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 517162**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4,5-Tetrachlorobenzene	100	89.9		ug/L		90	50 - 93	9	35
2,6-Dichlorophenol	100	92.4		ug/L		92	49 - 112	8	35
Diphenylamine	85.0	80.3		ug/L		94	60 - 140	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	104		40 - 120
2-Fluorobiphenyl	90		50 - 120
2-Fluorophenol (Surr)	76		30 - 120
Nitrobenzene-d5 (Surr)	97		45 - 120
Phenol-d6 (Surr)	87		35 - 120
Terphenyl-d14 (Surr)	100		10 - 150

**Lab Sample ID: MB 440-517164/1-A**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/14/18 12:51	12/17/18 11:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	71		30 - 120	12/14/18 12:51	12/17/18 11:23	1

**Lab Sample ID: LCS 440-517164/3-A**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.00	1.70		ug/L		85	35 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dioxane-d8 (Surr)	76		30 - 120

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227502-E-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	ND		1.98	1.80		ug/L		91	35 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,4-Dioxane-d8 (Surr)	75		30 - 120						

**Lab Sample ID: 440-227502-E-4-B MSD**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 517164**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	ND		1.99	1.73		ug/L		87	35 - 120	4	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8 (Surr)	75		30 - 120								

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) - RA

**Lab Sample ID: MB 440-517162/1-A**  
**Matrix: Water**  
**Analysis Batch: 518498**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517162**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kepone - RA	ND		100	35	ug/L		12/14/18 12:33	12/20/18 18:55	1
Methapyrilene - RA	ND		20	5.0	ug/L		12/14/18 12:33	12/20/18 18:55	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol (Surr) - RA	84		40 - 120				12/14/18 12:33	12/20/18 18:55	1
2-Fluorobiphenyl - RA	72		50 - 120				12/14/18 12:33	12/20/18 18:55	1
2-Fluorophenol (Surr) - RA	69		30 - 120				12/14/18 12:33	12/20/18 18:55	1
Nitrobenzene-d5 (Surr) - RA	83		45 - 120				12/14/18 12:33	12/20/18 18:55	1
Phenol-d6 (Surr) - RA	76		35 - 120				12/14/18 12:33	12/20/18 18:55	1
Terphenyl-d14 (Surr) - RA	86		10 - 150				12/14/18 12:33	12/20/18 18:55	1

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

**Lab Sample ID: MB 440-517158/1-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		1.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
1,2-Dichlorobenzene	ND		0.50	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		1.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
1,3-Dichlorobenzene	ND		0.50	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
1,4-Dichlorobenzene	ND		0.50	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
2,4,5-Trichlorophenol	ND		2.0	0.30	ug/L		12/14/18 12:26	12/17/18 10:58	1

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: MB 440-517158/1-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4,6-Trichlorophenol	ND		1.0	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
2,4-Dichlorophenol	ND		2.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
2,4-Dimethylphenol	ND		2.0	0.50	ug/L		12/14/18 12:26	12/17/18 10:58	1
2,4-Dinitrophenol	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
2,4-Dinitrotoluene	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
2,6-Dinitrotoluene	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
2-Chloronaphthalene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
2-Chlorophenol	ND		1.0	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
2-Methylnaphthalene	ND		1.0	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
2-Methylphenol	ND		2.0	0.30	ug/L		12/14/18 12:26	12/17/18 10:58	1
2-Nitroaniline	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
2-Nitrophenol	ND		2.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
3,3'-Dichlorobenzidine	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
3-Methylphenol + 4-Methylphenol	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
3-Nitroaniline	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
4,6-Dinitro-2-methylphenol	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
4-Bromophenyl phenyl ether	ND		1.0	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
4-Chloro-3-methylphenol	ND		2.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
4-Chloroaniline	ND		2.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
4-Chlorophenyl phenyl ether	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
4-Nitroaniline	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
4-Nitrophenol	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Acenaphthene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Acenaphthylene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Aniline	ND		10	0.75	ug/L		12/14/18 12:26	12/17/18 10:58	1
Anthracene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzidine	ND		10	5.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzo[a]anthracene	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzo[a]pyrene	ND		2.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzo[b]fluoranthene	ND		2.0	0.30	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzo[g,h,i]perylene	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzo[k]fluoranthene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzoic acid	ND		10	4.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Benzyl alcohol	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
bis (2-chloroisopropyl) ether	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Bis(2-chloroethoxy)methane	ND		0.50	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Bis(2-chloroethyl)ether	ND		0.50	0.050	ug/L		12/14/18 12:26	12/17/18 10:58	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Butyl benzyl phthalate	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Chrysene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Dibenz(a,h)anthracene	ND		0.50	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Dibenzofuran	ND		0.50	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Diethyl phthalate	ND		1.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Dimethyl phthalate	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Di-n-butyl phthalate	ND		2.0	0.50	ug/L		12/14/18 12:26	12/17/18 10:58	1
Di-n-octyl phthalate	ND		5.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Fluoranthene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Fluorene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: MB 440-517158/1-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	ND		1.0	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Hexachlorobutadiene	ND		2.0	0.50	ug/L		12/14/18 12:26	12/17/18 10:58	1
Hexachlorocyclopentadiene	ND		5.0	2.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Hexachloroethane	ND		3.0	0.50	ug/L		12/14/18 12:26	12/17/18 10:58	1
Indeno[1,2,3-cd]pyrene	ND		2.0	0.40	ug/L		12/14/18 12:26	12/17/18 10:58	1
Isophorone	ND		1.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Naphthalene	ND		1.0	0.050	ug/L		12/14/18 12:26	12/17/18 10:58	1
Nitrobenzene	ND		1.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
N-Nitrosodimethylamine	ND		2.0	0.30	ug/L		12/14/18 12:26	12/17/18 10:58	1
N-Nitrosodi-n-propylamine	ND		2.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
N-Nitrosodiphenylamine	ND		1.0	0.20	ug/L		12/14/18 12:26	12/17/18 10:58	1
Pentachlorophenol	ND		2.0	1.0	ug/L		12/14/18 12:26	12/17/18 10:58	1
Phenanthrene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Phenol	ND		1.0	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1
Pyrene	ND		0.50	0.10	ug/L		12/14/18 12:26	12/17/18 10:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	95		40 - 120	12/14/18 12:26	12/17/18 10:58	1
2-Fluorobiphenyl	86		50 - 120	12/14/18 12:26	12/17/18 10:58	1
2-Fluorophenol (Surr)	91		30 - 120	12/14/18 12:26	12/17/18 10:58	1
Nitrobenzene-d5 (Surr)	91		45 - 120	12/14/18 12:26	12/17/18 10:58	1
Phenol-d6 (Surr)	90		35 - 120	12/14/18 12:26	12/17/18 10:58	1
Terphenyl-d14 (Surr)	119		37 - 144	12/14/18 12:26	12/17/18 10:58	1

**Lab Sample ID: LCS 440-517158/2-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	10.0	6.68		ug/L		67	44 - 88
1,2-Dichlorobenzene	10.0	6.67		ug/L		67	43 - 87
1,2-Diphenylhydrazine(as Azobenzene)	10.1	8.05		ug/L		80	50 - 115
1,3-Dichlorobenzene	10.0	6.35		ug/L		64	41 - 83
1,4-Dichlorobenzene	10.0	6.41		ug/L		64	41 - 84
2,4,5-Trichlorophenol	10.0	8.10		ug/L		81	49 - 112
2,4,6-Trichlorophenol	10.0	8.87		ug/L		89	50 - 108
2,4-Dichlorophenol	10.0	7.96		ug/L		80	44 - 109
2,4-Dimethylphenol	10.0	8.20		ug/L		82	38 - 110
2,4-Dinitrophenol	20.0	11.9		ug/L		59	42 - 109
2,4-Dinitrotoluene	10.0	7.61		ug/L		76	56 - 114
2,6-Dinitrotoluene	10.0	8.54		ug/L		85	57 - 112
2-Chloronaphthalene	10.0	8.00		ug/L		80	46 - 103
2-Chlorophenol	10.0	8.00		ug/L		80	42 - 101
2-Methylnaphthalene	10.0	7.78		ug/L		78	49 - 100
2-Methylphenol	10.0	9.79		ug/L		98	31 - 120
2-Nitroaniline	10.0	8.53		ug/L		85	51 - 114
2-Nitrophenol	10.0	7.54		ug/L		75	44 - 104

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: LCS 440-517158/2-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3,3'-Dichlorobenzidine	10.0	4.17	J	ug/L		42	10 - 106
3-Methylphenol + 4-Methylphenol	10.0	8.88		ug/L		89	40 - 117
3-Nitroaniline	10.0	8.58		ug/L		86	32 - 124
4,6-Dinitro-2-methylphenol	20.0	15.5		ug/L		78	50 - 112
4-Bromophenyl phenyl ether	10.0	8.35		ug/L		83	54 - 110
4-Chloro-3-methylphenol	10.0	9.37		ug/L		94	53 - 115
4-Chloroaniline	10.0	10.6		ug/L		106	18 - 127
4-Chlorophenyl phenyl ether	10.0	8.42		ug/L		84	54 - 111
4-Nitroaniline	10.0	7.63		ug/L		76	39 - 123
4-Nitrophenol	20.0	13.1		ug/L		66	50 - 114
Acenaphthene	10.0	8.26		ug/L		83	55 - 105
Acenaphthylene	10.0	8.22		ug/L		82	52 - 111
Aniline	10.0	4.26	J	ug/L		43	30 - 115
Anthracene	10.0	8.63		ug/L		86	59 - 118
Benzidine	10.0	ND	*	ug/L		0	5 - 65
Benzo[a]anthracene	10.0	8.90		ug/L		89	59 - 116
Benzo[a]pyrene	10.0	10.1		ug/L		101	57 - 107
Benzo[b]fluoranthene	10.0	11.1		ug/L		111	60 - 112
Benzo[g,h,i]perylene	10.0	11.3		ug/L		113	26 - 150
Benzo[k]fluoranthene	10.0	10.9		ug/L		109	60 - 112
Benzoic acid	10.0	6.48	J	ug/L		65	21 - 142
Benzyl alcohol	10.0	7.79		ug/L		78	44 - 115
bis (2-chloroisopropyl) ether	10.0	7.58		ug/L		76	50 - 102
Bis(2-chloroethoxy)methane	10.0	8.61		ug/L		86	46 - 120
Bis(2-chloroethyl)ether	10.0	8.39		ug/L		84	50 - 101
Bis(2-ethylhexyl) phthalate	10.0	10.1		ug/L		101	52 - 121
Butyl benzyl phthalate	10.0	10.1		ug/L		101	57 - 123
Chrysene	10.0	8.79		ug/L		88	63 - 109
Dibenz(a,h)anthracene	10.0	10.4		ug/L		104	37 - 136
Dibenzofuran	10.0	7.71		ug/L		77	53 - 107
Diethyl phthalate	10.0	8.66		ug/L		87	58 - 118
Dimethyl phthalate	10.0	8.55		ug/L		85	55 - 115
Di-n-butyl phthalate	10.0	9.63		ug/L		96	59 - 129
Di-n-octyl phthalate	10.0	8.39		ug/L		84	47 - 127
Fluoranthene	10.0	9.35		ug/L		93	60 - 124
Fluorene	10.0	8.46		ug/L		85	54 - 113
Hexachlorobenzene	10.0	8.19		ug/L		82	53 - 105
Hexachlorobutadiene	10.0	5.96		ug/L		60	37 - 78
Hexachlorocyclopentadiene	10.0	3.90	J	ug/L		39	10 - 73
Hexachloroethane	10.0	5.96		ug/L		60	37 - 78
Indeno[1,2,3-cd]pyrene	10.0	10.7		ug/L		107	30 - 150
Isophorone	10.0	9.50		ug/L		95	47 - 131
Naphthalene	10.0	7.31		ug/L		73	32 - 117
Nitrobenzene	10.0	8.21		ug/L		82	51 - 104
N-Nitrosodimethylamine	10.0	9.54		ug/L		95	46 - 104
N-Nitrosodi-n-propylamine	10.0	9.99		ug/L		100	52 - 114
N-Nitrosodiphenylamine	10.0	7.50		ug/L		75	49 - 113
Pentachlorophenol	20.0	15.9		ug/L		79	54 - 116

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: LCS 440-517158/2-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenanthrene	10.0	8.63		ug/L		86	58 - 116
Phenol	10.0	7.58		ug/L		76	28 - 118
Pyrene	10.0	10.1		ug/L		101	62 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	87		40 - 120
2-Fluorobiphenyl	82		50 - 120
2-Fluorophenol (Surr)	77		30 - 120
Nitrobenzene-d5 (Surr)	82		45 - 120
Phenol-d6 (Surr)	84		35 - 120
Terphenyl-d14 (Surr)	101		37 - 144

**Lab Sample ID: LCSD 440-517158/3-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	10.0	6.33		ug/L		63	44 - 88	5	35
1,2-Dichlorobenzene	10.0	6.10		ug/L		61	43 - 87	9	35
1,2-Diphenylhydrazine(as Azobenzene)	10.1	7.65		ug/L		76	50 - 115	5	35
1,3-Dichlorobenzene	10.0	5.67		ug/L		57	41 - 83	11	35
1,4-Dichlorobenzene	10.0	5.88		ug/L		59	41 - 84	9	35
2,4,5-Trichlorophenol	10.0	7.67		ug/L		77	49 - 112	5	35
2,4,6-Trichlorophenol	10.0	8.00		ug/L		80	50 - 108	10	35
2,4-Dichlorophenol	10.0	7.71		ug/L		77	44 - 109	3	35
2,4-Dimethylphenol	10.0	7.96		ug/L		80	38 - 110	3	35
2,4-Dinitrophenol	20.0	9.64		ug/L		48	42 - 109	21	35
2,4-Dinitrotoluene	10.0	7.48		ug/L		75	56 - 114	2	35
2,6-Dinitrotoluene	10.0	8.35		ug/L		83	57 - 112	2	35
2-Chloronaphthalene	10.0	7.42		ug/L		74	46 - 103	8	35
2-Chlorophenol	10.0	7.52		ug/L		75	42 - 101	6	35
2-Methylnaphthalene	10.0	7.54		ug/L		75	49 - 100	3	35
2-Methylphenol	10.0	9.73		ug/L		97	31 - 120	1	35
2-Nitroaniline	10.0	8.04		ug/L		80	51 - 114	6	35
2-Nitrophenol	10.0	7.43		ug/L		74	44 - 104	2	35
3,3'-Dichlorobenzidine	10.0	7.39	*	ug/L		74	10 - 106	56	35
3-Methylphenol + 4-Methylphenol	10.0	8.45		ug/L		85	40 - 117	5	35
3-Nitroaniline	10.0	9.01		ug/L		90	32 - 124	5	35
4,6-Dinitro-2-methylphenol	20.0	16.5		ug/L		83	50 - 112	6	35
4-Bromophenyl phenyl ether	10.0	8.52		ug/L		85	54 - 110	2	35
4-Chloro-3-methylphenol	10.0	9.13		ug/L		91	53 - 115	3	35
4-Chloroaniline	10.0	12.3		ug/L		123	18 - 127	14	35
4-Chlorophenyl phenyl ether	10.0	8.00		ug/L		80	54 - 111	5	35
4-Nitroaniline	10.0	7.18		ug/L		72	39 - 123	6	35
4-Nitrophenol	20.0	12.7		ug/L		64	50 - 114	3	35
Acenaphthene	10.0	7.95		ug/L		80	55 - 105	4	35
Acenaphthylene	10.0	8.07		ug/L		81	52 - 111	2	35

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

**Lab Sample ID: LCSD 440-517158/3-A**  
**Matrix: Water**  
**Analysis Batch: 517525**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 517158**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aniline	10.0	4.27	J	ug/L		43	30 - 115	0	35
Anthracene	10.0	8.84		ug/L		88	59 - 118	2	35
Benzidine	10.0	ND	*	ug/L		0	5 - 65	NC	35
Benzo[a]anthracene	10.0	8.89		ug/L		89	59 - 116	0	35
Benzo[a]pyrene	10.0	9.12		ug/L		91	57 - 107	10	35
Benzo[b]fluoranthene	10.0	9.76		ug/L		98	60 - 112	12	35
Benzo[g,h,i]perylene	10.0	9.83		ug/L		98	26 - 150	14	35
Benzo[k]fluoranthene	10.0	9.81		ug/L		98	60 - 112	10	35
Benzoic acid	10.0	ND	*	ug/L		22	21 - 142	99	35
Benzyl alcohol	10.0	7.51		ug/L		75	44 - 115	4	35
bis (2-chloroisopropyl) ether	10.0	7.07		ug/L		71	50 - 102	7	35
Bis(2-chloroethoxy)methane	10.0	8.34		ug/L		83	46 - 120	3	35
Bis(2-chloroethyl)ether	10.0	7.55		ug/L		75	50 - 101	11	35
Bis(2-ethylhexyl) phthalate	10.0	9.78		ug/L		98	52 - 121	3	35
Butyl benzyl phthalate	10.0	9.72		ug/L		97	57 - 123	4	35
Chrysene	10.0	8.74		ug/L		87	63 - 109	1	35
Dibenz(a,h)anthracene	10.0	8.90		ug/L		89	37 - 136	16	35
Dibenzofuran	10.0	7.63		ug/L		76	53 - 107	1	35
Diethyl phthalate	10.0	7.99		ug/L		80	58 - 118	8	35
Dimethyl phthalate	10.0	8.20		ug/L		82	55 - 115	4	35
Di-n-butyl phthalate	10.0	10.5		ug/L		105	59 - 129	8	35
Di-n-octyl phthalate	10.0	9.95		ug/L		100	47 - 127	17	35
Fluoranthene	10.0	10.2		ug/L		102	60 - 124	9	35
Fluorene	10.0	8.18		ug/L		82	54 - 113	3	35
Hexachlorobenzene	10.0	8.97		ug/L		90	53 - 105	9	35
Hexachlorobutadiene	10.0	5.45		ug/L		55	37 - 78	9	35
Hexachlorocyclopentadiene	10.0	3.65	J	ug/L		36	10 - 73	7	35
Hexachloroethane	10.0	5.39		ug/L		54	37 - 78	10	35
Indeno[1,2,3-cd]pyrene	10.0	9.58		ug/L		96	30 - 150	11	35
Isophorone	10.0	9.24		ug/L		92	47 - 131	3	35
Naphthalene	10.0	6.93		ug/L		69	32 - 117	5	35
Nitrobenzene	10.0	7.97		ug/L		80	51 - 104	3	35
N-Nitrosodimethylamine	10.0	8.76		ug/L		88	46 - 104	8	35
N-Nitrosodi-n-propylamine	10.0	9.46		ug/L		95	52 - 114	5	35
N-Nitrosodiphenylamine	10.0	8.28		ug/L		83	49 - 113	10	35
Pentachlorophenol	20.0	13.6		ug/L		68	54 - 116	16	35
Phenanthrene	10.0	8.75		ug/L		88	58 - 116	1	35
Phenol	10.0	7.80		ug/L		78	28 - 118	3	35
Pyrene	10.0	9.69		ug/L		97	62 - 123	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol (Surr)	93		40 - 120
2-Fluorobiphenyl	76		50 - 120
2-Fluorophenol (Surr)	72		30 - 120
Nitrobenzene-d5 (Surr)	78		45 - 120
Phenol-d6 (Surr)	80		35 - 120
Terphenyl-d14 (Surr)	97		37 - 144

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

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

**Lab Sample ID: MB 440-516759/1-A**  
**Matrix: Water**  
**Analysis Batch: 516766**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 516759**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
4,4'-DDE	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
4,4'-DDT	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Aldrin	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
alpha-BHC	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
beta-BHC	ND		0.10	0.030	ug/L		12/13/18 06:14	12/13/18 12:18	1
Chlordane (technical)	ND		1.0	0.20	ug/L		12/13/18 06:14	12/13/18 12:18	1
delta-BHC	ND		0.20	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Dieldrin	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Endosulfan I	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Endosulfan II	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Endosulfan sulfate	ND		0.20	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Endrin	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Endrin aldehyde	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Endrin ketone	ND		0.10	0.040	ug/L		12/13/18 06:14	12/13/18 12:18	1
gamma-BHC (Lindane)	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Heptachlor	ND		0.10	0.030	ug/L		12/13/18 06:14	12/13/18 12:18	1
Heptachlor epoxide	ND		0.10	0.030	ug/L		12/13/18 06:14	12/13/18 12:18	1
Methoxychlor	ND		0.10	0.020	ug/L		12/13/18 06:14	12/13/18 12:18	1
Toxaphene	ND		5.0	0.50	ug/L		12/13/18 06:14	12/13/18 12:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	64		10 - 123	12/13/18 06:14	12/13/18 12:18	1
DCB Decachlorobiphenyl (Surr)	69		28 - 108	12/13/18 06:14	12/13/18 12:18	1

**Lab Sample ID: LCS 440-516759/2-A**  
**Matrix: Water**  
**Analysis Batch: 516766**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516759**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4,4'-DDD	0.200	0.152		ug/L		76	50 - 128
4,4'-DDE	0.200	0.146		ug/L		73	49 - 121
4,4'-DDT	0.200	0.172		ug/L		86	41 - 140
Aldrin	0.200	0.148		ug/L		74	37 - 115
alpha-BHC	0.200	0.146		ug/L		73	44 - 115
beta-BHC	0.200	0.152		ug/L		76	46 - 121
delta-BHC	0.200	0.149	J	ug/L		75	32 - 129
Dieldrin	0.200	0.153		ug/L		76	39 - 126
Endosulfan I	0.200	0.149		ug/L		75	47 - 115
Endosulfan II	0.200	0.148		ug/L		74	47 - 120
Endosulfan sulfate	0.200	0.146	J	ug/L		73	48 - 126
Endrin	0.200	0.150		ug/L		75	43 - 127
Endrin aldehyde	0.200	0.142		ug/L		71	43 - 120
Endrin ketone	0.200	0.157		ug/L		79	47 - 123
gamma-BHC (Lindane)	0.200	0.150		ug/L		75	45 - 116
Heptachlor	0.200	0.151		ug/L		75	37 - 115
Heptachlor epoxide	0.200	0.153		ug/L		76	41 - 129
Methoxychlor	0.200	0.188		ug/L		94	44 - 141

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	66		10 - 123
DCB Decachlorobiphenyl (Surr)	69		28 - 108

Lab Sample ID: LCSD 440-516759/3-A  
 Matrix: Water  
 Analysis Batch: 516766

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 516759

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
4,4'-DDD	0.200	0.152		ug/L		76	50 - 128	0	26	
4,4'-DDE	0.200	0.148		ug/L		74	49 - 121	1	22	
4,4'-DDT	0.200	0.179		ug/L		89	41 - 140	4	20	
Aldrin	0.200	0.153		ug/L		77	37 - 115	2	24	
alpha-BHC	0.200	0.147		ug/L		74	44 - 115	1	26	
beta-BHC	0.200	0.155		ug/L		77	46 - 121	2	27	
delta-BHC	0.200	0.152	J	ug/L		76	32 - 129	2	35	
Dieldrin	0.200	0.157		ug/L		78	39 - 126	3	35	
Endosulfan I	0.200	0.150		ug/L		75	47 - 115	1	27	
Endosulfan II	0.200	0.151		ug/L		76	47 - 120	2	29	
Endosulfan sulfate	0.200	0.151	J	ug/L		75	48 - 126	3	26	
Endrin	0.200	0.153		ug/L		76	43 - 127	2	35	
Endrin aldehyde	0.200	0.147		ug/L		74	43 - 120	4	35	
Endrin ketone	0.200	0.160		ug/L		80	47 - 123	2	27	
gamma-BHC (Lindane)	0.200	0.153		ug/L		76	45 - 116	2	28	
Heptachlor	0.200	0.150		ug/L		75	37 - 115	1	35	
Heptachlor epoxide	0.200	0.156		ug/L		78	41 - 129	3	35	
Methoxychlor	0.200	0.198		ug/L		99	44 - 141	5	35	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	65		10 - 123
DCB Decachlorobiphenyl (Surr)	70		28 - 108

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 440-516759/1-A  
 Matrix: Water  
 Analysis Batch: 516821

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 516759

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1016	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1
Aroclor 1221	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1
Aroclor 1232	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1
Aroclor 1242	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1
Aroclor 1248	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1
Aroclor 1254	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1
Aroclor 1260	ND		1.0	0.25	ug/L		12/13/18 06:14	12/13/18 10:47	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl (Surr)	73		29 - 115	12/13/18 06:14	12/13/18 10:47	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 440-516759/4-A**  
**Matrix: Water**  
**Analysis Batch: 516821**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516759**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aroclor 1016	4.00	3.44		ug/L		86	39 - 145
Aroclor 1260	4.00	3.58		ug/L		90	37 - 137

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	86		29 - 115

**Lab Sample ID: LCSD 440-516759/5-A**  
**Matrix: Water**  
**Analysis Batch: 516821**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 516759**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Aroclor 1016	4.00	3.39		ug/L		85	39 - 145	2	30
Aroclor 1260	4.00	3.54		ug/L		89	37 - 137	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	85		29 - 115

## Method: 8141A - Organophosphorous Pesticides (GC)

**Lab Sample ID: MB 180-265642/1-A**  
**Matrix: Water**  
**Analysis Batch: 265686**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265642**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Azinphos-methyl	ND		1.0	0.26	ug/L		12/14/18 10:50	12/17/18 06:18	1
Bolstar	ND		1.0	0.14	ug/L		12/14/18 10:50	12/17/18 06:18	1
Chlorpyrifos	ND		1.0	0.23	ug/L		12/14/18 10:50	12/17/18 06:18	1
Coumaphos	ND		1.0	0.13	ug/L		12/14/18 10:50	12/17/18 06:18	1
Demeton, Total	ND		2.0	0.16	ug/L		12/14/18 10:50	12/17/18 06:18	1
Diazinon	ND		1.0	0.18	ug/L		12/14/18 10:50	12/17/18 06:18	1
Dichlorvos	ND		1.0	0.11	ug/L		12/14/18 10:50	12/17/18 06:18	1
Dimethoate	ND		1.0	0.22	ug/L		12/14/18 10:50	12/17/18 06:18	1
Disulfoton	ND		1.0	0.24	ug/L		12/14/18 10:50	12/17/18 06:18	1
EPN	ND		1.0	0.26	ug/L		12/14/18 10:50	12/17/18 06:18	1
Famphur	ND		1.0	0.11	ug/L		12/14/18 10:50	12/17/18 06:18	1
Fensulfothion	ND		1.0	0.28	ug/L		12/14/18 10:50	12/17/18 06:18	1
Fenthion	ND		1.0	0.11	ug/L		12/14/18 10:50	12/17/18 06:18	1
Malathion	ND		1.0	0.21	ug/L		12/14/18 10:50	12/17/18 06:18	1
Methyl parathion	ND		1.0	0.17	ug/L		12/14/18 10:50	12/17/18 06:18	1
Mevinphos	ND		1.0	0.44	ug/L		12/14/18 10:50	12/17/18 06:18	1
O,O,O-Triethyl phosphorothioate	ND		1.0	0.15	ug/L		12/14/18 10:50	12/17/18 06:18	1
Parathion	ND		1.0	0.19	ug/L		12/14/18 10:50	12/17/18 06:18	1
Phorate	ND		1.0	0.18	ug/L		12/14/18 10:50	12/17/18 06:18	1
Ronnel	ND		1.0	0.23	ug/L		12/14/18 10:50	12/17/18 06:18	1
Stirophos	ND		1.0	0.16	ug/L		12/14/18 10:50	12/17/18 06:18	1
Sulfotepp	ND		1.0	0.15	ug/L		12/14/18 10:50	12/17/18 06:18	1
Tokuthion	ND		1.0	0.22	ug/L		12/14/18 10:50	12/17/18 06:18	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8141A - Organophosphorous Pesticides (GC) (Continued)

**Lab Sample ID: MB 180-265642/1-A**  
**Matrix: Water**  
**Analysis Batch: 265686**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265642**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Trichloronate	ND		1.0	0.25	ug/L		12/14/18 10:50	12/17/18 06:18	1
Mocap	ND		1.0	0.16	ug/L		12/14/18 10:50	12/17/18 06:18	1
Thionazin	ND		1.0	0.36	ug/L		12/14/18 10:50	12/17/18 06:18	1
Surrogate	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Triphenylphosphate	108		79 - 116				12/14/18 10:50	12/17/18 06:18	1
Tributyl phosphate	81		55 - 106				12/14/18 10:50	12/17/18 06:18	1

**Lab Sample ID: LCS 180-265642/2-A**  
**Matrix: Water**  
**Analysis Batch: 265686**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 265642**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
								Azinphos-methyl
Bolstar	10.0	9.62		ug/L		96	86 - 126	
Chlorpyrifos	10.0	11.2		ug/L		112	89 - 129	
Coumaphos	10.0	10.2		ug/L		102	82 - 132	
Demeton, Total	10.0	11.4		ug/L		114	66 - 150	
Diazinon	10.0	9.58		ug/L		96	71 - 140	
Dichlorvos	10.0	12.1		ug/L		121	61 - 150	
Dimethoate	10.0	10.5		ug/L		105	68 - 139	
Disulfoton	10.0	11.3		ug/L		113	60 - 150	
EPN	10.0	7.63		ug/L		76	69 - 124	
Famphur	10.0	9.27		ug/L		93	76 - 117	
Fensulfothion	10.0	9.20		ug/L		92	77 - 136	
Fenthion	10.0	11.1		ug/L		111	87 - 127	
Malathion	10.0	10.2		ug/L		102	83 - 123	
Methyl parathion	10.0	9.78		ug/L		98	82 - 124	
Mevinphos	10.0	8.43		ug/L		84	72 - 131	
O,O,O-Triethyl phosphorothioate	10.0	10.0		ug/L		100	77 - 117	
Parathion	10.0	8.81		ug/L		88	81 - 121	
Phorate	10.0	8.99		ug/L		90	77 - 117	
Ronnel	10.0	11.1		ug/L		111	85 - 125	
Stirophos	10.0	9.69		ug/L		97	77 - 128	
Sulfotepp	10.0	9.28		ug/L		93	82 - 122	
Tokuthion	10.0	9.59		ug/L		96	85 - 125	
Trichloronate	10.0	11.3		ug/L		113	85 - 125	
Mocap	10.0	9.07		ug/L		91	75 - 131	
Thionazin	10.0	8.90		ug/L		89	71 - 126	
Surrogate	LCS	LCS	Limits			D	%Rec	%Rec. Limits
	%Recovery	Qualifier						
Triphenylphosphate	104		79 - 116					
Tributyl phosphate	89		55 - 106					

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8141A - Organophosphorous Pesticides (GC) (Continued)

**Lab Sample ID: LCSD 180-265642/3-A**  
**Matrix: Water**  
**Analysis Batch: 265686**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 265642**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Azinphos-methyl	10.0	9.04		ug/L		90	59 - 138	3	15
Bolstar	10.0	9.93		ug/L		99	86 - 126	3	15
Chlorpyrifos	10.0	11.5		ug/L		115	89 - 129	3	15
Coumaphos	10.0	10.5		ug/L		105	82 - 132	3	15
Demeton, Total	10.0	11.5		ug/L		115	66 - 150	1	19
Diazinon	10.0	9.76		ug/L		98	71 - 140	2	22
Dichlorvos	10.0	12.4		ug/L		124	61 - 150	3	17
Dimethoate	10.0	10.9		ug/L		109	68 - 139	4	29
Disulfoton	10.0	11.6		ug/L		116	60 - 150	3	35
EPN	10.0	7.91		ug/L		79	69 - 124	4	15
Famphur	10.0	9.80		ug/L		98	76 - 117	6	16
Fensulfothion	10.0	9.58		ug/L		96	77 - 136	4	31
Fenthion	10.0	11.5		ug/L		115	87 - 127	3	15
Malathion	10.0	10.7		ug/L		107	83 - 123	5	15
Methyl parathion	10.0	10.1		ug/L		101	82 - 124	3	15
Mevinphos	10.0	8.56		ug/L		86	72 - 131	2	26
O,O,O-Triethyl phosphorothioate	10.0	10.3		ug/L		103	77 - 117	3	15
Parathion	10.0	9.15		ug/L		91	81 - 121	4	15
Phorate	10.0	9.11		ug/L		91	77 - 117	1	15
Ronnel	10.0	11.3		ug/L		113	85 - 125	2	15
Stirophos	10.0	9.83		ug/L		98	77 - 128	1	15
Sulfotepp	10.0	9.54		ug/L		95	82 - 122	3	15
Tokuthion	10.0	9.95		ug/L		100	85 - 125	4	15
Trichloronate	10.0	11.6		ug/L		116	85 - 125	2	15
Mocap	10.0	9.39		ug/L		94	75 - 131	3	15
Thionazin	10.0	9.12		ug/L		91	71 - 126	2	15

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Triphenylphosphate	103		79 - 116
Tributyl phosphate	90		55 - 106

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 180-265649/1-A**  
**Matrix: Water**  
**Analysis Batch: 265912**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265649**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		1.0	0.21	ug/L		12/14/18 14:30	12/18/18 22:29	20
2,4-D	ND		4.0	0.74	ug/L		12/14/18 14:30	12/18/18 22:29	20
2,4-DB	ND		4.0	0.89	ug/L		12/14/18 14:30	12/18/18 22:29	20
Dalapon	ND		5.0	3.7	ug/L		12/14/18 14:30	12/18/18 22:29	20
Dicamba	ND		2.0	0.68	ug/L		12/14/18 14:30	12/18/18 22:29	20
Dichlorprop	ND		4.0	0.99	ug/L		12/14/18 14:30	12/18/18 22:29	20
Dinoseb	ND		0.90	0.57	ug/L		12/14/18 14:30	12/18/18 22:29	20
MCPA	ND		400	140	ug/L		12/14/18 14:30	12/18/18 22:29	20
MCPP	ND		400	290	ug/L		12/14/18 14:30	12/18/18 22:29	20

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 8151A - Herbicides (GC) (Continued)

**Lab Sample ID: MB 180-265649/1-A**  
**Matrix: Water**  
**Analysis Batch: 265912**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 265649**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	ND		0.50	0.23	ug/L		12/14/18 14:30	12/18/18 22:29	20
Silvex (2,4,5-TP)	ND		1.0	0.25	ug/L		12/14/18 14:30	12/18/18 22:29	20

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	76		20 - 105	12/14/18 14:30	12/18/18 22:29	20

**Lab Sample ID: LCS 180-265649/2-A**  
**Matrix: Water**  
**Analysis Batch: 265912**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 265649**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-T	5.00	3.08		ug/L		62	11 - 101
2,4-D	20.0	14.1		ug/L		70	10 - 100
2,4-DB	20.0	14.0		ug/L		70	13 - 109
Dalapon	20.0	10.5		ug/L		53	10 - 100
Dicamba	10.0	8.71		ug/L		87	10 - 119
Dichlorprop	20.0	13.4		ug/L		67	16 - 108
Dinoseb	20.0	27.3		ug/L		136	12 - 150
MCPA	2000	1250		ug/L		62	10 - 101
MCPP	2000	1480		ug/L		74	14 - 120
Pentachlorophenol	5.00	4.05		ug/L		81	31 - 125
Silvex (2,4,5-TP)	5.00	3.61		ug/L		72	23 - 109

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid	74		20 - 105

**Lab Sample ID: LCSD 180-265649/3-A**  
**Matrix: Water**  
**Analysis Batch: 265912**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 265649**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,5-T	5.00	2.88		ug/L		58	11 - 101	7	35
2,4-D	20.0	14.6		ug/L		73	10 - 100	3	35
2,4-DB	20.0	13.6		ug/L		68	13 - 109	3	35
Dalapon	20.0	10.8		ug/L		54	10 - 100	3	35
Dicamba	10.0	9.18		ug/L		92	10 - 119	5	35
Dichlorprop	20.0	13.2		ug/L		66	16 - 108	1	35
Dinoseb	20.0	28.1		ug/L		140	12 - 150	3	35
MCPA	2000	1150		ug/L		57	10 - 101	9	35
MCPP	2000	1430		ug/L		72	14 - 120	3	35
Pentachlorophenol	5.00	4.35		ug/L		87	31 - 125	7	35
Silvex (2,4,5-TP)	5.00	3.55		ug/L		71	23 - 109	2	33

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4-Dichlorophenylacetic acid	73		20 - 105

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-517804/1-A**  
**Matrix: Water**  
**Analysis Batch: 518223**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.010	0.0060	mg/L		12/18/18 07:30	12/19/18 13:29	1
Arsenic	ND		0.010	0.0089	mg/L		12/18/18 07:30	12/19/18 13:29	1
Barium	ND		0.010	0.0050	mg/L		12/18/18 07:30	12/19/18 13:29	1
Beryllium	ND		0.0020	0.0010	mg/L		12/18/18 07:30	12/19/18 13:29	1
Cadmium	ND		0.0050	0.0025	mg/L		12/18/18 07:30	12/19/18 13:29	1
Chromium	ND		0.0050	0.0025	mg/L		12/18/18 07:30	12/19/18 13:29	1
Cobalt	ND		0.010	0.0050	mg/L		12/18/18 07:30	12/19/18 13:29	1
Copper	ND		0.010	0.0050	mg/L		12/18/18 07:30	12/19/18 13:29	1
Lead	ND		0.0050	0.0038	mg/L		12/18/18 07:30	12/19/18 13:29	1
Nickel	ND		0.010	0.0050	mg/L		12/18/18 07:30	12/19/18 13:29	1
Selenium	ND		0.010	0.0087	mg/L		12/18/18 07:30	12/19/18 13:29	1
Silver	ND		0.010	0.0050	mg/L		12/18/18 07:30	12/19/18 13:29	1
Thallium	ND		0.010	0.0080	mg/L		12/18/18 07:30	12/19/18 13:29	1
Tin	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 13:29	1

**Lab Sample ID: LCS 440-517804/2-A**  
**Matrix: Water**  
**Analysis Batch: 518223**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.00	0.998		mg/L		100	80 - 120
Arsenic	1.00	0.963		mg/L		96	80 - 120
Barium	1.00	0.969		mg/L		97	80 - 120
Beryllium	1.00	0.967		mg/L		97	80 - 120
Cadmium	1.00	0.971		mg/L		97	80 - 120
Chromium	1.00	0.974		mg/L		97	80 - 120
Cobalt	1.00	0.978		mg/L		98	80 - 120
Copper	1.00	0.995		mg/L		100	80 - 120
Lead	1.00	0.963		mg/L		96	80 - 120
Nickel	1.00	0.974		mg/L		97	80 - 120
Selenium	1.00	0.938		mg/L		94	80 - 120
Silver	0.500	0.487		mg/L		97	80 - 120
Thallium	1.00	0.965		mg/L		96	80 - 120
Tin	1.00	0.955		mg/L		95	80 - 120

**Lab Sample ID: 440-226841-N-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 518223**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		1.00	0.944		mg/L		94	75 - 125
Arsenic	0.019		1.00	0.998		mg/L		98	75 - 125
Barium	0.36		1.00	1.36		mg/L		100	75 - 125
Beryllium	0.0027		1.00	0.990		mg/L		99	75 - 125
Cadmium	ND		1.00	0.960		mg/L		96	75 - 125
Chromium	0.083		1.00	1.07		mg/L		99	75 - 125
Cobalt	0.016		1.00	1.00		mg/L		99	75 - 125
Copper	0.075		1.00	1.15		mg/L		108	75 - 125

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: 440-226841-N-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 518223**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	0.051		1.00	1.03		mg/L		97	75 - 125
Nickel	0.054		1.00	1.03		mg/L		98	75 - 125
Selenium	ND		1.00	0.951		mg/L		95	75 - 125
Silver	ND		0.500	0.506		mg/L		101	75 - 125
Thallium	ND		1.00	0.981		mg/L		98	75 - 125
Tin	ND		1.00	0.973		mg/L		97	75 - 125

**Lab Sample ID: 440-226841-N-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 518223**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		1.00	0.951		mg/L		95	75 - 125	1	20
Arsenic	0.019		1.00	0.977		mg/L		96	75 - 125	2	20
Barium	0.36		1.00	1.34		mg/L		98	75 - 125	1	20
Beryllium	0.0027		1.00	0.977		mg/L		97	75 - 125	1	20
Cadmium	ND		1.00	0.949		mg/L		95	75 - 125	1	20
Chromium	0.083		1.00	1.05		mg/L		96	75 - 125	2	20
Cobalt	0.016		1.00	0.989		mg/L		97	75 - 125	1	20
Copper	0.075		1.00	1.13		mg/L		105	75 - 125	2	20
Lead	0.051		1.00	1.01		mg/L		96	75 - 125	1	20
Nickel	0.054		1.00	1.01		mg/L		96	75 - 125	2	20
Selenium	ND		1.00	0.938		mg/L		94	75 - 125	1	20
Silver	ND		0.500	0.500		mg/L		100	75 - 125	1	20
Thallium	ND		1.00	0.970		mg/L		97	75 - 125	1	20
Tin	ND		1.00	0.966		mg/L		97	75 - 125	1	20

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 440-517737/1-A**  
**Matrix: Water**  
**Analysis Batch: 518005**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517737**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00010	mg/L		12/18/18 10:57	12/18/18 16:12	1

**Lab Sample ID: LCS 440-517737/2-A**  
**Matrix: Water**  
**Analysis Batch: 518005**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517737**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00800	0.00743		mg/L		93	80 - 120

**Lab Sample ID: 440-227592-I-2-C MS**  
**Matrix: Water**  
**Analysis Batch: 518005**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 517737**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.00800	0.00821		mg/L		103	75 - 125

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

**Lab Sample ID: 440-227592-I-2-D MSD**  
**Matrix: Water**  
**Analysis Batch: 518005**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 517737**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00800	0.00843		mg/L		105	75 - 125	3	20

## Method: SM 4500 CN E - Cyanide, Total

**Lab Sample ID: MB 440-518275/1-A**  
**Matrix: Water**  
**Analysis Batch: 518610**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 518275**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.025	0.013	mg/L		12/19/18 21:01	12/20/18 22:58	1

**Lab Sample ID: LCS 440-518275/2-A**  
**Matrix: Water**  
**Analysis Batch: 518610**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 518275**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.200	0.191		mg/L		95	90 - 110

**Lab Sample ID: 440-227267-F-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 518610**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 518275**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		0.200	0.195		mg/L		97	70 - 115

**Lab Sample ID: 440-227267-F-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 518610**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 518275**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		0.200	0.197		mg/L		99	70 - 115	1	15

## Method: SM 4500 S2 D - Sulfide, Total

**Lab Sample ID: MB 440-516975/3**  
**Matrix: Water**  
**Analysis Batch: 516975**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Sulfide	ND		0.050	0.027	mg/L			12/13/18 17:09	1

**Lab Sample ID: LCS 440-516975/4**  
**Matrix: Water**  
**Analysis Batch: 516975**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.500	0.471		mg/L		94	80 - 120

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Method: SM 4500 S2 D - Sulfide, Total (Continued)

**Lab Sample ID: LCSD 440-516975/5**  
**Matrix: Water**  
**Analysis Batch: 516975**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	0.500	0.416		mg/L		83	80 - 120	12	20

**Lab Sample ID: 440-227508-J-2 MS**  
**Matrix: Water**  
**Analysis Batch: 516975**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	ND	F1	0.500	0.210	F1	mg/L		42	70 - 130		

**Lab Sample ID: 440-227508-J-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 516975**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	ND	F1	0.500	0.237	F1	mg/L		47	70 - 130	12	30

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## GC/MS VOA

### Analysis Batch: 516755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-2	Field Blank	Total/NA	Water	8260B	
440-227501-3	Trip Blank	Total/NA	Water	8260B	
MB 440-516755/6	Method Blank	Total/NA	Water	8260B	
LCS 440-516755/7	Lab Control Sample	Total/NA	Water	8260B	
440-227497-E-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-227497-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 517236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8260B	
MB 440-517236/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517236/5	Lab Control Sample	Total/NA	Water	8260B	
440-227505-C-4 MS	Matrix Spike	Total/NA	Water	8260B	
440-227505-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 517299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8260B	
MB 440-517299/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517299/6	Lab Control Sample	Total/NA	Water	8260B	
LCSD 440-517299/7	Lab Control Sample Dup	Total/NA	Water	8260B	
550-114911-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
550-114911-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 517983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-2	Field Blank	Total/NA	Water	8260B	
440-227501-3	Trip Blank	Total/NA	Water	8260B	
MB 440-517983/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517983/5	Lab Control Sample	Total/NA	Water	8260B	
440-227298-A-6 MS	Matrix Spike	Total/NA	Water	8260B	
440-227298-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 518076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-2 - RA	Field Blank	Total/NA	Water	8260B	
MB 440-518076/4	Method Blank	Total/NA	Water	8260B	
LCS 440-518076/5	Lab Control Sample	Total/NA	Water	8260B	
440-227633-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-227633-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 518077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1 - DL	Deep Leachate	Total/NA	Water	8260B	
MB 440-518077/4	Method Blank	Total/NA	Water	8260B	
LCS 440-518077/5	Lab Control Sample	Total/NA	Water	8260B	
440-227650-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
440-227650-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## GC/MS Semi VOA

### Prep Batch: 517158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1 - DL	Deep Leachate	Total/NA	Water	3520C	
440-227501-1	Deep Leachate	Total/NA	Water	3520C	
MB 440-517158/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-517158/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-517158/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Prep Batch: 517162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	3520C	
440-227501-1 - RA	Deep Leachate	Total/NA	Water	3520C	
MB 440-517162/1-A	Method Blank	Total/NA	Water	3520C	
MB 440-517162/1-A - RA	Method Blank	Total/NA	Water	3520C	
LCS 440-517162/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-517162/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Prep Batch: 517164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	3520C	
MB 440-517164/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-517164/3-A	Lab Control Sample	Total/NA	Water	3520C	
440-227502-E-4-A MS	Matrix Spike	Total/NA	Water	3520C	
440-227502-E-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

### Analysis Batch: 517525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8270C LL	517158
440-227501-1 - DL	Deep Leachate	Total/NA	Water	8270C LL	517158
MB 440-517158/1-A	Method Blank	Total/NA	Water	8270C LL	517158
LCS 440-517158/2-A	Lab Control Sample	Total/NA	Water	8270C LL	517158
LCSD 440-517158/3-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	517158

### Analysis Batch: 517530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8270C	517164
MB 440-517164/1-A	Method Blank	Total/NA	Water	8270C	517164
LCS 440-517164/3-A	Lab Control Sample	Total/NA	Water	8270C	517164
440-227502-E-4-A MS	Matrix Spike	Total/NA	Water	8270C	517164
440-227502-E-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	517164

### Analysis Batch: 517600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8270C	517162
MB 440-517162/1-A	Method Blank	Total/NA	Water	8270C	517162
LCS 440-517162/2-A	Lab Control Sample	Total/NA	Water	8270C	517162
LCSD 440-517162/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	517162

### Analysis Batch: 518498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1 - RA	Deep Leachate	Total/NA	Water	8270C	517162
MB 440-517162/1-A - RA	Method Blank	Total/NA	Water	8270C	517162

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 518725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8270C	517162
MB 440-517162/1-A	Method Blank	Total/NA	Water	8270C	517162

## GC Semi VOA

### Prep Batch: 265642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	3510C	
MB 180-265642/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-265642/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-265642/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Prep Batch: 265649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8151A	
MB 180-265649/1-A	Method Blank	Total/NA	Water	8151A	
LCS 180-265649/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 180-265649/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 265686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8141A	265642
MB 180-265642/1-A	Method Blank	Total/NA	Water	8141A	265642
LCS 180-265642/2-A	Lab Control Sample	Total/NA	Water	8141A	265642
LCSD 180-265642/3-A	Lab Control Sample Dup	Total/NA	Water	8141A	265642

### Analysis Batch: 265912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8151A	265649
MB 180-265649/1-A	Method Blank	Total/NA	Water	8151A	265649
LCS 180-265649/2-A	Lab Control Sample	Total/NA	Water	8151A	265649
LCSD 180-265649/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	265649

### Prep Batch: 516759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	3510C	
MB 440-516759/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-516759/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 440-516759/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-516759/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 440-516759/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 516766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8081A	516759
MB 440-516759/1-A	Method Blank	Total/NA	Water	8081A	516759
LCS 440-516759/2-A	Lab Control Sample	Total/NA	Water	8081A	516759
LCSD 440-516759/3-A	Lab Control Sample Dup	Total/NA	Water	8081A	516759

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## GC Semi VOA (Continued)

### Analysis Batch: 516821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	8082	516759
MB 440-516759/1-A	Method Blank	Total/NA	Water	8082	516759
LCS 440-516759/4-A	Lab Control Sample	Total/NA	Water	8082	516759
LCSD 440-516759/5-A	Lab Control Sample Dup	Total/NA	Water	8082	516759

## Metals

### Prep Batch: 517737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	7470A	
MB 440-517737/1-A	Method Blank	Total/NA	Water	7470A	
LCS 440-517737/2-A	Lab Control Sample	Total/NA	Water	7470A	
440-227592-I-2-C MS	Matrix Spike	Total/NA	Water	7470A	
440-227592-I-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

### Prep Batch: 517804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total Recoverable	Water	3005A	
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	3005A	
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 518005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	7470A	517737
MB 440-517737/1-A	Method Blank	Total/NA	Water	7470A	517737
LCS 440-517737/2-A	Lab Control Sample	Total/NA	Water	7470A	517737
440-227592-I-2-C MS	Matrix Spike	Total/NA	Water	7470A	517737
440-227592-I-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	517737

### Analysis Batch: 518223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total Recoverable	Water	6010B	517804
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	6010B	517804
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517804
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	6010B	517804
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	517804

## General Chemistry

### Analysis Batch: 516975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	SM 4500 S2 D	
MB 440-516975/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-516975/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 440-516975/5	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
440-227508-J-2 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
440-227508-J-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## General Chemistry (Continued)

### Prep Batch: 518275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	Distill/CN	
MB 440-518275/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 440-518275/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
440-227267-F-1-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-227267-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	

### Analysis Batch: 518610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227501-1	Deep Leachate	Total/NA	Water	SM 4500 CN E	518275
MB 440-518275/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	518275
LCS 440-518275/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	518275
440-227267-F-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	518275
440-227267-F-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	518275

# Definitions/Glossary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Qualifiers

### GC/MS VOA

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

### GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

### GC Semi VOA

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

### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

## Glossary

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

TestAmerica Irvine

# Accreditation/Certification Summary

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227501-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

## Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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Chain of Custody Record 208044

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING  
 TestAmerica Laboratories, Inc.  
 TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: C. P. Weiland Date: 12-12-18  
 Tel/Fax: 858-451-1336 Lab Contact: V. Tamova Carrier: TA  
 Analysis Turnaround Time:  CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below:  2 weeks  1 week  2 days  1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Site Contact	Date	Carrier	COC No
Deep leachate	12/11/18	0850	G	WWT	21	X	X	860B-ANALY-133	12/11/18	TA	
Field Blanks	12/11/18	1100	G	WWT	11	X	X	860B-ANALY-133	12/11/18	TA	
Tap Blanks	12/11/18	1100	G	WWT	11	X	X	860B-ANALY-133	12/11/18	TA	



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
 Possible Hazard Identification: \_\_\_\_\_  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:  
 Custody Seals Intact  Yes  No  
 Relinquished by: [Signature] Date/Time: 12/13/18  
 Relinquished by: [Signature] Date/Time: 12/13/18  
 Relinquished by: [Signature] Date/Time: 12/13/18  
 Company: Geo-Less  
 Company: TA IRV  
 Company: \_\_\_\_\_  
 Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Cor'd: \_\_\_\_\_  
 Received by: [Signature] Date/Time: 12/12/18 1435  
 Received by: [Signature] Date/Time: 12/12/18 1435  
 Received by: [Signature] Date/Time: 12/12/18 1435  
 Therm ID No: \_\_\_\_\_  
 1.2/1.4 4.7/4.9 0.4/0.6 IR-88

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# Chain of Custody Record



440-227501 Chain of Custody

Client Contact: Shipping/Receiving  
Company: TestAmerica Laboratories, Inc.  
Address: 301 Alpha Drive, RIDC Park, Pittsburgh, PA, 15238  
Phone: 412-963-7058(Tel) 412-963-2468(Fax)  
Email: [Redacted]

Lab PM: Tomova, Rossina D  
E-Mail: rossina.tomova@lestam.com  
Accreditations Required (See note):

Due Date Requested: 12/20/2018  
TAT Requested (days):  
PO #:  
WO #:  
Project #: 44007851  
SSOW#:

Field Filtered Sample (Yes or No)   
Perform MS/MSD (Yes or No)   
8141A/3510C 8141-Full appendix II   
8151A/8151A AP 8151A (Herbicides) appendix II list

Sample Identification - Client ID (Lab ID)  
Deep Leachate (440-227501-1)

Sample Date: 12/12/18  
Sample Time: 08:50 Pacific  
Sample Type (C=Comp, G=grab)  
Matrix (W=Water, S=solid, O=soil, BT=Tissue, A=Air)  
Preservation Code: Water

Analysis Requested  
Total Number of containers: 2  
J flag

Special Instructions/Note:  
Preservation Codes:  
A - HCl  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Archlor  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDA  
Other:  
M - Hexane  
N - None  
O - AgNO2  
P - Na2O4S  
Q - Na2SO3  
R - Na2SO3  
S - H2SO4  
T - TSP Dodecahydrate  
U - Acetone  
V - MCAA  
W - pH 4-5  
Z - other (specify)

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification  
Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by: [Signature]  
Relinquished by: [Signature]  
Relinquished by: [Signature]  
Relinquished by: [Signature]

Date: 12/18/18  
Date: 12/18/18  
Date: 12/18/18  
Date: 12/18/18

Company: [Redacted]  
Company: [Redacted]  
Company: [Redacted]  
Company: [Redacted]

Received by: [Signature]  
Received by: [Signature]  
Received by: [Signature]  
Received by: [Signature]

Cooler Temperature(s) °C and Other Remarks:



# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-227501-1

**Login Number: 227501**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

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



# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-227501-1

**Login Number: 227501**

**List Number: 2**

**Creator: Neri, Tom**

**List Source: TestAmerica Pittsburgh**

**List Creation: 12/14/18 09:45 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.8/0.8
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-227604-1

Client Project/Site: Republic Sunshine Canyon

For:

Geo-Logic Associates

11415 West Bernardo Court

Suite 200

San Diego, California 92127

Attn: Kyle Welchans



Authorized for release by:

12/31/2018 11:41:03 AM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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# Sample Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-227604-1	DW-2	Water	12/13/18 08:15	12/13/18 18:20
440-227604-2	DW-3	Water	12/13/18 09:35	12/13/18 18:20
440-227604-3	Combined Subdrains	Water	12/13/18 09:20	12/13/18 18:20
440-227604-4	Extraction Trench	Water	12/13/18 10:20	12/13/18 18:20
440-227604-5	Field Blank	Water	12/13/18 00:01	12/13/18 18:20
440-227604-6	Trip Blank	Water	12/13/18 00:01	12/13/18 18:20

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# Case Narrative

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Job ID: 440-227604-1**

**Laboratory: TestAmerica Irvine**

## Narrative

**Job Narrative  
440-227604-1**

### Comments

No additional comments.

### Receipt

The samples were received on 12/13/2018 6:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5° C and 3.0° C.

### GC/MS VOA

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

### GC/MS Semi VOA

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

### HPLC/IC

Method(s) 300.0: The following samples were diluted for Nitrate as N due to the nature of the sample matrix: DW-2 (440-227604-1) and Extraction Trench (440-227604-4). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples were diluted for Fluoride due to the nature of the sample matrix: DW-2 (440-227604-1) and Extraction Trench (440-227604-4). Elevated reporting limits (RLs) are provided.

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

### Metals

Method(s) 3005A: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of 6: Extraction Trench (440-227604-4). The sample(s) was preserved to the appropriate pH in the laboratory.

1.0mL HNO3 added 12/16/18 @6:54-7:03  
HNO3 lot#0000203839

Method(s) 6010B: Due to the high concentration of Sodium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 440-517352 and analytical batch 440-517461 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 6010B: The post digestion spike % recovery for Calcium associated with batch 440-518257 was outside of control limits.

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

### General Chemistry

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

### Organic Prep

Method(s) 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-517292. 3520C 8270/1625 1,4 DXN/NDMA

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

### VOA Prep

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

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: DW-2**  
**Date Collected: 12/13/18 08:15**  
**Date Received: 12/13/18 18:20**

**Lab Sample ID: 440-227604-1**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 11:31	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Acrolein	ND		50	2.5	ug/L			12/18/18 08:56	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 08:56	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 11:31	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 11:31	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 11:31	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 11:31	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 11:31	1
Acetone	ND		20	10	ug/L			12/19/18 11:31	1
Acetonitrile	ND		20	10	ug/L			12/19/18 11:31	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 11:31	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 11:31	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 11:31	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 11:31	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 11:31	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 11:31	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 11:31	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 11:31	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 11:31	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 11:31	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 11:31	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 11:31	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 11:31	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: DW-2**  
**Date Collected: 12/13/18 08:15**  
**Date Received: 12/13/18 18:20**

**Lab Sample ID: 440-227604-1**  
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 11:31	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 11:31	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Propionitrile	ND		20	10	ug/L			12/19/18 11:31	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 11:31	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 11:31	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 11:31	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 11:31	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 11:31	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 11:31	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 11:31	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 11:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 11:31	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.8	T J	ug/L		5.71			12/19/18 11:31	1
Unknown	9.3	T J	ug/L		7.21			12/19/18 11:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/18/18 08:56	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/18/18 08:56	1
Toluene-d8 (Surr)	97		80 - 128		12/19/18 11:31	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/19/18 11:31	1
Dibromofluoromethane (Surr)	102		76 - 132		12/18/18 08:56	1
Dibromofluoromethane (Surr)	99		76 - 132		12/19/18 11:31	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/15/18 07:10	12/17/18 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	60		30 - 120	12/15/18 07:10	12/17/18 18:43	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/13/18 20:26	2
Nitrate as N	ND		0.22	0.11	mg/L			12/13/18 20:26	2
Chloride	11		1.0	0.50	mg/L			12/13/18 20:26	2
Fluoride	0.52	J	1.0	0.50	mg/L			12/13/18 20:26	2
Sulfate	1100		50	25	mg/L			12/13/18 20:40	100

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.58		0.050	0.025	mg/L		12/16/18 07:13	12/16/18 20:49	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: DW-2**  
**Date Collected: 12/13/18 08:15**  
**Date Received: 12/13/18 18:20**

**Lab Sample ID: 440-227604-1**  
**Matrix: Water**

**Method: 6010B - Metals (ICP) - Total Recoverable (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 20:49	1
Iron	1.3		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 20:49	1
Magnesium	73		0.020	0.010	mg/L		12/16/18 07:13	12/16/18 20:49	1
Manganese	0.14		0.020	0.015	mg/L		12/16/18 07:13	12/16/18 20:49	1
Potassium	4.2		0.50	0.25	mg/L		12/16/18 07:13	12/16/18 20:49	1
Sodium	420		0.50	0.26	mg/L		12/16/18 07:13	12/17/18 13:06	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	3.2		0.20	0.10	mg/L			12/21/18 15:18	1
Chemical Oxygen Demand	18	J	20	10	mg/L			12/22/18 11:42	1
Total Dissolved Solids	1900		20	10	mg/L			12/19/18 10:17	1
Total Sulfide	ND		0.050	0.027	mg/L			12/18/18 16:14	1
Total Organic Carbon	1.3		0.10	0.050	mg/L			12/14/18 10:43	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	360		4.0	4.0	mg/L			12/14/18 10:02	1
Bicarbonate Alkalinity as CaCO3	360		4.0	4.0	mg/L			12/14/18 10:02	1
Carbon Dioxide, Free	16		2.0	2.0	mg/L			12/27/18 15:04	1

**Client Sample ID: DW-3**

**Date Collected: 12/13/18 09:35**  
**Date Received: 12/13/18 18:20**

**Lab Sample ID: 440-227604-2**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 11:55	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Acrolein	ND		50	2.5	ug/L			12/18/18 12:10	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 12:10	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 11:55	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 11:55	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 11:55	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 11:55	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 11:55	1
Acetone	ND		20	10	ug/L			12/19/18 11:55	1
Acetonitrile	ND		20	10	ug/L			12/19/18 11:55	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 11:55	1

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# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: DW-3**

**Lab Sample ID: 440-227604-2**

**Date Collected: 12/13/18 09:35**

**Matrix: Water**

**Date Received: 12/13/18 18:20**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 11:55	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 11:55	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 11:55	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 11:55	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 11:55	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 11:55	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 11:55	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 11:55	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 11:55	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 11:55	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 11:55	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 11:55	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 11:55	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 11:55	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Propionitrile	ND		20	10	ug/L			12/19/18 11:55	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
<b>t-Butanol</b>	<b>8.1</b>	<b>J ID</b>	10	5.0	ug/L			12/19/18 11:55	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 11:55	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 11:55	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 11:55	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 11:55	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 11:55	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 11:55	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 11:55	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 11:55	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	3.5	T J	ug/L		4.50			12/19/18 11:55	1
Unknown	2.7	T J	ug/L		5.71			12/19/18 11:55	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: DW-3**  
**Date Collected: 12/13/18 09:35**  
**Date Received: 12/13/18 18:20**

**Lab Sample ID: 440-227604-2**  
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.5	T J	ug/L		7.21			12/19/18 11:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128					12/18/18 12:10	1
4-Bromofluorobenzene (Surr)	101		80 - 120					12/18/18 12:10	1
Toluene-d8 (Surr)	95		80 - 128					12/19/18 11:55	1
4-Bromofluorobenzene (Surr)	100		80 - 120					12/19/18 11:55	1
Dibromofluoromethane (Surr)	101		76 - 132					12/18/18 12:10	1
Dibromofluoromethane (Surr)	104		76 - 132					12/19/18 11:55	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		12/15/18 07:10	12/17/18 19:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	56		30 - 120				12/15/18 07:10	12/17/18 19:06	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/13/18 21:32	1
Nitrate as N	ND		0.11	0.055	mg/L			12/13/18 21:32	1
<b>Chloride</b>	<b>15</b>		0.50	0.25	mg/L			12/13/18 21:32	1
<b>Fluoride</b>	<b>0.34</b>	<b>J</b>	0.50	0.25	mg/L			12/13/18 21:32	1
<b>Sulfate</b>	<b>1200</b>		25	13	mg/L			12/13/18 21:46	50

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>0.051</b>		0.050	0.025	mg/L		12/16/18 07:13	12/16/18 20:55	1
<b>Calcium</b>	<b>290</b>		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 20:55	1
<b>Iron</b>	<b>0.57</b>		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 20:55	1
<b>Magnesium</b>	<b>110</b>		0.020	0.010	mg/L		12/16/18 07:13	12/16/18 20:55	1
<b>Manganese</b>	<b>0.067</b>		0.020	0.015	mg/L		12/16/18 07:13	12/16/18 20:55	1
<b>Potassium</b>	<b>8.6</b>		0.50	0.25	mg/L		12/16/18 07:13	12/16/18 20:55	1
<b>Sodium</b>	<b>68</b>		0.50	0.26	mg/L		12/16/18 07:13	12/17/18 13:08	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ammonia (as N)</b>	<b>0.62</b>		0.20	0.10	mg/L			12/21/18 15:23	1
<b>Chemical Oxygen Demand</b>	<b>15</b>	<b>J</b>	20	10	mg/L			12/22/18 11:42	1
<b>Total Dissolved Solids</b>	<b>1900</b>		10	5.0	mg/L			12/19/18 10:17	1
Total Sulfide	ND		0.050	0.027	mg/L			12/18/18 16:14	1
<b>Total Organic Carbon</b>	<b>0.29</b>		0.10	0.050	mg/L			12/14/18 10:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Alkalinity as CaCO3</b>	<b>160</b>		4.0	4.0	mg/L			12/14/18 10:19	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>160</b>		4.0	4.0	mg/L			12/14/18 10:19	1
<b>Carbon Dioxide, Free</b>	<b>16</b>		2.0	2.0	mg/L			12/27/18 15:04	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: Combined Subdrains**

**Lab Sample ID: 440-227604-3**

**Date Collected: 12/13/18 09:20**

**Matrix: Water**

**Date Received: 12/13/18 18:20**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 12:19	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Acrolein	ND		50	2.5	ug/L			12/18/18 12:34	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 12:34	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 12:19	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 12:19	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 12:19	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 12:19	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 12:19	1
Acetone	ND		20	10	ug/L			12/19/18 12:19	1
Acetonitrile	ND		20	10	ug/L			12/19/18 12:19	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 12:19	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 12:19	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 12:19	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 12:19	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 12:19	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 12:19	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
<b>cis-1,2-Dichloroethene</b>	<b>1.2</b>		0.50	0.25	ug/L			12/19/18 12:19	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 12:19	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 12:19	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 12:19	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 12:19	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 12:19	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 12:19	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 12:19	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Client Sample ID: Combined Subdrains

Lab Sample ID: 440-227604-3

Date Collected: 12/13/18 09:20

Matrix: Water

Date Received: 12/13/18 18:20

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 12:19	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 12:19	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Propionitrile	ND		20	10	ug/L			12/19/18 12:19	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
<b>t-Butanol</b>	<b>5.4</b>	<b>J ID</b>	10	5.0	ug/L			12/19/18 12:19	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 12:19	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 12:19	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 12:19	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 12:19	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 12:19	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 12:19	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 12:19	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 12:19	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.7	T J	ug/L		5.71			12/19/18 12:19	1
Unknown	9.5	T J	ug/L		7.21			12/19/18 12:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128		12/18/18 12:34	1
4-Bromofluorobenzene (Surr)	100		80 - 120		12/18/18 12:34	1
Toluene-d8 (Surr)	96		80 - 128		12/19/18 12:19	1
4-Bromofluorobenzene (Surr)	100		80 - 120		12/19/18 12:19	1
Dibromofluoromethane (Surr)	105		76 - 132		12/18/18 12:34	1
Dibromofluoromethane (Surr)	102		76 - 132		12/19/18 12:19	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>9.6</b>		1.0	0.25	ug/L		12/15/18 07:10	12/17/18 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	65		30 - 120	12/15/18 07:10	12/17/18 19:29	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bromide</b>	<b>1.4</b>		1.0	0.50	mg/L			12/13/18 22:00	2
<b>Nitrate as N</b>	<b>3.4</b>		0.22	0.11	mg/L			12/13/18 22:00	2
<b>Chloride</b>	<b>120</b>		50	25	mg/L			12/13/18 22:14	100
<b>Fluoride</b>	<b>1.2</b>		1.0	0.50	mg/L			12/13/18 22:00	2
<b>Sulfate</b>	<b>1600</b>		50	25	mg/L			12/13/18 22:14	100

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>0.56</b>		0.050	0.025	mg/L		12/16/18 07:13	12/16/18 21:19	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Client Sample ID: Combined Subdrains

Lab Sample ID: 440-227604-3

Date Collected: 12/13/18 09:20

Matrix: Water

Date Received: 12/13/18 18:20

### Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	340		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 21:19	1
Iron	53		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 21:19	1
Magnesium	240		0.020	0.010	mg/L		12/16/18 07:13	12/16/18 21:19	1
Manganese	3.9		0.020	0.015	mg/L		12/16/18 07:13	12/16/18 21:19	1
Potassium	14		0.50	0.25	mg/L		12/16/18 07:13	12/16/18 21:19	1
Sodium	190		0.50	0.26	mg/L		12/16/18 07:13	12/17/18 13:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.92		0.20	0.10	mg/L			12/21/18 15:28	1
Chemical Oxygen Demand	110		20	10	mg/L			12/22/18 11:42	1
Total Dissolved Solids	2900		20	10	mg/L			12/19/18 10:17	1
Total Sulfide	ND		0.050	0.027	mg/L			12/18/18 16:16	1
Total Organic Carbon	18		1.0	0.50	mg/L			12/14/18 11:07	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	290		4.0	4.0	mg/L			12/14/18 10:28	1
Bicarbonate Alkalinity as CaCO3	290		4.0	4.0	mg/L			12/14/18 10:28	1
Carbon Dioxide, Free	64		2.0	2.0	mg/L			12/27/18 15:04	1

## Client Sample ID: Extraction Trench

Lab Sample ID: 440-227604-4

Date Collected: 12/13/18 10:20

Matrix: Water

Date Received: 12/13/18 18:20

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 12:43	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Acrolein	ND		50	2.5	ug/L			12/18/18 12:58	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 12:58	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 12:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 12:43	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
<b>1,4-Dichlorobenzene</b>	<b>0.78</b>		0.50	0.25	ug/L			12/19/18 12:43	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 12:43	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 12:43	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 12:43	1
Acetone	30		20	10	ug/L			12/19/18 12:43	1
Acetonitrile	ND		20	10	ug/L			12/19/18 12:43	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 12:43	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: Extraction Trench**

**Lab Sample ID: 440-227604-4**

Date Collected: 12/13/18 10:20

Matrix: Water

Date Received: 12/13/18 18:20

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 12:43	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 12:43	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 12:43	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 12:43	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 12:43	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
<b>cis-1,2-Dichloroethene</b>	<b>1.0</b>		0.50	0.25	ug/L			12/19/18 12:43	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 12:43	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 12:43	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 12:43	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 12:43	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 12:43	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 12:43	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 12:43	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 12:43	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 12:43	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Propionitrile	ND		20	10	ug/L			12/19/18 12:43	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
<b>t-Butanol</b>	<b>57</b>		10	5.0	ug/L			12/19/18 12:43	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
<b>Tetrahydrofuran</b>	<b>60</b>		10	5.0	ug/L			12/19/18 12:43	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 12:43	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 12:43	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 12:43	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 12:43	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 12:43	1
<b>2-Butanone (MEK)</b>	<b>8.5</b>		5.0	2.5	ug/L			12/19/18 12:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 12:43	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	7.9	T J	ug/L		5.71			12/19/18 12:43	1
Unknown	9.8	T J	ug/L		7.21			12/19/18 12:43	1

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# Client Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Client Sample ID: Extraction Trench

Lab Sample ID: 440-227604-4

Date Collected: 12/13/18 10:20

Matrix: Water

Date Received: 12/13/18 18:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128		12/18/18 12:58	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/18/18 12:58	1
Toluene-d8 (Surr)	93		80 - 128		12/19/18 12:43	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/19/18 12:43	1
Dibromofluoromethane (Surr)	106		76 - 132		12/18/18 12:58	1
Dibromofluoromethane (Surr)	104		76 - 132		12/19/18 12:43	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	40		2.5	0.63	ug/L		12/16/18 16:31	12/18/18 19:34	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	47		30 - 120	12/16/18 16:31	12/18/18 19:34	2.5

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	6.4		5.0	2.5	mg/L			12/13/18 22:29	10
Nitrate as N	ND		1.1	0.55	mg/L			12/13/18 22:29	10
Chloride	420		50	25	mg/L			12/14/18 02:01	100
Fluoride	ND		5.0	2.5	mg/L			12/13/18 22:29	10
Sulfate	1400		50	25	mg/L			12/14/18 02:01	100

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.6		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 18:10	2
Calcium	420		0.20	0.10	mg/L		12/18/18 07:30	12/19/18 18:10	2
Iron	97		0.20	0.10	mg/L		12/18/18 07:30	12/19/18 18:10	2
Magnesium	220		0.040	0.020	mg/L		12/18/18 07:30	12/19/18 18:10	2
Manganese	2.9		0.040	0.030	mg/L		12/18/18 07:30	12/19/18 18:10	2
Potassium	62		1.0	0.50	mg/L		12/18/18 07:30	12/19/18 18:10	2
Sodium	440		1.0	0.52	mg/L		12/18/18 07:30	12/19/18 18:10	2

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	21		1.0	0.50	mg/L			12/21/18 15:34	5
Chemical Oxygen Demand	320		20	10	mg/L			12/22/18 11:42	1
Total Dissolved Solids	4200		50	25	mg/L			12/19/18 10:17	1
Total Sulfide	ND		0.050	0.027	mg/L			12/18/18 16:16	1
Total Organic Carbon	100		1.0	0.50	mg/L			12/14/18 11:23	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	1100		4.0	4.0	mg/L			12/14/18 10:46	1
Bicarbonate Alkalinity as CaCO3	1100		4.0	4.0	mg/L			12/14/18 10:46	1
Carbon Dioxide, Free	150		2.0	2.0	mg/L			12/27/18 15:04	1

## Client Sample ID: Field Blank

Lab Sample ID: 440-227604-5

Date Collected: 12/13/18 00:01

Matrix: Water

Date Received: 12/13/18 18:20

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 13:07	1

TestAmerica Irvine



# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227604-5**

Date Collected: 12/13/18 00:01

Matrix: Water

Date Received: 12/13/18 18:20

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Acrolein	ND		50	2.5	ug/L			12/18/18 13:23	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 13:23	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 13:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 13:07	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 13:07	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 13:07	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 13:07	1
Acetone	ND		20	10	ug/L			12/19/18 13:07	1
Acetonitrile	ND		20	10	ug/L			12/19/18 13:07	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 13:07	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 13:07	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 13:07	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 13:07	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 13:07	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 13:07	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 13:07	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 13:07	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 13:07	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 13:07	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 13:07	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 13:07	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 13:07	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 13:07	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-227604-5**

Date Collected: 12/13/18 00:01

Matrix: Water

Date Received: 12/13/18 18:20

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 13:07	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Propionitrile	ND		20	10	ug/L			12/19/18 13:07	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 13:07	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 13:07	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 13:07	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 13:07	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 13:07	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 13:07	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 13:07	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 13:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 13:07	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.8	T J	ug/L		7.21			12/19/18 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/18/18 13:23	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/18/18 13:23	1
Toluene-d8 (Surr)	96		80 - 128		12/19/18 13:07	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/19/18 13:07	1
Dibromofluoromethane (Surr)	108		76 - 132		12/18/18 13:23	1
Dibromofluoromethane (Surr)	103		76 - 132		12/19/18 13:07	1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227604-6**

Date Collected: 12/13/18 00:01

Matrix: Water

Date Received: 12/13/18 18:20

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 13:31	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Acrolein	ND		50	2.5	ug/L			12/18/18 13:47	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 13:47	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 13:31	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 13:31	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:31	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227604-6**

**Date Collected: 12/13/18 00:01**

**Matrix: Water**

**Date Received: 12/13/18 18:20**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 13:31	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 13:31	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 13:31	1
Acetone	ND		20	10	ug/L			12/19/18 13:31	1
Acetonitrile	ND		20	10	ug/L			12/19/18 13:31	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 13:31	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 13:31	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 13:31	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 13:31	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 13:31	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 13:31	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 13:31	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 13:31	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 13:31	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 13:31	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 13:31	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 13:31	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 13:31	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 13:31	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 13:31	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Propionitrile	ND		20	10	ug/L			12/19/18 13:31	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 13:31	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 13:31	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 13:31	1

TestAmerica Irvine

# Client Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-227604-6**

**Date Collected: 12/13/18 00:01**

**Matrix: Water**

**Date Received: 12/13/18 18:20**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 13:31	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 13:31	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 13:31	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 13:31	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 13:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 13:31	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.6	TJ	ug/L		7.21			12/19/18 13:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 128		12/18/18 13:47	1
4-Bromofluorobenzene (Surr)	100		80 - 120		12/18/18 13:47	1
Toluene-d8 (Surr)	97		80 - 128		12/19/18 13:31	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/19/18 13:31	1
Dibromofluoromethane (Surr)	102		76 - 132		12/18/18 13:47	1
Dibromofluoromethane (Surr)	105		76 - 132		12/19/18 13:31	1

# Method Summary

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
350.1	Nitrogen, Ammonia	MCAWW	TAL IRV
410.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 4500 CO2 C	Free Carbon Dioxide	SM	TAL IRV
SM 4500 S2 D	Sulfide, Total	SM	TAL IRV
SM 5310C	TOC	SM	TAL IRV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

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

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



# Lab Chronicle

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Client Sample ID: DW-2

Date Collected: 12/13/18 08:15

Date Received: 12/13/18 18:20

## Lab Sample ID: 440-227604-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	518076	12/19/18 11:31	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517783	12/18/18 08:56	TCN	TAL IRV
Total/NA	Prep	3520C			1005 mL	1.0 mL	517292	12/15/18 07:10	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 18:43	L1B	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516840	12/13/18 20:26	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516841	12/13/18 20:26	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516841	12/13/18 20:40	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517352	12/16/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 20:49	TQN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517352	12/16/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517627	12/17/18 13:06	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 15:18	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:42	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			517137	12/14/18 10:02	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	518121	12/19/18 10:17	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	519628	12/27/18 15:04	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	517986	12/18/18 16:14	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	517284	12/14/18 10:43	YZ	TAL IRV

## Client Sample ID: DW-3

Date Collected: 12/13/18 09:35

Date Received: 12/13/18 18:20

## Lab Sample ID: 440-227604-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	518076	12/19/18 11:55	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517783	12/18/18 12:10	TCN	TAL IRV
Total/NA	Prep	3520C			1000 mL	1.0 mL	517292	12/15/18 07:10	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 19:06	L1B	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	516840	12/13/18 21:32	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	516841	12/13/18 21:32	NTN	TAL IRV
Total/NA	Analysis	300.0		50			516841	12/13/18 21:46	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517352	12/16/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 20:55	TQN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517352	12/16/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517627	12/17/18 13:08	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 15:23	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:42	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			517137	12/14/18 10:19	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	518121	12/19/18 10:17	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	519628	12/27/18 15:04	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	517986	12/18/18 16:14	KMY	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Client Sample ID: DW-3

Date Collected: 12/13/18 09:35

Date Received: 12/13/18 18:20

## Lab Sample ID: 440-227604-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	517284	12/14/18 10:54	YZ	TAL IRV

## Client Sample ID: Combined Subdrains

Date Collected: 12/13/18 09:20

Date Received: 12/13/18 18:20

## Lab Sample ID: 440-227604-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	518076	12/19/18 12:19	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517783	12/18/18 12:34	TCN	TAL IRV
Total/NA	Prep	3520C			1005 mL	1.0 mL	517292	12/15/18 07:10	JAA	TAL IRV
Total/NA	Analysis	8270C		1			517530	12/17/18 19:29	L1B	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516840	12/13/18 22:00	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	516841	12/13/18 22:00	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516841	12/13/18 22:14	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517352	12/16/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517461	12/16/18 21:19	TQN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517352	12/16/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	6010B		1			517627	12/17/18 13:10	VS	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8.0 mL	518887	12/21/18 15:28	KMY	TAL IRV
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:42	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			517137	12/14/18 10:28	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	518121	12/19/18 10:17	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	519628	12/27/18 15:04	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	517986	12/18/18 16:16	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	517284	12/14/18 11:07	YZ	TAL IRV

## Client Sample ID: Extraction Trench

Date Collected: 12/13/18 10:20

Date Received: 12/13/18 18:20

## Lab Sample ID: 440-227604-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	518076	12/19/18 12:43	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517783	12/18/18 12:58	TCN	TAL IRV
Total/NA	Prep	3520C			990 mL	1 mL	517405	12/16/18 16:31	AJP	TAL IRV
Total/NA	Analysis	8270C		2.5			518004	12/18/18 19:34	HN	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	516840	12/13/18 22:29	NTN	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	516841	12/13/18 22:29	NTN	TAL IRV
Total/NA	Analysis	300.0		100			516841	12/14/18 02:01	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	517804	12/18/18 07:30	KE	TAL IRV
Total Recoverable	Analysis	6010B		2			518257	12/19/18 18:10	P1R	TAL IRV
Total/NA	Analysis	350.1		5	0.8 mL	8.0 mL	518887	12/21/18 15:34	KMY	TAL IRV

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# Lab Chronicle

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Client Sample ID: Extraction Trench

Lab Sample ID: 440-227604-4

Date Collected: 12/13/18 10:20

Matrix: Water

Date Received: 12/13/18 18:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	410.4		1	2.5 mL	2.5 mL	518916	12/22/18 11:42	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			517137	12/14/18 10:46	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	518121	12/19/18 10:17	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	519628	12/27/18 15:04	KYP	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	517986	12/18/18 16:16	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	517284	12/14/18 11:23	YZ	TAL IRV

## Client Sample ID: Field Blank

Lab Sample ID: 440-227604-5

Date Collected: 12/13/18 00:01

Matrix: Water

Date Received: 12/13/18 18:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	518076	12/19/18 13:07	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517783	12/18/18 13:23	TCN	TAL IRV

## Client Sample ID: Trip Blank

Lab Sample ID: 440-227604-6

Date Collected: 12/13/18 00:01

Matrix: Water

Date Received: 12/13/18 18:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	518076	12/19/18 13:31	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	517783	12/18/18 13:47	TCN	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-517783/4**

**Matrix: Water**

**Analysis Batch: 517783**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		50	2.5	ug/L			12/18/18 08:07	1
Acrylonitrile	ND		50	1.0	ug/L			12/18/18 08:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128					12/18/18 08:07	1
4-Bromofluorobenzene (Surr)	101		80 - 120					12/18/18 08:07	1
Dibromofluoromethane (Surr)	101		76 - 132					12/18/18 08:07	1

**Lab Sample ID: LCS 440-517783/5**

**Matrix: Water**

**Analysis Batch: 517783**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	25.0	27.2	J	ug/L		109	10 - 145
Acrylonitrile	250	275		ug/L		110	48 - 140
Surrogate	%Recovery	Qualifier	Limits				
Toluene-d8 (Surr)	97		80 - 128				
4-Bromofluorobenzene (Surr)	100		80 - 120				
Dibromofluoromethane (Surr)	107		76 - 132				

**Lab Sample ID: 440-227604-1 MS**

**Matrix: Water**

**Analysis Batch: 517783**

**Client Sample ID: DW-2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrolein	ND		25.0	23.4	J	ug/L		94	10 - 147
Acrylonitrile	ND		250	260		ug/L		104	38 - 144
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	101		80 - 128						
4-Bromofluorobenzene (Surr)	104		80 - 120						
Dibromofluoromethane (Surr)	100		76 - 132						

**Lab Sample ID: 440-227604-1 MSD**

**Matrix: Water**

**Analysis Batch: 517783**

**Client Sample ID: DW-2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	ND		25.0	25.7	J	ug/L		103	10 - 147	9	40
Acrylonitrile	ND		250	262		ug/L		105	38 - 144	1	40
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	95		80 - 128								
4-Bromofluorobenzene (Surr)	100		80 - 120								
Dibromofluoromethane (Surr)	103		76 - 132								

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-518076/4**

**Matrix: Water**

**Analysis Batch: 518076**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/19/18 08:18	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/19/18 08:18	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/19/18 08:18	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/19/18 08:18	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/19/18 08:18	1
2-Hexanone	ND		5.0	2.5	ug/L			12/19/18 08:18	1
Acetone	ND		20	10	ug/L			12/19/18 08:18	1
Acetonitrile	ND		20	10	ug/L			12/19/18 08:18	1
Acrolein	ND		5.0	2.5	ug/L			12/19/18 08:18	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/19/18 08:18	1
Benzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Allyl chloride	ND		1.0	0.50	ug/L			12/19/18 08:18	1
Bromoform	ND		1.0	0.40	ug/L			12/19/18 08:18	1
Bromomethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/19/18 08:18	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Chloroethane	ND		1.0	0.40	ug/L			12/19/18 08:18	1
Chloroform	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Chloromethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Dibromomethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/19/18 08:18	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 08:18	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Iodomethane	ND		2.0	1.0	ug/L			12/19/18 08:18	1
Isobutyl alcohol	ND		25	13	ug/L			12/19/18 08:18	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/19/18 08:18	1
Methylacrylonitrile	ND		10	2.5	ug/L			12/19/18 08:18	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/19/18 08:18	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/19/18 08:18	1

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# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-518076/4**

**Matrix: Water**

**Analysis Batch: 518076**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Naphthalene	ND		1.0	0.40	ug/L			12/19/18 08:18	1
o-Xylene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Propionitrile	ND		20	10	ug/L			12/19/18 08:18	1
Styrene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
t-Butanol	ND		10	5.0	ug/L			12/19/18 08:18	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/19/18 08:18	1
Toluene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/19/18 08:18	1
Trichloroethene	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/19/18 08:18	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/19/18 08:18	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/19/18 08:18	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/19/18 08:18	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/19/18 08:18	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/19/18 08:18	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	4.64	TJ	ug/L		5.71			12/19/18 08:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 128		12/19/18 08:18	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/19/18 08:18	1
Dibromofluoromethane (Surr)	97		76 - 132		12/19/18 08:18	1

**Lab Sample ID: LCS 440-518076/5**

**Matrix: Water**

**Analysis Batch: 518076**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	25.0	26.7		ug/L		107	63 - 130
1,1,1,2-Tetrachloroethane	25.0	23.6		ug/L		95	60 - 141
1,1,1-Trichloroethane	25.0	22.0		ug/L		88	70 - 130
1,1,2,2-Tetrachloroethane	25.0	26.7		ug/L		107	63 - 130
1,1,2-Trichloroethane	25.0	25.1		ug/L		100	70 - 130
1,1-Dichloroethane	25.0	23.2		ug/L		93	64 - 130
1,1-Dichloroethene	25.0	21.4		ug/L		85	70 - 130
1,1-Dichloropropene	25.0	21.6		ug/L		86	70 - 130
1,2,4-Trichlorobenzene	25.0	21.6		ug/L		87	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	24.8		ug/L		99	52 - 140
1,2-Dichlorobenzene	25.0	22.8		ug/L		91	70 - 130
1,2-Dichloroethane	25.0	22.1		ug/L		88	57 - 138
1,2-Dichloropropane	25.0	24.5		ug/L		98	67 - 130
1,3-Dichlorobenzene	25.0	23.3		ug/L		93	70 - 130

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-518076/5**

**Matrix: Water**

**Analysis Batch: 518076**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	25.0	23.9		ug/L		96	70 - 130
1,4-Dichlorobenzene	25.0	23.4		ug/L		93	70 - 130
2,2-Dichloropropane	25.0	22.3		ug/L		89	68 - 141
2-Hexanone	25.0	32.4		ug/L		129	10 - 150
Acetone	25.0	27.7		ug/L		111	10 - 150
Acrolein	25.0	20.2		ug/L		81	10 - 145
Acrylonitrile	250	265		ug/L		106	48 - 140
Benzene	25.0	21.6		ug/L		86	68 - 130
Bromoform	25.0	24.5		ug/L		98	60 - 148
Bromomethane	25.0	23.3		ug/L		93	64 - 139
Carbon disulfide	25.0	20.4		ug/L		81	52 - 136
Carbon tetrachloride	25.0	21.2		ug/L		85	60 - 150
Chlorobenzene	25.0	22.4		ug/L		89	70 - 130
Bromochloromethane	25.0	22.8		ug/L		91	70 - 130
Chloroethane	25.0	23.1		ug/L		92	64 - 135
Chloroform	25.0	23.0		ug/L		92	70 - 130
Chloromethane	25.0	21.7		ug/L		87	47 - 140
cis-1,2-Dichloroethene	25.0	21.8		ug/L		87	70 - 133
cis-1,3-Dichloropropene	25.0	25.4		ug/L		101	70 - 133
Dibromochloromethane	25.0	24.0		ug/L		96	69 - 145
Dibromomethane	25.0	21.2		ug/L		85	70 - 130
Bromodichloromethane	25.0	23.4		ug/L		94	70 - 132
Dichlorodifluoromethane	25.0	18.5		ug/L		74	29 - 150
Ethylbenzene	25.0	22.9		ug/L		91	70 - 130
m,p-Xylene	25.0	22.4		ug/L		90	70 - 130
Methylene Chloride	25.0	20.5		ug/L		82	52 - 130
Methyl tert-butyl ether	25.0	22.9		ug/L		91	63 - 131
Naphthalene	25.0	21.8		ug/L		87	60 - 140
o-Xylene	25.0	22.1		ug/L		88	70 - 130
Styrene	25.0	23.3		ug/L		93	70 - 134
t-Butanol	250	256		ug/L		102	70 - 130
Tetrachloroethene	25.0	21.1		ug/L		84	70 - 130
Toluene	25.0	21.9		ug/L		88	70 - 130
trans-1,2-Dichloroethene	25.0	22.0		ug/L		88	70 - 130
trans-1,3-Dichloropropene	25.0	25.8		ug/L		103	70 - 132
Trichloroethene	25.0	21.0		ug/L		84	70 - 130
Trichlorofluoromethane	25.0	22.2		ug/L		89	60 - 150
Vinyl acetate	25.0	28.9		ug/L		116	48 - 140
Vinyl chloride	25.0	20.8		ug/L		83	59 - 133
1,2-Dibromoethane (EDB)	25.0	23.7		ug/L		95	70 - 130
2-Butanone (MEK)	25.0	25.6		ug/L		102	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	30.3		ug/L		121	59 - 149

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	97		80 - 128
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227633-B-1 MS**

**Matrix: Water**

**Analysis Batch: 518076**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
1,2,3-Trichloropropane	ND		25.0	23.9		ug/L		96	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	22.7		ug/L		91	60 - 149
1,1,1-Trichloroethane	ND		25.0	22.5		ug/L		90	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	23.0		ug/L		92	63 - 130
1,1,2-Trichloroethane	ND		25.0	23.1		ug/L		93	70 - 130
1,1-Dichloroethane	ND		25.0	22.5		ug/L		90	65 - 130
1,1-Dichloroethene	ND		25.0	22.7		ug/L		91	70 - 130
1,1-Dichloropropene	ND		25.0	21.8		ug/L		87	64 - 130
1,2,4-Trichlorobenzene	0.44	J	25.0	20.7		ug/L		81	60 - 140
1,2-Dibromo-3-Chloropropane	ND		25.0	21.9		ug/L		88	48 - 140
1,2-Dichlorobenzene	ND		25.0	21.9		ug/L		88	70 - 130
1,2-Dichloroethane	ND		25.0	21.0		ug/L		84	56 - 146
1,2-Dichloropropane	ND		25.0	23.1		ug/L		93	69 - 130
1,3-Dichlorobenzene	ND		25.0	22.7		ug/L		91	70 - 130
1,3-Dichloropropane	ND		25.0	22.3		ug/L		89	70 - 130
1,4-Dichlorobenzene	ND		25.0	22.2		ug/L		89	70 - 130
2,2-Dichloropropane	ND		25.0	23.0		ug/L		92	69 - 138
2-Hexanone	ND		25.0	27.4		ug/L		110	10 - 150
Acetone	ND		25.0	26.0		ug/L		104	10 - 150
Acrolein	ND		25.0	17.6		ug/L		70	10 - 147
Acrylonitrile	ND		250	242		ug/L		97	38 - 144
Benzene	ND		25.0	21.6		ug/L		86	66 - 130
Bromoform	ND		25.0	22.8		ug/L		91	59 - 150
Bromomethane	ND		25.0	22.2		ug/L		89	62 - 131
Carbon disulfide	ND		25.0	20.9		ug/L		84	49 - 140
Carbon tetrachloride	ND		25.0	22.3		ug/L		89	60 - 150
Chlorobenzene	ND		25.0	21.7		ug/L		87	70 - 130
Bromochloromethane	ND		25.0	21.0		ug/L		84	70 - 130
Chloroethane	ND		25.0	22.0		ug/L		88	68 - 130
Chloroform	ND		25.0	22.0		ug/L		88	70 - 130
Chloromethane	ND		25.0	21.0		ug/L		84	39 - 144
cis-1,2-Dichloroethene	ND		25.0	21.4		ug/L		86	70 - 130
cis-1,3-Dichloropropene	ND		25.0	23.9		ug/L		95	70 - 133
Dibromochloromethane	ND		25.0	22.4		ug/L		89	70 - 148
Dibromomethane	ND		25.0	19.7		ug/L		79	70 - 130
Bromodichloromethane	ND		25.0	22.5		ug/L		90	70 - 138
Dichlorodifluoromethane	ND		25.0	17.4		ug/L		70	25 - 142
Ethylbenzene	ND		25.0	22.5		ug/L		90	70 - 130
m,p-Xylene	ND		25.0	22.1		ug/L		88	70 - 133
Methylene Chloride	ND		25.0	20.9		ug/L		84	52 - 130
Methyl tert-butyl ether	ND		25.0	21.7		ug/L		87	70 - 130
Naphthalene	1.1		25.0	19.5		ug/L		74	60 - 140
o-Xylene	ND		25.0	21.3		ug/L		85	70 - 133
Styrene	ND		25.0	20.8		ug/L		83	29 - 150
t-Butanol	ND		250	231		ug/L		92	70 - 130
Tetrachloroethene	ND		25.0	21.2		ug/L		85	70 - 137
Toluene	ND		25.0	21.6		ug/L		86	70 - 130
trans-1,2-Dichloroethene	ND		25.0	21.8		ug/L		87	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227633-B-1 MS**

**Client Sample ID: Matrix Spike**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 518076**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
trans-1,3-Dichloropropene	ND		25.0	24.1		ug/L		96	70 - 138
Trichloroethene	ND		25.0	20.9		ug/L		83	70 - 130
Trichlorofluoromethane	ND		25.0	23.0		ug/L		92	60 - 150
Vinyl acetate	ND		25.0	26.2		ug/L		105	23 - 150
Vinyl chloride	ND		25.0	21.2		ug/L		85	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	21.8		ug/L		87	70 - 131
2-Butanone (MEK)	ND		25.0	20.9		ug/L		83	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.6		ug/L		110	52 - 150
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	97		80 - 128						
4-Bromofluorobenzene (Surr)	104		80 - 120						
Dibromofluoromethane (Surr)	98		76 - 132						

**Lab Sample ID: 440-227633-B-1 MSD**

**Client Sample ID: Matrix Spike Duplicate**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 518076**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
1,2,3-Trichloropropene	ND		25.0	24.7		ug/L		99	60 - 130	3	30
1,1,1,2-Tetrachloroethane	ND		25.0	23.1		ug/L		92	60 - 149	2	20
1,1,1-Trichloroethane	ND		25.0	24.3		ug/L		97	70 - 130	8	20
1,1,1,2-Tetrachloroethane	ND		25.0	24.5		ug/L		98	63 - 130	6	30
1,1,2-Trichloroethane	ND		25.0	23.5		ug/L		94	70 - 130	1	25
1,1-Dichloroethane	ND		25.0	23.9		ug/L		96	65 - 130	6	20
1,1-Dichloroethene	ND		25.0	23.5		ug/L		94	70 - 130	4	20
1,1-Dichloropropene	ND		25.0	23.3		ug/L		93	64 - 130	7	20
1,2,4-Trichlorobenzene	0.44	J	25.0	21.3		ug/L		83	60 - 140	3	20
1,2-Dibromo-3-Chloropropane	ND		25.0	23.4		ug/L		93	48 - 140	6	30
1,2-Dichlorobenzene	ND		25.0	21.8		ug/L		87	70 - 130	0	20
1,2-Dichloroethane	ND		25.0	22.7		ug/L		91	56 - 146	8	20
1,2-Dichloropropane	ND		25.0	24.8		ug/L		99	69 - 130	7	20
1,3-Dichlorobenzene	ND		25.0	22.8		ug/L		91	70 - 130	1	20
1,3-Dichloropropane	ND		25.0	23.1		ug/L		93	70 - 130	4	25
1,4-Dichlorobenzene	ND		25.0	22.5		ug/L		90	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	24.8		ug/L		99	69 - 138	8	25
2-Hexanone	ND		25.0	29.6		ug/L		118	10 - 150	8	35
Acetone	ND		25.0	29.6		ug/L		119	10 - 150	13	35
Acrolein	ND		25.0	20.3		ug/L		81	10 - 147	14	40
Acrylonitrile	ND		25.0	26.1		ug/L		104	38 - 144	8	40
Benzene	ND		25.0	22.7		ug/L		91	66 - 130	5	20
Bromoform	ND		25.0	23.2		ug/L		93	59 - 150	1	25
Bromomethane	ND		25.0	23.7		ug/L		95	62 - 131	7	25
Carbon disulfide	ND		25.0	21.9		ug/L		87	49 - 140	5	20
Carbon tetrachloride	ND		25.0	24.4		ug/L		98	60 - 150	9	25
Chlorobenzene	ND		25.0	21.9		ug/L		88	70 - 130	1	20
Bromochloromethane	ND		25.0	22.8		ug/L		91	70 - 130	9	25
Chloroethane	ND		25.0	24.0		ug/L		96	68 - 130	9	25

TestAmerica Irvine



# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-227633-B-1 MSD**

**Matrix: Water**

**Analysis Batch: 518076**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloroform	ND		25.0	24.0		ug/L		96	70 - 130	9	20
Chloromethane	ND		25.0	22.0		ug/L		88	39 - 144	5	25
cis-1,2-Dichloroethene	ND		25.0	23.5		ug/L		94	70 - 130	9	20
cis-1,3-Dichloropropene	ND		25.0	24.5		ug/L		98	70 - 133	3	20
Dibromochloromethane	ND		25.0	22.5		ug/L		90	70 - 148	1	25
Dibromomethane	ND		25.0	20.7		ug/L		83	70 - 130	5	25
Bromodichloromethane	ND		25.0	24.1		ug/L		96	70 - 138	7	20
Dichlorodifluoromethane	ND		25.0	19.3		ug/L		77	25 - 142	10	30
Ethylbenzene	ND		25.0	22.8		ug/L		91	70 - 130	2	20
m,p-Xylene	ND		25.0	21.8		ug/L		87	70 - 133	1	25
Methylene Chloride	ND		25.0	21.7		ug/L		87	52 - 130	3	20
Methyl tert-butyl ether	ND		25.0	23.3		ug/L		93	70 - 130	7	25
Naphthalene	1.1		25.0	20.7		ug/L		78	60 - 140	6	30
o-Xylene	ND		25.0	21.4		ug/L		86	70 - 133	1	20
Styrene	ND		25.0	15.9		ug/L		63	29 - 150	27	35
t-Butanol	ND		250	241		ug/L		96	70 - 130	4	25
Tetrachloroethene	ND		25.0	22.1		ug/L		88	70 - 137	4	20
Toluene	ND		25.0	21.9		ug/L		88	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	23.1		ug/L		92	70 - 130	6	20
trans-1,3-Dichloropropene	ND		25.0	24.3		ug/L		97	70 - 138	1	25
Trichloroethene	ND		25.0	22.3		ug/L		89	70 - 130	7	20
Trichlorofluoromethane	ND		25.0	24.7		ug/L		99	60 - 150	7	25
Vinyl acetate	ND		25.0	27.8		ug/L		111	23 - 150	6	30
Vinyl chloride	ND		25.0	22.4		ug/L		89	50 - 137	6	30
1,2-Dibromoethane (EDB)	ND		25.0	22.0		ug/L		88	70 - 131	1	25
2-Butanone (MEK)	ND		25.0	24.4		ug/L		98	48 - 140	16	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.1		ug/L		116	52 - 150	5	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	94		80 - 128
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-517292/1-A**

**Matrix: Water**

**Analysis Batch: 517530**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 517292**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		1.0	0.25	ug/L		12/15/18 07:10	12/17/18 17:32	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,4-Dioxane-d8 (Surr)	82		30 - 120	12/15/18 07:10	12/17/18 17:32	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-517292/3-A**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517292**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.99	1.43		ug/L		72	35 - 120
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>
1,4-Dioxane-d8 (Surr)		67					30 - 120

**Lab Sample ID: LCSD 440-517292/4-A**  
**Matrix: Water**  
**Analysis Batch: 517530**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 517292**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.01	1.55		ug/L		77	35 - 120	8	35
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>		
1,4-Dioxane-d8 (Surr)		70					30 - 120		

**Lab Sample ID: MB 440-517405/1-A**  
**Matrix: Water**  
**Analysis Batch: 517809**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517405**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.26	ug/L		12/16/18 15:10	12/18/18 11:06	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,4-Dioxane-d8 (Surr)	76		30 - 120				12/16/18 15:10	12/18/18 11:06	1

**Lab Sample ID: LCS 440-517405/3-A**  
**Matrix: Water**  
**Analysis Batch: 517809**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517405**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.98	1.63		ug/L		82	35 - 120
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>
1,4-Dioxane-d8 (Surr)		79					30 - 120

**Lab Sample ID: 440-227669-E-3-A MSD**  
**Matrix: Water**  
**Analysis Batch: 517809**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 517405**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		1.98	1.49		ug/L		75	35 - 120	11	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8 (Surr)	65		30 - 120								

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-227669-F-3-B MS

Matrix: Water

Analysis Batch: 517809

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 517405

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
1,4-Dioxane	ND		1.97	1.66		ug/L		84	35 - 120
Surrogate	MS	MS	Limits						
1,4-Dioxane-d8 (Surr)	%Recovery	Qualifier		73					

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-516840/6

Matrix: Water

Analysis Batch: 516840

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	ND		0.11	0.055	mg/L			12/13/18 14:10	1

Lab Sample ID: LCS 440-516840/7

Matrix: Water

Analysis Batch: 516840

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
Nitrate as N	1.13	1.23		mg/L		109	90 - 110

Lab Sample ID: 440-227636-A-1 MS

Matrix: Water

Analysis Batch: 516840

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Nitrate as N	110	E	1.13	108	E 4	mg/L		109	80 - 120

Lab Sample ID: 440-227636-A-1 MSD

Matrix: Water

Analysis Batch: 516840

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Nitrate as N	110	E	1.13	108	E 4	mg/L		100	80 - 120	0	20

Lab Sample ID: MB 440-516841/6

Matrix: Water

Analysis Batch: 516841

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bromide	ND		0.50	0.25	mg/L			12/13/18 14:10	1
Chloride	ND		0.50	0.25	mg/L			12/13/18 14:10	1
Fluoride	ND		0.50	0.25	mg/L			12/13/18 14:10	1
Sulfate	ND		0.50	0.25	mg/L			12/13/18 14:10	1

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# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID:** LCS 440-516841/7  
**Matrix:** Water  
**Analysis Batch:** 516841

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	5.00	5.32		mg/L		106	90 - 110
Chloride	5.00	5.10		mg/L		102	90 - 110
Fluoride	5.00	4.64		mg/L		93	90 - 110
Sulfate	5.00	5.08		mg/L		102	90 - 110

**Lab Sample ID:** 440-227572-B-3 MS  
**Matrix:** Water  
**Analysis Batch:** 516841

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		5.00	4.97		mg/L		99	80 - 120
Chloride	48	E	5.00	54.0	E 4	mg/L		116	80 - 120
Fluoride	1.1		5.00	5.55		mg/L		90	80 - 120
Sulfate	320	E	5.00	329	E 4	mg/L		128	80 - 120

**Lab Sample ID:** 440-227572-B-3 MSD  
**Matrix:** Water  
**Analysis Batch:** 516841

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		5.00	4.93		mg/L		99	80 - 120	1	20
Chloride	48	E	5.00	54.0	E 4	mg/L		115	80 - 120	0	20
Fluoride	1.1		5.00	5.60		mg/L		91	80 - 120	1	20
Sulfate	320	E	5.00	329	E 4	mg/L		133	80 - 120	0	20

## Method: 6010B - Metals (ICP)

**Lab Sample ID:** MB 440-517352/1-A  
**Matrix:** Water  
**Analysis Batch:** 517461

**Client Sample ID:** Method Blank  
**Prep Type:** Total Recoverable  
**Prep Batch:** 517352

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/16/18 07:13	12/16/18 18:56	1
Calcium	ND		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 18:56	1
Iron	ND		0.10	0.050	mg/L		12/16/18 07:13	12/16/18 18:56	1
Magnesium	ND		0.020	0.010	mg/L		12/16/18 07:13	12/16/18 18:56	1
Manganese	ND		0.020	0.015	mg/L		12/16/18 07:13	12/16/18 18:56	1
Potassium	ND		0.50	0.25	mg/L		12/16/18 07:13	12/16/18 18:56	1
Sodium	ND		0.50	0.26	mg/L		12/16/18 07:13	12/16/18 18:56	1

**Lab Sample ID:** LCS 440-517352/2-A  
**Matrix:** Water  
**Analysis Batch:** 517461

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total Recoverable  
**Prep Batch:** 517352

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.500	0.485		mg/L		97	80 - 120
Calcium	2.50	2.51		mg/L		100	80 - 120
Iron	0.500	0.504		mg/L		101	80 - 120
Magnesium	2.50	2.53		mg/L		101	80 - 120

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: LCS 440-517352/2-A**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517352**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	0.500	0.497		mg/L		99	80 - 120
Potassium	5.00	4.77		mg/L		95	80 - 120
Sodium	5.00	5.03		mg/L		101	80 - 120

**Lab Sample ID: 440-227545-G-9-B MS**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517352**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.8		0.500	2.21		mg/L		90	75 - 125
Calcium	180		2.50	179	4	mg/L		-168	75 - 125
Iron	ND		0.500	0.474		mg/L		95	75 - 125
Magnesium	88		2.50	87.6	4	mg/L		-6	75 - 125
Manganese	ND		0.500	0.466		mg/L		93	75 - 125
Potassium	23		5.00	27.1	4	mg/L		80	75 - 125
Sodium	870		5.00	846	4	mg/L		-530	75 - 125

**Lab Sample ID: 440-227545-G-9-C MSD**  
**Matrix: Water**  
**Analysis Batch: 517461**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517352**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.8		0.500	2.27		mg/L		101	75 - 125	3	20
Calcium	180		2.50	183	4	mg/L		-36	75 - 125	2	20
Iron	ND		0.500	0.488		mg/L		98	75 - 125	3	20
Magnesium	88		2.50	89.3	4	mg/L		61	75 - 125	2	20
Manganese	ND		0.500	0.479		mg/L		96	75 - 125	3	20
Potassium	23		5.00	28.2	4	mg/L		101	75 - 125	4	20
Sodium	870		5.00	866	4	mg/L		-122	75 - 125	2	20

**Lab Sample ID: MB 440-517804/1-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/18/18 07:30	12/19/18 17:47	1
Calcium	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 17:47	1
Iron	ND		0.10	0.050	mg/L		12/18/18 07:30	12/19/18 17:47	1
Magnesium	ND		0.020	0.010	mg/L		12/18/18 07:30	12/19/18 17:47	1
Manganese	ND		0.020	0.015	mg/L		12/18/18 07:30	12/19/18 17:47	1
Potassium	ND		0.50	0.25	mg/L		12/18/18 07:30	12/19/18 17:47	1
Sodium	ND		0.50	0.26	mg/L		12/18/18 07:30	12/19/18 17:47	1

**Lab Sample ID: LCS 440-517804/2-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.983		mg/L		98	80 - 120

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: LCS 440-517804/2-A**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	4.84		mg/L		97	80 - 120
Iron	1.00	1.01		mg/L		101	80 - 120
Magnesium	5.00	4.89		mg/L		98	80 - 120
Manganese	1.00	0.986		mg/L		99	80 - 120
Potassium	10.0	9.53		mg/L		95	80 - 120
Sodium	10.0	9.61		mg/L		96	80 - 120

**Lab Sample ID: 440-226841-N-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.038	J	1.00	1.06		mg/L		102	75 - 125
Calcium	28		5.00	32.9	4	mg/L		106	75 - 125
Iron	67		1.00	61.3	4	mg/L		-576	75 - 125
Magnesium	21		5.00	26.7	4	mg/L		107	75 - 125
Manganese	1.1		1.00	2.11		mg/L		99	75 - 125
Potassium	17		10.0	26.8		mg/L		99	75 - 125
Sodium	9.7		10.0	19.9		mg/L		102	75 - 125

**Lab Sample ID: 440-226841-N-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 518257**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517804**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	0.038	J	1.00	1.06		mg/L		102	75 - 125	0	20
Calcium	28		5.00	34.4	4	mg/L		135	75 - 125	4	20
Iron	67		1.00	54.4	4	mg/L		-1263	75 - 125	12	20
Magnesium	21		5.00	25.4	4	mg/L		81	75 - 125	5	20
Manganese	1.1		1.00	2.08		mg/L		96	75 - 125	1	20
Potassium	17		10.0	26.7		mg/L		98	75 - 125	0	20
Sodium	9.7		10.0	20.4		mg/L		107	75 - 125	3	20

## Method: 350.1 - Nitrogen, Ammonia

**Lab Sample ID: MB 440-518887/10**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.20	0.10	mg/L			12/21/18 13:54	1

**Lab Sample ID: LCS 440-518887/11**  
**Matrix: Water**  
**Analysis Batch: 518887**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.00	5.16		mg/L		103	90 - 110

# QC Sample Results

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MRL 440-518887/9

Matrix: Water

Analysis Batch: 518887

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.200	0.182	J	mg/L		91	50 - 150

Lab Sample ID: 440-227321-A-1 MS

Matrix: Water

Analysis Batch: 518887

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	3.0	F1	5.00	6.60	F1	mg/L		72	90 - 110

Lab Sample ID: 440-227321-A-1 MSD

Matrix: Water

Analysis Batch: 518887

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	3.0	F1	5.00	7.14	F1	mg/L		83	90 - 110	8	15

## Method: 410.4 - COD

Lab Sample ID: MB 440-518916/3

Matrix: Water

Analysis Batch: 518916

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/22/18 11:40	1

Lab Sample ID: LCS 440-518916/4

Matrix: Water

Analysis Batch: 518916

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	206		mg/L		103	90 - 110

Lab Sample ID: 440-227566-A-1 MS

Matrix: Water

Analysis Batch: 518916

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	17	J	200	211		mg/L		97	70 - 120

Lab Sample ID: 440-227566-A-1 MSD

Matrix: Water

Analysis Batch: 518916

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	17	J	200	206		mg/L		94	70 - 120	3	15

TestAmerica Irvine



# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-517137/3**  
**Matrix: Water**  
**Analysis Batch: 517137**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/14/18 08:25	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/14/18 08:25	1

**Lab Sample ID: LCS 440-517137/2**  
**Matrix: Water**  
**Analysis Batch: 517137**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	80.7	79.3		mg/L		98	80 - 120

**Lab Sample ID: 440-227604-1 DU**  
**Matrix: Water**  
**Analysis Batch: 517137**

**Client Sample ID: DW-2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	360		362		mg/L		0.7	20
Bicarbonate Alkalinity as CaCO3	360		362		mg/L		0.7	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 440-518121/1**  
**Matrix: Water**  
**Analysis Batch: 518121**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	5.0	mg/L			12/19/18 10:17	1

**Lab Sample ID: LCS 440-518121/2**  
**Matrix: Water**  
**Analysis Batch: 518121**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	986		mg/L		99	90 - 110

**Lab Sample ID: 440-227604-1 DU**  
**Matrix: Water**  
**Analysis Batch: 518121**

**Client Sample ID: DW-2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1900		1940		mg/L		0.7	5

## Method: SM 4500 CO2 C - Free Carbon Dioxide

**Lab Sample ID: MB 440-519628/1**  
**Matrix: Water**  
**Analysis Batch: 519628**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/27/18 15:04	1

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Lab Sample ID: 440-227604-1 DU**  
**Matrix: Water**  
**Analysis Batch: 519628**

**Client Sample ID: DW-2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Carbon Dioxide, Free	16		15.7		mg/L		0	20

## Method: SM 4500 S2 D - Sulfide, Total

**Lab Sample ID: MB 440-517986/4**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Sulfide	ND		0.050	0.027	mg/L			12/18/18 16:14	1

**Lab Sample ID: LCS 440-517986/5**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.500	0.404		mg/L		81	80 - 120

**Lab Sample ID: LCSD 440-517986/6**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	0.500	0.406		mg/L		81	80 - 120	0	20

**Lab Sample ID: MRL 440-517986/16**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.0500	0.0490	J	mg/L		98	50 - 150

**Lab Sample ID: MRL 440-517986/2**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.0500	0.0490	J	mg/L		98	50 - 150

**Lab Sample ID: 440-227689-N-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	ND	F1	0.500	0.151	F1	mg/L		30	70 - 130

**Lab Sample ID: 440-227689-N-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 517986**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Sulfide	ND	F1	0.500	0.156	F1	mg/L		31	70 - 130	3	30

TestAmerica Irvine

# QC Sample Results

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

**Lab Sample ID: 440-227798-C-1 DU**  
**Matrix: Water**  
**Analysis Batch: 517986**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Sulfide	ND		ND		mg/L		NC	30

## Method: SM 5310C - TOC

**Lab Sample ID: MB 440-517284/6**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.10	0.050	mg/L			12/14/18 08:02	1

**Lab Sample ID: LCS 440-517284/5**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

**Lab Sample ID: MRL 440-517284/4**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.100	0.0881	J	mg/L		88	50 - 150

**Lab Sample ID: 580-82472-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	5.7		10.0	15.4		mg/L		97	80 - 120

**Lab Sample ID: 580-82472-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 517284**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Organic Carbon	5.7		10.0	15.8		mg/L		101	80 - 120	3	20

# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## GC/MS VOA

### Analysis Batch: 517783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	8260B	
440-227604-2	DW-3	Total/NA	Water	8260B	
440-227604-3	Combined Subdrains	Total/NA	Water	8260B	
440-227604-4	Extraction Trench	Total/NA	Water	8260B	
440-227604-5	Field Blank	Total/NA	Water	8260B	
440-227604-6	Trip Blank	Total/NA	Water	8260B	
MB 440-517783/4	Method Blank	Total/NA	Water	8260B	
LCS 440-517783/5	Lab Control Sample	Total/NA	Water	8260B	
440-227604-1 MS	DW-2	Total/NA	Water	8260B	
440-227604-1 MSD	DW-2	Total/NA	Water	8260B	

### Analysis Batch: 518076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	8260B	
440-227604-2	DW-3	Total/NA	Water	8260B	
440-227604-3	Combined Subdrains	Total/NA	Water	8260B	
440-227604-4	Extraction Trench	Total/NA	Water	8260B	
440-227604-5	Field Blank	Total/NA	Water	8260B	
440-227604-6	Trip Blank	Total/NA	Water	8260B	
MB 440-518076/4	Method Blank	Total/NA	Water	8260B	
LCS 440-518076/5	Lab Control Sample	Total/NA	Water	8260B	
440-227633-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-227633-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 517292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	3520C	
440-227604-2	DW-3	Total/NA	Water	3520C	
440-227604-3	Combined Subdrains	Total/NA	Water	3520C	
MB 440-517292/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-517292/3-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-517292/4-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Prep Batch: 517405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-4	Extraction Trench	Total/NA	Water	3520C	
MB 440-517405/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-517405/3-A	Lab Control Sample	Total/NA	Water	3520C	
440-227669-E-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	
440-227669-F-3-B MS	Matrix Spike	Total/NA	Water	3520C	

### Analysis Batch: 517530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	8270C	517292
440-227604-2	DW-3	Total/NA	Water	8270C	517292
440-227604-3	Combined Subdrains	Total/NA	Water	8270C	517292
MB 440-517292/1-A	Method Blank	Total/NA	Water	8270C	517292
LCS 440-517292/3-A	Lab Control Sample	Total/NA	Water	8270C	517292

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# QC Association Summary

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 517530 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 440-517292/4-A	Lab Control Sample Dup	Total/NA	Water	8270C	517292

### Analysis Batch: 517809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-517405/1-A	Method Blank	Total/NA	Water	8270C	517405
LCS 440-517405/3-A	Lab Control Sample	Total/NA	Water	8270C	517405
440-227669-E-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	517405
440-227669-F-3-B MS	Matrix Spike	Total/NA	Water	8270C	517405

### Analysis Batch: 518004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-4	Extraction Trench	Total/NA	Water	8270C	517405

## HPLC/IC

### Analysis Batch: 516840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	300.0	
440-227604-2	DW-3	Total/NA	Water	300.0	
440-227604-3	Combined Subdrains	Total/NA	Water	300.0	
440-227604-4	Extraction Trench	Total/NA	Water	300.0	
MB 440-516840/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516840/7	Lab Control Sample	Total/NA	Water	300.0	
440-227636-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-227636-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 516841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	300.0	
440-227604-1	DW-2	Total/NA	Water	300.0	
440-227604-2	DW-3	Total/NA	Water	300.0	
440-227604-2	DW-3	Total/NA	Water	300.0	
440-227604-3	Combined Subdrains	Total/NA	Water	300.0	
440-227604-3	Combined Subdrains	Total/NA	Water	300.0	
440-227604-4	Extraction Trench	Total/NA	Water	300.0	
440-227604-4	Extraction Trench	Total/NA	Water	300.0	
MB 440-516841/6	Method Blank	Total/NA	Water	300.0	
LCS 440-516841/7	Lab Control Sample	Total/NA	Water	300.0	
440-227572-B-3 MS	Matrix Spike	Total/NA	Water	300.0	
440-227572-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

## Metals

### Prep Batch: 517352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total Recoverable	Water	3005A	
440-227604-2	DW-3	Total Recoverable	Water	3005A	
440-227604-3	Combined Subdrains	Total Recoverable	Water	3005A	
MB 440-517352/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517352/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

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# QC Association Summary

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Metals (Continued)

### Prep Batch: 517352 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227545-G-9-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-227545-G-9-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 517461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total Recoverable	Water	6010B	517352
440-227604-2	DW-3	Total Recoverable	Water	6010B	517352
440-227604-3	Combined Subdrains	Total Recoverable	Water	6010B	517352
MB 440-517352/1-A	Method Blank	Total Recoverable	Water	6010B	517352
LCS 440-517352/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517352
440-227545-G-9-B MS	Matrix Spike	Total Recoverable	Water	6010B	517352
440-227545-G-9-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	517352

### Analysis Batch: 517627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total Recoverable	Water	6010B	517352
440-227604-2	DW-3	Total Recoverable	Water	6010B	517352
440-227604-3	Combined Subdrains	Total Recoverable	Water	6010B	517352

### Prep Batch: 517804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-4	Extraction Trench	Total Recoverable	Water	3005A	
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	3005A	
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 518257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-4	Extraction Trench	Total Recoverable	Water	6010B	517804
MB 440-517804/1-A	Method Blank	Total Recoverable	Water	6010B	517804
LCS 440-517804/2-A	Lab Control Sample	Total Recoverable	Water	6010B	517804
440-226841-N-1-C MS	Matrix Spike	Total Recoverable	Water	6010B	517804
440-226841-N-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	517804

## General Chemistry

### Analysis Batch: 517137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	SM 2320B	
440-227604-2	DW-3	Total/NA	Water	SM 2320B	
440-227604-3	Combined Subdrains	Total/NA	Water	SM 2320B	
440-227604-4	Extraction Trench	Total/NA	Water	SM 2320B	
MB 440-517137/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-517137/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-227604-1 DU	DW-2	Total/NA	Water	SM 2320B	

### Analysis Batch: 517284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	SM 5310C	

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# QC Association Summary

Client: Geo-Logic Associates  
 Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## General Chemistry (Continued)

### Analysis Batch: 517284 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-2	DW-3	Total/NA	Water	SM 5310C	
440-227604-3	Combined Subdrains	Total/NA	Water	SM 5310C	
440-227604-4	Extraction Trench	Total/NA	Water	SM 5310C	
MB 440-517284/6	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-517284/5	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-517284/4	Lab Control Sample	Total/NA	Water	SM 5310C	
580-82472-A-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
580-82472-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 517986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	SM 4500 S2 D	
440-227604-2	DW-3	Total/NA	Water	SM 4500 S2 D	
440-227604-3	Combined Subdrains	Total/NA	Water	SM 4500 S2 D	
440-227604-4	Extraction Trench	Total/NA	Water	SM 4500 S2 D	
MB 440-517986/4	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-517986/5	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 440-517986/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
MRL 440-517986/16	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MRL 440-517986/2	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-227689-N-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
440-227689-N-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	
440-227798-C-1 DU	Duplicate	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 518121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	SM 2540C	
440-227604-2	DW-3	Total/NA	Water	SM 2540C	
440-227604-3	Combined Subdrains	Total/NA	Water	SM 2540C	
440-227604-4	Extraction Trench	Total/NA	Water	SM 2540C	
MB 440-518121/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-518121/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-227604-1 DU	DW-2	Total/NA	Water	SM 2540C	

### Analysis Batch: 518887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	350.1	
440-227604-2	DW-3	Total/NA	Water	350.1	
440-227604-3	Combined Subdrains	Total/NA	Water	350.1	
440-227604-4	Extraction Trench	Total/NA	Water	350.1	
MB 440-518887/10	Method Blank	Total/NA	Water	350.1	
LCS 440-518887/11	Lab Control Sample	Total/NA	Water	350.1	
MRL 440-518887/9	Lab Control Sample	Total/NA	Water	350.1	
440-227321-A-1 MS	Matrix Spike	Total/NA	Water	350.1	
440-227321-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

### Analysis Batch: 518916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	410.4	
440-227604-2	DW-3	Total/NA	Water	410.4	
440-227604-3	Combined Subdrains	Total/NA	Water	410.4	

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# QC Association Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## General Chemistry (Continued)

### Analysis Batch: 518916 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-4	Extraction Trench	Total/NA	Water	410.4	
MB 440-518916/3	Method Blank	Total/NA	Water	410.4	
LCS 440-518916/4	Lab Control Sample	Total/NA	Water	410.4	
440-227566-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-227566-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

### Analysis Batch: 519628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-227604-1	DW-2	Total/NA	Water	SM 4500 CO2 C	
440-227604-2	DW-3	Total/NA	Water	SM 4500 CO2 C	
440-227604-3	Combined Subdrains	Total/NA	Water	SM 4500 CO2 C	
440-227604-4	Extraction Trench	Total/NA	Water	SM 4500 CO2 C	
MB 440-519628/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-227604-1 DU	DW-2	Total/NA	Water	SM 4500 CO2 C	

# Definitions/Glossary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
ID	Analyte identified by RT & presence of single mass ion

### GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
T	Result is a tentatively identified compound (TIC) and an estimated value.

### HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Accreditation/Certification Summary

Client: Geo-Logic Associates  
Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-227604-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: Kyle Wehrens  
Site Contact: John Miller  
Date: 12-13-18  
COC No: 1 of 1 COCs

Tel/Fax: 858-451-1136  
Lab Contact: Rossing  
Carrier: T/A

Company Name: Geo-Logic Associates  
Address: 17415 W. Bernardo Ct. Suite 306  
City/State/Zip: San Diego, CA 92127  
Phone: 858-451-1136  
Fax:

Project Name: Republic Services  
Site: Sunshine Canyon Landfill  
P.O.#

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Filtered Sample (Y/N)  Y  N  
Perform MS/MSD (Y/N)  Y  N

Sample Specific Notes:

Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Sample Identification
12/13/18	0815	G	GW	13	DW-2
12/13/18	0935	G	GW	13	DW-3
12/13/18	0920	G	GW	13	Combined subsamples
12/13/18	1020	G	GW	13	Extraction Trench
12/13/18	1120	G	GW	4	Field Blank
12/13/18	1130	G	GW	3	Tap Blank

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

440-227604 Chain of Custody

Company: Geo-Logic  
Company: T/A  
Company: T/A

Received by: [Signature]  
Date/Time: 12/13/18 1130

Received in Laboratory by: [Signature]  
Date/Time: 12/13/18 1320

Custody Seal No.:  
Custody Seals Intact:  Yes  No



## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-227604-1

**Login Number: 227604**

**List Number: 1**

**Creator: Soderblom, Tim**

**List Source: TestAmerica Irvine**

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



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-222654-1

Client Project/Site: Republic-Sunshine Canyon - Stormwater

For:

Republic Services Inc

14747 San Fernando Road

Sylmar, California 91342

Attn: Ms. Patti Costa



Authorized for release by:

11/9/2018 9:20:46 AM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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# Sample Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-222654-1	Stormwater_101818	Water	10/18/18 11:40	10/19/18 12:30

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# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

**Job ID: 440-222654-1**

**Laboratory: TestAmerica Irvine**

## Narrative

**Job Narrative  
440-222654-1**

### Comments

No additional comments.

### Receipt

The sample was received on 10/19/2018 12:30 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

### GC/MS VOA

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

### GC/MS Semi VOA

Method(s) 625: The continuing calibration verification (CCV) associated with batch 490-555842 recovered above the upper control limit for Alpha-Terpineol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 490-555842/6).

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-552789 and analytical batch 490-555842.

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

### HPLC/IC

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

### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-506583 and analytical batch 440-506751. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-506583/4-A)

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

### Metals

Method(s) 200.8: The method blank for preparation batch 440-506640 and analytical batch 440-506819 contained Aluminum above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

### General Chemistry

Method(s) 365.3: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-508299 and analytical batch 440-508311 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### Organic Prep

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-507685 and analytical batch 440-507751. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-507685/2-A)

Method(s) 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 507422 preparation batch 440-507422.3520/8270C.

# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

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## Job ID: 440-222654-1 (Continued)

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### Laboratory: TestAmerica Irvine (Continued)

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

### VOA Prep

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

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# Client Sample Results

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

**Client Sample ID: Stormwater\_101818**

**Lab Sample ID: 440-222654-1**

**Date Collected: 10/18/18 11:40**

**Matrix: Water**

**Date Received: 10/19/18 12:30**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			10/26/18 11:41	1
Toluene	ND		0.00050	0.00025	mg/L			10/26/18 11:41	1
Acrylonitrile	ND		0.050	0.0010	mg/L			10/23/18 17:28	1
Benzene	ND		0.00050	0.00025	mg/L			10/26/18 11:41	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			10/26/18 11:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114		80 - 128		10/23/18 17:28	1
4-Bromofluorobenzene (Surr)	111		80 - 120		10/23/18 17:28	1
Dibromofluoromethane (Surr)	97		76 - 132		10/23/18 17:28	1
Toluene-d8 (Surr)	101		80 - 128		10/26/18 11:41	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/26/18 11:41	1
Dibromofluoromethane (Surr)	103		76 - 132		10/26/18 11:41	1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	0.0038	J *	0.0097	0.0032	mg/L		10/25/18 15:54	11/08/18 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		10 - 120	10/25/18 15:54	11/08/18 23:37	1
2-Fluorophenol	52		29 - 120	10/25/18 15:54	11/08/18 23:37	1
Nitrobenzene-d5	69		27 - 120	10/25/18 15:54	11/08/18 23:37	1
Phenol-d5	39		10 - 120	10/25/18 15:54	11/08/18 23:37	1
Terphenyl-d14	80		13 - 120	10/25/18 15:54	11/08/18 23:37	1
2-Fluorobiphenyl (Surr)	73		10 - 120	10/25/18 15:54	11/08/18 23:37	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	0.014	J	0.020	0.0099	mg/L		10/25/18 08:44	10/28/18 23:12	1
Butyl benzyl phthalate	ND		0.020	0.0049	mg/L		10/25/18 08:44	10/28/18 23:12	1
Cresol, p-	ND		0.0099	0.0020	mg/L		10/25/18 08:44	10/28/18 23:12	1
Dimethyl phthalate	ND		0.0099	0.0039	mg/L		10/25/18 08:44	10/28/18 23:12	1
Fluoranthene	ND		0.0099	0.0049	mg/L		10/25/18 08:44	10/28/18 23:12	1
Phenol	ND		0.0099	0.0049	mg/L		10/25/18 08:44	10/28/18 23:12	1
Pyrene	ND		0.0099	0.0049	mg/L		10/25/18 08:44	10/28/18 23:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	100		40 - 120	10/25/18 08:44	10/28/18 23:12	1
2-Fluorobiphenyl	91		50 - 120	10/25/18 08:44	10/28/18 23:12	1
2-Fluorophenol (Surr)	73		30 - 120	10/25/18 08:44	10/28/18 23:12	1
Nitrobenzene-d5 (Surr)	77		45 - 120	10/25/18 08:44	10/28/18 23:12	1
Phenol-d6 (Surr)	75		35 - 120	10/25/18 08:44	10/28/18 23:12	1
Terphenyl-d14 (Surr)	98		10 - 150	10/25/18 08:44	10/28/18 23:12	1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1
Aroclor 1221	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1
Aroclor 1232	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1
Aroclor 1242	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1
Aroclor 1248	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1

TestAmerica Irvine

# Client Sample Results

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

**Client Sample ID: Stormwater\_101818**

**Lab Sample ID: 440-222654-1**

Date Collected: 10/18/18 11:40

Matrix: Water

Date Received: 10/19/18 12:30

### Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1254	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1
Aroclor 1260	ND		0.00098	0.00025	mg/L		10/22/18 05:54	10/23/18 05:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	90		29 - 115				10/22/18 05:54	10/23/18 05:40	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.6		0.11	0.055	mg/L			10/19/18 17:57	1
Nitrite as N	1.0		0.15	0.025	mg/L			10/19/18 17:57	1
Fluoride	1.1		0.50	0.25	mg/L			10/19/18 17:57	1

### Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35		5.0	2.5	mg/L			10/19/18 20:17	10

### Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.6		0.15	0.055	mg/L			10/25/18 14:46	1

### Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.50		0.10	0.050	mg/L		10/22/18 08:41	10/22/18 21:27	1

### Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.074	B	0.010	0.0050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Antimony	0.0030		0.0020	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Arsenic	0.0034		0.0010	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Beryllium	ND		0.00050	0.00025	mg/L		10/22/18 08:54	10/22/18 19:53	1
Cadmium	0.00065	J	0.0010	0.00025	mg/L		10/22/18 08:54	10/22/18 19:53	1
Copper	0.013		0.0020	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Lead	ND		0.0010	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Manganese	1.3		0.0010	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Nickel	0.053		0.0020	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Selenium	0.0024		0.0020	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Silver	ND		0.0010	0.00050	mg/L		10/22/18 08:54	10/22/18 19:53	1
Zinc	0.37		0.020	0.0025	mg/L		10/22/18 08:54	10/22/18 19:53	1

### Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0010		0.00020	0.00010	mg/L		10/22/18 18:40	10/23/18 17:22	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.1	1.4	mg/L		10/26/18 10:46	10/26/18 15:43	1
Total Suspended Solids	7.4		2.0	1.0	mg/L			10/24/18 14:54	1
Phosphorus, Total	0.065		0.050	0.025	mg/L		10/30/18 12:58	10/30/18 14:26	1
Ammonia (as N)	2.2		0.50	0.10	mg/L		10/23/18 05:00	10/23/18 08:00	1
Chemical Oxygen Demand	170		20	10	mg/L			10/26/18 15:30	1

TestAmerica Irvine

# Client Sample Results

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

**Client Sample ID: Stormwater\_101818**

**Lab Sample ID: 440-222654-1**

**Date Collected: 10/18/18 11:40**

**Matrix: Water**

**Date Received: 10/19/18 12:30**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	29		15	15	mg/L			10/20/18 09:34	1

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- 2
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# Method Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
2540 D	TSS	SM21	TAL IRV
365.3	Phosphorus, Total	EPA	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5220D	COD	SM	TAL IRV
SM5210B	BOD, 5 Day	SM	TAL IRV
1664A	HEM and SGT-HEM (SPE)	1664A	TAL IRV
200.2	Preparation, Total Recoverable Metals	EPA	TAL IRV
245.1	Preparation, Mercury	EPA	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
365.2/365.3/365	Phosphorus, Total	MCAWW	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	TAL IRV
625	Liquid-Liquid Extraction	40CFR136A	TAL NSH
SM 4500 NH3 B	Distillation, Ammonia	SM	TAL IRV

## Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

SM21 = Standard Methods For The Examination Of Water And Wastewater, 21st Edition

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

## Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177



# Lab Chronicle

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

**Client Sample ID: Stormwater\_101818**

**Lab Sample ID: 440-222654-1**

**Date Collected: 10/18/18 11:40**

**Matrix: Water**

**Date Received: 10/19/18 12:30**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	506843	10/23/18 17:28	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	507621	10/26/18 11:41	JB	TAL IRV
Total/NA	Prep	625			1027 mL	1 mL	552789	10/25/18 15:54	MCO	TAL NSH
Total/NA	Analysis	625		1			555842	11/08/18 23:37	T1C	TAL NSH
Total/NA	Prep	3520C			1015 mL	2.0 mL	507422	10/25/18 08:44	JAA	TAL IRV
Total/NA	Analysis	8270C		1			507906	10/28/18 23:12	L1B	TAL IRV
Total/NA	Prep	608			1020 mL	2 mL	506583	10/22/18 05:54	L1H	TAL IRV
Total/NA	Analysis	608		1			506751	10/23/18 05:40	JM	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	506236	10/19/18 17:57	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	506237	10/19/18 17:57	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	10			506237	10/19/18 20:17	NTN	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			507514	10/25/18 14:46	TLN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	506628	10/22/18 08:41	KE	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			506886	10/22/18 21:27	VS	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	506640	10/22/18 08:54	KE	TAL IRV
Total Recoverable	Analysis	200.8		1			506819	10/22/18 19:53	B1H	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	506805	10/22/18 18:40	DB	TAL IRV
Total/NA	Analysis	245.1		1			507034	10/23/18 17:22	DB	TAL IRV
Total/NA	Prep	1664A			980 mL	1000 mL	507685	10/26/18 10:46	AJH	TAL IRV
Total/NA	Analysis	1664A		1			507751	10/26/18 15:43	AJH	TAL IRV
Total/NA	Analysis	2540 D		1	500 mL	1000 mL	507256	10/24/18 14:54	KM	TAL IRV
Total/NA	Prep	365.2/365.3/365			50 mL	50 mL	508299	10/30/18 12:58	MMP	TAL IRV
Total/NA	Analysis	365.3		1			508311	10/30/18 14:26	MMP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	506893	10/23/18 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			506896	10/23/18 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 5220D		1	2.5 mL	2.5 mL	507748	10/26/18 15:30	KYP	TAL IRV
Total/NA	Analysis	SM5210B		1			506473	10/20/18 09:34	KM	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-506843/4**  
**Matrix: Water**  
**Analysis Batch: 506843**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		0.050	0.0010	mg/L			10/23/18 07:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		80 - 128		10/23/18 07:37	1
4-Bromofluorobenzene (Surr)	112		80 - 120		10/23/18 07:37	1
Dibromofluoromethane (Surr)	96		76 - 132		10/23/18 07:37	1

**Lab Sample ID: LCS 440-506843/5**  
**Matrix: Water**  
**Analysis Batch: 506843**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	0.250	0.211		mg/L		85	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	110		80 - 128
4-Bromofluorobenzene (Surr)	110		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

**Lab Sample ID: 440-222629-D-14 MS**  
**Matrix: Water**  
**Analysis Batch: 506843**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	ND		0.250	0.209		mg/L		84	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	111		80 - 128
4-Bromofluorobenzene (Surr)	112		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132

**Lab Sample ID: 440-222629-D-14 MSD**  
**Matrix: Water**  
**Analysis Batch: 506843**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile	ND		0.250	0.209		mg/L		83	38 - 144	0	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	110		80 - 128
4-Bromofluorobenzene (Surr)	112		80 - 120
Dibromofluoromethane (Surr)	94		76 - 132

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-507621/7**  
**Matrix: Water**  
**Analysis Batch: 507621**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			10/26/18 09:03	1
Toluene	ND		0.00050	0.00025	mg/L			10/26/18 09:03	1
Benzene	ND		0.00050	0.00025	mg/L			10/26/18 09:03	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			10/26/18 09:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 128		10/26/18 09:03	1
4-Bromofluorobenzene (Surr)	94		80 - 120		10/26/18 09:03	1
Dibromofluoromethane (Surr)	103		76 - 132		10/26/18 09:03	1

**Lab Sample ID: LCS 440-507621/5**  
**Matrix: Water**  
**Analysis Batch: 507621**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	0.0250	0.0246		mg/L		98	70 - 130
Toluene	0.0250	0.0247		mg/L		99	70 - 130
Benzene	0.0250	0.0244		mg/L		98	68 - 130
Trichloroethylene	0.0250	0.0288		mg/L		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132

**Lab Sample ID: 440-222583-A-3 MS**  
**Matrix: Water**  
**Analysis Batch: 507621**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	ND		0.0250	0.0231		mg/L		92	70 - 130
Toluene	ND		0.0250	0.0235		mg/L		94	70 - 130
Benzene	ND		0.0250	0.0239		mg/L		96	66 - 130
Trichloroethylene	ND		0.0250	0.0277		mg/L		111	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	96		80 - 128
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132

**Lab Sample ID: 440-222583-A-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 507621**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	ND		0.0250	0.0207		mg/L		83	70 - 130	11	20
Toluene	ND		0.0250	0.0205		mg/L		82	70 - 130	13	20

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-222583-A-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 507621**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		0.0250	0.0210		mg/L		84	66 - 130	13	20
Trichloroethylene	ND		0.0250	0.0248		mg/L		99	70 - 130	11	20
Surrogate	%Recovery		MSD Qualifier	MSD		Limits					
Toluene-d8 (Surr)	96					80 - 128					
4-Bromofluorobenzene (Surr)	93					80 - 120					
Dibromofluoromethane (Surr)	102					76 - 132					

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-552789/1-A**  
**Matrix: Water**  
**Analysis Batch: 555842**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 552789**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Alpha-Terpineol	ND		0.010	0.0033	mg/L		10/25/18 15:54	11/08/18 23:17	1	
Surrogate	%Recovery		MB Qualifier	MB		Limits		Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79					10 - 120		10/25/18 15:54	11/08/18 23:17	1
2-Fluorophenol	69					29 - 120		10/25/18 15:54	11/08/18 23:17	1
Nitrobenzene-d5	86					27 - 120		10/25/18 15:54	11/08/18 23:17	1
Phenol-d5	40					10 - 120		10/25/18 15:54	11/08/18 23:17	1
Terphenyl-d14	99					13 - 120		10/25/18 15:54	11/08/18 23:17	1
2-Fluorobiphenyl (Surr)	83					10 - 120		10/25/18 15:54	11/08/18 23:17	1

**Lab Sample ID: LCS 490-552789/4-A**  
**Matrix: Water**  
**Analysis Batch: 555842**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 552789**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alpha-Terpineol	0.0500	0.0433		mg/L		87	58 - 156
Surrogate	%Recovery		LCS Qualifier	LCS		Limits	
2,4,6-Tribromophenol	76					10 - 120	
2-Fluorophenol	60					29 - 120	
Nitrobenzene-d5	71					27 - 120	
Phenol-d5	37					10 - 120	
Terphenyl-d14	86					13 - 120	
2-Fluorobiphenyl (Surr)	83					10 - 120	

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-507422/1-A**

**Matrix: Water**

**Analysis Batch: 507897**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 507422**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	ND		0.020	0.010	mg/L		10/25/18 08:44	10/28/18 16:06	1
Butyl benzyl phthalate	ND		0.020	0.0050	mg/L		10/25/18 08:44	10/28/18 16:06	1
Cresol, p-	ND		0.010	0.0020	mg/L		10/25/18 08:44	10/28/18 16:06	1
Dimethyl phthalate	ND		0.010	0.0040	mg/L		10/25/18 08:44	10/28/18 16:06	1
Fluoranthene	ND		0.010	0.0050	mg/L		10/25/18 08:44	10/28/18 16:06	1
Phenol	ND		0.010	0.0050	mg/L		10/25/18 08:44	10/28/18 16:06	1
Pyrene	ND		0.010	0.0050	mg/L		10/25/18 08:44	10/28/18 16:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	66		40 - 120	10/25/18 08:44	10/28/18 16:06	1
2-Fluorobiphenyl	54		50 - 120	10/25/18 08:44	10/28/18 16:06	1
2-Fluorophenol (Surr)	46		30 - 120	10/25/18 08:44	10/28/18 16:06	1
Nitrobenzene-d5 (Surr)	55		45 - 120	10/25/18 08:44	10/28/18 16:06	1
Phenol-d6 (Surr)	46		35 - 120	10/25/18 08:44	10/28/18 16:06	1
Terphenyl-d14 (Surr)	80		10 - 150	10/25/18 08:44	10/28/18 16:06	1

**Lab Sample ID: LCS 440-507422/2-A**

**Matrix: Water**

**Analysis Batch: 507897**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 507422**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzoic acid	0.100	0.0876		mg/L		88	15 - 121
Butyl benzyl phthalate	0.100	0.0827		mg/L		83	44 - 122
Cresol, p-	0.100	0.0786		mg/L		79	35 - 106
Dimethyl phthalate	0.100	0.0828		mg/L		83	49 - 113
Fluoranthene	0.100	0.0843		mg/L		84	44 - 119
Phenol	0.100	0.0625		mg/L		62	25 - 99
Pyrene	0.100	0.0827		mg/L		83	43 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	89		40 - 120
2-Fluorobiphenyl	74		50 - 120
2-Fluorophenol (Surr)	62		30 - 120
Nitrobenzene-d5 (Surr)	75		45 - 120
Phenol-d6 (Surr)	66		35 - 120
Terphenyl-d14 (Surr)	91		10 - 150

**Lab Sample ID: LCSD 440-507422/3-A**

**Matrix: Water**

**Analysis Batch: 507897**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 507422**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzoic acid	0.100	0.0746		mg/L		75	15 - 121	16	35
Butyl benzyl phthalate	0.100	0.0795		mg/L		80	44 - 122	4	35
Cresol, p-	0.100	0.0664		mg/L		66	35 - 106	17	35
Dimethyl phthalate	0.100	0.0748		mg/L		75	49 - 113	10	35
Fluoranthene	0.100	0.0768		mg/L		77	44 - 119	9	35

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 440-507422/3-A**

**Matrix: Water**

**Analysis Batch: 507897**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 507422**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	0.100	0.0555		mg/L		56	25 - 99	12	35
Pyrene	0.100	0.0758		mg/L		76	43 - 119	9	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	80		40 - 120
2-Fluorobiphenyl	67		50 - 120
2-Fluorophenol (Surr)	47		30 - 120
Nitrobenzene-d5 (Surr)	64		45 - 120
Phenol-d6 (Surr)	56		35 - 120
Terphenyl-d14 (Surr)	85		10 - 150

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

**Lab Sample ID: MB 440-506583/1-A**

**Matrix: Water**

**Analysis Batch: 506751**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 506583**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1
Aroclor 1221	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1
Aroclor 1232	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1
Aroclor 1242	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1
Aroclor 1248	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1
Aroclor 1254	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1
Aroclor 1260	ND		0.0010	0.00025	mg/L		10/22/18 05:54	10/23/18 04:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	90		29 - 115	10/22/18 05:54	10/23/18 04:46	1

**Lab Sample ID: LCS 440-506583/4-A**

**Matrix: Water**

**Analysis Batch: 506751**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 506583**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	0.00400	0.00371		mg/L		93	10 - 127
Aroclor 1260	0.00400	0.00386		mg/L		96	50 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	105		29 - 115

**Lab Sample ID: LCSD 440-506583/5-A**

**Matrix: Water**

**Analysis Batch: 506751**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 506583**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	0.00400	0.00363		mg/L		91	10 - 127	2	30
Aroclor 1260	0.00400	0.00384		mg/L		96	50 - 115	0	30

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

**Lab Sample ID: LCSD 440-506583/5-A**  
**Matrix: Water**  
**Analysis Batch: 506751**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 506583**

Surrogate	<i>LCSD</i> %Recovery	<i>LCSD</i> Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	103		29 - 115

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-506236/6**  
**Matrix: Water**  
**Analysis Batch: 506236**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			10/19/18 12:26	1
Nitrite as N	ND		0.15	0.025	mg/L			10/19/18 12:26	1

**Lab Sample ID: LCS 440-506236/5**  
**Matrix: Water**  
**Analysis Batch: 506236**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.08		mg/L		96	90 - 110
Nitrite as N	1.52	1.50		mg/L		99	90 - 110

**Lab Sample ID: 440-222654-1 MS**  
**Matrix: Water**  
**Analysis Batch: 506236**

**Client Sample ID: Stormwater\_101818**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.6		1.13	2.81		mg/L		104	80 - 120
Nitrite as N	1.0		1.52	2.57		mg/L		100	80 - 120

**Lab Sample ID: 440-222654-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 506236**

**Client Sample ID: Stormwater\_101818**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	1.6		1.13	2.86		mg/L		108	80 - 120	2	20
Nitrite as N	1.0		1.52	2.57		mg/L		101	80 - 120	0	20

**Lab Sample ID: MB 440-506237/6**  
**Matrix: Water**  
**Analysis Batch: 506237**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			10/19/18 12:26	1
Fluoride	ND		0.50	0.25	mg/L			10/19/18 12:26	1

TestAmerica Irvine



# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 440-506237/5**  
**Matrix: Water**  
**Analysis Batch: 506237**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.91		mg/L		98	90 - 110
Fluoride	5.00	4.82		mg/L		96	90 - 110

**Lab Sample ID: 440-222654-1 MS**  
**Matrix: Water**  
**Analysis Batch: 506237**

**Client Sample ID: Stormwater\_101818**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	45	E	5.00	51.7	E 4	mg/L		126	80 - 120
Fluoride	1.1		5.00	5.87		mg/L		96	80 - 120

**Lab Sample ID: 440-222654-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 506237**

**Client Sample ID: Stormwater\_101818**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	45	E	5.00	51.8	E 4	mg/L		127	80 - 120	0	20
Fluoride	1.1		5.00	5.77		mg/L		94	80 - 120	2	20

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID: MB 440-506628/1-A**  
**Matrix: Water**  
**Analysis Batch: 506886**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506628**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	0.050	mg/L		10/22/18 08:41	10/22/18 20:11	1

**Lab Sample ID: LCS 440-506628/2-A**  
**Matrix: Water**  
**Analysis Batch: 506886**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506628**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.500	0.505		mg/L		101	85 - 115

**Lab Sample ID: 440-222648-M-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 506886**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506628**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.17		0.500	0.681		mg/L		103	70 - 130

**Lab Sample ID: 440-222648-M-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 506886**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506628**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.17		0.500	0.676		mg/L		102	70 - 130	1	20

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 200.8 - Metals (ICP/MS)

**Lab Sample ID: MB 440-506640/1-A**  
**Matrix: Water**  
**Analysis Batch: 506931**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506640**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.00515	J	0.010	0.0050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Antimony	ND		0.0020	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Arsenic	ND		0.0010	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Beryllium	ND		0.00050	0.00025	mg/L		10/22/18 08:54	10/23/18 10:31	1
Cadmium	ND		0.0010	0.00025	mg/L		10/22/18 08:54	10/23/18 10:31	1
Copper	ND		0.0020	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Lead	ND		0.0010	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Manganese	ND		0.0010	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Nickel	ND		0.0020	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Selenium	ND		0.0020	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Silver	ND		0.0010	0.00050	mg/L		10/22/18 08:54	10/23/18 10:31	1
Zinc	ND		0.020	0.0025	mg/L		10/22/18 08:54	10/23/18 10:31	1

**Lab Sample ID: LCS 440-506640/2-A**  
**Matrix: Water**  
**Analysis Batch: 506931**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506640**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.0800	0.0820		mg/L		103	85 - 115
Antimony	0.0800	0.0796		mg/L		99	85 - 115
Arsenic	0.0800	0.0767		mg/L		96	85 - 115
Beryllium	0.0800	0.0793		mg/L		99	85 - 115
Cadmium	0.0800	0.0753		mg/L		94	85 - 115
Copper	0.0800	0.0776		mg/L		97	85 - 115
Lead	0.0800	0.0766		mg/L		96	85 - 115
Manganese	0.0800	0.0774		mg/L		97	85 - 115
Nickel	0.0800	0.0767		mg/L		96	85 - 115
Selenium	0.0800	0.0775		mg/L		97	85 - 115
Silver	0.0800	0.0802		mg/L		100	85 - 115
Zinc	0.0800	0.0787		mg/L		98	85 - 115

**Lab Sample ID: 440-222733-B-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 506819**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 506640**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.038	B	0.0800	0.114		mg/L		95	70 - 130
Antimony	0.0010	J	0.0800	0.0841		mg/L		104	70 - 130
Arsenic	0.012		0.0800	0.0839		mg/L		90	70 - 130
Beryllium	ND		0.0800	0.0769		mg/L		96	70 - 130
Cadmium	ND		0.0800	0.0746		mg/L		93	70 - 130
Copper	0.0043		0.0800	0.0753		mg/L		89	70 - 130
Lead	ND		0.0800	0.0737		mg/L		92	70 - 130
Manganese	0.14		0.0800	0.196		mg/L		74	70 - 130
Nickel	0.0030		0.0800	0.0739		mg/L		89	70 - 130
Selenium	0.0013	J	0.0800	0.0762		mg/L		94	70 - 130
Silver	ND		0.0800	0.0767		mg/L		96	70 - 130
Zinc	0.034		0.0800	0.101		mg/L		84	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: 440-222733-B-1-C MSD**

**Matrix: Water**

**Analysis Batch: 506819**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total Recoverable**

**Prep Batch: 506640**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Aluminum	0.038	B	0.0800	0.112		mg/L		93	70 - 130	2	20	
Antimony	0.0010	J	0.0800	0.0873		mg/L		108	70 - 130	4	20	
Arsenic	0.012		0.0800	0.0866		mg/L		94	70 - 130	3	20	
Beryllium	ND		0.0800	0.0784		mg/L		98	70 - 130	2	20	
Cadmium	ND		0.0800	0.0780		mg/L		98	70 - 130	5	20	
Copper	0.0043		0.0800	0.0763		mg/L		90	70 - 130	1	20	
Lead	ND		0.0800	0.0760		mg/L		95	70 - 130	3	20	
Manganese	0.14		0.0800	0.201		mg/L		80	70 - 130	2	20	
Nickel	0.0030		0.0800	0.0748		mg/L		90	70 - 130	1	20	
Selenium	0.0013	J	0.0800	0.0777		mg/L		96	70 - 130	2	20	
Silver	ND		0.0800	0.0800		mg/L		100	70 - 130	4	20	
Zinc	0.034		0.0800	0.104		mg/L		87	70 - 130	2	20	

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 440-506805/1-A**

**Matrix: Water**

**Analysis Batch: 507034**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 506805**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00010	mg/L		10/22/18 18:40	10/23/18 18:15	1

**Lab Sample ID: LCS 440-506805/2-A**

**Matrix: Water**

**Analysis Batch: 507034**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 506805**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Mercury	0.00800	0.00847		mg/L		106	85 - 115	

**Lab Sample ID: 440-222739-A-2-B MS**

**Matrix: Water**

**Analysis Batch: 507034**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 506805**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	RPD
Mercury	ND		0.00800	0.00820		mg/L		103	70 - 130	

**Lab Sample ID: 440-222739-A-2-C MSD**

**Matrix: Water**

**Analysis Batch: 507034**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 506805**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Mercury	ND		0.00800	0.00830		mg/L		104	70 - 130	1	20	

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 1664A - HEM and SGT-HEM

**Lab Sample ID: MB 440-507685/1-A**  
**Matrix: Water**  
**Analysis Batch: 507751**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 507685**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.0	1.4	mg/L		10/26/18 10:46	10/26/18 15:43	1

**Lab Sample ID: LCS 440-507685/2-A**  
**Matrix: Water**  
**Analysis Batch: 507751**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 507685**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil & Grease (HEM)	40.0	37.70		mg/L		94	78 - 114

**Lab Sample ID: LCSD 440-507685/3-A**  
**Matrix: Water**  
**Analysis Batch: 507751**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 507685**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Oil & Grease (HEM)	40.0	36.00		mg/L		90	78 - 114	5	11

## Method: 2540 D - TSS

**Lab Sample ID: MB 440-507256/1**  
**Matrix: Water**  
**Analysis Batch: 507256**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			10/24/18 14:54	1

**Lab Sample ID: LCS 440-507256/2**  
**Matrix: Water**  
**Analysis Batch: 507256**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	927		mg/L		93	85 - 115

**Lab Sample ID: 440-222876-A-1 DU**  
**Matrix: Water**  
**Analysis Batch: 507256**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Suspended Solids	110		115		mg/L		9	10

## Method: 365.3 - Phosphorus, Total

**Lab Sample ID: MB 440-508299/1-A**  
**Matrix: Water**  
**Analysis Batch: 508311**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 508299**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	ND		0.050	0.025	mg/L		10/30/18 12:58	10/30/18 14:25	1

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: 365.3 - Phosphorus, Total (Continued)

**Lab Sample ID: LCS 440-508299/2-A**  
**Matrix: Water**  
**Analysis Batch: 508311**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 508299**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Phosphorus, Total	0.501	0.471		mg/L		94	80 - 120

**Lab Sample ID: 440-222784-B-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 508311**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 508299**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Phosphorus, Total	0.064	F1	0.501	0.164	F1	mg/L		20	75 - 125

**Lab Sample ID: 440-222784-B-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 508311**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 508299**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Phosphorus, Total	0.064	F1	0.501	0.157	F1	mg/L		19	75 - 125	4	20

## Method: SM 4500 NH3 D - Ammonia

**Lab Sample ID: MB 440-506893/2-A**  
**Matrix: Water**  
**Analysis Batch: 506896**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 506893**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		10/23/18 05:00	10/23/18 08:00	1

**Lab Sample ID: LCS 440-506893/1-A**  
**Matrix: Water**  
**Analysis Batch: 506896**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 506893**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	2.50	2.32		mg/L		93	85 - 115

**Lab Sample ID: 440-222772-A-3-B MS**  
**Matrix: Water**  
**Analysis Batch: 506896**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 506893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	ND		2.50	2.48		mg/L		99	75 - 125

**Lab Sample ID: 440-222772-A-3-C MSD**  
**Matrix: Water**  
**Analysis Batch: 506896**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 506893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	ND		2.50	2.48		mg/L		99	75 - 125	0	15

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Method: SM 5220D - COD

**Lab Sample ID: MB 440-507748/3**  
**Matrix: Water**  
**Analysis Batch: 507748**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			10/26/18 15:29	1

**Lab Sample ID: LCS 440-507748/4**  
**Matrix: Water**  
**Analysis Batch: 507748**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	197		mg/L		99	90 - 110

**Lab Sample ID: 440-223025-A-9 MS**  
**Matrix: Water**  
**Analysis Batch: 507748**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	15	J	200	220		mg/L		102	70 - 120

**Lab Sample ID: 440-223025-A-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 507748**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	15	J	200	214		mg/L		100	70 - 120	2	15

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-506473/1**  
**Matrix: Water**  
**Analysis Batch: 506473**

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

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	2.0	mg/L			10/20/18 09:34	1

**Lab Sample ID: LCS 440-506473/4**  
**Matrix: Water**  
**Analysis Batch: 506473**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	210		mg/L		106	85 - 115

**Lab Sample ID: LCSD 440-506473/5**  
**Matrix: Water**  
**Analysis Batch: 506473**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	208		mg/L		105	85 - 115	1	20

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## GC/MS VOA

### Analysis Batch: 506843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	8260B	
MB 440-506843/4	Method Blank	Total/NA	Water	8260B	
LCS 440-506843/5	Lab Control Sample	Total/NA	Water	8260B	
440-222629-D-14 MS	Matrix Spike	Total/NA	Water	8260B	
440-222629-D-14 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 507621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	8260B	
MB 440-507621/7	Method Blank	Total/NA	Water	8260B	
LCS 440-507621/5	Lab Control Sample	Total/NA	Water	8260B	
440-222583-A-3 MS	Matrix Spike	Total/NA	Water	8260B	
440-222583-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 507422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	3520C	
MB 440-507422/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-507422/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-507422/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 507897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-507422/1-A	Method Blank	Total/NA	Water	8270C	507422
LCS 440-507422/2-A	Lab Control Sample	Total/NA	Water	8270C	507422
LCSD 440-507422/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	507422

### Analysis Batch: 507906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	8270C	507422

### Prep Batch: 552789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	625	
MB 490-552789/1-A	Method Blank	Total/NA	Water	625	
LCS 490-552789/4-A	Lab Control Sample	Total/NA	Water	625	

### Analysis Batch: 555842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	625	552789
MB 490-552789/1-A	Method Blank	Total/NA	Water	625	552789
LCS 490-552789/4-A	Lab Control Sample	Total/NA	Water	625	552789

## GC Semi VOA

### Prep Batch: 506583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	608	

TestAmerica Irvine



# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## GC Semi VOA (Continued)

### Prep Batch: 506583 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-506583/1-A	Method Blank	Total/NA	Water	608	
LCS 440-506583/4-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-506583/5-A	Lab Control Sample Dup	Total/NA	Water	608	

### Analysis Batch: 506751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	608	506583
MB 440-506583/1-A	Method Blank	Total/NA	Water	608	506583
LCS 440-506583/4-A	Lab Control Sample	Total/NA	Water	608	506583
LCS 440-506583/5-A	Lab Control Sample Dup	Total/NA	Water	608	506583

## HPLC/IC

### Analysis Batch: 506236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	300.0	
MB 440-506236/6	Method Blank	Total/NA	Water	300.0	
LCS 440-506236/5	Lab Control Sample	Total/NA	Water	300.0	
440-222654-1 MS	Stormwater_101818	Total/NA	Water	300.0	
440-222654-1 MSD	Stormwater_101818	Total/NA	Water	300.0	

### Analysis Batch: 506237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	300.0	
440-222654-1 - DL	Stormwater_101818	Total/NA	Water	300.0	
MB 440-506237/6	Method Blank	Total/NA	Water	300.0	
LCS 440-506237/5	Lab Control Sample	Total/NA	Water	300.0	
440-222654-1 MS	Stormwater_101818	Total/NA	Water	300.0	
440-222654-1 MSD	Stormwater_101818	Total/NA	Water	300.0	

### Analysis Batch: 507514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	NO3NO2 Calc	

## Metals

### Prep Batch: 506628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total Recoverable	Water	200.2	
MB 440-506628/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-506628/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-222648-M-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-222648-M-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Prep Batch: 506640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total Recoverable	Water	200.2	
MB 440-506640/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-506640/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-222733-B-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Metals (Continued)

### Prep Batch: 506640 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222733-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Prep Batch: 506805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	245.1	
MB 440-506805/1-A	Method Blank	Total/NA	Water	245.1	
LCS 440-506805/2-A	Lab Control Sample	Total/NA	Water	245.1	
440-222739-A-2-B MS	Matrix Spike	Total/NA	Water	245.1	
440-222739-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

### Analysis Batch: 506819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total Recoverable	Water	200.8	506640
440-222733-B-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	506640
440-222733-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	506640

### Analysis Batch: 506886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total Recoverable	Water	200.7 Rev 4.4	506628
MB 440-506628/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	506628
LCS 440-506628/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	506628
440-222648-M-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	506628
440-222648-M-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	506628

### Analysis Batch: 506931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-506640/1-A	Method Blank	Total Recoverable	Water	200.8	506640
LCS 440-506640/2-A	Lab Control Sample	Total Recoverable	Water	200.8	506640

### Analysis Batch: 507034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	245.1	506805
MB 440-506805/1-A	Method Blank	Total/NA	Water	245.1	506805
LCS 440-506805/2-A	Lab Control Sample	Total/NA	Water	245.1	506805
440-222739-A-2-B MS	Matrix Spike	Total/NA	Water	245.1	506805
440-222739-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	506805

## General Chemistry

### Analysis Batch: 506473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	SM5210B	
USB 440-506473/1	Method Blank	Total/NA	Water	SM5210B	
LCS 440-506473/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-506473/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	

### Prep Batch: 506893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	SM 4500 NH3 B	
MB 440-506893/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## General Chemistry (Continued)

### Prep Batch: 506893 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-506893/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-222772-A-3-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-222772-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 506896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	SM 4500 NH3 D	506893
MB 440-506893/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	506893
LCS 440-506893/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	506893
440-222772-A-3-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	506893
440-222772-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	506893

### Analysis Batch: 507256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	2540 D	
MB 440-507256/1	Method Blank	Total/NA	Water	2540 D	
LCS 440-507256/2	Lab Control Sample	Total/NA	Water	2540 D	
440-222876-A-1 DU	Duplicate	Total/NA	Water	2540 D	

### Prep Batch: 507685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	1664A	
MB 440-507685/1-A	Method Blank	Total/NA	Water	1664A	
LCS 440-507685/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-507685/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

### Analysis Batch: 507748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	SM 5220D	
MB 440-507748/3	Method Blank	Total/NA	Water	SM 5220D	
LCS 440-507748/4	Lab Control Sample	Total/NA	Water	SM 5220D	
440-223025-A-9 MS	Matrix Spike	Total/NA	Water	SM 5220D	
440-223025-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5220D	

### Analysis Batch: 507751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	1664A	507685
MB 440-507685/1-A	Method Blank	Total/NA	Water	1664A	507685
LCS 440-507685/2-A	Lab Control Sample	Total/NA	Water	1664A	507685
LCSD 440-507685/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	507685

### Prep Batch: 508299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	365.2/365.3/365	
MB 440-508299/1-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 440-508299/2-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
440-222784-B-1-C MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
440-222784-B-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## General Chemistry (Continued)

### Analysis Batch: 508311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-222654-1	Stormwater_101818	Total/NA	Water	365.3	508299
MB 440-508299/1-A	Method Blank	Total/NA	Water	365.3	508299
LCS 440-508299/2-A	Lab Control Sample	Total/NA	Water	365.3	508299
440-222784-B-1-C MS	Matrix Spike	Total/NA	Water	365.3	508299
440-222784-B-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	365.3	508299

# Definitions/Glossary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits

### HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

### Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

## Glossary

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

# Accreditation/Certification Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-18 *
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19
Hawaii	State Program	9	N/A	01-29-19
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19
Oregon	NELAP	10	4028	01-29-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

## Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	10-31-18 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-18 *
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-18
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-18
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-18 *
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-18
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-18
South Carolina	State Program	4	84009 (001)	02-28-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-222654-1

## Laboratory: TestAmerica Nashville (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19



**TestAmerica Irvine**  
 17461 Derian Ave  
 Suite 100  
 Irvine, CA 92614  
 phone 949.261 1022 fax

**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other: **Site Contact: Dennis Montano** Date: 10/18/18  
 Project Manager: Tuong-Phu Ngo **Lab Contact: Rossina Tomova** Carrier: **COC No. 1**  
 Tel/Fax: 818-362-2096

**Client Contact**  
 Republic Services  
 14747 San Fernando Road  
 Sylmar, CA 91342  
 Phone (818) 362-2075  
 FAX (818) 362-5854  
 Project Name: Storm Water Event Sampling  
 Site: Sunshine Canyon Landfill  
 P O #

**Analysis Turnaround Time**  
 WORKING DAYS  
 CALENDAR DAYS  
 TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Oil & Grease (EPA 1664 HEM)	TSS (SM 2540-D)	Metals (EPA 200.7, 200.8, & 245.1)	α-Terpineol (EPA 625)	Ammonia as N (SM 4500D)	BOD (SM 5210B)	Semi-VOCs (SM 8270C), PCBs (EPA 808)	SM 8260B-project VOCs	Semivolatiles (SM8270)	Acrylonitrile (SM 8260b)	chloride, fluoride, nitrate+nitrite (N)	Total phosphorus (EPA 365.3)	COD (SM 5220D)	
Stormwater_101818	10/18/18	11:40 AM	G	W	22	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other</b> Total # 22																					



440-222654 Chain of Custody

**Possible Hazard Identification:**  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the  
 Non-Hazardous Flammable Skin Irritant Poison B Unknown  
 Return to Client Disposal by Lab Archive for \_\_\_\_\_ Months  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

**Special Instructions/QC Requirements & Comments:**

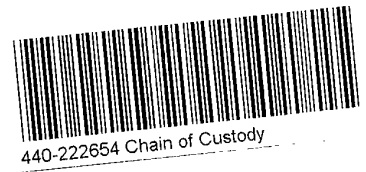
**Custody Seals Intact:** Yes No  
 Relinquished by: *[Signature]* Date/Time: 10/19 11:05  
 Relinquished by: *[Signature]* Date/Time: 10/14/18 12:30  
 Relinquished by: *[Signature]* Date/Time: 10/19/18 12:30 pm

**Custody Seal No.:** Republic Services - Sunshine Canyon Landfill  
 Company: TA  
 Received by: *[Signature]* Date/Time: 10/19/18 11:05  
 Received in Laboratory by: *[Signature]* Date/Time: 10/19/18 12:30 pm

**Cooler Temp (°C):** Obs'd 1.0 Cor'd 1.3 Therm ID No. FR 93  
 Company: TA-IRV  
 Company: TA-IRV



**COOLER RECEIPT FORM**



Cooler Received/Opened On 10/23/2018 @ 09:50

Time Samples Removed From Cooler 4:08 Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # 1079 (last 4 digits, FedEx) Courier: FedEx  
 IR Gun ID 17960358 pH Strip Lot NA Chlorine Strip Lot NA
2. Temperature of rep. sample or temp blank when opened: 0.3 Degrees Celsius
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA
4. Were custody seals on outside of cooler? YES NO...NA  
 If yes, how many and where: \_\_\_\_\_
5. Were the seals intact, signed, and dated correctly? YES...NO NA
6. Were custody papers inside cooler? YES NO...NA
- I certify that I opened the cooler and answered questions 1-6 (initial) \_\_\_\_\_
7. Were custody seals on containers: YES NO and Intact YES...NO NA  
 Were these signed and dated correctly? YES...NO NA
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None
10. Did all containers arrive in good condition (unbroken)? YES NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)? YES NO...NA
12. Did all container labels and tags agree with custody papers? YES NO...NA
- 13a. Were VOA vials received? YES NO...NA
- b. Was there any observable headspace present in any VOA vial? YES...NO NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # \_\_\_\_\_

I certify that I unloaded the cooler and answered questions 7-14 (initial) ACE

- 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO NA
- b. Did the bottle labels indicate that the correct preservatives were used YES NO...NA
16. Was residual chlorine present? YES...NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ACE

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO NA
18. Did you sign the custody papers in the appropriate place? YES NO...NA
19. Were correct containers used for the analysis requested? YES NO...NA
20. Was sufficient amount of sample sent in each container? YES NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) ACE

I certify that I attached a label with the unique LIMS number to each container (initial) ACE

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO # \_\_\_\_\_

TestAmerica Irvine  
 17461 Denian Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone (949) 261-1022 Fax (949) 260-3297

### Chain of Custody Record

440-222654  
 TestAmerica  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b> Client Contact: Tomova, Rossina D Shipping/Receiving: rossina.tomova@testamericainc.com Address: 2960 Foster Creighton Drive, Nashville, TN, 37204 Phone: 615-726-0177(Tel) 615-726-3404(Fax) Email: Project Name: Republic-Sunshine Canyon - Stormwater Site:		Lab PVI: Tomova, Rossina D E-Mail: rossina.tomova@testamericainc.com Name or Origin: California OC No: 40-128184-1 Page: Page 1 of 1 Job #: 440-222654-1	
TestAmerica Laboratories, Inc 2960 Foster Creighton Drive, Nashville, TN, 37204 Phone: 615-726-0177(Tel) 615-726-3404(Fax) Email: Project Name: Republic-Sunshine Canyon - Stormwater Site:		Accreditations Required (See note): Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDA Z - other (specify)	
Date Requested: 10/31/2018 TAT Requested (days):		Analysis Requested:	
PO #: 615-726-0177(Tel) 615-726-3404(Fax) WO #:		625/625 Prep (MOD) Custom 625 Semivolatle List Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Total Number of Containers: 2	
Project #: 44003139 SSOW#:		Special Instructions/Note: needs Alpha-Terpineol spike for the LCS!!!	
Sample Identification - Client ID (Lab ID) Stormwater_101818 (440-222654-1)		Matrix (W=Water, S=solid, O=Organic, A=Air) Sample Type (C=Comp, G=grab) Sample Time: 11:40 Pacific Sample Date: 10/18/18 Preservation Code: Water	
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.			
<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:			
Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:		Date/Time: 10/23/18 9:10 Date/Time: Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.3	



## Login Sample Receipt Checklist

Client: Republic Services Inc

Job Number: 440-222654-1

**Login Number: 222654**

**List Number: 1**

**Creator: Soderblom, Tim**

**List Source: TestAmerica Irvine**

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

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-225342-1

Client Project/Site: Republic-Sunshine Canyon - Stormwater

For:

Republic Services Inc

14747 San Fernando Road

Sylmar, California 91342

Attn: Mr. Tuong-Phu Ngo



Authorized for release by:

12/12/2018 5:14:07 PM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



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[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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# Sample Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-225342-1	SW-2	Water	11/28/18 15:20	11/29/18 17:20

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# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

**Job ID: 440-225342-1**

**Laboratory: TestAmerica Irvine**

## Narrative

**Job Narrative  
440-225342-1**

### Comments

No additional comments.

### Receipt

The sample was received on 11/29/2018 5:20 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.0° C.

### GC/MS VOA

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

### GC/MS Semi VOA

Method(s) 8270C: Surrogate 2,4,6-tribromophenol recovery for the following sample was outside the upper control limit: SW-2 (440-225342-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-561391 and analytical batch 490-561490.

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

### HPLC/IC

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

### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-514507 and analytical batch 440-514797. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-514507/4-A)

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

### Metals

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

### Field Service / Mobile Lab

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

### General Chemistry

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

### Organic Prep

Method(s) 3510C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-514507.

Method(s) 3520C, 8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-514584.

Method(s) 1664A: Insufficient 1664A sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-516323 and analytical batch 440-516396. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-516323/2-A)

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

### VOA Prep

# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

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## Job ID: 440-225342-1 (Continued)

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### Laboratory: TestAmerica Irvine (Continued)

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

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# Client Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

**Client Sample ID: SW-2**

**Lab Sample ID: 440-225342-1**

**Date Collected: 11/28/18 15:20**

**Matrix: Water**

**Date Received: 11/29/18 17:20**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			12/03/18 16:42	1
Toluene	ND		0.00050	0.00025	mg/L			12/03/18 16:42	1
Acrylonitrile	ND		0.050	0.0010	mg/L			11/30/18 09:04	1
Benzene	ND		0.00050	0.00025	mg/L			12/03/18 16:42	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			12/03/18 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		80 - 128		11/30/18 09:04	1
4-Bromofluorobenzene (Surr)	100		80 - 120		11/30/18 09:04	1
Dibromofluoromethane (Surr)	105		76 - 132		11/30/18 09:04	1
Toluene-d8 (Surr)	101		80 - 128		12/03/18 16:42	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/03/18 16:42	1
Dibromofluoromethane (Surr)	97		76 - 132		12/03/18 16:42	1

### Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	ND		0.0095	0.0031	mg/L		12/04/18 15:51	12/05/18 13:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		10 - 120	12/04/18 15:51	12/05/18 13:59	1
2-Fluorophenol	39		29 - 120	12/04/18 15:51	12/05/18 13:59	1
Nitrobenzene-d5	65		27 - 120	12/04/18 15:51	12/05/18 13:59	1
Phenol-d5	27		10 - 120	12/04/18 15:51	12/05/18 13:59	1
Terphenyl-d14	69		13 - 120	12/04/18 15:51	12/05/18 13:59	1
2-Fluorobiphenyl (Surr)	70		10 - 120	12/04/18 15:51	12/05/18 13:59	1

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	ND		0.020	0.010	mg/L		12/03/18 09:52	12/06/18 00:01	1
Butyl benzyl phthalate	ND		0.020	0.0050	mg/L		12/03/18 09:52	12/06/18 00:01	1
Cresol, p-	ND		0.010	0.0020	mg/L		12/03/18 09:52	12/06/18 00:01	1
Dimethyl phthalate	ND		0.010	0.0040	mg/L		12/03/18 09:52	12/06/18 00:01	1
Fluoranthene	ND		0.010	0.0050	mg/L		12/03/18 09:52	12/06/18 00:01	1
Phenol	ND		0.010	0.0050	mg/L		12/03/18 09:52	12/06/18 00:01	1
Pyrene	ND		0.010	0.0050	mg/L		12/03/18 09:52	12/06/18 00:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	141	X	40 - 120	12/03/18 09:52	12/06/18 00:01	1
2-Fluorobiphenyl	107		50 - 120	12/03/18 09:52	12/06/18 00:01	1
2-Fluorophenol (Surr)	84		30 - 120	12/03/18 09:52	12/06/18 00:01	1
Nitrobenzene-d5 (Surr)	91		45 - 120	12/03/18 09:52	12/06/18 00:01	1
Phenol-d6 (Surr)	85		35 - 120	12/03/18 09:52	12/06/18 00:01	1
Terphenyl-d14 (Surr)	116		10 - 150	12/03/18 09:52	12/06/18 00:01	1

### Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1
Aroclor 1221	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1
Aroclor 1232	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1
Aroclor 1242	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1
Aroclor 1248	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1

TestAmerica Irvine

# Client Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Client Sample ID: SW-2

## Lab Sample ID: 440-225342-1

Date Collected: 11/28/18 15:20

Matrix: Water

Date Received: 11/29/18 17:20

### Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1254	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1
Aroclor 1260	ND		0.00096	0.00024	mg/L		12/03/18 06:05	12/04/18 13:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	62		29 - 115				12/03/18 06:05	12/04/18 13:35	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.6		0.11	0.055	mg/L			11/29/18 20:35	1
Chloride	19		0.50	0.25	mg/L			11/29/18 20:35	1
Nitrite as N	0.092	J	0.15	0.025	mg/L			11/29/18 20:35	1
Fluoride	0.62		0.50	0.25	mg/L			11/29/18 20:35	1

### Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.7		0.15	0.055	mg/L			12/10/18 12:08	1

### Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.23		0.10	0.050	mg/L		12/07/18 09:34	12/08/18 14:11	1

### Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.10		0.010	0.0050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Antimony	0.0018	J	0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Arsenic	0.0014		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Beryllium	ND		0.00050	0.00025	mg/L		12/07/18 08:17	12/07/18 17:39	1
Cadmium	0.0010		0.0010	0.00025	mg/L		12/07/18 08:17	12/07/18 17:39	1
Copper	0.011		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Lead	ND		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Manganese	1.3		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Nickel	0.076		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Selenium	0.0024		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Silver	ND		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 17:39	1
Zinc	0.12		0.020	0.0025	mg/L		12/07/18 08:17	12/07/18 17:39	1

### Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00010	mg/L		12/05/18 15:13	12/06/18 13:39	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.1	1.4	mg/L		12/11/18 13:54	12/11/18 20:04	1
Total Suspended Solids	15		5.0	2.5	mg/L			11/30/18 18:54	1
Phosphorus, Total	0.060		0.050	0.025	mg/L		12/10/18 15:53	12/10/18 17:57	1
Ammonia (as N)	1.9		0.50	0.10	mg/L		12/04/18 03:30	12/04/18 05:00	1
Chemical Oxygen Demand	60		20	10	mg/L			12/12/18 10:46	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	15		8.6	8.6	mg/L			11/30/18 11:50	1

# Client Sample Results

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

**Client Sample ID: SW-2**

**Lab Sample ID: 440-225342-1**

Date Collected: 11/28/18 15:20

Matrix: Water

Date Received: 11/29/18 17:20

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.26				SU			11/28/18 15:20	1

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# Method Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
2540 D	TSS	SM21	TAL IRV
365.3	Phosphorus, Total	EPA	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5220D	COD	SM	TAL IRV
SM5210B	BOD, 5 Day	SM	TAL IRV
Field Sampling	Field Sampling	EPA	TAL IRV
1664A	HEM and SGT-HEM (SPE)	1664A	TAL IRV
200.2	Preparation, Total Recoverable Metals	EPA	TAL IRV
245.1	Preparation, Mercury	EPA	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
365.2/365.3/365	Phosphorus, Total	MCAWW	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	TAL IRV
625	Liquid-Liquid Extraction	40CFR136A	TAL NSH
SM 4500 NH3 B	Distillation, Ammonia	SM	TAL IRV

**Protocol References:**

- 1664A = EPA-821-98-002
- 40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
- EPA = US Environmental Protection Agency
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SM = "Standard Methods For The Examination Of Water And Wastewater"
- SM21 = Standard Methods For The Examination Of Water And Wastewater, 21st Edition
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Lab Chronicle

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

**Client Sample ID: SW-2**

**Lab Sample ID: 440-225342-1**

**Date Collected: 11/28/18 15:20**

**Matrix: Water**

**Date Received: 11/29/18 17:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	514511	12/03/18 16:42	WC	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	514105	11/30/18 09:04	RM	TAL IRV
Total/NA	Prep	625			1051.6 mL	1 mL	561391	12/04/18 15:51	MCO	TAL NSH
Total/NA	Analysis	625		1			561490	12/05/18 13:59	T1C	TAL NSH
Total/NA	Prep	3520C			1005 mL	2.0 mL	514584	12/03/18 09:52	JAA	TAL IRV
Total/NA	Analysis	8270C		1			515163	12/06/18 00:01	HN	TAL IRV
Total/NA	Prep	608			1045 mL	2 mL	514507	12/03/18 06:05	L1H	TAL IRV
Total/NA	Analysis	608		1			514797	12/04/18 13:35	JM	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	513890	11/29/18 20:35	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	513891	11/29/18 20:35	NTN	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			515988	12/10/18 12:08	TLN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	515579	12/07/18 09:34	KE	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			515799	12/08/18 14:11	TQN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	515549	12/07/18 08:17	KE	TAL IRV
Total Recoverable	Analysis	200.8		1			515726	12/07/18 17:39	B1H	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	515247	12/05/18 15:13	DB	TAL IRV
Total/NA	Analysis	245.1		1			515469	12/06/18 13:39	P1P	TAL IRV
Total/NA	Prep	1664A			980 mL	1000 mL	516323	12/11/18 13:54	AJH	TAL IRV
Total/NA	Analysis	1664A		1			516396	12/11/18 20:04	AJH	TAL IRV
Total/NA	Analysis	2540 D		1	200 mL	1000 mL	514327	11/30/18 18:54	KM	TAL IRV
Total/NA	Prep	365.2/365.3/365			50 mL	50 mL	516068	12/10/18 15:53	MMP	TAL IRV
Total/NA	Analysis	365.3		1			516096	12/10/18 17:57	MMP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	514736	12/04/18 03:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			514754	12/04/18 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 5220D		1	2.5 mL	2.5 mL	516521	12/12/18 10:46	KYP	TAL IRV
Total/NA	Analysis	SM5210B		1			514156	11/30/18 11:50	MMP	TAL IRV
Total/NA	Analysis	Field Sampling		1			515851	11/28/18 15:20	PS	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177



# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-514105/4**

**Matrix: Water**

**Analysis Batch: 514105**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		0.050	0.0010	mg/L			11/30/18 08:06	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128					11/30/18 08:06	1
4-Bromofluorobenzene (Surr)	100		80 - 120					11/30/18 08:06	1
Dibromofluoromethane (Surr)	101		76 - 132					11/30/18 08:06	1

**Lab Sample ID: LCS 440-514105/5**

**Matrix: Water**

**Analysis Batch: 514105**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	0.250	0.256		mg/L		103	48 - 140
Surrogate	%Recovery	LCS Qualifier	Limits				
Toluene-d8 (Surr)	102		80 - 128				
4-Bromofluorobenzene (Surr)	100		80 - 120				
Dibromofluoromethane (Surr)	99		76 - 132				

**Lab Sample ID: 440-225273-E-4 MS**

**Matrix: Water**

**Analysis Batch: 514105**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	ND		0.250	0.249		mg/L		100	38 - 144
Surrogate	%Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	103		80 - 128						
4-Bromofluorobenzene (Surr)	101		80 - 120						
Dibromofluoromethane (Surr)	99		76 - 132						

**Lab Sample ID: 440-225273-F-4 MSD**

**Matrix: Water**

**Analysis Batch: 514105**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile	ND		0.250	0.222		mg/L		89	38 - 144	11	40
Surrogate	%Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr)	101		80 - 128								
4-Bromofluorobenzene (Surr)	102		80 - 120								
Dibromofluoromethane (Surr)	99		76 - 132								

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-514511/4**  
**Matrix: Water**  
**Analysis Batch: 514511**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			12/03/18 08:30	1
Toluene	ND		0.00050	0.00025	mg/L			12/03/18 08:30	1
Benzene	ND		0.00050	0.00025	mg/L			12/03/18 08:30	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			12/03/18 08:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128		12/03/18 08:30	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/03/18 08:30	1
Dibromofluoromethane (Surr)	99		76 - 132		12/03/18 08:30	1

**Lab Sample ID: LCS 440-514511/5**  
**Matrix: Water**  
**Analysis Batch: 514511**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	0.0250	0.0247		mg/L		99	70 - 130
Toluene	0.0250	0.0237		mg/L		95	70 - 130
Benzene	0.0250	0.0239		mg/L		96	68 - 130
Trichloroethylene	0.0250	0.0247		mg/L		99	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-225628-E-1 MS**  
**Matrix: Water**  
**Analysis Batch: 514511**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	ND		0.0250	0.0243		mg/L		97	70 - 130
Toluene	ND		0.0250	0.0228		mg/L		91	70 - 130
Benzene	ND		0.0250	0.0240		mg/L		96	66 - 130
Trichloroethylene	ND		0.0250	0.0249		mg/L		99	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	96		80 - 128
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132

**Lab Sample ID: 440-225628-E-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 514511**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ethylbenzene	ND		0.0250	0.0242		mg/L		97	70 - 130	0	20
Toluene	ND		0.0250	0.0232		mg/L		93	70 - 130	2	20

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-225628-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 514511**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Benzene	ND		0.0250	0.0240		mg/L		96	66 - 130	0	20
Trichloroethylene	ND		0.0250	0.0251		mg/L		100	70 - 130	1	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
Toluene-d8 (Surr)	99		80 - 128								
4-Bromofluorobenzene (Surr)	101		80 - 120								
Dibromofluoromethane (Surr)	98		76 - 132								

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-561391/1-A**

**Matrix: Water**

**Analysis Batch: 561490**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 561391**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alpha-Terpineol	ND		0.010	0.0033	mg/L		12/04/18 15:51	12/05/18 12:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>						
2,4,6-Tribromophenol	100		10 - 120				12/04/18 15:51	12/05/18 12:33	1
2-Fluorophenol	65		29 - 120				12/04/18 15:51	12/05/18 12:33	1
Nitrobenzene-d5	99		27 - 120				12/04/18 15:51	12/05/18 12:33	1
Phenol-d5	41		10 - 120				12/04/18 15:51	12/05/18 12:33	1
Terphenyl-d14	110		13 - 120				12/04/18 15:51	12/05/18 12:33	1
2-Fluorobiphenyl (Surr)	102		10 - 120				12/04/18 15:51	12/05/18 12:33	1

**Lab Sample ID: LCS 490-561391/4-A**

**Matrix: Water**

**Analysis Batch: 561490**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 561391**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Alpha-Terpineol	0.0500	0.0446		mg/L		89	58 - 156
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
2,4,6-Tribromophenol	92		10 - 120				
2-Fluorophenol	54		29 - 120				
Nitrobenzene-d5	71		27 - 120				
Phenol-d5	35		10 - 120				
Terphenyl-d14	89		13 - 120				
2-Fluorobiphenyl (Surr)	86		10 - 120				

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-514584/1-A**

**Matrix: Water**

**Analysis Batch: 515154**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 514584**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	ND		0.020	0.010	mg/L		12/03/18 09:52	12/05/18 16:18	1
Butyl benzyl phthalate	ND		0.020	0.0050	mg/L		12/03/18 09:52	12/05/18 16:18	1
Cresol, p-	ND		0.010	0.0020	mg/L		12/03/18 09:52	12/05/18 16:18	1
Dimethyl phthalate	ND		0.010	0.0040	mg/L		12/03/18 09:52	12/05/18 16:18	1
Fluoranthene	ND		0.010	0.0050	mg/L		12/03/18 09:52	12/05/18 16:18	1
Phenol	ND		0.010	0.0050	mg/L		12/03/18 09:52	12/05/18 16:18	1
Pyrene	ND		0.010	0.0050	mg/L		12/03/18 09:52	12/05/18 16:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	85		40 - 120	12/03/18 09:52	12/05/18 16:18	1
2-Fluorobiphenyl	89		50 - 120	12/03/18 09:52	12/05/18 16:18	1
2-Fluorophenol (Surr)	71		30 - 120	12/03/18 09:52	12/05/18 16:18	1
Nitrobenzene-d5 (Surr)	90		45 - 120	12/03/18 09:52	12/05/18 16:18	1
Phenol-d6 (Surr)	81		35 - 120	12/03/18 09:52	12/05/18 16:18	1
Terphenyl-d14 (Surr)	109		10 - 150	12/03/18 09:52	12/05/18 16:18	1

**Lab Sample ID: LCS 440-514584/2-A**

**Matrix: Water**

**Analysis Batch: 515154**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 514584**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzoic acid	0.100	0.0603		mg/L		60	15 - 121
Butyl benzyl phthalate	0.100	0.113		mg/L		113	44 - 122
Cresol, p-	0.100	0.0909		mg/L		91	35 - 106
Dimethyl phthalate	0.100	0.107		mg/L		107	49 - 113
Fluoranthene	0.100	0.114		mg/L		114	44 - 119
Phenol	0.100	0.0786		mg/L		79	25 - 99
Pyrene	0.100	0.108		mg/L		108	43 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	107		40 - 120
2-Fluorobiphenyl	97		50 - 120
2-Fluorophenol (Surr)	68		30 - 120
Nitrobenzene-d5 (Surr)	94		45 - 120
Phenol-d6 (Surr)	80		35 - 120
Terphenyl-d14 (Surr)	110		10 - 150

**Lab Sample ID: LCSD 440-514584/3-A**

**Matrix: Water**

**Analysis Batch: 515154**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 514584**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzoic acid	0.100	0.0781		mg/L		78	15 - 121	26	35
Butyl benzyl phthalate	0.100	0.114		mg/L		114	44 - 122	1	35
Cresol, p-	0.100	0.0939		mg/L		94	35 - 106	3	35
Dimethyl phthalate	0.100	0.102		mg/L		102	49 - 113	5	35
Fluoranthene	0.100	0.111		mg/L		111	44 - 119	3	35

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 440-514584/3-A**

**Matrix: Water**

**Analysis Batch: 515154**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 514584**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	0.100	0.0860		mg/L		86	25 - 99	9	35
Pyrene	0.100	0.108		mg/L		108	43 - 119	0	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	102		40 - 120
2-Fluorobiphenyl	96		50 - 120
2-Fluorophenol (Surr)	75		30 - 120
Nitrobenzene-d5 (Surr)	95		45 - 120
Phenol-d6 (Surr)	85		35 - 120
Terphenyl-d14 (Surr)	110		10 - 150

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

**Lab Sample ID: MB 440-514507/1-A**

**Matrix: Water**

**Analysis Batch: 514797**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 514507**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1
Aroclor 1221	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1
Aroclor 1232	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1
Aroclor 1242	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1
Aroclor 1248	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1
Aroclor 1254	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1
Aroclor 1260	ND		0.0010	0.00025	mg/L		12/03/18 06:05	12/04/18 12:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	65		29 - 115	12/03/18 06:05	12/04/18 12:14	1

**Lab Sample ID: LCS 440-514507/4-A**

**Matrix: Water**

**Analysis Batch: 514797**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 514507**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	0.00400	0.00341		mg/L		85	10 - 127
Aroclor 1260	0.00400	0.00365		mg/L		91	50 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	84		29 - 115

**Lab Sample ID: LCSD 440-514507/5-A**

**Matrix: Water**

**Analysis Batch: 514797**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 514507**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	0.00400	0.00336		mg/L		84	10 - 127	1	30
Aroclor 1260	0.00400	0.00357		mg/L		89	50 - 115	2	30

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCSD 440-514507/5-A  
 Matrix: Water  
 Analysis Batch: 514797

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 514507

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	84		29 - 115

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-513890/6  
 Matrix: Water  
 Analysis Batch: 513890

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			11/29/18 11:42	1
Nitrite as N	ND		0.15	0.025	mg/L			11/29/18 11:42	1

Lab Sample ID: LCS 440-513890/5  
 Matrix: Water  
 Analysis Batch: 513890

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.09		mg/L		96	90 - 110
Nitrite as N	1.52	1.54		mg/L		101	90 - 110

Lab Sample ID: 440-225416-C-4 MS  
 Matrix: Water  
 Analysis Batch: 513890

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.2		1.13	2.21		mg/L		92	80 - 120
Nitrite as N	0.057	J	1.52	1.56		mg/L		99	80 - 120

Lab Sample ID: 440-225416-C-4 MSD  
 Matrix: Water  
 Analysis Batch: 513890

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Nitrate as N	1.2		1.13	2.22		mg/L		92	80 - 120	0	20
Nitrite as N	0.057	J	1.52	1.56		mg/L		99	80 - 120	0	20

Lab Sample ID: MB 440-513891/6  
 Matrix: Water  
 Analysis Batch: 513891

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			11/29/18 11:42	1
Fluoride	ND		0.50	0.25	mg/L			11/29/18 11:42	1

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID:** LCS 440-513891/5  
**Matrix:** Water  
**Analysis Batch:** 513891

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.62		mg/L		92	90 - 110
Fluoride	5.00	4.59		mg/L		92	90 - 110

**Lab Sample ID:** 440-225416-C-4 MS  
**Matrix:** Water  
**Analysis Batch:** 513891

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	19		5.00	24.3	E	mg/L		110	80 - 120
Fluoride	0.26	J	5.00	4.57		mg/L		86	80 - 120

**Lab Sample ID:** 440-225416-C-4 MSD  
**Matrix:** Water  
**Analysis Batch:** 513891

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	19		5.00	24.3	E	mg/L		110	80 - 120	0	20
Fluoride	0.26	J	5.00	4.59		mg/L		87	80 - 120	0	20

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID:** MB 440-515579/1-A  
**Matrix:** Water  
**Analysis Batch:** 515799

**Client Sample ID:** Method Blank  
**Prep Type:** Total Recoverable  
**Prep Batch:** 515579

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	0.050	mg/L		12/07/18 09:34	12/08/18 13:15	1

**Lab Sample ID:** LCS 440-515579/2-A  
**Matrix:** Water  
**Analysis Batch:** 515799

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total Recoverable  
**Prep Batch:** 515579

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.500	0.494		mg/L		99	85 - 115

**Lab Sample ID:** 440-226249-C-1-B MS  
**Matrix:** Water  
**Analysis Batch:** 515799

**Client Sample ID:** Matrix Spike  
**Prep Type:** Total Recoverable  
**Prep Batch:** 515579

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.30		0.500	0.797		mg/L		100	70 - 130

**Lab Sample ID:** 440-226249-C-1-C MSD  
**Matrix:** Water  
**Analysis Batch:** 515799

**Client Sample ID:** Matrix Spike Duplicate  
**Prep Type:** Total Recoverable  
**Prep Batch:** 515579

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.30		0.500	0.779		mg/L		97	70 - 130	2	20

TestAmerica Irvine



# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 200.8 - Metals (ICP/MS)

**Lab Sample ID: MB 440-515549/1-A**  
**Matrix: Water**  
**Analysis Batch: 515726**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515549**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.010	0.0050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Antimony	ND		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Arsenic	ND		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Beryllium	ND		0.00050	0.00025	mg/L		12/07/18 08:17	12/07/18 16:38	1
Cadmium	ND		0.0010	0.00025	mg/L		12/07/18 08:17	12/07/18 16:38	1
Copper	ND		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Lead	ND		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Manganese	ND		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Nickel	ND		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Selenium	ND		0.0020	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Silver	ND		0.0010	0.00050	mg/L		12/07/18 08:17	12/07/18 16:38	1
Zinc	ND		0.020	0.0025	mg/L		12/07/18 08:17	12/07/18 16:38	1

**Lab Sample ID: LCS 440-515549/2-A**  
**Matrix: Water**  
**Analysis Batch: 515726**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515549**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.0800	0.0786		mg/L		98	85 - 115
Antimony	0.0800	0.0779		mg/L		97	85 - 115
Arsenic	0.0800	0.0763		mg/L		95	85 - 115
Beryllium	0.0800	0.0755		mg/L		94	85 - 115
Cadmium	0.0800	0.0753		mg/L		94	85 - 115
Copper	0.0800	0.0755		mg/L		94	85 - 115
Lead	0.0800	0.0750		mg/L		94	85 - 115
Manganese	0.0800	0.0764		mg/L		96	85 - 115
Nickel	0.0800	0.0762		mg/L		95	85 - 115
Selenium	0.0800	0.0720		mg/L		90	85 - 115
Silver	0.0800	0.0750		mg/L		94	85 - 115
Zinc	0.0800	0.0751		mg/L		94	85 - 115

**Lab Sample ID: 440-226289-A-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 515726**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515549**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.63		0.0800	0.723	4	mg/L		116	70 - 130
Antimony	0.0014	J	0.0800	0.0893		mg/L		110	70 - 130
Arsenic	0.0039		0.0800	0.0821		mg/L		98	70 - 130
Beryllium	ND		0.0800	0.0799		mg/L		100	70 - 130
Cadmium	ND		0.0800	0.0788		mg/L		98	70 - 130
Copper	0.0071		0.0800	0.0875		mg/L		100	70 - 130
Lead	0.0023		0.0800	0.0803		mg/L		97	70 - 130
Manganese	0.14		0.0800	0.217		mg/L		100	70 - 130
Nickel	0.0073		0.0800	0.0868		mg/L		99	70 - 130
Selenium	ND		0.0800	0.0725		mg/L		91	70 - 130
Silver	ND		0.0800	0.0745		mg/L		93	70 - 130
Zinc	0.042		0.0800	0.118		mg/L		96	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 440-226289-A-1-C MSD

Matrix: Water

Analysis Batch: 515726

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 515549

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Aluminum	0.63		0.0800	0.697	4	mg/L		83	70 - 130	4	20
Antimony	0.0014	J	0.0800	0.0935		mg/L		115	70 - 130	5	20
Arsenic	0.0039		0.0800	0.0867		mg/L		103	70 - 130	5	20
Beryllium	ND		0.0800	0.0846		mg/L		106	70 - 130	6	20
Cadmium	ND		0.0800	0.0815		mg/L		102	70 - 130	3	20
Copper	0.0071		0.0800	0.0896		mg/L		103	70 - 130	2	20
Lead	0.0023		0.0800	0.0834		mg/L		101	70 - 130	4	20
Manganese	0.14		0.0800	0.218		mg/L		100	70 - 130	0	20
Nickel	0.0073		0.0800	0.0893		mg/L		102	70 - 130	3	20
Selenium	ND		0.0800	0.0769		mg/L		96	70 - 130	6	20
Silver	ND		0.0800	0.0778		mg/L		97	70 - 130	4	20
Zinc	0.042		0.0800	0.121		mg/L		99	70 - 130	2	20

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-515247/1-A

Matrix: Water

Analysis Batch: 515469

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 515247

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00010	mg/L		12/05/18 15:13	12/06/18 13:35	1

Lab Sample ID: LCS 440-515247/2-A

Matrix: Water

Analysis Batch: 515469

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 515247

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Mercury	0.00800	0.00875		mg/L		109	85 - 115

Lab Sample ID: 440-225342-1 MS

Matrix: Water

Analysis Batch: 515469

Client Sample ID: SW-2

Prep Type: Total/NA

Prep Batch: 515247

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	ND		0.00800	0.00811		mg/L		101	75 - 125

Lab Sample ID: 440-225342-1 MSD

Matrix: Water

Analysis Batch: 515469

Client Sample ID: SW-2

Prep Type: Total/NA

Prep Batch: 515247

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Mercury	ND		0.00800	0.00817		mg/L		102	75 - 125	1	20

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-516323/1-A  
 Matrix: Water  
 Analysis Batch: 516396

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 516323

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.0	1.4	mg/L		12/11/18 13:54	12/11/18 20:04	1

Lab Sample ID: LCS 440-516323/2-A  
 Matrix: Water  
 Analysis Batch: 516396

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 516323

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil & Grease (HEM)	40.0	35.60		mg/L		89	78 - 114

Lab Sample ID: LCSD 440-516323/3-A  
 Matrix: Water  
 Analysis Batch: 516396

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 516323

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Oil & Grease (HEM)	40.0	39.20		mg/L		98	78 - 114	10	11

## Method: 2540 D - TSS

Lab Sample ID: MB 440-514327/1  
 Matrix: Water  
 Analysis Batch: 514327

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			11/30/18 18:54	1

Lab Sample ID: LCS 440-514327/2  
 Matrix: Water  
 Analysis Batch: 514327

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	920		mg/L		92	85 - 115

Lab Sample ID: 440-225438-A-1 DU  
 Matrix: Water  
 Analysis Batch: 514327

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	170		188		mg/L		10	10

## Method: 365.3 - Phosphorus, Total

Lab Sample ID: MB 440-516068/1-A  
 Matrix: Water  
 Analysis Batch: 516096

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 516068

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	ND		0.050	0.025	mg/L		12/10/18 15:53	12/10/18 17:56	1

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: 365.3 - Phosphorus, Total (Continued)

**Lab Sample ID: LCS 440-516068/2-A**  
**Matrix: Water**  
**Analysis Batch: 516096**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516068**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	0.501	0.493		mg/L		98	80 - 120

**Lab Sample ID: 440-226343-C-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 516096**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 516068**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	0.037	J	0.501	0.550		mg/L		102	75 - 125

**Lab Sample ID: 440-226343-C-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 516096**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 516068**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus, Total	0.037	J	0.501	0.554		mg/L		103	75 - 125	1	20

## Method: SM 4500 NH3 D - Ammonia

**Lab Sample ID: MB 440-514736/2-A**  
**Matrix: Water**  
**Analysis Batch: 514754**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 514736**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/04/18 03:30	12/04/18 05:00	1

**Lab Sample ID: LCS 440-514736/1-A**  
**Matrix: Water**  
**Analysis Batch: 514754**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 514736**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	2.50	2.33		mg/L		93	85 - 115

**Lab Sample ID: 440-225947-A-3-B MS**  
**Matrix: Water**  
**Analysis Batch: 514754**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 514736**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	ND		2.50	2.52		mg/L		101	75 - 125

**Lab Sample ID: 440-225947-A-3-C MSD**  
**Matrix: Water**  
**Analysis Batch: 514754**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 514736**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	ND		2.50	2.52		mg/L		101	75 - 125	0	15

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Method: SM 5220D - COD

Lab Sample ID: MB 440-516521/3

Matrix: Water

Analysis Batch: 516521

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/12/18 10:44	1

Lab Sample ID: LCS 440-516521/4

Matrix: Water

Analysis Batch: 516521

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	194		mg/L		97	90 - 110

Lab Sample ID: 440-225466-B-1 MS

Matrix: Water

Analysis Batch: 516521

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	ND		200	207		mg/L		104	70 - 120

Lab Sample ID: 440-225466-B-1 MSD

Matrix: Water

Analysis Batch: 516521

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	ND		200	200		mg/L		100	70 - 120	4	15

## Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-514156/1

Matrix: Water

Analysis Batch: 514156

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	2.0	mg/L			11/30/18 08:51	1

Lab Sample ID: LCS 440-514156/4

Matrix: Water

Analysis Batch: 514156

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	210		mg/L		106	85 - 115

Lab Sample ID: LCSD 440-514156/5

Matrix: Water

Analysis Batch: 514156

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	211		mg/L		106	85 - 115	0	20

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## GC/MS VOA

### Analysis Batch: 514105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	8260B	
MB 440-514105/4	Method Blank	Total/NA	Water	8260B	
LCS 440-514105/5	Lab Control Sample	Total/NA	Water	8260B	
440-225273-E-4 MS	Matrix Spike	Total/NA	Water	8260B	
440-225273-F-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 514511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	8260B	
MB 440-514511/4	Method Blank	Total/NA	Water	8260B	
LCS 440-514511/5	Lab Control Sample	Total/NA	Water	8260B	
440-225628-E-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-225628-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 514584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	3520C	
MB 440-514584/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-514584/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 440-514584/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 515154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-514584/1-A	Method Blank	Total/NA	Water	8270C	514584
LCS 440-514584/2-A	Lab Control Sample	Total/NA	Water	8270C	514584
LCS 440-514584/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	514584

### Analysis Batch: 515163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	8270C	514584

### Prep Batch: 561391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	625	
MB 490-561391/1-A	Method Blank	Total/NA	Water	625	
LCS 490-561391/4-A	Lab Control Sample	Total/NA	Water	625	

### Analysis Batch: 561490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	625	561391
MB 490-561391/1-A	Method Blank	Total/NA	Water	625	561391
LCS 490-561391/4-A	Lab Control Sample	Total/NA	Water	625	561391

## GC Semi VOA

### Prep Batch: 514507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	608	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## GC Semi VOA (Continued)

### Prep Batch: 514507 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-514507/1-A	Method Blank	Total/NA	Water	608	
LCS 440-514507/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-514507/5-A	Lab Control Sample Dup	Total/NA	Water	608	

### Analysis Batch: 514797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	608	514507
MB 440-514507/1-A	Method Blank	Total/NA	Water	608	514507
LCS 440-514507/4-A	Lab Control Sample	Total/NA	Water	608	514507
LCSD 440-514507/5-A	Lab Control Sample Dup	Total/NA	Water	608	514507

## HPLC/IC

### Analysis Batch: 513890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	300.0	
MB 440-513890/6	Method Blank	Total/NA	Water	300.0	
LCS 440-513890/5	Lab Control Sample	Total/NA	Water	300.0	
440-225416-C-4 MS	Matrix Spike	Total/NA	Water	300.0	
440-225416-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 513891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	300.0	
MB 440-513891/6	Method Blank	Total/NA	Water	300.0	
LCS 440-513891/5	Lab Control Sample	Total/NA	Water	300.0	
440-225416-C-4 MS	Matrix Spike	Total/NA	Water	300.0	
440-225416-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 515988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	NO3NO2 Calc	

## Metals

### Prep Batch: 515247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	245.1	
MB 440-515247/1-A	Method Blank	Total/NA	Water	245.1	
LCS 440-515247/2-A	Lab Control Sample	Total/NA	Water	245.1	
440-225342-1 MS	SW-2	Total/NA	Water	245.1	
440-225342-1 MSD	SW-2	Total/NA	Water	245.1	

### Analysis Batch: 515469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	245.1	515247
MB 440-515247/1-A	Method Blank	Total/NA	Water	245.1	515247
LCS 440-515247/2-A	Lab Control Sample	Total/NA	Water	245.1	515247
440-225342-1 MS	SW-2	Total/NA	Water	245.1	515247
440-225342-1 MSD	SW-2	Total/NA	Water	245.1	515247

TestAmerica Irvine



# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Metals (Continued)

### Prep Batch: 515549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total Recoverable	Water	200.2	
MB 440-515549/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-515549/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-226289-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-226289-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Prep Batch: 515579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total Recoverable	Water	200.2	
MB 440-515579/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-515579/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-226249-C-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-226249-C-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Analysis Batch: 515726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total Recoverable	Water	200.8	515549
MB 440-515549/1-A	Method Blank	Total Recoverable	Water	200.8	515549
LCS 440-515549/2-A	Lab Control Sample	Total Recoverable	Water	200.8	515549
440-226289-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	515549
440-226289-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	515549

### Analysis Batch: 515799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total Recoverable	Water	200.7 Rev 4.4	515579
MB 440-515579/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	515579
LCS 440-515579/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	515579
440-226249-C-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	515579
440-226249-C-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	515579

## General Chemistry

### Analysis Batch: 514156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	SM5210B	
USB 440-514156/1	Method Blank	Total/NA	Water	SM5210B	
LCS 440-514156/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-514156/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	

### Analysis Batch: 514327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	2540 D	
MB 440-514327/1	Method Blank	Total/NA	Water	2540 D	
LCS 440-514327/2	Lab Control Sample	Total/NA	Water	2540 D	
440-225438-A-1 DU	Duplicate	Total/NA	Water	2540 D	

### Prep Batch: 514736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	SM 4500 NH3 B	
MB 440-514736/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## General Chemistry (Continued)

### Prep Batch: 514736 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-514736/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-225947-A-3-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-225947-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 514754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	SM 4500 NH3 D	514736
MB 440-514736/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	514736
LCS 440-514736/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	514736
440-225947-A-3-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	514736
440-225947-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	514736

### Prep Batch: 516068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	365.2/365.3/365	
MB 440-516068/1-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 440-516068/2-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
440-226343-C-1-B MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
440-226343-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

### Analysis Batch: 516096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	365.3	516068
MB 440-516068/1-A	Method Blank	Total/NA	Water	365.3	516068
LCS 440-516068/2-A	Lab Control Sample	Total/NA	Water	365.3	516068
440-226343-C-1-B MS	Matrix Spike	Total/NA	Water	365.3	516068
440-226343-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	365.3	516068

### Prep Batch: 516323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	1664A	
MB 440-516323/1-A	Method Blank	Total/NA	Water	1664A	
LCS 440-516323/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-516323/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

### Analysis Batch: 516396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	1664A	516323
MB 440-516323/1-A	Method Blank	Total/NA	Water	1664A	516323
LCS 440-516323/2-A	Lab Control Sample	Total/NA	Water	1664A	516323
LCSD 440-516323/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	516323

### Analysis Batch: 516521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	SM 5220D	
MB 440-516521/3	Method Blank	Total/NA	Water	SM 5220D	
LCS 440-516521/4	Lab Control Sample	Total/NA	Water	SM 5220D	
440-225466-B-1 MS	Matrix Spike	Total/NA	Water	SM 5220D	
440-225466-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5220D	

# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Field Service / Mobile Lab

Analysis Batch: 515851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225342-1	SW-2	Total/NA	Water	Field Sampling	

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

# Definitions/Glossary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

### HPLC/IC

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

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

## Glossary

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

## Accreditation/Certification Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

### Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

### Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	10-31-18 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-18 *
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-18
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-18
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-18
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-18
South Carolina	State Program	4	84009 (001)	02-28-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

# Accreditation/Certification Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225342-1

## Laboratory: TestAmerica Nashville (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19



**TestAmerica Irvine**  
 17461 Meridian Ave  
 Suite 100  
 Irvine, CA 92614  
 Phone: 949.261.1022 Fax:

**Chain of Custody Record**

138509

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING  
 TestAmerica Laboratories, Inc.  
 TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_  
 Project Manager: **Sosh Mills** Date: **11-28-18**  
 Client Contact: **Republic Services** Lab Contact: **Dennis Montano**  
 Company Name: **Republic Services** Address: **14747 San Fernando Rd.**  
 City/State/Zip: **Sylmar CA 91342**  
 Phone: **(818) 462-2075**  
 Fax: **(818) 462-5854**  
 Project Name: **Storm Water Event Sampling**  
 Site: **Sunshine Canyon Landfill**  
 P.O.#: \_\_\_\_\_

Analysis Turnaround Time: \_\_\_\_\_  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below:  
 2 weeks  1 week  2 days  1 day

Site Contact: **Dennis Montano** Date: **11-28-18**  
 Lab Contact: **Rossie Tomalia** Carrier: \_\_\_\_\_  
 Filtered Sample (Y/N) Perform MS/MSD (Y/N) Oil & Grease (EPA 8160-A) TSS (SM 2540D) Metel (EPA 2007.208.215) A-Tripincol (EPA 815) Ammonia as N (SH 4500) BOD (SH 5210B) Semi-Vol (SH 8160-C) VOCs + 4 (SH 8160-B) Sew Volatile (EPA 821) Acrylonitrile (SH 8160) Chlorinated (SH 8160) Total Phosphorus (EPA 821) COD (SH 9220D)

Sample Identification

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Oil & Grease (EPA 8160-A)	TSS (SM 2540D)	Metel (EPA 2007.208.215)	A-Tripincol (EPA 815)	Ammonia as N (SH 4500)	BOD (SH 5210B)	Semi-Vol (SH 8160-C)	VOCs + 4 (SH 8160-B)	Sew Volatile (EPA 821)	Acrylonitrile (SH 8160)	Chlorinated (SH 8160)	Total Phosphorus (EPA 821)	COD (SH 9220D)	
SW-2	11/28/18	3:20PM	G	W		N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SW-2						N	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Sample Specific Notes: **PH Meter Read 7.26 time: 3:20pm**

Barcode: 440-225342 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other \_\_\_\_\_  
 Possible Hazard Identification: \_\_\_\_\_  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_  
 Relinquished by: **Dennis Montano** Date/Time: **11-28-18 1114**  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received by: **TA IRV** Date/Time: **11-29-18 1114**  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received in Laboratory by: **Dora Jimelas** Date/Time: **11/29/18 1720**

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Therm ID No: **5.0**





## COOLER RECEIPT FORM



440-225342 Chain of Custody

Cooler Received/Opened On 12/4/2018 @ 10:20

Time Samples Removed From Cooler 1202 Time Samples Placed In Storage 1224 (2 Hour Window)

1. Tracking # 9600 (last 4 digits, FedEx) Courier: FedEx  
IR Gun ID 17960358 pH Strip Lot      Chlorine Strip Lot     

2. Temperature of rep. sample or temp blank when opened: 0.1 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES NO...NA

If yes, how many and where:     

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial)     

7. Were custody seals on containers: YES NO and Intact      YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #     

I certify that I unloaded the cooler and answered questions 7-14 (initial) TR

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) TR

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) TR

I certify that I attached a label with the unique LIMS number to each container (initial) TR

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

LOC: 440

225342

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Record

TestAmerica Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Form containing client information, analysis requested, sample identification, and chain of custody details. Includes sections for 'Client Information (Sub Contract Lab)', 'Analysis Requested', 'Sample Identification - Client ID (Lab ID)', and 'Chain of Custody'.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided.

Possible Hazard Identification
Unconfirmed
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Return To Client Disposal By Lab Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify)
Primary Deliverable Rank: 2

Table for Chain of Custody with columns: Date/Time, Received by, Company, Relinquished by, Date/Time. Includes signatures and dates for various stages of the process.

Ver: 09/20/2016

## Login Sample Receipt Checklist

Client: Republic Services Inc

Job Number: 440-225342-1

**Login Number: 225342**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Soderblom, Tim**

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



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-225666-1

Client Project/Site: Republic-Sunshine Canyon - Stormwater

For:

Republic Services Inc

14747 San Fernando Road

Sylmar, California 91342

Attn: Mr. Tuong-Phu Ngo



Authorized for release by:

12/19/2018 12:08:40 PM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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# Sample Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-225666-1	SW-3	Water	11/29/18 14:05	11/30/18 18:00

---

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

# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

**Job ID: 440-225666-1**

**Laboratory: TestAmerica Irvine**

## Narrative

**Job Narrative  
440-225666-1**

### Comments

No additional comments.

### Receipt

The sample was received on 11/30/2018 6:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

### GC/MS VOA

Method(s) 8260B: The sample was collected in improperly unpreserved vials for analysis of volatile organic compounds (VOCs). However, when verified by the laboratory, the pH was 6 and the following sample was analyzed after 7 days from sampling: SW-3 (440-225666-1).

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

### GC/MS Semi VOA

Method(s) 8270C: Surrogate 2,4,6-Tribromophenol (Surr) recovery for the following sample was outside the upper control limit: SW-3 (440-225666-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-561391 and analytical batch 490-561490.

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

### HPLC/IC

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

### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-514349 and analytical batch 440-514566. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-514349/4-A)

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

### Metals

Method(s) 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries of Iron for preparation batch 440-515783 and analytical batch 440-516028 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 200.8: The continuing calibration verification (CCV) associated with batch 440-516049 recovered above the upper control limit for Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: SW-3 (440-225666-1).

Method(s) 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-515781 and analytical batch 440-516049 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### Field Service / Mobile Lab

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

### General Chemistry



# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

---

## Job ID: 440-225666-1 (Continued)

---

### Laboratory: TestAmerica Irvine (Continued)

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

#### Organic Prep

Method(s) 3520C/8270: Due to the matrix, the following sample could not be concentrated to the final method required volume: SW-3 (440-225666-1). The reporting limits (RLs) are elevated proportionately.

Method(s) 3520C/8270 : Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-514808.

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-517269 and analytical batch 440-517310. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

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

#### VOA Prep

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



# Client Sample Results

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

**Client Sample ID: SW-3**  
**Date Collected: 11/29/18 14:05**  
**Date Received: 11/30/18 18:00**

**Lab Sample ID: 440-225666-1**  
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			12/07/18 16:04	1
Toluene	ND		0.00050	0.00025	mg/L			12/07/18 16:04	1
Acrylonitrile	ND		0.050	0.0010	mg/L			12/04/18 14:22	1
Benzene	ND		0.00050	0.00025	mg/L			12/07/18 16:04	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			12/07/18 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 128		12/04/18 14:22	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/04/18 14:22	1
Dibromofluoromethane (Surr)	100		76 - 132		12/04/18 14:22	1
Toluene-d8 (Surr)	98		80 - 128		12/07/18 16:04	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/07/18 16:04	1
Dibromofluoromethane (Surr)	89		76 - 132		12/07/18 16:04	1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	ND		0.0095	0.0031	mg/L		12/04/18 15:51	12/05/18 14:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	75		10 - 120	12/04/18 15:51	12/05/18 14:20	1
2-Fluorophenol	38		29 - 120	12/04/18 15:51	12/05/18 14:20	1
Nitrobenzene-d5	63		27 - 120	12/04/18 15:51	12/05/18 14:20	1
Phenol-d5	26		10 - 120	12/04/18 15:51	12/05/18 14:20	1
Terphenyl-d14	69		13 - 120	12/04/18 15:51	12/05/18 14:20	1
2-Fluorobiphenyl (Surr)	68		10 - 120	12/04/18 15:51	12/05/18 14:20	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	ND		0.040	0.020	mg/L		12/04/18 10:08	12/06/18 18:13	1
Butyl benzyl phthalate	ND		0.040	0.010	mg/L		12/04/18 10:08	12/06/18 18:13	1
Cresol, p-	ND		0.020	0.0040	mg/L		12/04/18 10:08	12/06/18 18:13	1
Dimethyl phthalate	ND		0.020	0.0080	mg/L		12/04/18 10:08	12/06/18 18:13	1
Fluoranthene	ND		0.020	0.010	mg/L		12/04/18 10:08	12/06/18 18:13	1
Phenol	ND		0.020	0.010	mg/L		12/04/18 10:08	12/06/18 18:13	1
Pyrene	ND		0.020	0.010	mg/L		12/04/18 10:08	12/06/18 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	123	X	40 - 120	12/04/18 10:08	12/06/18 18:13	1
2-Fluorobiphenyl	100		50 - 120	12/04/18 10:08	12/06/18 18:13	1
2-Fluorophenol (Surr)	76		30 - 120	12/04/18 10:08	12/06/18 18:13	1
Nitrobenzene-d5 (Surr)	85		45 - 120	12/04/18 10:08	12/06/18 18:13	1
Phenol-d6 (Surr)	79		35 - 120	12/04/18 10:08	12/06/18 18:13	1
Terphenyl-d14 (Surr)	103		10 - 150	12/04/18 10:08	12/06/18 18:13	1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1
Aroclor 1221	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1
Aroclor 1232	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1
Aroclor 1242	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1
Aroclor 1248	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1

TestAmerica Irvine

# Client Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

**Client Sample ID: SW-3**  
**Date Collected: 11/29/18 14:05**  
**Date Received: 11/30/18 18:00**

**Lab Sample ID: 440-225666-1**  
**Matrix: Water**

### Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1254	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1
Aroclor 1260	ND		0.00095	0.00024	mg/L		12/01/18 05:12	12/03/18 15:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	67		29 - 115				12/01/18 05:12	12/03/18 15:45	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.0		0.11	0.055	mg/L			11/30/18 20:17	1
Chloride	14		0.50	0.25	mg/L			11/30/18 20:17	1
Nitrite as N	0.076	J	0.15	0.025	mg/L			11/30/18 20:17	1
Fluoride	0.53		0.50	0.25	mg/L			11/30/18 20:17	1

### Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.1		0.15	0.055	mg/L			12/11/18 15:03	1

### Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.0		0.10	0.050	mg/L		12/08/18 11:38	12/10/18 12:59	1

### Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.52		0.010	0.0050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Antimony	0.00094	J	0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Arsenic	0.0011		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Beryllium	ND	^	0.00050	0.00025	mg/L		12/08/18 11:32	12/10/18 13:28	1
Cadmium	0.0017		0.0010	0.00025	mg/L		12/08/18 11:32	12/10/18 13:28	1
Copper	0.0064		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Lead	ND		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Manganese	2.4		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Nickel	0.095		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Selenium	0.0027		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Silver	ND		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 13:28	1
Zinc	0.051		0.020	0.0025	mg/L		12/08/18 11:32	12/10/18 13:28	1

### Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00010	mg/L		12/11/18 11:45	12/11/18 21:06	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.2	1.5	mg/L		12/14/18 22:05	12/15/18 09:23	1
Total Suspended Solids	8.7		3.3	1.7	mg/L			12/03/18 08:48	1
Phosphorus, Total	0.046	J	0.050	0.025	mg/L		12/18/18 13:42	12/18/18 15:33	1
Ammonia (as N)	1.8		0.50	0.10	mg/L		12/06/18 03:30	12/06/18 06:00	1
Chemical Oxygen Demand	45		20	10	mg/L			12/18/18 13:42	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	7.7		2.0	2.0	mg/L			12/01/18 11:33	1

TestAmerica Irvine

# Client Sample Results

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

**Client Sample ID: SW-3**  
**Date Collected: 11/29/18 14:05**  
**Date Received: 11/30/18 18:00**

**Lab Sample ID: 440-225666-1**  
**Matrix: Water**

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.33				SU			11/29/18 14:05	1

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

# Method Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
2540 D	TSS	SM21	TAL IRV
365.3	Phosphorus, Total	EPA	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5220D	COD	SM	TAL IRV
SM5210B	BOD, 5 Day	SM	TAL IRV
Field Sampling	Field Sampling	EPA	TAL IRV
1664A	HEM and SGT-HEM (SPE)	1664A	TAL IRV
200.2	Preparation, Total Recoverable Metals	EPA	TAL IRV
245.1	Preparation, Mercury	EPA	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
365.2/365.3/365	Phosphorus, Total	MCAWW	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	TAL IRV
625	Liquid-Liquid Extraction	40CFR136A	TAL NSH
SM 4500 NH3 B	Distillation, Ammonia	SM	TAL IRV

## Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

SM21 = Standard Methods For The Examination Of Water And Wastewater, 21st Edition

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

## Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Lab Chronicle

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

**Client Sample ID: SW-3**  
**Date Collected: 11/29/18 14:05**  
**Date Received: 11/30/18 18:00**

**Lab Sample ID: 440-225666-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	515518	12/07/18 16:04	RM	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	514744	12/04/18 14:22	WC	TAL IRV
Total/NA	Prep	625			1051.9 mL	1 mL	561391	12/04/18 15:51	MCO	TAL NSH
Total/NA	Analysis	625		1			561490	12/05/18 14:20	T1C	TAL NSH
Total/NA	Prep	3520C			1005 mL	4.0 mL	514808	12/04/18 10:08	JAA	TAL IRV
Total/NA	Analysis	8270C		1			515390	12/06/18 18:13	HN	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	514349	12/01/18 05:12	L1H	TAL IRV
Total/NA	Analysis	608		1			514566	12/03/18 15:45	JM	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	514169	11/30/18 20:17	NN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	514170	11/30/18 20:17	NTN	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			516343	12/11/18 15:03	TLN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	515783	12/08/18 11:38	KE	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			516028	12/10/18 12:59	TQN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	515781	12/08/18 11:32	KE	TAL IRV
Total Recoverable	Analysis	200.8		1			516049	12/10/18 13:28	B1H	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	516143	12/11/18 11:45	DB	TAL IRV
Total/NA	Analysis	245.1		1			516543	12/11/18 21:06	DB	TAL IRV
Total/NA	Prep	1664A			965 mL	1000 mL	517269	12/14/18 22:05	AJH	TAL IRV
Total/NA	Analysis	1664A		1			517310	12/15/18 09:23	JC1	TAL IRV
Total/NA	Analysis	2540 D		1	300 mL	1000 mL	514560	12/03/18 08:48	XL	TAL IRV
Total/NA	Prep	365.2/365.3/365			50 mL	50 mL	517924	12/18/18 13:42	MMP	TAL IRV
Total/NA	Analysis	365.3		1			517969	12/18/18 15:33	MMP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	515266	12/06/18 03:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			515287	12/06/18 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 5220D		1	2.5 mL	2.5 mL	517925	12/18/18 13:42	KYP	TAL IRV
Total/NA	Analysis	SM5210B		1			514366	12/01/18 11:33	HTL	TAL IRV
Total/NA	Analysis	Field Sampling		1			516134	11/29/18 14:05	PS	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022  
 TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-514744/4**  
**Matrix: Water**  
**Analysis Batch: 514744**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		0.050	0.0010	mg/L			12/04/18 08:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 128		12/04/18 08:18	1
4-Bromofluorobenzene (Surr)	101		80 - 120		12/04/18 08:18	1
Dibromofluoromethane (Surr)	99		76 - 132		12/04/18 08:18	1

**Lab Sample ID: LCS 440-514744/5**  
**Matrix: Water**  
**Analysis Batch: 514744**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	0.250	0.228		mg/L		91	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132

**Lab Sample ID: LCSD 440-514744/6**  
**Matrix: Water**  
**Analysis Batch: 514744**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile	0.250	0.233		mg/L		93	48 - 140	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 128
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	105		76 - 132

**Lab Sample ID: 550-114087-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 514744**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	ND		0.250	0.217		mg/L		87	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132



# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 550-114087-B-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 514744**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile	ND		0.250	0.243		mg/L		97	38 - 144	11	40
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD</b>	<b>Limits</b>							
Toluene-d8 (Surr)	97			80 - 128							
4-Bromofluorobenzene (Surr)	102			80 - 120							
Dibromofluoromethane (Surr)	105			76 - 132							

**Lab Sample ID: MB 440-515518/4**  
**Matrix: Water**  
**Analysis Batch: 515518**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			12/07/18 08:07	1
Toluene	ND		0.00050	0.00025	mg/L			12/07/18 08:07	1
Benzene	ND		0.00050	0.00025	mg/L			12/07/18 08:07	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			12/07/18 08:07	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>MB</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Toluene-d8 (Surr)	98			80 - 128				12/07/18 08:07	1
4-Bromofluorobenzene (Surr)	96			80 - 120				12/07/18 08:07	1
Dibromofluoromethane (Surr)	95			76 - 132				12/07/18 08:07	1

**Lab Sample ID: LCS 440-515518/5**  
**Matrix: Water**  
**Analysis Batch: 515518**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	0.0250	0.0249		mg/L		99	70 - 130
Toluene	0.0250	0.0232		mg/L		93	70 - 130
Benzene	0.0250	0.0233		mg/L		93	68 - 130
Trichloroethylene	0.0250	0.0244		mg/L		98	70 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>LCS</b>	<b>Limits</b>			
Toluene-d8 (Surr)	96			80 - 128			
4-Bromofluorobenzene (Surr)	95			80 - 120			
Dibromofluoromethane (Surr)	96			76 - 132			

**Lab Sample ID: 440-226628-D-1 MS**  
**Matrix: Water**  
**Analysis Batch: 515518**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	ND		0.0250	0.0271		mg/L		108	70 - 130
Toluene	0.00034	J	0.0250	0.0255		mg/L		101	70 - 130
Benzene	ND		0.0250	0.0251		mg/L		100	66 - 130
Trichloroethylene	ND		0.0250	0.0262		mg/L		105	70 - 130

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-226628-D-1 MS**  
**Matrix: Water**  
**Analysis Batch: 515518**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	89		76 - 132

**Lab Sample ID: 440-226628-D-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 515518**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	ND		0.0250	0.0256		mg/L		102	70 - 130	6	20
Toluene	0.00034	J	0.0250	0.0244		mg/L		96	70 - 130	4	20
Benzene	ND		0.0250	0.0249		mg/L		100	66 - 130	1	20
Trichloroethylene	ND		0.0250	0.0259		mg/L		104	70 - 130	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	87		76 - 132

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-561391/1-A**  
**Matrix: Water**  
**Analysis Batch: 561490**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 561391**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	ND		0.010	0.0033	mg/L		12/04/18 15:51	12/05/18 12:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	100		10 - 120	12/04/18 15:51	12/05/18 12:33	1
2-Fluorophenol	65		29 - 120	12/04/18 15:51	12/05/18 12:33	1
Nitrobenzene-d5	99		27 - 120	12/04/18 15:51	12/05/18 12:33	1
Phenol-d5	41		10 - 120	12/04/18 15:51	12/05/18 12:33	1
Terphenyl-d14	110		13 - 120	12/04/18 15:51	12/05/18 12:33	1
2-Fluorobiphenyl (Surr)	102		10 - 120	12/04/18 15:51	12/05/18 12:33	1

**Lab Sample ID: LCS 490-561391/4-A**  
**Matrix: Water**  
**Analysis Batch: 561490**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 561391**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alpha-Terpineol	0.0500	0.0446		mg/L		89	58 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	92		10 - 120
2-Fluorophenol	54		29 - 120
Nitrobenzene-d5	71		27 - 120

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-561391/4-A**  
**Matrix: Water**  
**Analysis Batch: 561490**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 561391**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Phenol-d5	35		10 - 120
Terphenyl-d14	89		13 - 120
2-Fluorobiphenyl (Surr)	86		10 - 120

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-514808/1-A**  
**Matrix: Water**  
**Analysis Batch: 515299**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 514808**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	ND		0.020	0.010	mg/L		12/04/18 10:08	12/06/18 10:26	1
Butyl benzyl phthalate	ND		0.020	0.0050	mg/L		12/04/18 10:08	12/06/18 10:26	1
Cresol, p-	ND		0.010	0.0020	mg/L		12/04/18 10:08	12/06/18 10:26	1
Dimethyl phthalate	ND		0.010	0.0040	mg/L		12/04/18 10:08	12/06/18 10:26	1
Fluoranthene	ND		0.010	0.0050	mg/L		12/04/18 10:08	12/06/18 10:26	1
Phenol	ND		0.010	0.0050	mg/L		12/04/18 10:08	12/06/18 10:26	1
Pyrene	ND		0.010	0.0050	mg/L		12/04/18 10:08	12/06/18 10:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	81		40 - 120	12/04/18 10:08	12/06/18 10:26	1
2-Fluorobiphenyl	82		50 - 120	12/04/18 10:08	12/06/18 10:26	1
2-Fluorophenol (Surr)	63		30 - 120	12/04/18 10:08	12/06/18 10:26	1
Nitrobenzene-d5 (Surr)	82		45 - 120	12/04/18 10:08	12/06/18 10:26	1
Phenol-d6 (Surr)	78		35 - 120	12/04/18 10:08	12/06/18 10:26	1
Terphenyl-d14 (Surr)	98		10 - 150	12/04/18 10:08	12/06/18 10:26	1

**Lab Sample ID: LCS 440-514808/2-A**  
**Matrix: Water**  
**Analysis Batch: 515299**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 514808**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzoic acid	0.100	0.0749		mg/L		75	15 - 121
Butyl benzyl phthalate	0.100	0.109		mg/L		109	44 - 122
Cresol, p-	0.100	0.0785		mg/L		79	35 - 106
Dimethyl phthalate	0.100	0.0941		mg/L		94	49 - 113
Fluoranthene	0.100	0.105		mg/L		105	44 - 119
Phenol	0.100	0.0668		mg/L		67	25 - 99
Pyrene	0.100	0.101		mg/L		101	43 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	96		40 - 120
2-Fluorobiphenyl	81		50 - 120
2-Fluorophenol (Surr)	54		30 - 120
Nitrobenzene-d5 (Surr)	79		45 - 120
Phenol-d6 (Surr)	68		35 - 120
Terphenyl-d14 (Surr)	104		10 - 150

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

**Lab Sample ID: LCSD 440-514808/3-A**  
**Matrix: Water**  
**Analysis Batch: 515299**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 514808**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzoic acid	0.100	0.0845		mg/L		85	15 - 121	12	35
Butyl benzyl phthalate	0.100	0.112		mg/L		112	44 - 122	3	35
Cresol, p-	0.100	0.0912		mg/L		91	35 - 106	15	35
Dimethyl phthalate	0.100	0.102		mg/L		102	49 - 113	8	35
Fluoranthene	0.100	0.109		mg/L		109	44 - 119	4	35
Phenol	0.100	0.0782		mg/L		78	25 - 99	16	35
Pyrene	0.100	0.105		mg/L		105	43 - 119	3	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	104		40 - 120
2-Fluorobiphenyl	91		50 - 120
2-Fluorophenol (Surr)	65		30 - 120
Nitrobenzene-d5 (Surr)	88		45 - 120
Phenol-d6 (Surr)	78		35 - 120
Terphenyl-d14 (Surr)	107		10 - 150

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

**Lab Sample ID: MB 440-514349/1-A**  
**Matrix: Water**  
**Analysis Batch: 514566**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 514349**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1
Aroclor 1221	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1
Aroclor 1232	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1
Aroclor 1242	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1
Aroclor 1248	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1
Aroclor 1254	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1
Aroclor 1260	ND		0.0010	0.00025	mg/L		12/01/18 05:12	12/03/18 12:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	64		29 - 115	12/01/18 05:12	12/03/18 12:49	1

**Lab Sample ID: LCS 440-514349/4-A**  
**Matrix: Water**  
**Analysis Batch: 514566**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 514349**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	0.00400	0.00330		mg/L		82	10 - 127
Aroclor 1260	0.00400	0.00351		mg/L		88	50 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	82		29 - 115

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

**Lab Sample ID: LCSD 440-514349/5-A**  
**Matrix: Water**  
**Analysis Batch: 514566**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 514349**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	0.00400	0.00327		mg/L		82	10 - 127	1	30
Aroclor 1260	0.00400	0.00346		mg/L		87	50 - 115	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	82		29 - 115

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-514169/6**  
**Matrix: Water**  
**Analysis Batch: 514169**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			11/30/18 12:11	1
Nitrite as N	ND		0.15	0.025	mg/L			11/30/18 12:11	1

**Lab Sample ID: LCS 440-514169/5**  
**Matrix: Water**  
**Analysis Batch: 514169**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.09		mg/L		97	90 - 110
Nitrite as N	1.52	1.55		mg/L		102	90 - 110

**Lab Sample ID: 440-225659-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 514169**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.16		1.13	1.13		mg/L		86	80 - 120
Nitrite as N	0.058	J	1.52	1.42		mg/L		89	80 - 120

**Lab Sample ID: 440-225659-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 514169**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.16		1.13	1.14		mg/L		86	80 - 120	0	20
Nitrite as N	0.058	J	1.52	1.41		mg/L		89	80 - 120	0	20

**Lab Sample ID: MB 440-514170/6**  
**Matrix: Water**  
**Analysis Batch: 514170**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			11/30/18 12:11	1
Fluoride	ND		0.50	0.25	mg/L			11/30/18 12:11	1

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 440-514170/5**  
**Matrix: Water**  
**Analysis Batch: 514170**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.64		mg/L		93	90 - 110
Fluoride	5.00	4.58		mg/L		92	90 - 110

**Lab Sample ID: 440-225659-A-2 MS**  
**Matrix: Water**  
**Analysis Batch: 514170**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.4		5.00	6.79		mg/L		89	80 - 120
Fluoride	ND		5.00	4.45		mg/L		89	80 - 120

**Lab Sample ID: 440-225659-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 514170**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2.4		5.00	6.82		mg/L		89	80 - 120	0	20
Fluoride	ND		5.00	4.46		mg/L		89	80 - 120	0	20

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID: MB 440-515783/1-A**  
**Matrix: Water**  
**Analysis Batch: 516028**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515783**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	0.050	mg/L		12/08/18 11:38	12/10/18 11:44	1

**Lab Sample ID: LCS 440-515783/2-A**  
**Matrix: Water**  
**Analysis Batch: 516028**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515783**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.500	0.522		mg/L		104	85 - 115

**Lab Sample ID: 440-226315-C-2-B MS**  
**Matrix: Water**  
**Analysis Batch: 516028**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515783**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.4	F1	0.500	2.20	F1	mg/L		156	70 - 130

**Lab Sample ID: 440-226315-C-2-C MSD**  
**Matrix: Water**  
**Analysis Batch: 516028**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515783**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.4	F1	0.500	2.16	F1	mg/L		147	70 - 130	2	20

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 200.8 - Metals (ICP/MS)

**Lab Sample ID: MB 440-515781/1-A**  
**Matrix: Water**  
**Analysis Batch: 516049**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515781**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.010	0.0050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Antimony	ND		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Arsenic	ND		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Beryllium	ND	^	0.00050	0.00025	mg/L		12/08/18 11:32	12/10/18 12:33	1
Cadmium	ND		0.0010	0.00025	mg/L		12/08/18 11:32	12/10/18 12:33	1
Copper	ND		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Lead	ND		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Manganese	ND		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Nickel	ND		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Selenium	ND		0.0020	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Silver	ND		0.0010	0.00050	mg/L		12/08/18 11:32	12/10/18 12:33	1
Zinc	ND		0.020	0.0025	mg/L		12/08/18 11:32	12/10/18 12:33	1

**Lab Sample ID: LCS 440-515781/2-A**  
**Matrix: Water**  
**Analysis Batch: 516049**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515781**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.0800	0.0872		mg/L		109	85 - 115
Antimony	0.0800	0.0884		mg/L		111	85 - 115
Arsenic	0.0800	0.0807		mg/L		101	85 - 115
Beryllium	0.0800	0.0907	^	mg/L		113	85 - 115
Cadmium	0.0800	0.0829		mg/L		104	85 - 115
Copper	0.0800	0.0822		mg/L		103	85 - 115
Lead	0.0800	0.0814		mg/L		102	85 - 115
Manganese	0.0800	0.0803		mg/L		100	85 - 115
Nickel	0.0800	0.0824		mg/L		103	85 - 115
Selenium	0.0800	0.0752		mg/L		94	85 - 115
Silver	0.0800	0.0832		mg/L		104	85 - 115
Zinc	0.0800	0.0838		mg/L		105	85 - 115

**Lab Sample ID: 440-226588-A-7-B MS ^10**  
**Matrix: Water**  
**Analysis Batch: 516049**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 515781**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.17		0.0800	0.256		mg/L		102	70 - 130
Antimony	ND		0.0800	0.0855		mg/L		107	70 - 130
Arsenic	0.70		0.0800	0.772	4	mg/L		93	70 - 130
Beryllium	ND	^	0.0800	0.0833	^	mg/L		104	70 - 130
Cadmium	ND		0.0800	0.0803		mg/L		100	70 - 130
Copper	0.0060	J	0.0800	0.0839		mg/L		97	70 - 130
Lead	ND		0.0800	0.0777		mg/L		97	70 - 130
Manganese	0.044		0.0800	0.123		mg/L		99	70 - 130
Nickel	0.020		0.0800	0.0997		mg/L		100	70 - 130
Selenium	0.017	J F1	0.0800	0.0721	F1	mg/L		69	70 - 130
Silver	ND		0.0800	0.0784		mg/L		98	70 - 130
Zinc	0.048	J	0.0800	0.122	J	mg/L		92	70 - 130

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: 440-226588-A-7-C MSD ^10**

**Matrix: Water**  
**Analysis Batch: 516049**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total Recoverable**  
**Prep Batch: 515781**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Aluminum	0.17		0.0800	0.246		mg/L		89	70 - 130	4	20	
Antimony	ND		0.0800	0.0858		mg/L		107	70 - 130	0	20	
Arsenic	0.70		0.0800	0.788	4	mg/L		113	70 - 130	2	20	
Beryllium	ND	^	0.0800	0.0873	^	mg/L		109	70 - 130	5	20	
Cadmium	ND		0.0800	0.0802		mg/L		100	70 - 130	0	20	
Copper	0.0060	J	0.0800	0.0860		mg/L		100	70 - 130	2	20	
Lead	ND		0.0800	0.0794		mg/L		99	70 - 130	2	20	
Manganese	0.044		0.0800	0.124		mg/L		100	70 - 130	1	20	
Nickel	0.020		0.0800	0.100		mg/L		100	70 - 130	0	20	
Selenium	0.017	J F1	0.0800	0.0730		mg/L		71	70 - 130	1	20	
Silver	ND		0.0800	0.0809		mg/L		101	70 - 130	3	20	
Zinc	0.048	J	0.0800	0.122	J	mg/L		92	70 - 130	0	20	

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 440-516143/1-A**

**Matrix: Water**  
**Analysis Batch: 516543**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 516143**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00010	mg/L		12/11/18 11:45	12/11/18 20:38	1

**Lab Sample ID: LCS 440-516143/2-A**

**Matrix: Water**  
**Analysis Batch: 516543**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 516143**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Mercury	0.00800	0.00758		mg/L		95	85 - 115	

**Lab Sample ID: 440-226385-A-1-C MS**

**Matrix: Water**  
**Analysis Batch: 516543**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**  
**Prep Batch: 516143**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	RPD
Mercury	ND		0.00800	0.00796		mg/L		100	75 - 125	

**Lab Sample ID: 440-226385-A-1-D MSD**

**Matrix: Water**  
**Analysis Batch: 516543**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**  
**Prep Batch: 516143**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Mercury	ND		0.00800	0.00761		mg/L		95	75 - 125	4	20	

TestAmerica Irvine



# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 1664A - HEM and SGT-HEM

**Lab Sample ID: MB 440-517269/1-A**  
**Matrix: Water**  
**Analysis Batch: 517310**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517269**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.0	1.4	mg/L		12/14/18 22:05	12/15/18 09:23	1

**Lab Sample ID: LCS 440-517269/2-A**  
**Matrix: Water**  
**Analysis Batch: 517310**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517269**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil & Grease (HEM)	40.0	33.00		mg/L		83	78 - 114

**Lab Sample ID: LCSD 440-517269/3-A**  
**Matrix: Water**  
**Analysis Batch: 517310**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 517269**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Oil & Grease (HEM)	40.0	33.60		mg/L		84	78 - 114	2	11

## Method: 2540 D - TSS

**Lab Sample ID: MB 440-514560/1**  
**Matrix: Water**  
**Analysis Batch: 514560**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			12/03/18 08:48	1

**Lab Sample ID: LCS 440-514560/2**  
**Matrix: Water**  
**Analysis Batch: 514560**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	979		mg/L		98	85 - 115

**Lab Sample ID: 440-225672-A-1 DU**  
**Matrix: Water**  
**Analysis Batch: 514560**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Suspended Solids	220		228		mg/L		3	10

## Method: 365.3 - Phosphorus, Total

**Lab Sample ID: MB 440-517924/1-A**  
**Matrix: Water**  
**Analysis Batch: 517969**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 517924**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	ND		0.050	0.025	mg/L		12/18/18 13:42	12/18/18 15:33	1

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: 365.3 - Phosphorus, Total (Continued)

**Lab Sample ID: LCS 440-517924/2-A**  
**Matrix: Water**  
**Analysis Batch: 517969**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 517924**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Phosphorus, Total	0.501	0.519		mg/L		104	80 - 120

**Lab Sample ID: 440-225692-E-1-F MS**  
**Matrix: Water**  
**Analysis Batch: 517969**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 517924**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Phosphorus, Total	0.044	J	0.501	0.563		mg/L		104	75 - 125

**Lab Sample ID: 440-225692-E-1-G MSD**  
**Matrix: Water**  
**Analysis Batch: 517969**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 517924**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Phosphorus, Total	0.044	J	0.501	0.570		mg/L		105	75 - 125	1	20

## Method: SM 4500 NH3 D - Ammonia

**Lab Sample ID: MB 440-515266/2-A**  
**Matrix: Water**  
**Analysis Batch: 515287**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 515266**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/06/18 03:30	12/06/18 06:00	1

**Lab Sample ID: LCS 440-515266/1-A**  
**Matrix: Water**  
**Analysis Batch: 515287**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 515266**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	2.50	2.20		mg/L		88	85 - 115

**Lab Sample ID: 440-226354-M-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 515287**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 515266**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	9.8		25.0	32.8		mg/L		92	75 - 125

**Lab Sample ID: 440-226354-M-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 515287**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 515266**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	9.8		25.0	34.1		mg/L		97	75 - 125	4	15

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: 440-226354-B-1-A DU  
 Matrix: Water  
 Analysis Batch: 515287

Client Sample ID: Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 515266

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ammonia (as N)	9.8		10.2		mg/L		4	15

## Method: SM 5220D - COD

Lab Sample ID: MB 440-517925/3  
 Matrix: Water  
 Analysis Batch: 517925

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/18/18 13:42	1

Lab Sample ID: LCS 440-517925/4  
 Matrix: Water  
 Analysis Batch: 517925

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	197		mg/L		98	90 - 110

Lab Sample ID: 440-227109-B-1 MS  
 Matrix: Water  
 Analysis Batch: 517925

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	41		200	210		mg/L		85	70 - 120

Lab Sample ID: 440-227109-B-1 MSD  
 Matrix: Water  
 Analysis Batch: 517925

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chemical Oxygen Demand	41		200	218		mg/L		89	70 - 120	4	15

## Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-514366/1  
 Matrix: Water  
 Analysis Batch: 514366

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

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	2.0	mg/L			12/01/18 09:12	1

Lab Sample ID: LCS 440-514366/4  
 Matrix: Water  
 Analysis Batch: 514366

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	198		mg/L		100	85 - 115

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCSD 440-514366/5  
 Matrix: Water  
 Analysis Batch: 514366

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	198		mg/L		99	85 - 115	0	20

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

# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## GC/MS VOA

### Analysis Batch: 514744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	8260B	
MB 440-514744/4	Method Blank	Total/NA	Water	8260B	
LCS 440-514744/5	Lab Control Sample	Total/NA	Water	8260B	
LCS D 440-514744/6	Lab Control Sample Dup	Total/NA	Water	8260B	
550-114087-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
550-114087-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 515518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	8260B	
MB 440-515518/4	Method Blank	Total/NA	Water	8260B	
LCS 440-515518/5	Lab Control Sample	Total/NA	Water	8260B	
440-226628-D-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-226628-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 514808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	3520C	
MB 440-514808/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-514808/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCS D 440-514808/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 515299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-514808/1-A	Method Blank	Total/NA	Water	8270C	514808
LCS 440-514808/2-A	Lab Control Sample	Total/NA	Water	8270C	514808
LCS D 440-514808/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	514808

### Analysis Batch: 515390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	8270C	514808

### Prep Batch: 561391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	625	
MB 490-561391/1-A	Method Blank	Total/NA	Water	625	
LCS 490-561391/4-A	Lab Control Sample	Total/NA	Water	625	

### Analysis Batch: 561490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	625	561391
MB 490-561391/1-A	Method Blank	Total/NA	Water	625	561391
LCS 490-561391/4-A	Lab Control Sample	Total/NA	Water	625	561391

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## GC Semi VOA

### Prep Batch: 514349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	608	
MB 440-514349/1-A	Method Blank	Total/NA	Water	608	
LCS 440-514349/4-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-514349/5-A	Lab Control Sample Dup	Total/NA	Water	608	

### Analysis Batch: 514566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	608	514349
MB 440-514349/1-A	Method Blank	Total/NA	Water	608	514349
LCS 440-514349/4-A	Lab Control Sample	Total/NA	Water	608	514349
LCS 440-514349/5-A	Lab Control Sample Dup	Total/NA	Water	608	514349

## HPLC/IC

### Analysis Batch: 514169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	300.0	
MB 440-514169/6	Method Blank	Total/NA	Water	300.0	
LCS 440-514169/5	Lab Control Sample	Total/NA	Water	300.0	
440-225659-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
440-225659-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 514170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	300.0	
MB 440-514170/6	Method Blank	Total/NA	Water	300.0	
LCS 440-514170/5	Lab Control Sample	Total/NA	Water	300.0	
440-225659-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
440-225659-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 516343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	NO3NO2 Calc	

## Metals

### Prep Batch: 515781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total Recoverable	Water	200.2	
MB 440-515781/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-515781/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-226588-A-7-B MS ^10	Matrix Spike	Total Recoverable	Water	200.2	
440-226588-A-7-C MSD ^10	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Prep Batch: 515783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total Recoverable	Water	200.2	
MB 440-515783/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-515783/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-226315-C-2-B MS	Matrix Spike	Total Recoverable	Water	200.2	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Metals (Continued)

### Prep Batch: 515783 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226315-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Analysis Batch: 516028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total Recoverable	Water	200.7 Rev 4.4	515783
MB 440-515783/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	515783
LCS 440-515783/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	515783
440-226315-C-2-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	515783
440-226315-C-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	515783

### Analysis Batch: 516049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total Recoverable	Water	200.8	515781
MB 440-515781/1-A	Method Blank	Total Recoverable	Water	200.8	515781
LCS 440-515781/2-A	Lab Control Sample	Total Recoverable	Water	200.8	515781
440-226588-A-7-B MS ^10	Matrix Spike	Total Recoverable	Water	200.8	515781
440-226588-A-7-C MSD ^10	Matrix Spike Duplicate	Total Recoverable	Water	200.8	515781

### Prep Batch: 516143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	245.1	
MB 440-516143/1-A	Method Blank	Total/NA	Water	245.1	
LCS 440-516143/2-A	Lab Control Sample	Total/NA	Water	245.1	
440-226385-A-1-C MS	Matrix Spike	Total/NA	Water	245.1	
440-226385-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

### Analysis Batch: 516543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	245.1	516143
MB 440-516143/1-A	Method Blank	Total/NA	Water	245.1	516143
LCS 440-516143/2-A	Lab Control Sample	Total/NA	Water	245.1	516143
440-226385-A-1-C MS	Matrix Spike	Total/NA	Water	245.1	516143
440-226385-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	516143

## General Chemistry

### Analysis Batch: 514366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	SM5210B	
USB 440-514366/1	Method Blank	Total/NA	Water	SM5210B	
LCS 440-514366/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-514366/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	

### Analysis Batch: 514560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	2540 D	
MB 440-514560/1	Method Blank	Total/NA	Water	2540 D	
LCS 440-514560/2	Lab Control Sample	Total/NA	Water	2540 D	
440-225672-A-1 DU	Duplicate	Total/NA	Water	2540 D	

TestAmerica Irvine

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## General Chemistry (Continued)

### Prep Batch: 515266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	SM 4500 NH3 B	
MB 440-515266/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-515266/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-226354-M-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-226354-M-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-226354-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 515287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	SM 4500 NH3 D	515266
MB 440-515266/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	515266
LCS 440-515266/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	515266
440-226354-M-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	515266
440-226354-M-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	515266
440-226354-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	515266

### Prep Batch: 517269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	1664A	
MB 440-517269/1-A	Method Blank	Total/NA	Water	1664A	
LCS 440-517269/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-517269/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

### Analysis Batch: 517310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	1664A	517269
MB 440-517269/1-A	Method Blank	Total/NA	Water	1664A	517269
LCS 440-517269/2-A	Lab Control Sample	Total/NA	Water	1664A	517269
LCSD 440-517269/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	517269

### Prep Batch: 517924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	365.2/365.3/365	
MB 440-517924/1-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 440-517924/2-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
440-225692-E-1-F MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
440-225692-E-1-G MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

### Analysis Batch: 517925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	SM 5220D	
MB 440-517925/3	Method Blank	Total/NA	Water	SM 5220D	
LCS 440-517925/4	Lab Control Sample	Total/NA	Water	SM 5220D	
440-227109-B-1 MS	Matrix Spike	Total/NA	Water	SM 5220D	
440-227109-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5220D	

### Analysis Batch: 517969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	365.3	517924
MB 440-517924/1-A	Method Blank	Total/NA	Water	365.3	517924
LCS 440-517924/2-A	Lab Control Sample	Total/NA	Water	365.3	517924

TestAmerica Irvine



# QC Association Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## General Chemistry (Continued)

### Analysis Batch: 517969 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225692-E-1-F MS	Matrix Spike	Total/NA	Water	365.3	517924
440-225692-E-1-G MSD	Matrix Spike Duplicate	Total/NA	Water	365.3	517924

## Field Service / Mobile Lab

### Analysis Batch: 516134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-225666-1	SW-3	Total/NA	Water	Field Sampling	

# Definitions/Glossary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

### HPLC/IC

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

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

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

## Glossary

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

# Accreditation/Certification Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

## Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	10-31-18 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-18
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-18
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-18
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-18
South Carolina	State Program	4	84009 (001)	02-28-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

# Accreditation/Certification Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-225666-1

## Laboratory: TestAmerica Nashville (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

**TestAmerica Irvine**  
 17461 Derian Ave  
 Suite 100  
 Irvine, CA 92614  
 Phone: 949.261.1022 Fax:

**Chain of Custody Record**

138508

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING  
 TestAmerica Laboratories, Inc.  
 TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  other:

Project Manager: **Sush Mills** Date: **11-29-18** COC No. **1** of **1** COCs

Site Contact: **Dennis Montano** Carrier: **3**

Lab Contact: **Rossina Tomova**

Company Name: **Republic Services** Address: **14747**

City/State/Zip: **Sylmar, CA 91342**

Phone: **(818) 302-2075**

Fax: **(818) 302-5854**

Project Name: **Storm Water Sampling - SW3**

Site: **SunShine Canyon Landfill**

P.O.#

Analysis Turnaround Time

CALENDAR DAYS  WORKING DAYS

TAT if different from Below

2 weeks  1 week  2 days  1 day

Sample Date: **11/29/18 2:05PM** Sample Time: **6** Matrix: **W** # of Cont.:

Sample Identification: **SW-3**

Sample Specific Notes: **PH Meter Read 7.33**

Filtered Sample (Y/N) **Y**

Perform MS/MSD (Y/N) **Y**

Diff. for use for lab work **(SH 2540)**

Metal for use for lab work **(SH 4900)**

g-Tempinal **(SH 625)**

Ammonia as N **(SH 4900)**

BOD **(SH 5210B)**

Sem-VOCs **(SH 8200)**

Sem-VOCs **(SH 8200)**

Semivolatiles **(SH 8200)**

ACTONITRILE **(SH 8200)**

Chlordane **(SH 8200)**

TOTAL PHENOLS **(SH 5200)**

COB **(SH 5200)**

PH Meter Read 7.33

Sample Specific Notes: **COC 200.0**

Preservation Used: **1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other**

Possible Hazard Identification: **440-225666 Chain of Custody**

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/QC Requirements & Comments:

Custody Seal No.: **1-3** Therm ID No.: **88**

Relinquished by: **Dennis Montano** Date/Time: **11-30-18 12:15**

Relinquished by: **TA IRV** Date/Time: **11-30-18 18:00**

Relinquished by: **TA IRV** Date/Time: **11-30-18 18:00**

Received by: **TA IRV** Date/Time: **11-30-18 18:00**

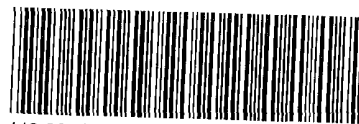
Received by: **TA IRV** Date/Time: **11-30-18 18:00**

Received in Laboratory by: **TA IRV** Date/Time: **11-30-18 18:00**

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months



## COOLER RECEIPT FORM



440-225666 Chain of Custody

Cooler Received/Opened On 12/4/2018 @ 10:20

Time Samples Removed From Cooler 1202 Time Samples Placed In Storage 1224 (2 Hour Window)

1. Tracking # 9600 (last 4 digits, FedEx) Courier: FedEx  
IR Gun ID 17960358 pH Strip Lot      Chlorine Strip Lot     

2. Temperature of rep. sample or temp blank when opened: 0.1 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: \_\_\_\_\_

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial)     

7. Were custody seals on containers: YES NO and intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # \_\_\_\_\_

I certify that I unloaded the cooler and answered questions 7-14 (initial) TR

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) TR

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) TR

I certify that I attached a label with the unique LIMS number to each container (initial) TR

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# \_\_\_\_\_

# Chain of Custody Record

Loc: 440  
225666



<b>Client Information (Sub Contract Lab)</b>		Lab PM: Tomova, Rossina D		sing No(s): 440-130217.1	
Client Contact: Shipping/Receiving		E-Mail: rossina.tomova@testamericainc.com		State of Origin: California	
Company: TestAmerica Laboratories, Inc		Address: 2960 Foster Creighton Drive, Nashville, TN, 37204		Page: Page 1 of 1	
Due Date Requested: 12/12/2018		PO #: 615-726-0177(Tel) 615-726-3404(Fax)		Job #: 440-225666-1	
TAT Requested (days):		WO #: Project #: 44003139		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - As/NaO2 D - Nitric Acid P - Na2CO4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:	
Address: 2960 Foster Creighton Drive, Nashville, TN, 37204		Project Name: Republic-Sunshine Canyon - Stormwater		Analysis Requested	
City: Nashville		Site: SSOW#:		Total Number of Containers	
State, Zip: TN, 37204		Field Filtered Sample (Yes/No)		2	
Phone: 615-726-0177(Tel) 615-726-3404(Fax)		Form (MS/SP/MS/MS/NO)		Special Instructions/Note: needs Alpha-Terpinoid spike for the LCS!!!	
Email: 615-726-0177(Tel) 615-726-3404(Fax)		625/625_Prep (MOD) Custom 625 Semivolatile List			
Project #: 44003139		Sample Date			
Site: SSOW#:		Sample Time			
Sample Date: 11/29/18		Sample Type (C=Comp, G=grab)			
Sample Time: 14:05 Pacific		Matrix (W=water, S=solid, O=wastewater, B=Trace, A=Air)			
Sample Type: Water		Preservation Code			
Matrix: Water		Field Filtered Sample (Yes/No)			
Preservation Code		Form (MS/SP/MS/MS/NO)			
Field Filtered Sample (Yes/No)		625/625_Prep (MOD) Custom 625 Semivolatile List			
Form (MS/SP/MS/MS/NO)		Total Number of Containers			
625/625_Prep (MOD) Custom 625 Semivolatile List		Special Instructions/Note:			
Total Number of Containers		needs Alpha-Terpinoid spike for the LCS!!!			

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Sample Hazard Identification**  
 Unconfirmed  
 Return To Client  
 Disposal By Lab  
 Archive For  
 Months

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact:  Yes  No  
 Cooler Temperature(s) °C and Other Remarks: 18/14/18 10:20 TA-NAS



## Login Sample Receipt Checklist

Client: Republic Services Inc

Job Number: 440-225666-1

**Login Number: 225666**

**List Number: 1**

**Creator: Bonta, Lucia F**

**List Source: TestAmerica Irvine**

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





# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-226778-1

Client Project/Site: Republic-Sunshine Canyon - Stormwater

For:

Republic Services Inc

14747 San Fernando Road

Sylmar, California 91342

Attn: Mr. Tuong-Phu Ngo



Authorized for release by:

1/2/2019 4:47:23 PM

Rossina Tomova, Project Manager I

(949)261-1022

[rossina.tomova@testamericainc.com](mailto:rossina.tomova@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

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# Sample Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-226778-1	Stormwater_12-06-2018	Water	12/06/18 14:58	12/07/18 14:20

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# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

**Job ID: 440-226778-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-226778-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 12/7/2018 2:20 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8° C.

#### GC/MS VOA

Method(s) 8260B: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: Stormwater\_12-06-2018 (440-226778-1). The sample was analyzed within 7 days per EPA recommendation.

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

#### GC/MS Semi VOA

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-562993 and analytical batch 490-563484.

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

#### HPLC/IC

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

#### GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-516165 and analytical batch 440-516373. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-516165/4-A)

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

#### Metals

Method(s) 200.8: Due to the high concentration of Silver, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 440-517794 and analytical batch 440-517961 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 440-517794 and analytical batch 440-517961 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits.

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

#### General Chemistry

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

#### Organic Prep

Method(s) 3510C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 3510-8015B preparation batch 440-516165.

Method(s) 3520C, 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-515950. 3520C 8270/625 REG

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with

# Case Narrative

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

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## Job ID: 440-226778-1 (Continued)

---

### Laboratory: TestAmerica Irvine (Continued)

preparation batch 440-520264 and analytical batch 440-520349. The Laboratory Control Sample (LCS) was performed in duplicate to provide precision data for this batch

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

### VOA Prep

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

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# Client Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

**Client Sample ID: Stormwater\_12-06-2018**

**Lab Sample ID: 440-226778-1**

**Date Collected: 12/06/18 14:58**

**Matrix: Water**

**Date Received: 12/07/18 14:20**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			12/12/18 09:47	1
Toluene	ND		0.00050	0.00025	mg/L			12/12/18 09:47	1
Acrylonitrile	ND		0.050	0.0010	mg/L			12/10/18 09:16	1
Benzene	ND		0.00050	0.00025	mg/L			12/12/18 09:47	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			12/12/18 09:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 128		12/10/18 09:16	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/10/18 09:16	1
Dibromofluoromethane (Surr)	92		76 - 132		12/10/18 09:16	1
Toluene-d8 (Surr)	108		80 - 128		12/12/18 09:47	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/12/18 09:47	1
Dibromofluoromethane (Surr)	103		76 - 132		12/12/18 09:47	1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alpha-Terpineol	ND		0.0095	0.0031	mg/L		12/11/18 17:55	12/13/18 21:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	67		10 - 120	12/11/18 17:55	12/13/18 21:59	1
2-Fluorophenol	31		29 - 120	12/11/18 17:55	12/13/18 21:59	1
Nitrobenzene-d5	57		27 - 120	12/11/18 17:55	12/13/18 21:59	1
Phenol-d5	20		10 - 120	12/11/18 17:55	12/13/18 21:59	1
Terphenyl-d14	63		13 - 120	12/11/18 17:55	12/13/18 21:59	1
2-Fluorobiphenyl (Surr)	61		10 - 120	12/11/18 17:55	12/13/18 21:59	1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzoic acid</b>	<b>0.014</b>	<b>J</b>	0.020	0.010	mg/L		12/10/18 10:51	12/13/18 14:43	1
Butyl benzyl phthalate	ND		0.020	0.0051	mg/L		12/10/18 10:51	12/13/18 14:43	1
Cresol, p-	ND		0.010	0.0020	mg/L		12/10/18 10:51	12/13/18 14:43	1
Dimethyl phthalate	ND		0.010	0.0040	mg/L		12/10/18 10:51	12/13/18 14:43	1
Fluoranthene	ND		0.010	0.0051	mg/L		12/10/18 10:51	12/13/18 14:43	1
Phenol	ND		0.010	0.0051	mg/L		12/10/18 10:51	12/13/18 14:43	1
Pyrene	ND		0.010	0.0051	mg/L		12/10/18 10:51	12/13/18 14:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	96		40 - 120	12/10/18 10:51	12/13/18 14:43	1
2-Fluorobiphenyl	75		50 - 120	12/10/18 10:51	12/13/18 14:43	1
2-Fluorophenol (Surr)	68		30 - 120	12/10/18 10:51	12/13/18 14:43	1
Nitrobenzene-d5 (Surr)	84		45 - 120	12/10/18 10:51	12/13/18 14:43	1
Phenol-d6 (Surr)	77		35 - 120	12/10/18 10:51	12/13/18 14:43	1
Terphenyl-d14 (Surr)	89		10 - 150	12/10/18 10:51	12/13/18 14:43	1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1
Aroclor 1221	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1
Aroclor 1232	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1
Aroclor 1242	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1
Aroclor 1248	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1

TestAmerica Irvine

# Client Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

**Client Sample ID: Stormwater\_12-06-2018**

**Lab Sample ID: 440-226778-1**

**Date Collected: 12/06/18 14:58**

**Matrix: Water**

**Date Received: 12/07/18 14:20**

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1254	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1
Aroclor 1260	ND		0.00095	0.00024	mg/L		12/11/18 05:36	12/11/18 18:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	87		29 - 115				12/11/18 05:36	12/11/18 18:00	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.71		0.11	0.055	mg/L			12/07/18 16:06	1
Chloride	7.7		0.50	0.25	mg/L			12/07/18 16:06	1
Nitrite as N	ND		0.15	0.025	mg/L			12/07/18 16:06	1
Fluoride	0.54		0.50	0.25	mg/L			12/07/18 16:06	1

## Method: NO3NO2 Calc - Nitrogen, Nitrate-Nitrite

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.71		0.15	0.055	mg/L			12/18/18 14:41	1

## Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2.5		0.10	0.050	mg/L		12/18/18 07:13	12/18/18 17:54	1

## Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.1		0.010	0.0050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Antimony	0.00051	J	0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Arsenic	0.0011		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Beryllium	ND		0.00050	0.00025	mg/L		12/18/18 07:11	12/18/18 14:24	1
Cadmium	0.00063	J	0.0010	0.00025	mg/L		12/18/18 07:11	12/18/18 14:24	1
Copper	0.0051		0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Lead	0.00096	J	0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Manganese	0.96		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Nickel	0.041		0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Selenium	0.0014	J	0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Silver	ND		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:24	1
Zinc	0.027		0.020	0.0025	mg/L		12/18/18 07:11	12/18/18 14:24	1

## Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00010	mg/L		12/13/18 13:26	12/13/18 22:12	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.2	1.4	mg/L		12/31/18 21:35	01/02/19 10:49	1
Total Suspended Solids	57		4.0	2.0	mg/L			12/10/18 10:36	1
Phosphorus, Total	0.10		0.050	0.025	mg/L		12/24/18 12:33	12/24/18 18:44	1
Ammonia (as N)	1.4		0.50	0.10	mg/L		12/12/18 05:00	12/12/18 09:00	1
Chemical Oxygen Demand	42		20	10	mg/L			12/20/18 10:12	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	7.1		2.0	2.0	mg/L			12/08/18 09:48	1

TestAmerica Irvine

# Method Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL NSH
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
NO3NO2 Calc	Nitrogen, Nitrate-Nitrite	EPA	TAL IRV
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
2540 D	TSS	SM21	TAL IRV
365.3	Phosphorus, Total	EPA	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5220D	COD	SM	TAL IRV
SM5210B	BOD, 5 Day	SM	TAL IRV
1664A	HEM and SGT-HEM (SPE)	1664A	TAL IRV
200.2	Preparation, Total Recoverable Metals	EPA	TAL IRV
245.1	Preparation, Mercury	EPA	TAL IRV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL IRV
365.2/365.3/365	Phosphorus, Total	MCAWW	TAL IRV
5030B	Purge and Trap	SW846	TAL IRV
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	TAL IRV
625	Liquid-Liquid Extraction	40CFR136A	TAL NSH
SM 4500 NH3 B	Distillation, Ammonia	SM	TAL IRV

## Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

SM21 = Standard Methods For The Examination Of Water And Wastewater, 21st Edition

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

## Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177



# Lab Chronicle

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

**Client Sample ID: Stormwater\_12-06-2018**

**Lab Sample ID: 440-226778-1**

**Date Collected: 12/06/18 14:58**

**Matrix: Water**

**Date Received: 12/07/18 14:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	516438	12/12/18 09:47	AYL	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	515868	12/10/18 09:16	TCN	TAL IRV
Total/NA	Prep	625			1050.4 mL	1 mL	562993	12/11/18 17:55	TJB	TAL NSH
Total/NA	Analysis	625		1			563484	12/13/18 21:59	T1C	TAL NSH
Total/NA	Prep	3520C			990 mL	2.0 mL	515950	12/10/18 10:51	JAA	TAL IRV
Total/NA	Analysis	8270C		1			516799	12/13/18 14:43	HN	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	516165	12/11/18 05:36	L1H	TAL IRV
Total/NA	Analysis	608		1			516373	12/11/18 18:00	D1D	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	515565	12/07/18 16:06	NN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	515566	12/07/18 16:06	NN	TAL IRV
Total/NA	Analysis	NO3NO2 Calc		1			517957	12/18/18 14:41	TLN	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	517795	12/18/18 07:13	KE	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			518032	12/18/18 17:54	P1R	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	517794	12/18/18 07:11	KE	TAL IRV
Total Recoverable	Analysis	200.8		1			517961	12/18/18 14:24	B1H	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	516687	12/13/18 13:26	DB	TAL IRV
Total/NA	Analysis	245.1		1			517219	12/13/18 22:12	DB	TAL IRV
Total/NA	Prep	1664A			970 mL	1000 mL	520264	12/31/18 21:35	AJH	TAL IRV
Total/NA	Analysis	1664A		1			520349	01/02/19 10:49	JC1	TAL IRV
Total/NA	Analysis	2540 D		1	250 mL	1000 mL	515921	12/10/18 10:36	XL	TAL IRV
Total/NA	Prep	365.2/365.3/365			50 mL	50 mL	519174	12/24/18 12:33	KYP	TAL IRV
Total/NA	Analysis	365.3		1	50 mL	50 mL	519185	12/24/18 18:44	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	516470	12/12/18 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			516510	12/12/18 09:00	YZ	TAL IRV
Total/NA	Analysis	SM 5220D		1	2.5 mL	2.5 mL	518400	12/20/18 10:12	KYP	TAL IRV
Total/NA	Analysis	SM5210B		1			515768	12/08/18 09:48	KYP	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-515868/4**

**Matrix: Water**

**Analysis Batch: 515868**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		0.050	0.0010	mg/L			12/10/18 08:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 128		12/10/18 08:21	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/10/18 08:21	1
Dibromofluoromethane (Surr)	94		76 - 132		12/10/18 08:21	1

**Lab Sample ID: LCS 440-515868/5**

**Matrix: Water**

**Analysis Batch: 515868**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	0.250	0.243		mg/L		97	48 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	91		76 - 132

**Lab Sample ID: 440-226778-1 MS**

**Matrix: Water**

**Analysis Batch: 515868**

**Client Sample ID: Stormwater\_12-06-2018**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acrylonitrile	ND		0.250	0.230		mg/L		92	38 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	95		80 - 128
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	93		76 - 132

**Lab Sample ID: 440-226778-1 MSD**

**Matrix: Water**

**Analysis Batch: 515868**

**Client Sample ID: Stormwater\_12-06-2018**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrylonitrile	ND		0.250	0.225		mg/L		90	38 - 144	2	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	95		80 - 128
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	92		76 - 132

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-516438/4**  
**Matrix: Water**  
**Analysis Batch: 516438**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.00050	0.00025	mg/L			12/12/18 08:27	1
Toluene	ND		0.00050	0.00025	mg/L			12/12/18 08:27	1
Benzene	ND		0.00050	0.00025	mg/L			12/12/18 08:27	1
Trichloroethylene	ND		0.00050	0.00025	mg/L			12/12/18 08:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 128		12/12/18 08:27	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/12/18 08:27	1
Dibromofluoromethane (Surr)	103		76 - 132		12/12/18 08:27	1

**Lab Sample ID: LCS 440-516438/5**  
**Matrix: Water**  
**Analysis Batch: 516438**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	0.0250	0.0255		mg/L		102	70 - 130
Toluene	0.0250	0.0258		mg/L		103	70 - 130
Benzene	0.0250	0.0261		mg/L		105	68 - 130
Trichloroethylene	0.0250	0.0275		mg/L		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

**Lab Sample ID: 440-226778-1 MS**  
**Matrix: Water**  
**Analysis Batch: 516438**

**Client Sample ID: Stormwater\_12-06-2018**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	ND		0.0250	0.0257		mg/L		103	70 - 130
Toluene	ND		0.0250	0.0260		mg/L		104	70 - 130
Benzene	ND		0.0250	0.0260		mg/L		104	66 - 130
Trichloroethylene	ND		0.0250	0.0268		mg/L		107	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	103		76 - 132

**Lab Sample ID: 440-226778-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 516438**

**Client Sample ID: Stormwater\_12-06-2018**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	ND		0.0250	0.0258		mg/L		103	70 - 130	0	20
Toluene	ND		0.0250	0.0258		mg/L		103	70 - 130	1	20

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-226778-1 MSD**

**Matrix: Water**

**Analysis Batch: 516438**

**Client Sample ID: Stormwater\_12-06-2018**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Benzene	ND		0.0250	0.0259		mg/L		103	66 - 130	1	20
Trichloroethylene	ND		0.0250	0.0265		mg/L		106	70 - 130	1	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
Toluene-d8 (Surr)	104		80 - 128								
4-Bromofluorobenzene (Surr)	97		80 - 120								
Dibromofluoromethane (Surr)	103		76 - 132								

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-562993/1-A**

**Matrix: Water**

**Analysis Batch: 563484**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 562993**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alpha-Terpineol	ND		0.010	0.0033	mg/L		12/11/18 17:55	12/13/18 20:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>						
2,4,6-Tribromophenol	74		10 - 120	12/11/18 17:55	12/13/18 20:33	1			
2-Fluorophenol	41		29 - 120	12/11/18 17:55	12/13/18 20:33	1			
Nitrobenzene-d5	69		27 - 120	12/11/18 17:55	12/13/18 20:33	1			
Phenol-d5	25		10 - 120	12/11/18 17:55	12/13/18 20:33	1			
Terphenyl-d14	80		13 - 120	12/11/18 17:55	12/13/18 20:33	1			
2-Fluorobiphenyl (Surr)	74		10 - 120	12/11/18 17:55	12/13/18 20:33	1			

**Lab Sample ID: LCS 490-562993/4-A**

**Matrix: Water**

**Analysis Batch: 563484**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 562993**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Alpha-Terpineol	0.0500	0.0359		mg/L		72	58 - 156
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
2,4,6-Tribromophenol	78		10 - 120				
2-Fluorophenol	42		29 - 120				
Nitrobenzene-d5	61		27 - 120				
Phenol-d5	26		10 - 120				
Terphenyl-d14	80		13 - 120				
2-Fluorobiphenyl (Surr)	72		10 - 120				

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-515950/1-A**  
**Matrix: Water**  
**Analysis Batch: 516524**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 515950**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzoic acid	ND		0.020	0.010	mg/L		12/10/18 10:51	12/12/18 15:44	1
Butyl benzyl phthalate	ND		0.020	0.0050	mg/L		12/10/18 10:51	12/12/18 15:44	1
Cresol, p-	ND		0.010	0.0020	mg/L		12/10/18 10:51	12/12/18 15:44	1
Dimethyl phthalate	ND		0.010	0.0040	mg/L		12/10/18 10:51	12/12/18 15:44	1
Fluoranthene	ND		0.010	0.0050	mg/L		12/10/18 10:51	12/12/18 15:44	1
Phenol	ND		0.010	0.0050	mg/L		12/10/18 10:51	12/12/18 15:44	1
Pyrene	ND		0.010	0.0050	mg/L		12/10/18 10:51	12/12/18 15:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	84		40 - 120	12/10/18 10:51	12/12/18 15:44	1
2-Fluorobiphenyl	62		50 - 120	12/10/18 10:51	12/12/18 15:44	1
2-Fluorophenol (Surr)	55		30 - 120	12/10/18 10:51	12/12/18 15:44	1
Nitrobenzene-d5 (Surr)	58		45 - 120	12/10/18 10:51	12/12/18 15:44	1
Phenol-d6 (Surr)	55		35 - 120	12/10/18 10:51	12/12/18 15:44	1
Terphenyl-d14 (Surr)	92		10 - 150	12/10/18 10:51	12/12/18 15:44	1

**Lab Sample ID: LCS 440-515950/2-A**  
**Matrix: Water**  
**Analysis Batch: 516524**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 515950**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzoic acid	0.100	0.109		mg/L		109	15 - 121
Butyl benzyl phthalate	0.100	0.0939		mg/L		94	44 - 122
Cresol, p-	0.100	0.0866		mg/L		87	35 - 106
Dimethyl phthalate	0.100	0.0853		mg/L		85	49 - 113
Fluoranthene	0.100	0.0971		mg/L		97	44 - 119
Phenol	0.100	0.0686		mg/L		69	25 - 99
Pyrene	0.100	0.0927		mg/L		93	43 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	108		40 - 120
2-Fluorobiphenyl	75		50 - 120
2-Fluorophenol (Surr)	59		30 - 120
Nitrobenzene-d5 (Surr)	68		45 - 120
Phenol-d6 (Surr)	66		35 - 120
Terphenyl-d14 (Surr)	95		10 - 150

**Lab Sample ID: LCSD 440-515950/3-A**  
**Matrix: Water**  
**Analysis Batch: 516524**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 515950**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzoic acid	0.100	0.102		mg/L		102	15 - 121	7	35
Butyl benzyl phthalate	0.100	0.0953		mg/L		95	44 - 122	2	35
Cresol, p-	0.100	0.0840		mg/L		84	35 - 106	3	35
Dimethyl phthalate	0.100	0.0864		mg/L		86	49 - 113	1	35
Fluoranthene	0.100	0.0977		mg/L		98	44 - 119	1	35

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 440-515950/3-A**  
**Matrix: Water**  
**Analysis Batch: 516524**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 515950**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	0.100	0.0663		mg/L		66	25 - 99	3	35
Pyrene	0.100	0.0947		mg/L		95	43 - 119	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	110		40 - 120
2-Fluorobiphenyl	75		50 - 120
2-Fluorophenol (Surr)	55		30 - 120
Nitrobenzene-d5 (Surr)	68		45 - 120
Phenol-d6 (Surr)	65		35 - 120
Terphenyl-d14 (Surr)	97		10 - 150

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

**Lab Sample ID: MB 440-516165/1-A**  
**Matrix: Water**  
**Analysis Batch: 516373**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 516165**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1
Aroclor 1221	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1
Aroclor 1232	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1
Aroclor 1242	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1
Aroclor 1248	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1
Aroclor 1254	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1
Aroclor 1260	ND		0.0010	0.00025	mg/L		12/11/18 05:36	12/11/18 17:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	80		29 - 115	12/11/18 05:36	12/11/18 17:07	1

**Lab Sample ID: LCS 440-516165/4-A**  
**Matrix: Water**  
**Analysis Batch: 516373**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516165**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	0.00400	0.00333		mg/L		83	10 - 127
Aroclor 1260	0.00400	0.00351		mg/L		88	50 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	89		29 - 115

**Lab Sample ID: LCSD 440-516165/5-A**  
**Matrix: Water**  
**Analysis Batch: 516373**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 516165**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	0.00400	0.00347		mg/L		87	10 - 127	4	30
Aroclor 1260	0.00400	0.00363		mg/L		91	50 - 115	3	30

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

**Lab Sample ID: LCSD 440-516165/5-A**  
**Matrix: Water**  
**Analysis Batch: 516373**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 516165**

Surrogate	LCS Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	91		29 - 115

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-515565/6**  
**Matrix: Water**  
**Analysis Batch: 515565**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/07/18 11:12	1
Nitrite as N	ND		0.15	0.025	mg/L			12/07/18 11:12	1

**Lab Sample ID: LCS 440-515565/5**  
**Matrix: Water**  
**Analysis Batch: 515565**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	1.13	1.20		mg/L		106	90 - 110
Nitrite as N	1.52	1.53		mg/L		100	90 - 110

**Lab Sample ID: 440-224128-B-3 MS**  
**Matrix: Water**  
**Analysis Batch: 515565**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		1130	1200		mg/L		106	80 - 120
Nitrite as N	62	J	1520	1640		mg/L		104	80 - 120

**Lab Sample ID: 440-224128-B-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 515565**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		1130	1200		mg/L		107	80 - 120	0	20
Nitrite as N	62	J	1520	1650		mg/L		104	80 - 120	0	20

**Lab Sample ID: MB 440-515566/6**  
**Matrix: Water**  
**Analysis Batch: 515566**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/07/18 11:12	1
Fluoride	ND		0.50	0.25	mg/L			12/07/18 11:12	1

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 440-515566/5**  
**Matrix: Water**  
**Analysis Batch: 515566**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	5.12		mg/L		102	90 - 110
Fluoride	5.00	4.72		mg/L		94	90 - 110

**Lab Sample ID: 440-224128-B-3 MS**  
**Matrix: Water**  
**Analysis Batch: 515566**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6100		5000	11500		mg/L		108	80 - 120
Fluoride	ND		5000	4200		mg/L		84	80 - 120

**Lab Sample ID: 440-224128-B-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 515566**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6100		5000	11500		mg/L		108	80 - 120	0	20
Fluoride	ND		5000	4280		mg/L		86	80 - 120	2	20

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID: MB 440-517795/1-A**  
**Matrix: Water**  
**Analysis Batch: 518032**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517795**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	0.050	mg/L		12/18/18 07:13	12/18/18 17:26	1

**Lab Sample ID: LCS 440-517795/2-A**  
**Matrix: Water**  
**Analysis Batch: 518032**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517795**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.500	0.470		mg/L		94	85 - 115

**Lab Sample ID: 440-227908-D-1-E MS**  
**Matrix: Water**  
**Analysis Batch: 518032**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517795**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	8.9		0.500	9.65	4	mg/L		142	70 - 130

**Lab Sample ID: 440-227908-D-1-F MSD**  
**Matrix: Water**  
**Analysis Batch: 518032**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517795**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	8.9		0.500	10.6	4	mg/L		334	70 - 130	9	20

TestAmerica Irvine



# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 200.8 - Metals (ICP/MS)

**Lab Sample ID: MB 440-517794/1-A**  
**Matrix: Water**  
**Analysis Batch: 517961**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517794**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.010	0.0050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Antimony	ND		0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Arsenic	ND		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Beryllium	ND		0.00050	0.00025	mg/L		12/18/18 07:11	12/18/18 14:07	1
Cadmium	ND		0.0010	0.00025	mg/L		12/18/18 07:11	12/18/18 14:07	1
Copper	ND		0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Lead	ND		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Manganese	ND		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Nickel	ND		0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Selenium	ND		0.0020	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Silver	ND		0.0010	0.00050	mg/L		12/18/18 07:11	12/18/18 14:07	1
Zinc	ND		0.020	0.0025	mg/L		12/18/18 07:11	12/18/18 14:07	1

**Lab Sample ID: LCS 440-517794/2-A**  
**Matrix: Water**  
**Analysis Batch: 517961**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517794**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.0800	0.0798		mg/L		100	85 - 115
Antimony	0.0800	0.0881		mg/L		110	85 - 115
Arsenic	0.0800	0.0770		mg/L		96	85 - 115
Beryllium	0.0800	0.0859		mg/L		107	85 - 115
Cadmium	0.0800	0.0797		mg/L		100	85 - 115
Copper	0.0800	0.0807		mg/L		101	85 - 115
Lead	0.0800	0.0782		mg/L		98	85 - 115
Manganese	0.0800	0.0774		mg/L		97	85 - 115
Nickel	0.0800	0.0791		mg/L		99	85 - 115
Selenium	0.0800	0.0790		mg/L		99	85 - 115
Silver	0.0800	0.0810		mg/L		101	85 - 115
Zinc	0.0800	0.0810		mg/L		101	85 - 115

**Lab Sample ID: 440-227908-D-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 517961**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 517794**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	4.5		0.0800	4.33	4	mg/L		-275	70 - 130
Antimony	0.0054		0.0800	0.0767		mg/L		89	70 - 130
Arsenic	0.014		0.0800	0.0895		mg/L		95	70 - 130
Beryllium	0.00026	J	0.0800	0.0865		mg/L		108	70 - 130
Cadmium	0.0040		0.0800	0.0834		mg/L		99	70 - 130
Copper	0.19	F1	0.0800	0.247	F1	mg/L		67	70 - 130
Lead	0.25	F1	0.0800	0.305	F1	mg/L		69	70 - 130
Manganese	0.57		0.0800	0.645	4	mg/L		92	70 - 130
Nickel	0.061		0.0800	0.140		mg/L		98	70 - 130
Selenium	0.0020	F1 F2	0.0800	0.0351	F1	mg/L		41	70 - 130
Zinc	1.6		0.0800	1.64	4	mg/L		41	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: 440-227908-D-1-C MSD**

**Matrix: Water**  
**Analysis Batch: 517961**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total Recoverable**  
**Prep Batch: 517794**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
				Result	Qualifier						
Aluminum	4.5		0.0800	4.25	4	mg/L		-369	70 - 130	2	20
Antimony	0.0054		0.0800	0.0786		mg/L		92	70 - 130	3	20
Arsenic	0.014		0.0800	0.0928		mg/L		99	70 - 130	4	20
Beryllium	0.00026	J	0.0800	0.0902		mg/L		112	70 - 130	4	20
Cadmium	0.0040		0.0800	0.0849		mg/L		101	70 - 130	2	20
Copper	0.19	F1	0.0800	0.244	F1	mg/L		65	70 - 130	1	20
Lead	0.25	F1	0.0800	0.299	F1	mg/L		61	70 - 130	2	20
Manganese	0.57		0.0800	0.624	4	mg/L		66	70 - 130	3	20
Nickel	0.061		0.0800	0.138		mg/L		95	70 - 130	2	20
Selenium	0.0020	F1 F2	0.0800	0.0521	F1 F2	mg/L		63	70 - 130	39	20
Zinc	1.6		0.0800	1.59	4	mg/L		-18	70 - 130	3	20

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 440-516687/1-A**

**Matrix: Water**  
**Analysis Batch: 517219**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 516687**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00010	mg/L		12/13/18 13:26	12/13/18 21:50	1

**Lab Sample ID: LCS 440-516687/2-A**

**Matrix: Water**  
**Analysis Batch: 517219**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 516687**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Mercury	0.00800	0.00834		mg/L		104	85 - 115

**Lab Sample ID: 440-226822-D-1-E MS**

**Matrix: Water**  
**Analysis Batch: 517219**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**  
**Prep Batch: 516687**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Mercury	ND		0.00800	0.00806		mg/L		101	75 - 125

**Lab Sample ID: 440-226822-D-1-F MSD**

**Matrix: Water**  
**Analysis Batch: 517219**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**  
**Prep Batch: 516687**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
				Result	Qualifier						
Mercury	ND		0.00800	0.00820		mg/L		103	75 - 125	2	20

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-520264/1-A  
 Matrix: Water  
 Analysis Batch: 520349

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 520264

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM)	ND		5.0	1.4	mg/L		12/31/18 21:35	01/02/19 10:49	1

Lab Sample ID: LCS 440-520264/2-A  
 Matrix: Water  
 Analysis Batch: 520349

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 520264

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Oil & Grease (HEM)	40.0	39.10		mg/L		98	78 - 114

Lab Sample ID: LCSD 440-520264/3-A  
 Matrix: Water  
 Analysis Batch: 520349

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 520264

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Oil & Grease (HEM)	40.0	38.40		mg/L		96	78 - 114	2	11

## Method: 2540 D - TSS

Lab Sample ID: MB 440-515921/1  
 Matrix: Water  
 Analysis Batch: 515921

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			12/10/18 10:36	1

Lab Sample ID: LCS 440-515921/2  
 Matrix: Water  
 Analysis Batch: 515921

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	968		mg/L		97	85 - 115

Lab Sample ID: 440-226665-B-1 DU  
 Matrix: Water  
 Analysis Batch: 515921

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Suspended Solids	21		21.6		mg/L		4	10

## Method: 365.3 - Phosphorus, Total

Lab Sample ID: MB 440-519174/1-A  
 Matrix: Water  
 Analysis Batch: 519185

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 519174

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	ND		0.050	0.025	mg/L		12/24/18 12:33	12/24/18 18:43	1

TestAmerica Irvine

# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: 365.3 - Phosphorus, Total (Continued)

**Lab Sample ID: LCS 440-519174/2-A**  
**Matrix: Water**  
**Analysis Batch: 519185**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 519174**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Phosphorus, Total	0.501	0.520		mg/L		104	80 - 120

**Lab Sample ID: 440-227418-I-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 519185**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 519174**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Phosphorus, Total	ND		0.501	0.517		mg/L		103	75 - 125

**Lab Sample ID: 440-227418-I-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 519185**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 519174**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Phosphorus, Total	ND		0.501	0.495		mg/L		99	75 - 125	4	20

## Method: SM 4500 NH3 D - Ammonia

**Lab Sample ID: MB 440-516470/2-A**  
**Matrix: Water**  
**Analysis Batch: 516510**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 516470**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/12/18 05:00	12/12/18 09:00	1

**Lab Sample ID: LCS 440-516470/1-A**  
**Matrix: Water**  
**Analysis Batch: 516510**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516470**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	2.50	2.29		mg/L		91	85 - 115

**Lab Sample ID: MRL 440-516470/3-A**  
**Matrix: Water**  
**Analysis Batch: 516510**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 516470**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	0.500	0.467	J	mg/L		93	10 - 200

**Lab Sample ID: 440-226734-C-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 516510**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 516470**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	ND		2.50	2.46		mg/L		98	75 - 125

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: SM 4500 NH3 D - Ammonia (Continued)

**Lab Sample ID: 440-226734-C-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 516510**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 516470**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	ND		2.50	2.46		mg/L		98	75 - 125	0	15

## Method: SM 5220D - COD

**Lab Sample ID: MB 440-518400/3**  
**Matrix: Water**  
**Analysis Batch: 518400**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/20/18 10:11	1

**Lab Sample ID: LCS 440-518400/4**  
**Matrix: Water**  
**Analysis Batch: 518400**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	200	211		mg/L		105	90 - 110

**Lab Sample ID: 440-226778-1 MS**  
**Matrix: Water**  
**Analysis Batch: 518400**

**Client Sample ID: Stormwater\_12-06-2018**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	42		200	252		mg/L		105	70 - 120

**Lab Sample ID: 440-226778-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 518400**

**Client Sample ID: Stormwater\_12-06-2018**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	42		200	240		mg/L		99	70 - 120	5	15

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-515768/1**  
**Matrix: Water**  
**Analysis Batch: 515768**

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

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	2.0	mg/L			12/08/18 09:48	1

**Lab Sample ID: LCS 440-515768/4**  
**Matrix: Water**  
**Analysis Batch: 515768**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	216		mg/L		109	85 - 115

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# QC Sample Results

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCSD 440-515768/5  
 Matrix: Water  
 Analysis Batch: 515768

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	210		mg/L		106	85 - 115	3	20

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

# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## GC/MS VOA

### Analysis Batch: 515868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	8260B	
MB 440-515868/4	Method Blank	Total/NA	Water	8260B	
LCS 440-515868/5	Lab Control Sample	Total/NA	Water	8260B	
440-226778-1 MS	Stormwater_12-06-2018	Total/NA	Water	8260B	
440-226778-1 MSD	Stormwater_12-06-2018	Total/NA	Water	8260B	

### Analysis Batch: 516438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	8260B	
MB 440-516438/4	Method Blank	Total/NA	Water	8260B	
LCS 440-516438/5	Lab Control Sample	Total/NA	Water	8260B	
440-226778-1 MS	Stormwater_12-06-2018	Total/NA	Water	8260B	
440-226778-1 MSD	Stormwater_12-06-2018	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 515950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	3520C	
MB 440-515950/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-515950/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-515950/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 516524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-515950/1-A	Method Blank	Total/NA	Water	8270C	515950
LCS 440-515950/2-A	Lab Control Sample	Total/NA	Water	8270C	515950
LCSD 440-515950/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	515950

### Analysis Batch: 516799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	8270C	515950

### Prep Batch: 562993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	625	
MB 490-562993/1-A	Method Blank	Total/NA	Water	625	
LCS 490-562993/4-A	Lab Control Sample	Total/NA	Water	625	

### Analysis Batch: 563484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	625	562993
MB 490-562993/1-A	Method Blank	Total/NA	Water	625	562993
LCS 490-562993/4-A	Lab Control Sample	Total/NA	Water	625	562993

## GC Semi VOA

### Prep Batch: 516165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	608	

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# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## GC Semi VOA (Continued)

### Prep Batch: 516165 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-516165/1-A	Method Blank	Total/NA	Water	608	
LCS 440-516165/4-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-516165/5-A	Lab Control Sample Dup	Total/NA	Water	608	

### Analysis Batch: 516373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	608	516165
MB 440-516165/1-A	Method Blank	Total/NA	Water	608	516165
LCS 440-516165/4-A	Lab Control Sample	Total/NA	Water	608	516165
LCS 440-516165/5-A	Lab Control Sample Dup	Total/NA	Water	608	516165

## HPLC/IC

### Analysis Batch: 515565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	300.0	
MB 440-515565/6	Method Blank	Total/NA	Water	300.0	
LCS 440-515565/5	Lab Control Sample	Total/NA	Water	300.0	
440-224128-B-3 MS	Matrix Spike	Total/NA	Water	300.0	
440-224128-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 515566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	300.0	
MB 440-515566/6	Method Blank	Total/NA	Water	300.0	
LCS 440-515566/5	Lab Control Sample	Total/NA	Water	300.0	
440-224128-B-3 MS	Matrix Spike	Total/NA	Water	300.0	
440-224128-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 517957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	NO3NO2 Calc	

## Metals

### Prep Batch: 516687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	245.1	
MB 440-516687/1-A	Method Blank	Total/NA	Water	245.1	
LCS 440-516687/2-A	Lab Control Sample	Total/NA	Water	245.1	
440-226822-D-1-E MS	Matrix Spike	Total/NA	Water	245.1	
440-226822-D-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

### Analysis Batch: 517219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	245.1	516687
MB 440-516687/1-A	Method Blank	Total/NA	Water	245.1	516687
LCS 440-516687/2-A	Lab Control Sample	Total/NA	Water	245.1	516687
440-226822-D-1-E MS	Matrix Spike	Total/NA	Water	245.1	516687
440-226822-D-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	516687

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# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Metals (Continued)

### Prep Batch: 517794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total Recoverable	Water	200.2	
MB 440-517794/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-517794/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-227908-D-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-227908-D-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Prep Batch: 517795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total Recoverable	Water	200.2	
MB 440-517795/1-A	Method Blank	Total Recoverable	Water	200.2	
LCS 440-517795/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
440-227908-D-1-E MS	Matrix Spike	Total Recoverable	Water	200.2	
440-227908-D-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	

### Analysis Batch: 517961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total Recoverable	Water	200.8	517794
MB 440-517794/1-A	Method Blank	Total Recoverable	Water	200.8	517794
LCS 440-517794/2-A	Lab Control Sample	Total Recoverable	Water	200.8	517794
440-227908-D-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	517794
440-227908-D-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	517794

### Analysis Batch: 518032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total Recoverable	Water	200.7 Rev 4.4	517795
MB 440-517795/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	517795
LCS 440-517795/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	517795
440-227908-D-1-E MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	517795
440-227908-D-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	517795

## General Chemistry

### Analysis Batch: 515768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	SM5210B	
USB 440-515768/1	Method Blank	Total/NA	Water	SM5210B	
LCS 440-515768/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-515768/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	

### Analysis Batch: 515921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	2540 D	
MB 440-515921/1	Method Blank	Total/NA	Water	2540 D	
LCS 440-515921/2	Lab Control Sample	Total/NA	Water	2540 D	
440-226665-B-1 DU	Duplicate	Total/NA	Water	2540 D	

### Prep Batch: 516470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	SM 4500 NH3 B	
MB 440-516470/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

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# QC Association Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## General Chemistry (Continued)

### Prep Batch: 516470 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-516470/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MRL 440-516470/3-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-226734-C-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-226734-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 516510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	SM 4500 NH3 D	516470
MB 440-516470/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	516470
LCS 440-516470/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	516470
MRL 440-516470/3-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	516470
440-226734-C-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	516470
440-226734-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	516470

### Analysis Batch: 518400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	SM 5220D	
MB 440-518400/3	Method Blank	Total/NA	Water	SM 5220D	
LCS 440-518400/4	Lab Control Sample	Total/NA	Water	SM 5220D	
440-226778-1 MS	Stormwater_12-06-2018	Total/NA	Water	SM 5220D	
440-226778-1 MSD	Stormwater_12-06-2018	Total/NA	Water	SM 5220D	

### Prep Batch: 519174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	365.2/365.3/365	
MB 440-519174/1-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 440-519174/2-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
440-227418-I-1-C MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
440-227418-I-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

### Analysis Batch: 519185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	365.3	519174
MB 440-519174/1-A	Method Blank	Total/NA	Water	365.3	519174
LCS 440-519174/2-A	Lab Control Sample	Total/NA	Water	365.3	519174
440-227418-I-1-C MS	Matrix Spike	Total/NA	Water	365.3	519174
440-227418-I-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	365.3	519174

### Prep Batch: 520264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	1664A	
MB 440-520264/1-A	Method Blank	Total/NA	Water	1664A	
LCS 440-520264/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-520264/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

### Analysis Batch: 520349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226778-1	Stormwater_12-06-2018	Total/NA	Water	1664A	520264
MB 440-520264/1-A	Method Blank	Total/NA	Water	1664A	520264
LCS 440-520264/2-A	Lab Control Sample	Total/NA	Water	1664A	520264
LCSD 440-520264/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	520264

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# Definitions/Glossary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Qualifiers

### GC/MS Semi VOA

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

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

### General Chemistry

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

## Glossary

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

# Accreditation/Certification Summary

Client: Republic Services Inc  
 Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

## Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	10-31-18 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-18 *
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

# Accreditation/Certification Summary

Client: Republic Services Inc  
Project/Site: Republic-Sunshine Canyon - Stormwater

TestAmerica Job ID: 440-226778-1

## Laboratory: TestAmerica Nashville (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

**TestAmerica Irvine**  
 17461 Derran Ave  
 Suite 100  
 Irvine, CA 92614  
 phone 949.261.1022 fax

**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

**Regulatory Program:** DW NPDES RCRA Other: **Site Contact: Dennis Montano**  
**Project Manager: Tuong-Phu Ngo** **Lab Contact: Rossina Tomova**  
**Tel/Fax: 818-362-2096**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Date: 12/6/2018													Sample Specific Notes:					
						Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Oil & Grease (EPA 1664A HEM)	TSS (SM 2540-D)	Metals (EPA 200.7, 200.8, & 245.1)	α-Terpineol (EPA 625)	Ammonia as N (SM 4500D)	BOD (SM 5210B)	Semi-VOCs (SM 8270C), PCBs (EPA 808)	SM 8260B - project VOCs	Semivolatiles (SM8270)	Acrylonitrile (SM 8260b)	chloride, fluoride, nitrate+nitrite (N)		Total phosphorus (EPA 365.3)	COD (SM 5220D)			
Stormwater_12-06-2018	12/06/18	2:58 PM	G	W	22	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	EPA 300.0
						2	1	4	1	3	1	1	2	1	1	1	3	3						



12/7/18  
C/B/C/B

**Preservation Used:** 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other **Total # 22**

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the  
 Non-Hazard Flammable Skin Irritant Poison B Unknown

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return to Client \_\_\_\_\_ Disposal by Lab \_\_\_\_\_ Archive for \_\_\_\_\_ Months

<b>Custody Seal No</b>	Company Republic Services - Sunshine Canyon Landfill	<b>Date/Time:</b> 12/2/18-10A	<b>Received by:</b> Sam Ahmed	<b>Company</b> PCS	<b>Cooler Temp. (°C):</b> Obs'd _____	<b>Therm ID No</b> _____
<b>Relinquished by:</b> Dennis Montano	Company PCS	<b>Date/Time:</b> 2:20	<b>Received by:</b> Sam Ahmed	Company PCS	<b>Company</b> PCS	<b>Date/Time:</b> 12/7/18
<b>Relinquished by:</b> Sam Ahmed	Company PCS	<b>Date/Time:</b> 12/7/18	<b>Received in Laboratory by:</b> [Signature]	Company IARRV	<b>Company</b> IARRV	<b>Date/Time:</b> 12/7/18 1420

3.8/3.8 IR89  
 Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013





## COOLER RECEIPT FORM

Cooler Received/Opened On 12/11/2018 @ 1010

Time Samples Removed From Cooler 14:11 Time Samples Placed In Storage 14:13 (2 Hour Window)

1. Tracking # 1518 (last 4 digits, FedEx) Courier: FedEx  
IR Gun ID 17610176 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.5 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: None

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) 2.2

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # KA

I certify that I unloaded the cooler and answered questions 7-14 (initial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) KA

I certify that I attached a label with the unique LIMS number to each container (initial) KA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#



**TestAmerica Irvine**  
 17461 Derian Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone (949) 261-1022 Fax (949) 260-3297

### Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab Pmt: Tomova, Rossini	
Client Contact: Shipping/Receiving		E-Mail: rossina.tomova@testamericainc.com	
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): California	
Address: 2960 Foster Creighton Drive, Nashville, TN, 37204		COC No: 440-130565.1	
Phone: 615-726-0177 (Tel) 615-726-3404 (Fax)		Page: Page 1 of 1	
Email:		Job #: 440-226778-1	
Project Name: Republic-Sunshine Canyon - Stormwater		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Site:		Special Instructions/Note: needs Alpha-Terpinol spike for the LCS!!!	
Sample Date: 12/6/18		Total Number of Containers: 2	
Sample Time: 14:58 Pacific		Analysis Requested:	
Sample Type (C=Comp, G=grab):		Field Filled Sample (Yes or No): X	
Matrix (W=water, S=soils, O=wastewater, BT=Tissue, A=Air):		Perform MS/SP (Yes or No): X	
Preservation Code: Water		825/625 Prep (MOD) Custom 625 Semivolatle List: X	
Due Date Requested: 12/19/2018		TAT Requested (days):	
PO #: 44003139		Project #: 44003139	
SSOW#:		Special Instructions/Note: LOC: 440 226778	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

---

**Possible Hazard Identification**

Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Special Instructions/QC Requirements:  Return To Client  Disposal By Lab  Archive For  Months

Empty Kit Relinquished by: [Signature] Date: [Signature] Method of Shipment: [Signature]

Relinquished by: [Signature] Date: 12-11-2018 10:10 Company: [Signature]

Relinquished by: [Signature] Date/Time: [Signature] Company: [Signature]

Relinquished by: [Signature] Date/Time: [Signature] Company: [Signature]

Custody Seals Intact:  Yes  No Cooler Temperature(s) °C and Other Remarks: 1.5





# Login Sample Receipt Checklist

Client: Republic Services Inc

Job Number: 440-226778-1

**Login Number: 226778**

**List Number: 1**

**Creator: Bonta, Lucia F**

**List Source: TestAmerica Irvine**

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



## **APPENDIX C**

### **MONTHLY VADOSE ZONE GAS MONITORING REPORTS**

SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: A Romo		TEMPERATURE: 50		BARO. PRESSURE: 28.16					
GEM SERIAL #: 6500485		WEATHER CONDITIONS: SUNNY							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	12-18-18	733	-24	0	.1	21.3	78.6	2	
B-29	12-18-18	735	-17	0	.1	21.3	78.6	2	
C-45	12-18-18	738	-1.69	0	.1	21.3	78.6	3	
D-61	12-18-18	743	-2.68	0	.1	21.3	78.6	4	
E-77	12-18-18	747	-14.25	0	.1	21.3	78.6	4	
214									
A-13	12-18-18	802	-15	0	2.4	17.1	80.5	2	
B-30	12-18-18	805	-9.52	0	.2	20.9	78.9	2	
C-48	12-18-18	808	-12.17	0	.1	21.1	78.8	3	
215									
A-13	12-18-18	818	-14	0	3.8	13.2	83.0	2	
B-30	12-18-18	821	-13	0	2.1	18.6	79.3	2	
C-47	12-18-18	824	-20	0	.1	21.1	78.8	3	
D-64	12-18-18	827	-11	0	.2	20.8	79.0	4	
E-81	12-18-18	832	-13	0	2.4	15.9	81.7	4	
216									
A-14	12-18-18	848	-16	0	.1	20.9	79.0	2	
B-43	12-18-18	852	-32	0	.1	20.9	79.0	2	
C-62	12-18-18	855	-12	0	.1	20.9	79.0	3	
D-86	12-18-18	858	-24	0	.1	20.9	79.0	4	
E-110	12-18-18	863	-07	0	.1	20.9	79.0	4	
217									
A-13	12-18-18	918	-08	0	2.8	18.6	78.6	2	
B-30	12-18-18	920	-09	0	1.9	19.3	78.8	2	
218R									
A-11	12-18-18	930	-07	0	16.4	6.8	76.8	2	
B-26.5	12-18-18	933	-19	0	21.6	7.2	71.1	2	
B-30	12-18-18	935	-10	0	10.5	18.0	71.5	2	
219									
A-13	12-18-18	959	-08	0	.5	20.6	78.9	2	
B-64	12-18-18	1001	-08	0	.1	21.0	78.9	2	
C-115	12-18-18	1004	-10	0	.1	20.9	79.0	3	
D-166	12-18-18	1010	-04	0	.1	20.8	79.1	4	
E-217	12-18-18	1015	-04	0	.9	19.6	79.5	4	

SCS SIGNATURE: 

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14	12/18/18	07:20	+0.04	0.0	2.7	18.5	78.8	2	
B-40	12/18/18	07:23	+0.01	0.0	0.9	20.3	78.8	2	
C-87	12/18/18	07:26	-0.02	0.0	0.5	20.8	78.8	3	
D-124	12/18/18	07:31	-0.04	0.0	1.0	20.3	78.7	4	
E-158	12/18/18	07:37	0.00	0.0	0.4	20.6	78.9	4	
220B									
A-14	12/18/18	07:44	-0.05	0.0	2.9	17.4	79.7	2	
B-38	12/18/18	07:47	-0.09	0.0	0.3	20.8	78.9	2	
C-62	12/18/18	07:51	-0.08	0.0	5.7	13.7	80.5	3	
D-86	12/18/18	07:57	-0.13	0.0	6.0	12.5	81.6	4	
E-110	12/18/18	08:02	-0.33	0.0	8.7	4.7	86.6	4	
221									
A-13	12/18/18	08:20	-0.01	0.0	0.8	20.3	78.9	2	
B-56	12/18/18	08:24	-0.09	0.0	0.3	20.7	79.1	2	
C-99	12/18/18	08:28	-0.27	0.0	0.6	20.3	79.1	3	
D-142	12/18/18	08:33	-0.04	0.0	0.1	20.7	79.2	4	
E-185	12/18/18	08:39	-0.04	0.0	0.1	20.7	79.2	4	
222									
A-13	12/18/18	08:48	-0.07	0.0	1.6	19.2	79.3	2	
B-54.8	12/18/18	08:51	-0.06	0.0	0.1	20.7	79.2	2	
C-96.5	12/18/18	08:55	-0.04	0.0	0.1	20.6	79.2	3	
D-138.3	12/18/18	09:00	-0.12	0.0	1.5	19.2	79.3	4	
E-180	12/18/18	09:05	-1.39	0.0	0.2	20.5	79.2	4	
223									
A-13	12/18/18	09:47	-0.03	0.0	6.5	7.1	86.3	2	
B-37.5	12/18/18	09:51	-0.04	0.0	9.9	1.2	88.8	2	
C-62	12/18/18	09:56	+0.02	0.0	4.0	13.5	82.5	3	
D-86.5	12/18/18	10:07	+0.01	0.0	2.4	15.9	81.7	4	
E-111	12/18/18	10:12	-0.02	0.0	3.2	14.1	82.7	4	
224									
A-13	12/18/18	10:30	-0.02	0.0	0.4	20.2	79.4	2	
B-67.5	12/18/18	10:33	-0.05	0.0	0.1	20.7	79.2	2	
C-122	12/18/18	10:37	-0.07	0.0	0.1	20.7	79.2	3	
D-177.5	12/18/18	10:41	-9.48	0.0	0.1	20.8	79.1	4	
E-232	12/18/18	10:49	-7.23	0.0	0.1	20.8	79.1	4	

SCS SINGATURE: 

LEA SINGATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13	12/18/18	11:06	-0.01	0.0	0.7	19.4	79.9	2	
B-72	12/18/18	11:09	-5.93	0.0	0.4	19.8	79.8	2	
C-1131	12/18/18	11:12	-9.03	0.0	0.8	19.3	79.9	3	
D-190	12/18/18	11:17	-10.97	0.0	0.1	20.3	79.6	4	
E-244	12/18/18	11:21	-10.21	0.0	0.4	19.9	79.6	4	
226									
A-13	12/18/18	13:49	+0.02	0.0	0.0	20.9	79.0	2	
B-64	12/18/18	13:53	-11.45	0.0	0.1	21.0	78.9	2	
C-114	12/18/18	14:01	-11.38	0.0	0.1	20.9	79.0	3	
D-164	12/18/18	14:05	-11.74	0.0	0.0	21.0	78.9	4	
E-208	12/18/18	14:12	-12.34	0.0	0.2	20.7	79.1	4	
227									
A-13	12/18/18	14:20	0.00	0.0	0.1	20.8	79.1	2	
B-48.7	12/18/18	14:23	-0.24	0.0	0.1	20.7	79.1	2	
C-84.4	12/18/18	14:26	-0.53	0.0	0.2	20.6	79.2	3	
D-114	12/18/18	14:31	-0.73	0.0	0.2	20.6	79.2	4	
E-115.7	12/18/18	14:35	-0.29	0.0	0.3	20.3	79.3	4	
228									
A-13	12/18/18	14:43	+0.05	0.0	0.7	19.4	79.8	2	
B-63	12/18/18	14:46	-0.03	0.0	1.9	16.3	81.8	2	
C-113	12/18/18	14:50	-0.10	0.0	0.2	20.4	79.4	3	
D-163	12/18/18	14:54	-0.43	0.0	0.6	19.8	79.5	4	
E-213	12/18/18	14:59	-0.48	0.0	1.9	17.2	80.9	4	
229									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-155.7								4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13								2	
B-72								2	
C-1131								3	
D-190								4	
E-244								4	
226									
A-13								2	
B-64								2	
C-114								3	
D-164								4	
E-208								4	
227									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-115.7								4	
228									
A-13								2	
B-63								2	
C-113								3	
D-163								4	
E-213								4	
229									
A-13	12-18-18	1028	-75	.1	0	20.8	79.1	2	
B-48.7	12-18-18	1034	-10.19	0	0	20.8	79.2	2	
C-84.4	12-18-18	1036	-10.25	0	0	20.7	79.3	3	
D-114	12-18-18	1039	-12.76	0	0	20.7	79.3	4	
E-155.7	12-18-18	1043	-18.24	0	0	20.6	79.4	4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
241									
A-13	12-18-18	1101	-6.92	0	0	20.7	79.3	2	
B-28	12-18-18	1104	+4.78	0	0	20.7	79.3	2	
C-47	12-18-18	1107	+2.03	0	0	20.7	79.3	3	
D-64	12-18-18	1114	-7.12	0	0	20.7	79.3	4	
E-85	12-18-18	1118	-2.49	0	0	20.8	79.2	4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: A. R. D. M. D.		TEMPERATURE: 80		BARO. PRESSURE: 28.27					
GEM SERIAL #: G504543		WEATHER CONDITIONS: SUNNY							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	7-24-18	744	+2.22	0	2.9	17.0	80.1	2	
B-29	7-24-18	747	+0.09	0	.1	20.5	79.4	2	
C-45	7-24-18	750	-0.36	0	.1	20.5	79.4	3	
D-61	7-24-18	754	-0.65	0	.1	20.3	79.6	4	
E-77	7-24-18	758	-1.23	0	.1	20.3	79.6	4	
214									
A-13	7-24-18	809	+0.05	0	10.2	9.6	80.2	2	
B-30	7-24-18	812	-10.65	0	.1	20.2	79.7	2	
C-48	7-24-18	814	-13.91	0	1.3	18.9	79.8	3	
215									
A-13	7-24-18	835	+0.12	0	5.1	9.6	85.3	2	
B-30	7-24-18	842	-0.17	0	1.0	18.6	80.4	2	
C-47	7-24-18	844	+0.13	0	.1	20.6	79.3	3	
D-64	7-24-18	847	+0.07	0	.2	20.4	79.4	4	
E-81	7-24-18	851	+0.08	0	3.8	12.3	83.9	4	
216									
A-14	7-24-18	900	+0.07	0	5.0	10.5	84.5	2	
B-43	7-24-18	903	+0.09	0	.1	20.6	79.2	2	
C-62	7-24-18	906	+0.12	0	.1	20.8	79.1	3	
D-86	7-24-18	909	-0.28	0	.2	20.6	79.2	4	
E-110	7-24-18	913	+0.02	0	.9	17.3	81.8	4	
217									
A-13	7-24-18	925	+0.08	0	4.4	16.2	79.4	2	
B-30	7-24-18	927	+0.07	0	3.5	17.4	79.1	2	
218R									
A-11	7-24-18	1008	+0.03	0	26.9	1.0	72.1	2	
B-26.5	7-24-18	1012	+0.05	0	21.0	4.8	74.2	2	
B-30	7-24-18	1015	.00	0	20.3	14.7	65.0	2	
219									
A-13	7-24-18	1045	.00	0	.9	18.5	80.6	2	
B-64	7-24-18	1047	-0.02	0	.1	19.4	80.5	2	
C-115	7-24-18	1050	+0.01	0	.5	18.7	80.8	3	
D-166	7-24-18	1054	-0.03	0	0	19.5	80.5	4	
E-217	7-24-18	1058	-0.06	0	3.9	12.2	83.9	4	

SCS SIGNATURE: 

LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G500390

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14	07/24/18	07:48	0.00	0.0	2.3	19.2	78.5	2	
B-40	07/24/18	07:53	-0.06	0.0	0.2	20.5	79.3	2	
C-87	07/24/18	07:58	-0.04	0.0	0.5	20.4	79.1	3	
D-124	07/24/18	08:03	-0.10	0.0	0.1	20.7	79.2	4	
E-158	07/24/18	08:08	-0.05	0.0	0.7	19.9	79.4	4	
220B									
A-14	07/24/18	08:17	0.00	0.0	3.8	15.7	80.5	2	
B-38	07/24/18	08:20	-0.02	0.0	9.9	1.8	88.2	2	
C-62	07/24/18	08:24	-0.07	0.0	5.8	11.6	82.6	3	
D-86	07/24/18	08:30	-0.08	0.0	6.1	11.0	82.9	4	
E-110	07/24/18	08:36	-0.10	0.0	8.6	2.3	89.1	4	
221									
A-13	07/24/18	09:01	+0.02	0.0	0.7	19.7	79.6	2	
B-56	07/24/18	09:05	+0.01	0.0	4.5	11.4	84.1	2	
C-99	07/24/18	09:11	-0.15	0.0	1.4	17.8	80.8	3	
D-142	07/24/18	09:17	-0.04	0.0	0.0	20.2	79.8	4	
E-185	07/24/18	09:24	+0.01	0.0	0.0	20.0	80.0	4	
222									
A-13	07/24/18	09:32	0.00	0.0	1.1	19.2	79.7	2	
B-54.8	07/24/18	09:37	-0.02	0.0	0.0	20.8	79.1	2	
C-96.5	07/24/18	09:43	+0.02	0.0	0.1	20.9	79.0	3	
D-138.3	07/24/18	09:48	-0.04	0.0	1.1	19.2	79.7	4	
E-180	07/24/18	09:59	-0.04	0.0	0.1	21.1	78.8	4	
223									
A-13	07/24/18	10:16	+0.01	0.0	6.9	7.8	85.3	2	
B-37.5	07/24/18	10:19	-0.02	0.0	7.7	4.2	88.1	2	
C-62	07/24/18	10:23	+0.02	0.0	3.7	13.2	83.0	3	
D-86.5	07/24/18	10:29	0.00	0.0	2.1	16.1	81.7	4	
E-111	07/24/18	10:34	+0.03	0.1	4.3	11.6	84.1	4	
224									
A-13	07/24/18	10:53	-0.04	0.0	0.3	20.6	79.2	2	
B-67.5	07/24/18	10:56	-0.02	0.0	0.0	21.0	79.0	2	
C-122	07/24/18	11:00	-0.03	0.0	0.0	21.0	79.0	3	
D-177.5	07/24/18	11:05	-11.07	0.0	0.0	21.1	78.9	4	
E-232	07/24/18	11:11	-8.27	0.0	0.0	20.9	79.1	4	

SCS SIGNATURE: *Saulo Diaz*

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo Diaz G500390

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13	07/24/18	13:54	-0.02	0.0	0.8	19.3	79.9	2	
B-72	07/24/18	13:58	-5.18	0.0	0.4	18.9	80.7	2	
C-1131	07/24/18	14:04	-9.14	0.0	1.0	18.1	80.9	3	
D-190	07/24/18	14:09	-9.08	0.1	0.2	19.1	80.7	4	
E-244	07/24/18	14:16	-8.45	0.0	0.7	19.9	79.4	4	
226									
A-13	07/24/18	14:24	0.00	0.0	0.0	21.0	78.9	2	
B-64	07/24/18	14:27	-10.83	0.1	0.0	20.9	79.1	2	
C-114	07/24/18	14:32	-10.16	0.1	0.0	21.2	78.7	3	
D-164	07/24/18	14:41	-10.94	0.0	0.0	21.2	78.7	4	
E-208	07/24/18	14:49	-11.05	0.0	0.0	20.9	79.1	4	
227									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-115.7								4	
228									
A-13								2	
B-63								2	
C-113								3	
D-163								4	
E-213								4	
229									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-155.7								4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: Saulo Diaz

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

A. ROMO

GEM 504543

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13								2	
B-72								2	
C-1131								3	
D-190								4	
E-244								4	
226									
A-13								2	
B-64								2	
C-114								3	
D-164								4	
E-208								4	
227									
A-13	7-24-18	1430	-1.08	0	1.0	16.8	82.2	2	
B-48.7	7-24-18	1432	+1.11	0	3.6	7.0	89.4	2	
C-84.4	7-24-18	1434	-1.11	0	2.5	10.5	87.0	3	
D-114	7-24-18	1437	-1.10	0	.6	18.2	81.2	4	
E-115.7	7-24-18	1442	-0.7	0	.3	18.2	81.5	4	
228									
A-13	7-24-18	1409	+1.07	0	.8	19.2	80.0	2	
B-63	7-24-18	1411	+1.08	0	1.6	15.1	82.3	2	
C-113	7-24-18	1413	+1.06	0	4.1	4.5	91.4	3	
D-163	7-24-18	1416	+1.04	0	.5	19.6	79.9	4	
E-213	7-24-18	1420	-0.9	0	1.9	15.5	82.6	4	
229									
A-13	7-24-18	1338	-1.71	0	.8	18.6	80.6	2	
B-48.7	7-24-18	1341	-11.57	0	.3	19.6	80.1	2	
C-84.4	7-24-18	1344	-12.16	0	.1	20.1	79.8	3	
D-114	7-24-18	1347	-14.08	0	.2	19.7	80.1	4	
E-155.7	7-24-18	1351	-12.82	0	0	20.3	79.7	4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE:



LEA SIGNATURE:

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SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: Saulo DIAZ			TEMPERATURE: 88°F		BARO. PRESSURE: 28.30"				
GEM SERIAL #: 6500390			WEATHER CONDITIONS: Sunny & clear						
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10	07/26/18	08:57	-0.01	0.0	3.1	17.5	79.4	2	
B-25	07/26/18	09:00	+0.02	0.0	4.2	15.8	80.0	2	
C-40	07/26/18	09:04	-0.01	0.0	3.5	16.2	80.3	3	
206									
A-10	07/26/18	07:31	+0.01	0.0	13.0	9.5	78.5	2	
B-25	07/26/18	07:35	+0.04	0.0	17.1	5.1	77.8	2	
C-40	07/26/18	07:42	-0.02	0.0	25.5	2.1	72.4	3	
207									
A-10								2	
B-25								2	
C-40								3	
208									
A-9.1								2	
B-25								2	
C-40								3	
210									
A-10								2	
B-25								2	
C-39								3	
242									
C-42								3	
D-60								4	
E-78								4	
243									
A-11	07/26/18	10:23	-0.15	0.2	13.6	0.2	86.1	2	
B-20	07/26/18	10:30	0.00	0.0	9.4	5.5	85.1	2	
C-33	07/26/18	10:36	+0.01	0.0	7.1	8.6	84.2	3	

SCS SIGNATURE: Saulo DIAZ

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>A. ROMO</u>			TEMPERATURE: <u>88</u>			BARO. PRESSURE: <u>28.09</u>			
GEM SERIAL #: <u>G501543</u>			WEATHER CONDITIONS: <u>SUNNY</u>						
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10								2	
B-25								2	
C-40								3	
206									
A-10								2	
B-25								2	
C-40								3	
207									
A-10	7-26-18	1002	-0.49	0	0	19.1	80.9	2	
B-25	7-26-18	1004	-0.11	0	.1	19.2	80.7	2	
C-40	7-26-18	1026	-0.12	0	0	19.3	80.7	3	
208									
A-9.1	7-26-18	938	-0.80	0	4.7	15.5	79.8	2	
B-25	7-26-18	940	-0.09	0	6.3	12.4	79.3	2	
C-40	7-26-18	942	-0.07	0	6.3	12.7	81.0	3	
210									
A-10	7-26-18	838	-0.53	0	.1	19.1	80.8	2	
B-25	7-26-18	841	-0.46	0	.1	19.4	80.5	2	
C-39	7-26-18	843	+0.03	0	.1	19.6	80.3	3	
242									
C-42	7-26-18	851	-0.00	0	3.0	16.4	80.6	3	
D-60	7-26-18	854	-1.56	0	7.0	5.3	87.7	4	
E-78	7-26-18	858	-0.03	0	4.2	14.4	81.4	4	
243									
A-11								2	
B-20								2	
C-33								3	

SCS SIGNATURE: \_\_\_\_\_




LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo Diaz G500390

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11	07/26/18	09:35	-0.01	0.0	16.1	3.7	80.1	2	
B-20	07/26/18	09:40	-0.01	0.1	25.6	0.5	73.8	2	
C-35	07/26/18	09:47	+0.01	0.0	23.7	0.2	76.0	3	
D-50	07/26/18	09:54	-0.01	0.1	19.0	0.0	81.0	4	
E-64	07/26/18	09:59	-0.02	0.0	8.3	5.2	86.5	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	07/26/18	08:01	-0.02	0.0	9.3	12.4	78.3	2	
B-20	07/26/18	08:07	-0.03	0.9	31.5	0.8	66.7	2	
C-33	07/26/18	08:14	-0.20	1.8	46.4	0.0	51.8	3	
D-48	07/26/18	08:21	-0.03	2.7	49.4	0.0	47.9	4	
E-62	07/26/18	08:28	-0.10	1.8	39.7	0.0	58.5	4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

A. Romo

GEM # 504543

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	7-26-18	917	+0.6	0	16.7	1.7	89.6	2	
B-21	7-26-18	920	-0.3	0	9.5	10.0	80.5	2	
C-36	7-26-18	922	-0.6	0	6.1	14.3	79.6	3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11	7-26-18	818	+1.15	0	12.1	13.1	74.8	2	
B-20	7-26-18	821	+1.16	0	.1	20.3	79.1	2	
C-35	7-26-18	823	+1.13	0	.1	20.1	79.8	3	
D-50	7-26-18	826	+1.06	0	.1	19.8	80.1	4	
E-64	7-26-18	830	+1.10	0	.1	19.5	80.4	4	
240									
A-11	7-26-18	739	+1.17	0	11.3	10.4	78.3	2	
B-20	7-26-18	742	+1.14	0	.1	20.6	79.3	2	
C-33	7-26-18	744	+1.16	0	.1	20.6	79.3	3	
D-49	7-26-18	747	-1.02	0	.1	20.5	79.4	4	
E-61	7-26-18	751	-1.19	0	.1	20.5	79.4	4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo Diaz G500390

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE ZONE									
PV203D	07/20/18	10:08	-3.58	0.0	0.0	20.9	79.1		
PV204D									
PV211D	07/20/18	09:27	-1.79	0.0	0.0	20.9	79.1		

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

A. ROMO

GEM #504543

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE ZONE									
PV203D									
PV204D	7-22-18	1011	-2.92	0	0	19.9	80.1	60	
PV211D									

SCS SIGNATURE: \_\_\_\_\_



LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>AROMO</u>		TEMPERATURE: <u>68</u>		BARO. PRESSURE: <u>28.30</u>					
GEM SERIAL #: <u>6504543</u>		WEATHER CONDITIONS: <u>OVERCAST</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	8-21-18	809	+1.12	0	2.8	17.6	79.6	2	
B-29	8-21-18	812	+1.11	0	.1	21.3	78.6	2	
C-45	8-21-18	815	-1.66	0	.1	21.5	78.4	3	
D-61	8-21-18	819	-1.02	0	.1	21.6	78.3	4	
E-77	8-21-18	823	-1.57	0	.1	21.8	78.1	4	
214									
A-13	8-21-18	835	+1.09	0	8.1	12.6	79.3	2	
B-30	8-21-18	838	+10.55	0	.1	21.5	78.4	2	
C-48	8-21-18	840	-13.05	0	.1	21.6	78.3	3	
215									
A-13	8-21-18	852	+1.10	0	6.3	8.5	85.2	2	
B-30	8-21-18	855	+1.11	0	.2	21.4	78.4	2	
C-47	8-21-18	858	+1.11	0	.1	22.0	77.9	3	
D-64	8-21-18	902	+1.10	0	.5	21.3	78.2	4	
E-81	8-21-18	907	+1.09	0	4.1	13.4	82.5	4	
216									
A-14	8-21-18	917	+1.08	0	.1	21.8	78.1	2	
B-43	8-21-18	920	+1.13	0	.1	21.9	78.0	2	
C-62	8-21-18	923	+1.05	0	.1	21.9	78.0	3	
D-86	8-21-18	927	+1.13	0	.1	21.8	78.1	4	
E-110	8-21-18	931	+1.06	0	.2	21.4	78.4	4	
217									
A-13	8-21-18	1342	+1.07	0	5.5	16.2	78.3	2	
B-30	8-21-18	1345	-1.31	0	4.3	17.4	78.3	2	
218R									
A-11	8-21-18	955	+1.08	.1	26.7	2.6	70.6	2	
B-26.5	8-21-18	958	+1.10	0	17.5	8.1	74.4	2	
B-30	8-21-18	1000	+1.05	0	18.4	16.2	65.4	2	
219									
A-13	8-21-18	1017	+1.10	0	.9	19.8	79.3	2	
B-64	8-21-18	1019	+1.07	0	.7	19.2	80.7	2	
C-115	8-21-18	1023	+1.04	0	.3	20.4	79.3	3	
D-166	8-21-18	1028	+1.03	0	0	20.8	79.2	4	
E-217	8-21-18	1039	+1.02	0	3.1	15.1	81.8	4	

SCS SIGNATURE: \_\_\_\_\_

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo Diaz G504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14	8/21/18	7:42am	-0.01	0.0	2.1	19.9	78.0	2	
B-40	8/21/18	7:51am	-0.01	0.0	0.4	20.9	78.8	2	
C-87	8/21/18	7:57am	-0.02	0.0	0.4	20.9	78.7	3	
D-124	8/21/18	8:03am	-0.04	0.0	0.1	20.0	78.9	4	
E-158	8/21/18	8:09am	-0.04	0.0	0.6	20.5	78.9	4	
220B									
A-14	8/21/18	8:22am	0.00	0.0	3.7	16.8	79.5	2	
B-38	8/21/18	8:26am	-0.10	0.0	0.6	20.1	79.3	2	
C-62	8/21/18	8:33am	-0.14	0.0	5.7	13.1	81.2	3	
D-86	8/21/18	8:41am	-0.19	0.0	5.9	12.4	81.7	4	
E-110	8/21/18	8:47am	-0.18	0.0	7.4	6.8	85.7	4	
221									
A-13	08/21/18	9:09	0.00	0.0	0.7	20.2	79.0	2	
B-56	8/21/18	9:14am	-0.01	0.0	0.3	20.7	79.0	2	
C-99	8/21/18	9:20am	-0.24	0.0	0.4	20.6	79.1	3	
D-142	8/21/18	9:29am	-0.09	0.0	0.1	20.8	79.1	4	
E-185	8/21/18	9:35am	-0.02	0.0	0.1	20.8	79.1	4	
222									
A-13	08/21/18	09:51	+0.01	0.0	1.1	19.6	79.3	2	
B-54.8	08/21/18	09:55	-0.04	0.0	0.1	20.6	79.3	2	
C-96.5	08/21/18	10:01	-0.01	0.0	0.1	20.4	79.5	3	
D-138.3	08/21/18	10:07	0.00	0.0	1.0	19.2	79.7	4	
E-180	08/21/18	10:12	-0.51	0.0	0.2	20.2	79.6	4	
223									
A-13	08/21/18	10:26	0.00	0.0	8.1	7.4	84.5	2	
B-37.5	08/21/18	10:30	0.00	0.0	9.2	3.1	87.7	2	
C-62	08/21/18	10:34	-0.01	0.0	5.1	12.0	82.9	3	
D-86.5	08/21/18	10:40	+0.02	0.0	2.7	16.1	81.2	4	
E-111	08/21/18	10:46	+0.01	0.0	5.2	11.0	83.8	4	
224									
A-13	08/21/18	11:02	-0.08	0.0	0.2	21.1	78.6	2	
B-67.5	08/21/18	11:07	-0.06	0.0	0.0	21.6	78.4	2	
C-122	08/21/18	11:15	-0.07	0.0	0.0	21.1	78.9	3	
D-177.5	08/21/18	11:21	-12.32	0.0	0.0	21.1	78.8	4	
E-232	08/21/18	11:29	-8.83	0.0	0.0	21.2	78.8	4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo Diaz GS04541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13	8/21/18	1:53pm	-0.03	0.0	0.7	19.9	79.5	2	
B-72	8/21/18	1:58pm	-5.52	0.0	0.3	20.0	79.7	2	
C-1131	8/21/18	2:05pm	-9.84	0.0	0.8	19.2	80.0	3	
D-190	8/21/18	2:10pm	-9.86	0.0	0.2	19.9	79.9	4	
E-244	8/21/18	2:15pm	-9.12	0.0	0.6	18.9	80.4	4	
226									
A-13	08/21/18	13:50	+0.04	0.0	0.2	20.6	79.2	2	
B-64	08/21/18	13:53	-11.45	0.0	0.1	20.6	79.3	2	
C-114	08/21/18	13:56	-11.04	0.0	0.0	20.6	79.3	3	
D-164	08/21/18	14:02	-11.74	0.1	0.0	20.5	79.4	4	
E-208	08/21/18	14:06	-11.98	0.1	0.1	20.4	79.4	4	
227									
A-13	08/21/18	14:16	-0.06	0.0	0.9	17.7	81.4	2	
B-48.7	08/21/18	14:19	-0.02	0.0	3.7	6.6	89.7	2	
C-84.4	08/21/18	14:23	-0.19	0.0	1.2	16.8	82.0	3	
D-114	08/21/18	14:31	-0.25	0.0	0.8	18.3	80.9	4	
E-115.7	08/21/18	14:37	-0.14	0.0	0.3	20.3	79.4	4	
228									
A-13								2	
B-63								2	
C-113								3	
D-163								4	
E-213								4	
229									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-155.7								4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13								2	
B-72								2	
C-1131								3	
D-190								4	
E-244								4	
226									
A-13								2	
B-64								2	
C-114								3	
D-164								4	
E-208								4	
227									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-115.7								4	
228									
A-13	8-21-18	1415	-0.02	0	.4	20.4	79.2	2	
B-63	8-21-18	1417	-0.12	0	1.8	16.5	81.7	2	
C-113	8-21-18	1419	-0.04	0	.2	20.9	78.9	3	
D-163	8-21-18	1422	-0.07	0	.4	20.5	79.1	4	
E-213	8-21-18	1426	-0.81	0	1.7	17.1	81.2	4	
229									
A-13	8-21-18	1049	-1.33	0	.5	19.9	79.6	2	
B-48.7	8-21-18	1052	-12.15	0	0	21.4	78.6	2	
C-84.4	8-21-18	1054	-12.77	0	0	21.3	78.7	3	
D-114	8-21-18	1058	-14.71	0	0	21.3	78.7	4	
E-155.7	8-21-18	1102	-22.09	.1	0	21.2	78.7	4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_





SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: Saulo DIAZ			TEMPERATURE: 88°F		BARO. PRESSURE: 29.97"				
GEM SERIAL #: G504541			WEATHER CONDITIONS: Clear						
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10	08/23/18	09:00	-0.01	0.0	3.2	17.4	79.4	2	
B-25	08/23/18	09:04	-0.01	0.0	5.0	15.1	79.9	2	
C-40	08/23/18	09:08	-0.01	0.0	3.9	15.9	80.2	3	
206									
A-10	08/23/18	07:27	-0.03	0.0	11.4	11.1	77.4	2	
B-25	08/23/18	07:30	-0.02	0.0	15.6	8.1	76.2	2	
C-40	08/23/18	07:33	-0.01	0.0	24.1	2.8	73.1	3	
207									
A-10								2	
B-25								2	
C-40								3	
208									
A-9.1								2	
B-25								2	
C-40								3	
210									
A-10								2	
B-25								2	
C-39								3	
242									
C-42								3	
D-60								4	
E-78								4	
243									
A-11	08/23/18	10:28	-0.09	0.1	14.2	0.2	85.5	2	
B-20	08/23/18	10:31	-0.06	0.0	7.9	7.9	84.1	2	
C-33	08/23/18	10:35	-0.12	0.0	5.4	11.5	83.1	3	

SCS SIGNATURE: 

LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: AROMO		TEMPERATURE: 79		BARO. PRESSURE: 30.00					
GEM SERIAL #: G503926				WEATHER CONDITIONS: SUNNY					
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10								2	
B-25								2	
C-40								3	
206									
A-10								2	
B-25								2	
C-40								3	
207									
A-10	8-23-18	1020	-.41	0	.5	17.9	81.6	2	
B-25	8-23-18	1022	-.07	0	.1	18.7	81.2	2	
C-40	8-23-18	1025	-.29	0	0	18.7	81.3	3	
208									
A-9.1	8-23-18	1003	-.05	0	5.7	14.7	79.6	2	
B-25	8-23-18	1005	-.07	0	8.8	12.0	77.2	2	
C-40	8-23-18	1008	+0.08	0	8.7	11.3	80.6	3	
210									
A-10	8-23-18	856	-1.04	0	.1	20.3	79.6	2	
B-25	8-23-18	858	-.57	0	.1	20.3	79.6	2	
C-39	8-23-18	900	-.14	0	.1	20.4	79.5	3	
242									
C-42	8-23-18	911	-.11	0	4.1	15.5	80.4	3	
D-60	8-23-18	914	-.18	0	6.5	7.0	86.5	4	
E-78	8-23-18	919	-.06	0	6.8	11.4	81.8	4	
243									
A-11								2	
B-20								2	
C-33								3	

SCS SIGNATURE: \_\_\_\_\_



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SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11	08/23/18	09:24	-0.04	0.0	16.4	4.3	79.3	2	
B-20	08/23/18	09:30	+0.01	0.0	26.2	0.1	73.7	2	
C-35	08/23/18	09:34	-0.01	0.0	23.3	0.4	76.3	3	
D-50	08/23/18	09:40	-0.01	0.0	19.2	0.0	80.8	4	
E-64	08/23/18	09:47	-0.05	0.0	0.2	20.9	78.9	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	08/23/18	08:07	-0.08	0.0	9.2	13.2	77.7	2	
B-20	08/23/18	08:12	-0.12	1.0	31.4	0.7	66.9	2	
C-33	08/23/18	08:18	-0.28	1.7	44.3	0.1	53.9	3	
D-48	08/23/18	08:24	-0.10	2.5	47.4	0.0	50.1	4	
E-62	08/23/18	08:32	-0.07	1.7	38.5	0.0	59.8	4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

SCS SINGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	8-23-18	934	-18	0	17.5	1.5	81.0	2	
B-21	8-23-18	937	-14	0	17.8	2.0	80.2	2	
C-36	8-23-18	940	-09	0	9.8	12.1	78.1	3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11	8-23-18	805	-18	0	14.0	12.9	73.3	2	
B-20	8-23-18	807	-48	0	.1	21.1	78.8	2	
C-35	8-23-18	809	-20	0	.1	21.1	78.8	3	
D-50	8-23-18	812	-23	0	.1	21.1	78.8	4	
E-64	8-23-18	816	-12	0	.1	20.9	79.0	4	
240									
A-11	8-23-18	741	-17	0	.1	20.7	79.2	2	
B-20	8-23-18	744	-17	0	.1	20.8	79.1	2	
C-33	8-23-18	747	-05	0	.1	20.9	79.0	3	
D-49	8-23-18	750	-21	0	.1	21.0	78.9	4	
E-61	8-23-18	754	-23	.2	.1	21.1	78.6	4	

SCS SINGNATURE: \_\_\_\_\_



LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo DIAZ 6504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
<b>VADOSE</b>									
<b>ZONE</b>									
PV203D	08/23/18	10:16	-3.36	0.0	0.0	20.9	79.1		
PV204D	08/23/18	10:30	-2.89	0.0	0.0	19.2	80.8		
PV211D	08/23/18	10:06	-1.63	0.0	0.0	21.2	78.8		

SCS SIGNATURE: 

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SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>Aromo</u>		TEMPERATURE: <u>85</u>		BARO. PRESSURE: <u>27.77</u>					
GEM SERIAL #: <u>G560390</u>		WEATHER CONDITIONS: <u>SUNNY</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	9-25-18	853	-0.04	0	3.5	17.8	78.7	2	
B-29	9-25-18	855	-0.50	0	.1	20.9	79.0	2	
C-45	9-25-18	859	-1.59	0	.1	20.9	79.0	3	
D-61	9-25-18	903	-1.60	0	.2	20.5	79.3	4	
E-77	9-25-18	907	-17.34	0	.1	20.8	79.1	4	
214									
A-13	9-25-18	916	-0.07	0	1.6	18.9	79.5	2	
B-30	9-25-18	918	-7.69	0	.1	20.5	79.4	2	
C-48	9-25-18	921	-13.64	0	1.3	19.2	79.5	3	
215									
A-13	9-25-18	932	-0.01	0	6.3	7.7	86.0	2	
B-30	9-25-18	936	+1.12	0	.2	20.0	79.8	2	
C-47	9-25-18	938	+0.02	0	0	20.5	79.5	3	
D-64	9-25-18	944	-0.10	0	.3	20.1	79.6	4	
E-81	9-25-18	917	-0.04	0	4.4	11.6	84.0	4	
216									
A-14	9-25-18	958	+0.05	0	0	20.6	79.4	2	
B-43	9-25-18	1000	-0.02	.1	0	20.6	79.3	2	
C-62	9-25-18	1003	+0.01	.1	0	20.7	79.2	3	
D-86	9-25-18	1006	+0.02	.1	0	20.8	79.1	4	
E-110	9-25-18	1011	+0.07	.1	.2	20.5	79.2	4	
217									
A-13	9-25-18	1034	+0.02	0	4.8	16.4	78.8	2	
B-30	9-25-18	1036	-0.00	0	3.2	16.1	78.7	2	
218R									
A-11								2	
B-26.5								2	
B-30								2	
219									
A-13								2	
B-64								2	
C-115								3	
D-166								4	
E-217								4	

SCS SIGNATURE: \_\_\_\_\_

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>Saulo Diaz</u>		TEMPERATURE: <u>73°F</u>		BARO. PRESSURE: <u>29.9</u>					
GEM SERIAL #: <u>G503926</u>		WEATHER CONDITIONS: <u>Mostly Clear</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13								2	
B-29								2	
C-45								3	
D-61								4	
E-77								4	
214									
A-13								2	
B-30								2	
C-48								3	
215									
A-13								2	
B-30								2	
C-47								3	
D-64								4	
E-81								4	
216									
A-14								2	
B-43								2	
C-62								3	
D-86								4	
E-110								4	
217									
A-13								2	
B-30								2	
218R									
A-11	<u>09/25/18</u>	<u>10:12</u>	<u>+0.02</u>	<u>0.0</u>	<u>23.7</u>	<u>0.0</u>	<u>76.2</u>	<u>2</u>	
B-26.5	<u>09/25/18</u>	<u>10:14</u>	<u>+0.01</u>	<u>0.0</u>	<u>27.8</u>	<u>2.4</u>	<u>69.8</u>	<u>2</u>	
B-30	<u>09/25/18</u>	<u>10:18</u>	<u>+0.02</u>	<u>0.0</u>	<u>47.0</u>	<u>8.3</u>	<u>44.7</u>	<u>2</u>	
219									
A-13	<u>09/25/18</u>	<u>10:39</u>	<u>+0.02</u>	<u>0.0</u>	<u>0.9</u>	<u>19.3</u>	<u>79.7</u>	<u>2</u>	
B-64	<u>09/25/18</u>	<u>10:43</u>	<u>+0.04</u>	<u>0.0</u>	<u>4.3</u>	<u>10.6</u>	<u>85.2</u>	<u>2</u>	
C-115	<u>09/25/18</u>	<u>10:46</u>	<u>-0.01</u>	<u>0.0</u>	<u>0.4</u>	<u>20.0</u>	<u>79.6</u>	<u>3</u>	
D-166	<u>09/25/18</u>	<u>10:51</u>	<u>+0.02</u>	<u>0.0</u>	<u>0.1</u>	<u>20.9</u>	<u>79.1</u>	<u>4</u>	
E-217	<u>09/25/18</u>	<u>10:56</u>	<u>+0.02</u>	<u>0.0</u>	<u>4.1</u>	<u>13.5</u>	<u>82.4</u>	<u>4</u>	

SCS SIGNATURE: 


LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

G503926

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14	09/25/18	07:27	-0.01	0.0	2.1	19.3	78.6	2	
B-40	09/25/18	07:31	-0.09	0.0	0.5	20.4	79.1	2	
C-87	09/25/18	07:35	-0.04	0.0	0.3	20.6	79.1	3	
D-124	09/25/18	07:40	-0.12	0.0	0.2	20.7	79.0	4	
E-158	09/25/18	07:46	-0.10	0.0	0.5	20.6	78.9	4	
220B									
A-14	09/25/18	07:52	-0.06	0.0	3.4	17.2	79.3	2	
B-38	09/25/18	07:56	-0.05	0.0	0.4	20.7	78.9	2	
C-62	09/25/18	08:02	-0.23	0.0	5.9	16.6	77.5	3	
D-86	09/25/18	08:07	-0.22	0.0	5.9	15.8	78.3	4	
E-110	09/25/18	08:13	-0.27	0.0	7.7	7.1	85.2	4	
221									
A-13	09/25/18	08:24	-0.04	0.0	0.7	20.5	78.8	2	
B-56	09/25/18	08:27	-0.11	0.0	0.3	20.9	78.8	2	
C-99	09/25/18	08:32	-0.37	0.0	0.4	20.8	78.8	3	
D-142	09/25/18	08:37	-0.11	0.0	0.1	21.1	78.9	4	
E-185	09/25/18	08:48	-0.04	0.0	0.1	20.9	79.0	4	
222									
A-13	09/25/18	08:57	-0.03	0.0	1.2	19.7	79.1	2	
B-54.8	09/25/18	09:00	-0.07	0.0	0.1	20.9	79.1	2	
C-96.5	09/25/18	09:06	-0.01	0.0	0.1	20.8	79.1	3	
D-138.3	09/25/18	09:11	-0.03	0.0	1.1	19.6	79.2	4	
E-180	09/25/18	09:18	-0.61	0.0	0.3	20.5	79.2	4	
223									
A-13	09/25/18	09:32	0.00	0.0	8.2	7.1	84.7	2	
B-37.5	09/25/18	09:35	-0.01	0.0	10.2	1.4	88.4	2	
C-62	09/25/18	09:39	0.00	0.0	6.5	10.2	83.3	3	
D-86.5	09/25/18	09:44	-0.06	0.0	2.6	16.3	81.1	4	
E-111	09/25/18	09:50	0.00	0.0	5.2	11.4	83.4	4	
224									
A-13								2	
B-67.5								2	
C-122								3	
D-177.5								4	
E-232								4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

T. ANDERSON

GEM # 50334L

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14								2	
B-40								2	
C-87								3	
D-124								4	
E-158								4	
220B									
A-14								2	
B-38								2	
C-62								3	
D-86								4	
E-110								4	
221									
A-13								2	
B-56								2	
C-99								3	
D-142								4	
E-185								4	
222									
A-13								2	
B-54.8								2	
C-96.5								3	
D-138.3								4	
E-180								4	
223									
A-13								2	
B-37.5								2	
C-62								3	
D-86.5								4	
E-111								4	
224	9-25-18	7:47							
A-13	9-25-18	7:47	-0.10	0.0	0.1	20.3	79.6	2	
B-67.5	11	7:20	-0.03	0.0	0.1	20.3	79.6	2	
C-122	11	7:33	-0.07	0.0	0.1	20.3	79.6	3	
D-177.5	11	7:37	-12.84	0.0	0.1	20.3	79.6	4	
E-232	11	7:43	-9.13	0.0	0.1	20.3	79.6	4	

SCS SIGNATURE: \_\_\_\_\_

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

T. ANDERSON

GEM # 503346

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13	9-25-18	7:52	-0.14"	0.0	0.7	19.7	79.6	2	
B-72	9-25-18	7:56	-6.03"	0.0	0.3	20.0	79.6	2	
C-1131	9-25-18	8:00	-10.67"	0.0	0.9	19.6	79.5	3	
D-190	9-25-18	8:04	-10.78"	0.0	0.1	20.4	79.6	4	
E-244	9-25-18	8:10	-10.13"	0.0	0.7	19.8	79.5	4	
226									
A-13	9-25-18	8:19	-0.01"	0.0	0.0	20.3	79.6	2	
B-64	9-25-18	8:22	-12.65"	0.0	0.0	20.4	79.6	2	
C-114	9-25-18	8:26	-11.96"	0.0	0.0	20.4	79.6	3	
D-164	9-25-18	8:30	-12.28"	0.0	0.0	20.4	79.5	4	
E-208	9-25-18	8:36	-12.91"	0.0	0.2	20.4	79.4	4	
227									
A-13	9-25-18	8:46	-0.01"	0.0	0.7	18.9	80.4	2	
B-48.7	9-25-18	8:50	-0.52"	0.0	4.1	10.6	85.3	2	
C-84.4	9-25-18	8:53	-0.44"	0.0	1.8	16.3	81.9	3	
D-114	9-25-18	8:57	-0.53"	0.0	0.6	18.8	80.6	4	
E-115.7	9-25-18	9:03	-0.35"	0.0	0.4	19.4	80.3	4	
228									
A-13	9-25-18	9:13	+0.02"	0.0	0.9	18.5	80.6	2	
B-63	9-25-18	9:17	-0.76"	0.0	3.3	14.5	82.2	2	
C-113	9-25-18	9:20	-0.32"	0.0	0.1	18.7	81.2	3	
D-163	9-25-18	9:25	-0.37"	0.0	0.4	18.1	81.5	4	
E-213	9-25-18	9:30	-0.49"	0.0	1.4	15.7	82.9	4	
229									
A-13	9-25-18	9:48	-2.37"	0.0	0.6	16.8	82.6	2	
B-48.7	9-25-18	9:52	-13.68"	0.0	0.0	18.5	81.5	2	
C-84.4	9-25-18	9:56	-14.55"	0.0	0.1	18.5	81.4	3	
D-114	9-25-18	10:00	-16.57"	0.0	0.0	19.5	81.0	4	
E-155.7	9-25-18	10:06	-24.40"	0.0	0.0	19.2	80.8	4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: \_\_\_\_\_

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>Saulo Diaz</u>		TEMPERATURE: <u>82°F</u>		BARO. PRESSURE: <u>29.9"</u>					
GEM SERIAL #: <u>G503926</u>		WEATHER CONDITIONS: <u>clear &amp; sunny</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10	<u>09/27/18</u>	<u>08:42</u>	<u>+0.03</u>	<u>0.0</u>	<u>3.1</u>	<u>17.4</u>	<u>79.5</u>	2	
B-25	<u>09/27/18</u>	<u>08:47</u>	<u>-0.04</u>	<u>0.0</u>	<u>4.3</u>	<u>15.8</u>	<u>80.0</u>	2	
C-40	<u>09/27/18</u>	<u>08:51</u>	<u>-0.03</u>	<u>0.0</u>	<u>3.8</u>	<u>15.9</u>	<u>80.3</u>	3	
206									
A-10								2	
B-25								2	
C-40								3	
207									
A-10								2	
B-25								2	
C-40								3	
208									
A-9.1								2	
B-25								2	
C-40								3	
210									
A-10								2	
B-25								2	
C-39								3	
242									
C-42								3	
D-60								4	
E-78								4	
243									
A-11	<u>09/27/18</u>	<u>07:38</u>	<u>-0.05</u>	<u>0.1</u>	<u>14.2</u>	<u>0.0</u>	<u>85.8</u>	2	
B-20	<u>09/27/18</u>	<u>07:41</u>	<u>-0.09</u>	<u>0.0</u>	<u>7.3</u>	<u>8.9</u>	<u>83.8</u>	2	
C-33	<u>09/27/18</u>	<u>07:45</u>	<u>-0.10</u>	<u>0.0</u>	<u>5.0</u>	<u>13.2</u>	<u>81.8</u>	3	

SCS SIGNATURE: Saulo Diaz

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>A Romo</u>			TEMPERATURE: <u>85</u>		BARO. PRESSURE: <u>28.02</u>				PURGE TIME (MIN)	COMMENTS
SEM SERIAL #: <u>G500390</u>			WEATHER CONDITIONS: <u>SUNNY</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL			
202										
A-10								2	REMOVED DUE TO CONSTRUCTION	
B-25								2	REMOVED DUE TO CONSTRUCTION	
C-38								3	REMOVED DUE TO CONSTRUCTION	
203										
A-10								2		
B-25								2		
C-40								3		
206										
A-10								2		
B-25								2		
C-40								3		
207										
A-10								2		
B-25								2		
C-40								3		
208										
A-9.1								2		
B-25								2		
C-40								3		
210										
A-10	<u>9-27-18</u>	<u>840</u>	<u>-.80</u>	<u>0</u>	<u>0</u>	<u>21.0</u>	<u>79.0</u>	2		
B-25	<u>9-27-18</u>	<u>842</u>	<u>-.40</u>	<u>0</u>	<u>0</u>	<u>21.1</u>	<u>78.9</u>	2		
C-39	<u>9-27-18</u>	<u>844</u>	<u>+1.08</u>	<u>0</u>	<u>0</u>	<u>21.0</u>	<u>78.0</u>	3		
242										
C-42	<u>9-27-18</u>	<u>854</u>	<u>-.02</u>	<u>0</u>	<u>2.7</u>	<u>14.4</u>	<u>79.9</u>	3		
D-60	<u>9-27-18</u>	<u>857</u>	<u>+0.05</u>	<u>0</u>	<u>5.7</u>	<u>9.0</u>	<u>85.3</u>	4		
E-78	<u>9-27-18</u>	<u>902</u>	<u>+1.10</u>	<u>0</u>	<u>4.5</u>	<u>16.4</u>	<u>79.1</u>	4		
243										
A-11								2		
B-20								2		
C-33								3		

SCS SIGNATURE: 

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: T. ANDERSON		TEMPERATURE: 78		BARO. PRESSURE: 27.96					
GEM SERIAL #: 502756		WEATHER CONDITIONS: CLEAR							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10								2	
B-25								2	
C-40								3	
206	9-27-18	8:03	-0.01	0.0	10.4	9.8	79.8		
A-10								2	
B-25	9-27-18	8:07	-0.02	0.0	14.0	7.9	78.1	2	
C-40	9-27-18	8:10	+0.01	0.0	21.4	4.4	74.2	3	
207									
A-10	9-27-18	7:38	-0.33	0.0	0.7	19.7	79.6	2	
B-25	9-27-18	7:42	-8.43	0.0	0.3	20.1	79.6	2	
C-40	9-27-18	7:47	+0.11	0.0	0.0	20.4	79.6	3	
208									
A-9.1	9-27-18	8:19	-0.01	0.0	6.4	15.0	78.6	2	
B-25	9-27-18	8:22	-0.03	0.0	11.4	9.2	79.4	2	
C-40	9-27-18	8:26	-0.03	0.0	12.3	7.0	80.7	3	
210									
A-10								2	
B-25								2	
C-39								3	
242									
C-42								3	
D-60								4	
E-78								4	
243									
A-11								2	
B-20								2	
C-33								3	

SCS SIGNATURE: \_\_\_\_\_

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G503926

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11	09/27/18	09:01	-0.01	0.0	16.0	4.2	79.8	2	
B-20	09/27/18	09:04	-0.01	0.0	24.7	0.8	74.5	2	
C-35	09/27/18	09:10	-0.03	0.0	19.0	3.7	77.3	3	
D-50	09/27/18	09:15	-0.01	0.0	16.2	3.2	80.6	4	
E-64	09/27/18	09:21	-0.05	0.0	0.2	20.0	79.8	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	09/27/18	08:02	-0.01	0.0	8.5	13.4	78.1	2	
B-20	09/27/18	08:06	-0.03	0.7	25.7	2.6	71.0	2	
C-33	09/27/18	08:10	-0.30	1.8	41.7	0.5	55.9	3	
D-48	09/27/18	08:18	-0.01	2.8	45.9	0.0	51.3	4	
E-62	09/27/18	08:25	-0.06	1.6	37.1	0.0	61.2	4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

SCS SINGNATURE: 

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SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

A. ROMO

GEM 500390

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11	9-27-18	819	+0.05	0	15.1	12.9	72.0	2	
B-20	9-27-18	822	+0.02	0	.1	21.7	78.2	2	
C-35	9-27-18	824	+0.08	0	0	21.7	78.3	3	
D-50	9-27-18	827	+0.06	0	0	21.5	78.5	4	
E-64	9-27-18	831	+0.08	0	.1	21.3	78.6	4	
240									
A-11	9-27-18	858	-0.05	0	18.9	5.0	76.1	2	
B-20	9-27-18	800	-0.14	0	.3	21.7	78.0	2	
C-33	9-27-18	802	-0.16	0	.1	21.9	78.0	3	
D-49	9-27-18	805	-0.09	0	0	21.9	78.1	4	
E-61	9-27-18	810	-0.03	.1	0	21.8	78.1	4	

SCS SINGNATURE:



LEA SIGNATURE:

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SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

T. ANDERSON GEM 502756

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	9-27-18	8:39	-0.02	0.0	19.3	0.1	80.6	2	
B-21	9-27-18	8:42	0.0	0.0	18.1	3.1	78.8	2	
C-36	9-27-18	8:46	-0.03	0.0	17.3	5.9	76.7	3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

SCS SINGNATURE: \_\_\_\_\_

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G503926

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE									
ZONE									
PV203D	09/27/18	09:35	-3.22	0.0	0.1	20.9	79.0		
PV204D	9/27/18	7:54	-2.71	0.0	0.0	20.6	79.4		
PV211D	09/27/18	09:27	-1.47	0.0	0.2	20.9	78.9		

SCS SIGNATURE:



LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>AROMB</u>		TEMPERATURE: <u>78</u>		WEATHER CONDITIONS: <u>SUNNY</u>				BARO. PRESSURE: <u>28.29</u>	
SEM SERIAL #: <u>503346</u>									
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10								2	
B-25								2	
C-40								3	
206									
A-10	10-25-18	1012	-1.07	0	7.9	13.3	79.0	2	
B-25	10-25-18	1015	-1.01	0	9.6	12.4	78.0	2	
C-40	10-25-18	1017	-1.11	0	13.8	11.5	75.7	3	
207									
A-10	10-25-18	955	-1.12	0	.5	19.2	80.3	2	
B-25	10-25-18	957	-8.25	0	0.8	19.9	80.1	2	
C-40	10-25-18	1000	-1.06	0	0	19.9	80.1	3	
208									
A-9.1	10-25-18	943	-1.09	0	0	28.2	79.8	2	
B-25	10-25-18	945	+1.03	0	.1	20.3	79.6	2	
C-40	10-25-18	947	+1.05	0	.1	20.2	79.7	3	
210									
A-10	10-25-18	858	-1.14	0	0	20.9	79.3	2	
B-25	10-25-18	900	-1.70	0	0	20.8	79.2	2	
C-39	10-25-18	902	-1.27	0	0	20.9	79.1	3	
242									
C-42	10-25-18	911	-1.15	0	2.9	16.9	80.7	3	
D-60	10-25-18	914	-1.12	0	5.9	8.7	85.4	4	
E-78	10-25-18	920	-1.16	0	4.1	13.8	82.1	4	
243									
A-11								2	
B-20								2	
C-33								3	

SCS SIGNATURE: \_\_\_\_\_



LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	10-25-18	933	-1.07	0	16.1	3.5	70.6	2	
B-21	10-25-18	935	-1.13	0	7.9	14.3	78.0	2	
C-36	10-25-18	1029	+1.61	0	3.9	19.2	78.9	3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11	10-25-18	824	-2.1	0	13.0	14.5	72.5	2	
B-20	10-25-18	826	-1.16	0	.1	20.8	79.1	2	
C-35	10-25-18	828	-2.4	0	0	21.1	78.9	3	
D-50	10-25-18	831	-1.19	0	0	21.0	79.0	4	
E-64	10-25-18	835	-1.19	0	.1	20.4	79.1	4	
240									
A-11	10-25-18	802	-1.40	0	7.7	15.1	77.2	2	
B-20	10-25-18	805	-2.29	0	.2	21.0	78.8	2	
C-33	10-25-18	809	-2.29	0	.1	21.2	78.7	3	
D-49	10-25-18	810	-2.22	0	.1	21.2	78.7	4	
E-61	10-25-18	814	-1.30	.1	.1	21.1	78.7	4	

SCS SIGNATURE: \_\_\_\_\_



LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE ZONE									
PV203D									
PV204D	10-25-18	1005	-1.82	0	0	20.1	79.9	60	
PV211D									

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>A MAKTIVETZ</u>		TEMPERATURE: <u>78</u>		WEATHER CONDITIONS: <u>SUNNY</u>		BARO. PRESSURE: <u>28.18</u>			
SEM SERIAL # <u>G582765</u>									
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10	10/25/18	10:21	4.68	Ø	2.7	18.4	78.4	2	
B-25	10/25/18	10:25	4.06	Ø	3.7	17.1	79.2	2	
C-40	10/25/18	10:29	4.06	Ø	3.3	17.3	79.4	3	
206									
A-10								2	
B-25								2	
C-40								3	
207									
A-10								2	
B-25								2	
C-40								3	
208									
A-9.1	<del>10/25/18</del>	<del>8:17</del>	<del>3.06</del>	<del>Ø</del>	<del>4.5</del>	<del>17.4</del>	<del>78.4</del>	<del>2</del>	
B-25	10/25/18	8:17	-0.06	Ø	4.5	17.4	78.4	2	
C-40	10/25/18	8:21	-0.15	Ø	11.3	11.4	77.3	2	
	10/25/18	8:26	-0.01	Ø	11.3	9.0	79.6	3	
210									
A-10								2	
B-25								2	
C-39								3	
242									
C-42								3	
D-60								4	
E-78								4	
243									
A-11	10/25/18	9:36	-0.05	Ø	12.5	0.1	87.4	2	
B-20	10/25/18	9:40	4.02	Ø	5.7	9.6	84.7	2	
C-33	10/25/18	9:44	6.06	Ø	4.4	11.8	83.7	3	

SCS SIGNATURE: Amoroso Maktivetz

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11	10/25/18	11:09	+0.17	0	13.6	6.0	80.4	2	
B-20	10/25/18	11:15	+1.3	0	24.0	0.7	75.3	2	
C-35	10/25/18	11:20	+0.17	0	21.4	1.5	77.2	3	
D-50	10/25/18	11:34	+0.29	0	17.0	1.8	81.2	4	
E-64	10/25/18	11:39	+0.17	0	0.1	19.9	80.0	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	10/25/18	8:39	0.0	0	7.45	14.1	78.3	2	
B-20	10/25/18	8:45	-0.07	0.3	20.1	6.3	73.9	2	
C-33	10/25/18	8:50	-0.20	1.5	38.5	1.7	58.3	3	
D-48	10/25/18	8:57	-0.04	2.5	44.5	0.0	53.0	4	
E-62	10/25/18	9:04	-0.11	1.3	35.2	0.0	63.5	4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

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GSM 1D  
G502765

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE ZONE									
PV203D	10/20/18	10:39	-3.07	0.0	0.1	20.9	79.0		
PV204D									
PV211D	10/20/18	10:17	-1.87	0.0	0.2	20.6	79.2		

SCS SIGNATURE: 

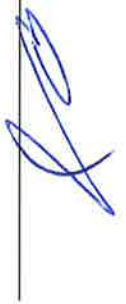
LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>APOMA</u>		TEMPERATURE: <u>76</u>		BARO. PRESSURE: <u>28.24</u>		PURGE TIME (MIN)	COMMENTS
SEM SERIAL #: <u>6583342</u>		WEATHER CONDITIONS: <u>SUNNY</u>					
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL
213							
A-13		813-.26	0	.1	20.9	79.0	
B-29		818-.19	0	0	21.0	79.0	
C-45		821-124	0	0	21.0	79.0	
D-61		825-130	0	0	21.0	79.0	
E-77		829-142	0	0	21.1	88.9	
214							
A-13		841+.21	0	1.1	19.7	79.2	2
B-30		843-5.61	0	.1	20.9	79.0	2
C-48		845-12.60	0	0	21.0	79.0	3
215							
A-13		910-.24	0	5.3	10.2	84.5	2
B-30		912-.25	0	1.4	19.0	79.5	2
C-47		915-.14	0	0	20.7	79.3	3
D-64		918-.16	0	.3	20.2	79.5	4
E-81		922-.09	0	3.7	13.7	82.5	4
216							
A-14		935-.04	0	0	20.7	79.3	2
B-43		942-.05	0	0	20.2	79.8	2
C-62		944-.07	0	.1	20.4	79.5	3
D-86		950-.08	0	0	20.5	79.5	4
E-110		957+.08	0	.1	20.3	79.6	4
217							
A-13		1008-.09	0	4.2	16.7	79.1	2
B-30		1010-.04	0	2.8	16.2	79.0	2
218R							
A-11		1024.00	0	23.8	3.5	72.7	2
B-265		1024+1.03	0	26.6	3.9	69.7	2
B-30		1026-.01	0	.4	20.3	79.3	2
219							
A-13							2
B-64							2
C-115							3
D-166							4
E-217							4

SCS SIGNATURE:



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SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <i>Sauls Diaz</i>		TEMPERATURE: <i>81°F</i>		BARO. PRESSURE: <i>29.9"</i>					
SEM SERIAL #: <i>6500396</i>		WEATHER CONDITIONS: <i>Mostly Clear</i>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13								2	
B-29								2	
C-45								3	
D-61								4	
E-77								4	
214									
A-13								2	
B-30								2	
C-48								3	
215									
A-13								2	
B-30								2	
C-47								3	
D-64								4	
E-81								4	
216									
A-14								2	
B-43								2	
C-62								3	
D-86								4	
E-110								4	
217									
A-13								2	
B-30								2	
218R									
A-11	<i>10/23/18</i>	<i>07:43</i>	<i>-0.01</i>	<i>0.1</i>	<i>32.4</i>	<i>0.0</i>	<i>67.5</i>	<i>2</i>	
B-265	<i>10/23/18</i>	<i>07:47</i>	<i>-0.06</i>	<i>0.1</i>	<i>34.0</i>	<i>0.0</i>	<i>65.9</i>	<i>2</i>	
B-30	<i>10/23/18</i>	<i>07:50</i>	<i>-0.03</i>	<i>0.0</i>	<i>61.0</i>	<i>5.6</i>	<i>33.4</i>	<i>2</i>	
219									
A-13	<i>10/23/18</i>	<i>08:08</i>	<i>+0.01</i>	<i>0.0</i>	<i>0.7</i>	<i>20.1</i>	<i>79.2</i>	<i>2</i>	
B-64	<i>10/23/18</i>	<i>08:11</i>	<i>+0.03</i>	<i>0.0</i>	<i>7.8</i>	<i>4.8</i>	<i>87.3</i>	<i>2</i>	
C-115	<i>10/23/18</i>	<i>08:15</i>	<i>+0.01</i>	<i>0.0</i>	<i>0.1</i>	<i>20.8</i>	<i>79.1</i>	<i>3</i>	
D-166	<i>10/23/18</i>	<i>08:20</i>	<i>+0.01</i>	<i>0.0</i>	<i>0.1</i>	<i>21.0</i>	<i>78.9</i>	<i>4</i>	
E-217	<i>10/23/18</i>	<i>08:25</i>	<i>-0.01</i>	<i>0.0</i>	<i>4.1</i>	<i>14.5</i>	<i>81.4</i>	<i>4</i>	

SCS SIGNATURE:



LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Souls Diaz 6500390

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14	10/23/18	08:41	+0.01	0.0	2.9	18.4	78.7	2	
B-40	10/23/18	08:45	-0.03	0.0	0.9	20.1	79.0	2	
C-87	10/23/18	08:49	-0.03	0.0	0.5	20.5	79.0	3	
D-124	10/23/18	08:54	-0.02	0.0	0.3	20.6	79.1	4	
E-158	10/23/18	08:59	+0.03	0.0	0.6	20.3	79.1	4	
220B									
A-14	10/23/18	09:09	-0.01	0.0	3.2	17.1	79.7	2	
B-38	10/23/18	09:12	-0.05	0.0	4.1	13.9	82.0	2	
C-62	10/23/18	09:15	-0.08	0.0	6.2	12.2	81.6	3	
D-86	10/23/18	09:20	-0.20	0.0	6.1	11.6	82.3	4	
E-110	10/23/18	09:25	-0.21	0.0	9.2	1.9	85.9	4	
221									
A-13	10/23/18	09:35	-0.01	0.0	0.8	19.9	79.3	2	
B-56	10/23/18	09:37	-0.04	0.0	0.3	20.3	79.3	2	
C-99	10/23/18	09:42	-0.18	0.0	0.4	20.2	79.4	3	
D-142	10/23/18	09:47	-0.09	0.0	0.0	20.5	79.4	4	
E-185	10/23/18	09:51	-0.02	0.0	0.0	20.1	79.8	4	
222									
A-13	10/23/18	09:59	-0.01	0.0	1.2	19.3	79.6	2	
B-54.8	10/23/18	10:02	-0.07	0.0	0.0	20.8	79.1	2	
C-96.5	10/23/18	10:08	-0.02	0.0	0.1	20.9	79.0	3	
D-138.3	10/23/18	10:15	-0.01	0.0	1.3	18.9	79.3	4	
E-180	10/23/18	10:21	-0.18	0.0	2.6	9.1	88.4	4	
223									
A-13	10/23/18	10:54	+0.02	0.0	7.4	6.5	86.1	2	
B-7.5	10/23/18	10:57	+0.01	0.0	8.8	2.1	89.0	2	
C-62	10/23/18	11:01	+0.01	0.0	5.1	11.2	83.7	3	
D-86.5	10/23/18	11:06	+0.01	0.0	2.4	16.5	91.1	4	
E-111	10/23/18	11:11	+0.01	0.0	4.9	10.8	84.3	4	
224									
A-13								2	
B-67.5								2	
C-122								3	
D-177.5								4	
E-232								4	

SCS SIGNATURE:



LEA SIGNATURE:

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AMANDO MARTINEZ  
 GEN 50 2765

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA


PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225	10/23/18	<del>9:09</del>	<del>-0.6</del>	0	0.6	19.8	79.6	2	
A-13	10/23/18	9:09	-0.6	0	0.3	20.2	79.6	2	
B-72	10/23/18	9:10	-6.16	0	0.7	19.8	79.5	3	
C-1131	10/23/18	9:16	-10.55	0	0.1	20.6	79.3	4	
D-190	10/23/18	9:20	-10.49	0	0.5	20.2	79.3	4	
E-244	10/23/18	9:24	-9.77	0	0.1	19.8	80.2	4	
226									
A-13	10/23/18	8:46	0	0	0.1	20.8	79.1	2	
B-64	10/23/18	8:49	-12.40	0	0.1	20.8	79.1	2	
C-114	10/23/18	8:52	-11.65	0	0.1	20.7	79.2	3	
D-164	10/23/18	8:57	12.92	0	0.1	20.5	79.4	4	
E-208	10/23/18	9:02	12.57	0	0.2	20.2	79.6	4	
227	10/23/18								
A-13	10/23/18	9:39	+0.02	0	1.8	12.7	85.5	2	
B-487	10/23/18	9:43	-0.05	0	4.9	1.0	94.1	2	
C-844	10/23/18	9:47	-0.05	0	3.5	5.3	91.2	3	
D-114	10/23/18	9:53	-0.09	0	2.8	2.1	95.0	4	
E-1557	10/23/18	9:59	0	0	1.6	12.2	86.2	4	
228									
A-13	10/23/18	10:08	0	0	0.8	19.1	80.1	2	
B-63	10/23/18	10:12	-0.09	0	3.0	13.14	83.6	2	
C-113	10/23/18	10:16	+0.03	0	0.2	19.6	80.1	3	
D-163	10/23/18	10:23	+0.10	0	1.7	8.8	89.5	4	
E-213	10/23/18	10:30	+0.05	0	1.7	15.8	84.5	4	
229									
A-13	10/23/18	10:52	-1.94	0	0.6	18.5	80.9	2	
B-487	10/23/18	10:55	-13.53	0	0.2	19.5	80.3	2	
C-844	10/23/18	10:59	-11.90	0	0.1	19.9	80.0	3	
D-114	10/23/18	11:05	-16.11	0	0.3	19.0	80.7	4	
E-1557	10/23/18	11:14	-22.35	0	0.1	19.8	80.2	4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: \_\_\_\_\_

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
241									
A-13	10-23-14	154	-1.22	0	3.3	19.4	79.9	2	
B-28	10-23-14	159	-1.19	0	.8	18.0	81.2	2	
C-47	10-23-14	161	-1.19	0	.1	20.8	79.1	3	
D-64	10-23-14	164	-1.22	0	.1	20.9	79.0	4	
E-85	10-23-14	168	-1.12	0	0	21.0	79.0	4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: A Romo			TEMPERATURE: 60		BARO. PRESSURE: 28.05				PURGE TIME (MIN)	COMMENTS
GEM SERIAL #: 6504543			WEATHER CONDITIONS: RAIN							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL			
202										
A-10								2	REMOVED DUE TO CONSTRUCTION	
B-25								2	REMOVED DUE TO CONSTRUCTION	
C-38								3	REMOVED DUE TO CONSTRUCTION	
203										
A-10								2		
B-25								2		
C-40								3		
206										
A-10	11-29-18	958	+0.8	0	9.0	12.5	78.5	2		
B-25	11-29-18	1000	+0.7	0	12.7	10.4	76.9	2		
C-40	11-29-18	1003	-0.24	0	18.8	7.2	74.0	3		
207										
A-10	11-29-18	1011	-0.08	0	.7	20.8	78.5	2		
B-25	11-29-18	1013	+14.40	0	.5	21.2	78.3	2		
C-40	11-29-18	1016	+63	0	.1	21.7	78.2	3		
208										
A-9.1	11-29-18	947	+0.05	0	4.5	16.7	78.8	2		
B-25	11-29-18	949	-0.02	0	7.2	15.1	77.7	2		
C-40	11-29-18	952	-9.80	0	10.6	10.6	79.2	3		
210										
A-10	11-29-18	900	-4.8	0	.1	21.5	78.4	2		
B-25	11-29-18	902	+0.07	0	.1	21.6	78.3	2		
C-39	11-29-18	905	+0.04	0	.1	21.7	78.2	3		
242										
C-42	11-29-18	914	+1.13	0	5.8	7.3	81.9	3		
D-60	11-29-18	910	+2.20	0	7.5	5.9	86.6	4		
E-78	11-29-18	922	+1.10	0	7.4	1.3	91.3	4		
243										
A-11								2		
B-20								2		
C-33								3		

SCS SIGNATURE: 

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>Saulo Diaz</u>			TEMPERATURE: <u>61°F</u>		BARO. PRESSURE: <u>29.76"</u>				PURGE TIME (MIN)	COMMENTS
GEM SERIAL #: <u>G504541</u>			WEATHER CONDITIONS: <u>Rain 14mph SW</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL			
202										
A-10								2	REMOVED DUE TO CONSTRUCTION	
B-25								2	REMOVED DUE TO CONSTRUCTION	
C-38								3	REMOVED DUE TO CONSTRUCTION	
203										
A-10	<u>11/29/18</u>	<u>08:27</u>	<u>+0.01</u>	<u>0.0</u>	<u>2.7</u>	<u>18.7</u>	<u>78.7</u>	2		
B-25	<u>11/29/18</u>	<u>08:30</u>	<u>+0.04</u>	<u>0.0</u>	<u>4.2</u>	<u>17.0</u>	<u>78.7</u>	2		
C-40	<u>11/29/18</u>	<u>08:35</u>	<u>-0.02</u>	<u>0.0</u>	<u>4.2</u>	<u>16.8</u>	<u>79.0</u>	3		
206										
A-10	<u>11/29/18</u>							2		
B-25								2		
C-40								3		
207										
A-10								2		
B-25								2		
C-40								3		
208										
A-9.1								2		
B-25								2		
C-40								3		
210										
A-10								2		
B-25								2		
C-39								3		
242										
C-42								3		
D-60								4		
E-78								4		
243										
A-11	<u>11/29/18</u>	<u>09:37</u>	<u>+0.02</u>	<u>0.2</u>	<u>13.0</u>	<u>0.0</u>	<u>86.8</u>	2		
B-20	<u>11/29/18</u>	<u>09:40</u>	<u>0.00</u>	<u>0.0</u>	<u>14.3</u>	<u>0.1</u>	<u>85.6</u>	2		
C-33	<u>11/29/18</u>	<u>09:44</u>	<u>+0.04</u>	<u>0.0</u>	<u>0.6</u>	<u>17.9</u>	<u>81.5</u>	3		

SCS SIGNATURE: 

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SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	11-29-18	932	+0.04	0	19.0	0	80.9	2	
B-21	11-29-18	934	+0.09	0	15.8	6.1	78.1	2	
C-36	11-29-18	938	+0.07	0	17.6	7.2	75.2	3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11	11-29-18	833	+0.39	0	14.1	13.6	72.3	2	
B-20	11-29-18	835	+0.10	0	.1	21.7	78.5	2	
C-35	11-29-18	838	+0.05	0	.1	21.9	78.0	3	
D-50	11-29-18	842	+0.11	0	.1	21.9	78.0	4	
E-64	11-29-18	846	+0.06	0	.1	22.0	77.9	4	
240									
A-11	11-29-18	805	+0.09	0	19.4	5.2	75.0	2	
B-20	11-29-18	807	+0.07	0	.3	21.1	78.6	2	
C-33	11-29-18	810	+0.20	0	.1	21.4	78.5	3	
D-49	11-29-18	815	+0.15	0	.1	21.6	78.3	4	
E-61	11-29-18	819	+0.10	0	.1	21.6	78.3	4	

SCS SINGNATURE:



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SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo Diaz 6504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11	11/29/18	08:45	-0.07	0.0	16.2	4.1	79.7	2	
B-20	11/29/18	08:48	+0.01	0.1	26.4	0.1	73.3	2	
C-35	11/29/18	08:51	-0.14	0.0	23.0	0.6	76.4	3	
D-50	11/29/18	08:57	-0.13	0.0	19.0	0.3	80.7	4	
E-64	11/29/18	09:02	-0.03	0.0	6.6	9.7	83.6	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	11/29/18	09:58	+0.03	0.0	8.2	13.0	78.8	2	
B-20	11/29/18	10:02	+0.05	0.6	28.2	0.4	70.9	2	
C-33	11/29/18	10:06	-0.24	1.6	41.6	0.0	56.6	3	
D-48	11/29/18	10:11	-0.13	2.7	45.7	0.0	51.6	4	
E-62	11/29/18	10:16	-0.11	0.6	28.8	0.0	70.6	4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

SCS SINGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

**SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA**

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
<b>VADOSE</b>									
<b>ZONE</b>									
PV203D									
PV204D	11-29-18	1018	-0.81	0	0.2	21.6	78.2		
PV211D									

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

Saulo Diaz G504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE									
ZONE									
PV203D	11/29/18	09:21	-2.20	0.0	0.3	20.8	78.9		
PV204D									
PV211D	11/29/18	09:13	-1.20	0.0	0.5	20.5	79.0		

SCS SIGNATURE: 

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SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: A ROMO		TEMPERATURE: 70		BARO. PRESSURE: 28.41					
GEM SERIAL #: 6504543		WEATHER CONDITIONS: SUNNY							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	11-27-18	736	+1.8	0	2.4	16.6	81.0	2	
B-29	11-27-18	739	+1.14	0	.1	21.5	78.4	2	
C-45	11-27-18	742	-1.48	0	.1	21.5	78.4	3	
D-61	11-27-18	745	-2.00	0	.1	21.5	78.4	4	
E-77	11-27-18	750	-20.69	0	.1	21.5	78.4	4	
214									
A-13	11-27-18	759	-2.29	0	1.5	19.4	79.1	2	
B-30	11-27-18	802	-5.80	0	.2	21.1	78.7	2	
C-48	11-27-18	804	-14.02	0	1.3	19.4	78.9	3	
215									
A-13	11-27-18	817	+1.15	0	3.2	13.6	83.2	2	
B-30	11-27-18	820	-0.18	0	4.8	12.8	82.4	2	
C-47	11-27-18	823	+2.20	0	.1	21.5	78.4	3	
D-64	11-27-18	827	+2.31	0	.1	21.4	78.5	4	
E-81	11-27-18	831	+1.13	0	.1	21.2	78.7	4	
216									
A-14	11-27-18	859	+1.12	0	0	21.3	78.7	2	
B-43	11-27-18	856	+1.10	0	.1	21.2	78.7	2	
C-62	11-27-18	859	+3.2	0	.1	21.2	78.7	3	
D-86	11-27-18	903	+1.04	0	0	21.2	78.8	4	
E-110	11-27-18	907	+1.08	0	.1	20.9	79.0	4	
217									
A-13	11-27-18	923	+1.08	0	4.4	16.9	78.7	2	
B-30	11-27-18	925	+1.08	0	2.2	19.0	78.8	2	
218R									
A-11	11-27-18	936	+1.06	0	21.1	.3	73.6	2	
B-26.5	11-27-18	938	+1.08	0	28.6	3.0	68.4	2	
B-30	11-27-18	941	+1.07	0	57.5	7.0	35.5	2	
219									
A-13	11-27-18	959	+1.11	0	.7	20.7	78.4	2	
B-64	11-27-18	1001	+1.13	0	4.2	13.2	82.6	2	
C-115	11-27-18	1004	+1.13	0	.2	21.1	78.7	3	
D-166	11-27-18	1008	+1.11	0	.1	21.2	78.7	4	
E-217	11-27-18	1012	+1.02	0	2.1	18.1	79.8	4	

SCS SIGNATURE

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SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: Sawlo DIAZ		TEMPERATURE: 75° F		BARO. PRESSURE: 28.32"					
GEM SERIAL #: 6504541		WEATHER CONDITIONS: Sunny & clear 3mph S							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13								2	
B-29								2	
C-45								3	
D-61								4	
E-77								4	
214									
A-13								2	
B-30								2	
C-48								3	
215									
A-13								2	
B-30								2	
C-47								3	
D-64								4	
E-81								4	
216									
A-14								2	
B-43								2	
C-62								3	
D-86								4	
E-110								4	
217									
A-13								2	
B-30								2	
218R									
A-11								2	
B-26.5								2	
B-30								2	
219									
A-13								2	
B-64								2	
C-115								3	
D-166								4	
E-217								4	

SCS SIGNATURE: Sawlo DIAZ

LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo DIAZ G504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
220									
A-14	11/27/18	07:37	+0.04	0.0	2.8	18.6	78.6	2	
B-40	11/27/18	07:39	+0.02	0.0	0.5	20.6	78.9	2	
C-87	11/27/18	07:43	+0.03	0.0	0.6	20.6	78.8	3	
D-124	11/27/18	07:48	+0.01	0.0	10.0	6.2	83.8	4	
E-158	11/27/18	07:52	-0.03	0.0	2.3	18.9	78.8	4	
220B									
A-14	11/27/18	07:59	+0.07	0.0	3.1	17.5	79.4	2	
B-38	11/27/18	08:01	-0.02	0.0	6.7	10.1	83.2	2	
C-62	11/27/18	08:05	-0.06	0.0	10.9	1.2	87.9	3	
D-86	11/27/18	08:10	-0.23	0.0	8.6	6.8	84.6	4	
E-110	11/27/18	08:14	-0.33	0.0	4.4	14.7	81.0	4	
221									
A-13	11/27/18	08:32	-0.07	0.0	0.6	20.4	79.0	2	
B-56	11/27/18	08:35	-0.09	0.0	0.5	20.1	79.4	2	
C-99	11/27/18	08:39	-0.07	0.0	0.4	20.4	79.2	3	
D-142	11/27/18	08:45	-0.02	0.0	0.1	20.7	79.2	4	
E-185	11/27/18	08:52	-0.01	0.0	0.1	20.5	79.4	4	
222									
A-13	11/27/18	08:59	-0.05	0.0	1.2	18.9	79.9	2	
B-54.8	11/27/18	09:04	-0.01	0.0	0.1	20.3	79.6	2	
C-96.5	11/27/18	09:08	+0.01	0.0	0.1	20.3	79.7	3	
D-138.3	11/27/18	09:14	-0.02	0.0	1.2	18.8	80.0	4	
E-180	11/27/18	09:22	-0.59	0.0	0.2	20.7	79.1	4	
223									
A-13	11/27/18	09:33	-0.02	0.0	6.3	7.7	86.0	2	
B-37.5	11/27/18	09:36	-0.04	0.0	6.8	6.6	86.6	2	
C-62	11/27/18	09:42	+0.01	0.1	1.0	19.0	79.9	3	
D-86.5	11/27/18	09:47	-0.01	0.1	2.0	16.9	81.0	4	
E-111	11/27/18	09:54	+0.01	0.0	0.1	18.6	81.3	4	
224									
A-13	11/27/18	10:05	-0.02	0.0	0.6	20.2	79.2	2	
B-67.5	11/27/18	10:07	-0.03	0.0	0.1	20.9	79.0	2	
C-122	11/27/18	10:11	0.00	0.0	0.1	20.8	79.1	3	
D-177.5	11/27/18	10:18	-8.56	0.0	0.1	20.8	79.1	4	
E-232	11/27/18	10:22	-6.38	0.0	0.1	20.9	79.1	4	

SCS SINGNATURE: 

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

Saulo Diaz 6504541

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13	11/27/18	10:32	-0.06	0.0	0.5	20.1	79.4	2	
B-72	11/27/18	10:35	-5.85	0.0	0.2	20.4	79.4	2	
C-1131	11/27/18	10:39	-10.47	0.0	0.6	19.9	79.5	3	
D-190	11/27/18	10:44	-10.67	0.0	0.3	20.3	79.3	4	
E-244	11/27/18	10:49	-9.94	0.0	0.4	20.1	79.5	4	
226									
A-13	11/27/18	10:59	-0.02	0.0	0.2	20.3	79.6	2	
B-64	11/27/18	11:02	-11.80	0.0	0.1	20.4	79.6	2	
C-114	11/27/18	11:07	-11.57	0.0	0.1	20.4	79.5	3	
D-164	11/27/18	11:11	-11.95	0.0	0.1	20.4	79.5	4	
E-208	11/27/18	11:16	-12.42	0.0	0.2	20.3	79.6	4	
227									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-115.7								4	
228									
A-13								2	
B-63								2	
C-113								3	
D-163								4	
E-213								4	
229									
A-13								2	
B-48.7								2	
C-84.4								3	
D-114								4	
E-155.7								4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225									
A-13								2	
B-72								2	
C-1131								3	
D-190								4	
E-244								4	
226									
A-13								2	
B-64								2	
C-114								3	
D-164								4	
E-208								4	
227									
A-13	11-27-18	1332	0	0	.8	20.6	78.1	2	
B-48.7	11-27-18	1334	+0.09	0	.2	22.6	77.2	2	
C-84.4	11-27-18	1336	+0.01	0	1.6	17.7	80.7	3	
D-114	11-27-18	1340	+0.04	0	.5	22.6	76.9	4	
E-115.7	11-27-18	1345	-0.13	0	.7	22.0	77.3	4	
228									
A-13	11-27-18	1354	-0.02	0	.8	22.1	77.1	2	
B-63	11-27-18	1356	+0.48	0	1.7	18.3	80.0	2	
C-113	11-27-18	1359	+0.02	0	.9	20.7	78.4	3	
D-163	11-27-18	1402	+0.13	0	.4	22.6	77.0	4	
E-213	11-27-18	1406	+0.26	0	1.9	18.8	79.3	4	
229									
A-13	11-27-18	1028	-1.79	0	.9	19.3	79.8	2	
B-48.7	11-27-18	1032	-2.62	0	0	20.9	79.1	2	
C-84.4	11-27-18	1035	-13.09	0	.1	20.7	79.2	3	
D-114	11-27-18	1038	-15.92	0	.2	19.8	80.0	4	
E-155.7	11-27-18	1042	-22.92	0	0	20.4	79.6	4	
230									
A-16								2	REMOVED DUE TO CONSTRUCTION
B-33								2	REMOVED DUE TO CONSTRUCTION
C-50								3	REMOVED DUE TO CONSTRUCTION
231									
A-13								2	REMOVED DUE TO CONSTRUCTION
B-26								2	REMOVED DUE TO CONSTRUCTION
C-39								3	REMOVED DUE TO CONSTRUCTION
D-51								4	REMOVED DUE TO CONSTRUCTION
E-66								4	REMOVED DUE TO CONSTRUCTION

SCS SIGNATURE: \_\_\_\_\_



LEA SIGNATURE: \_\_\_\_\_

# SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
241									
A-13	11-27-18	1108	-8.19	0	0	20.6	79.4	2	
B-28	11-27-18	1111	-6.08	0	0	20.7	79.3	2	
C-47	11-27-18	1113	-7.01	0	0	20.8	79.2	3	
D-64	11-27-18	1116	-8.33	0	0	20.8	79.2	4	
E-85	11-27-18	1120	-8.27	0	0	20.9	79.1	4	

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>AROMO</u>		TEMPERATURE: <u>62</u>		BARO. PRESSURE: <u>2800</u>					
GEM SERIAL #: <u>G500485</u>		WEATHER CONDITIONS: <u>SUNNY</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10								2	
B-25								2	
C-40								3	
206									
A-10	12-20-18	949	-0.03	0	7.0	12.5	80.5	2	
B-25	12-20-18	951	+0.02	0	8.9	12.5	78.6	2	
C-40	12-20-18	953	-0.04	0	13.1	11.0	75.9	3	
207									
A-10	12-20-18	1001	-0.03	0	.2	19.5	82.3	2	
B-25	12-20-18	1003	-26.51	0	0	20.7	79.3	2	
C-40	12-20-18	1005	-0.01	0	.1	20.7	79.2	3	
208									
A-9.1	12-20-18	936	-0.03	0	3.0	15.8	78.2	2	
B-25	12-20-18	938	-0.09	0	5.4	15.8	78.8	2	
C-40	12-20-18	940	+0.40	0	5.9	14.7	79.4	3	
210									
A-10	12-20-18	843	-0.72	0	.1	21.1	78.8	2	
B-25	12-20-18	845	-0.65	0	.1	21.2	78.7	2	
C-39	12-20-18	847	-0.22	0	.1	21.1	78.8	3	
242									
C-42	12-20-18	857	-0.12	0	1.0	19.5	79.5	3	
D-60	12-20-18	900	-0.14	0	2.9	16.1	81.0	4	
E-78	12-20-18	904	-0.05	0	2.3	17.5	80.2	4	
243									
A-11								2	
B-20								2	
C-33								3	

SCS SIGNATURE: 

LEA SIGNATURE \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: Saulo Diaz		TEMPERATURE: 63°F		BARO. PRESSURE: 30.12"					
GEM SERIAL #: G504541		WEATHER CONDITIONS: Mostly clear NW 3mph							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202									
A-10								2	REMOVED DUE TO CONSTRUCTION
B-25								2	REMOVED DUE TO CONSTRUCTION
C-38								3	REMOVED DUE TO CONSTRUCTION
203									
A-10	12/20/18	07:39	-0.02	0.0	2.7	18.7	78.6	2	
B-25	12/20/18	07:41	-0.04	0.0	3.8	17.7	78.5	2	
C-40	12/20/18	07:45	-0.07	0.0	3.9	17.4	78.7	3	
206									
A-10								2	
B-25								2	
C-40								3	
207									
A-10								2	
B-25								2	
C-40								3	
208									
A-9.1								2	
B-25								2	
C-40								3	
210									
A-10								2	
B-25								2	
C-39								3	
242									
C-42								3	
D-60								4	
E-78								4	
243									
A-11	12/20/18	07:14	+0.01	0.2	12.2	0.0	87.6	2	
B-20	12/20/18	07:18	-0.04	0.0	8.1	6.8	85.1	2	
C-33	12/20/18	07:22	-0.08	0.0	4.3	11.9	83.7	3	

SCS SIGNATURE: Saulo Diaz

LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	12-20-18	916	-.11	0	14.4	4.7	80.9	2	
B-21	12-20-18	919	-.10	.1	14.4	7.8	77.7	2	
C-36	12-20-18	922	-.10	0	4.3	17.8	77.9	3	
245									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11								2	
B-20								2	
C-33								3	
D-48								4	
E-62								4	
239									
A-11	12-20-18	756	-.15	0	13.8	13.5	72.7	2	
B-20	12-20-18	758	-.14	0	.1	21.2	78.7	2	
C-35	12-20-18	801	-.16	0	.1	21.2	78.7	3	
D-50	12-20-18	804	-.09	0	.1	21.2	78.7	4	
E-64	12-20-18	808	-.11	0	.1	21.2	78.7	4	
240									
A-11	12-20-18	733	-.16	0	6.6	15.2	78.2	2	
B-20	12-20-18	736	-.12	0	.1	21.1	78.8	2	
C-33	12-20-18	738	-.14	0	.1	21.1	78.8	3	
D-49	12-20-18	741	-.14	0	.1	21.1	78.8	4	
E-61	12-20-18	746	-.12	.1	.1	21.1	78.7	4	

SCS SIGNATURE: \_\_\_\_\_




LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11								2	
B-21								2	
C-36								3	
245									
A-11	12/20/18	08:02	-0.10	0.0	13.6	5.0	81.3	2	
B-20	12/20/18	08:05	+0.02	0.1	25.4	0.5	73.9	2	
C-35	12/20/18	08:09	-0.01	0.0	22.8	0.8	76.3	3	
D-50	12/20/18	08:13	-0.14	0.0	17.3	2.7	79.9	4	
E-64	12/20/18	08:18	-0.12	0.0	0.1	20.7	79.2	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	12/20/18	09:08	-0.01	0.0	10.2	6.1	83.7	2	
B-20	12/20/18	09:12	-0.15	0.3	26.1	1.2	72.3	2	
C-33	12/20/18	09:16	-0.47	1.6	39.9	1.0	57.5	3	
D-48	12/20/18	09:24	-0.10	2.4	44.7	0.0	53.0	4	
E-62	12/20/18	09:30	-0.17	0.7	31.0	0.2	68.1	4	
239									
A-11								2	
B-20								2	
C-35								3	
D-50								4	
E-64								4	
240									
A-11								2	
B-20								2	
C-33								3	
D-49								4	
E-61								4	

SCS SINGATURE 

LEA SIGNATURE: 



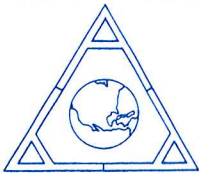
SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
VADOSE									
ZONE									
PV203D									
PV204D	12-20-18	1009	-1.61	0	0	20.9	79.1		
PV211D									

SCS SIGNATURE: 

LEA SIGNATURE: \_\_\_\_\_





LABORATORY ANALYSIS REPORT

environmental consultants  
laboratory services  
atmaa.com

SCAQMD Rule 1150.1 Components Analysis in Probe Tedlar Bag Samples

Report Date: November 5, 2018  
Client: SCS Field Services  
Project Location: Sunshine Canyon  
Project No.: 07218035.00  
Date Received: October 26, 2018  
Date Analyzed: October 26 & 27, 2018

AtmAA Lab No.:	12998-22	12998-23	12998-24
	P 205R-C	P 205R-D	P 205R-E
<u>Components</u>	(Concentration in ppmv)		
Methane	19400	26400	15300
Carbon dioxide	442000	464000	367000
Ethane	<5	<5	<5
TGNMO	13.8	16.1	12.5
Hydrogen sulfide	<0.1	<0.1	1.50
	(Concentration in ppbv)		
Benzene	3.87	3.57	1.57
Benzyl chloride	<1.4	<1.4	<1.4
Chlorobenzene	<1.4	<1.4	<1.4
Dichlorobenzenes*	<2	<2	<2
1,1-dichloroethane	<1.4	<1.4	<1.4
1,2-dichloroethane	<1.4	<1.4	<1.4
1,1-dichloroethylene	<1.4	<1.4	<1.4
Dichloromethane	<2	<2	<2
1,2-dibromoethane	<1	<1	<1
Perchloroethylene	<1	<1	<1
Carbon tetrachloride	<1.4	<1.4	<1.4
Toluene	<1.4	2.07	1.75
1,1,1-trichloroethane	<1	<1	<1
Trichloroethene	<1	<1	<1
Chloroform	<1	<1	<1
Vinyl chloride	<1	<1	<1
m+p-xylenes	<1.4	<1.4	<1.4
o-xylene	<1.4	<1.4	<1.4

Methane was measured by thermal conductivity detection/gas chromatography (TCD/GC), EPA Method 3C.

Ethane, and total gaseous non-methane organics (TGNMO) were measured by flame ionization detection/total combustion analysis (FID/TCA) Method 25.

Ethane is reported as ppmvC.

TGNMO is total gaseous non-methane, non-ethane organics reported as ppmvC.

\* total amount containing meta, para, and ortho isomers

Brian W. Fung  
Laboratory Director

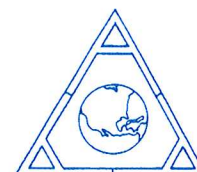
QUALITY ASSURANCE SUMMARY

(Repeat Analyses)

Project Location: Sunshine Canyon  
 Date Received: October 26, 2018  
 Date Analyzed: October 26 & 27, 2018

Components	Sample ID	Repeat Analysis		Mean Conc.	% Diff. From Mean
		Run #1	Run #2		
<i>(Concentration in ppmv)</i>					
Methane	P 205R-C	19400	19400	19400	0.0
Ethane	P 205R-C	<5	<5	---	---
TGNMO	P 205R-C	13.6	14.0	13.8	1.4
Hydrogen sulfide	P 205R-C	<0.1	<0.1	---	---
	P 205R-E	1.44	1.56	1.38	1.1
<i>(Concentration in ppbv)</i>					
Benzene	P 205R-C	3.82	3.92	3.87	1.3
Benzyl chloride	P 205R-C	<1.4	<1.4	---	---
Chlorobenzene	P 205R-C	<1.4	<1.4	---	---
Dichlorobenzenes	P 205R-C	<2	<2	---	---
1,1-dichloroethane	P 205R-C	<1.4	<1.4	---	---
1,2-dichloroethane	P 205R-C	<1.4	<1.4	---	---
1,1-dichloroethylene	P 205R-C	<1.4	<1.4	---	---
Dichloromethane	P 205R-C	<2	<2	---	---
1,2-dibromoethane	P 205R-C	<1	<1	---	---
Perchloroethene	P 205R-C	<1	<1	---	---
Carbon tetrachloride	P 205R-C	<1.4	<1.4	---	---
Toluene	P 205R-C	<1.4	<1.4	---	---
1,1,1-trichloroethane	P 205R-C	<1	<1	---	---
Trichloroethene	P 205R-C	<1	<1	---	---
Chloroform	P 205R-C	<1	<1	---	---
Vinyl chloride	P 205R-C	<1	<1	---	---
m+p-xylenes	P 205R-C	<1.4	<1.4	---	---
o-xylene	P 205R-C	<1.4	<1.4	---	---

Three Tedlar bag samples, laboratory numbers 12998-(22-24), were analyzed for SCAQMD Rule 1150.1 components, methane, and total gaseous non-methane organics (TGNMO). 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 4 repeat measurements from two Tedlar bag samples is 0.95%.



# CHAIN OF CUSTODY RECORD

## SCS FIELD SERVICES

9383 Charles Smith Avenue  
 Rancho Cucamonga, CA 91730  
 Office 909-373-2508 Fax 909-373-2518

TOTAL NUMBER OF SAMPLES: **3**  
 PAGE **1** OF **1**  
 TURNAROUND TIME REQUIRED:  
 Std.  3-Day  24-Hr.  Other

PROJECT NUMBER: **07218035.00**  
 PROJECT NAME: **SUNSHINE CANYON LANDFILL**  
 PROJECT LOCATION: **SYLMAR, CA**

PROJECT MANAGER: **RAY AL AYASS**  
 W.O. / S.O. #:

SAMPLER NAME AND SIGNATURE: **AMANDO MARTINEZ**

I.D. NUMBER	SAMPLE DESIGNATION	SAMPLE MATRIX	DATE/TIME COLLECTED	CONTAINER SIZE/TYPE	SAMPLE PRESERVATIVE	SPECIAL INSTRUCTIONS/COMMENTS	ANALYSES REQUESTED								LAB USE ONLY
	PROBE 205R-C	AIR	10-25-18 @ 14:35 HAS TEDLAR	10L	NONE	12998-22	TOC	TAC	H2O	CH4	CO2	<del>ETHANE</del>	TGNM09		
	PROBE 205R-D	AIR	10-25-18 @ 14:45 HAS TEDLAR	10L	NONE	-23									
	PROBE 205R-E	AIR	10-25-18 @ 15:00 HAS TEDLAR	10L	NONE	-24									

NOTES: \_\_\_\_\_

RELINQUISHED BY: \_\_\_\_\_ DATE: **10/26/18** TIME: **10:00**  
 COMPANY: **SCSFS**

ACCEPTED BY: \_\_\_\_\_ DATE: **10/26/18** TIME: **10:30**  
 COMPANY: **ATMA**

REINQUISHED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_

ACCEPTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_

RELINQUISHED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_

ACCEPTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_

FORM NO. 107 REV 3/14 TWIN CONCEPTS

## **APPENDIX D**

### **NPDES CERTIFICATION OF COMPLETION**

February 15, 2018

Operating Records  
Sunshine Canyon Landfill  
14747 San Fernando Road  
Sylmar, CA 91342

Please be advised that all standard observations for the landfill were done in accordance with the NPDES monitoring and reporting requirements. Records of observations are kept at the Sunshine Canyon Landfill's Operating Records and are submitted to the RWQCB in the storm water table due annually by July 1<sup>st</sup>.

Sincerely,



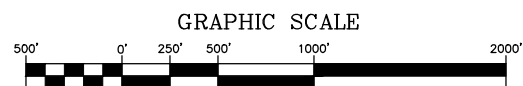
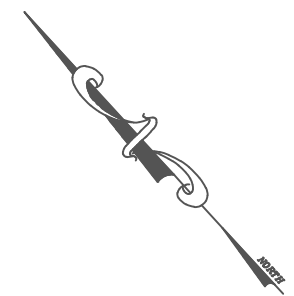
Chris Coyle  
General Manager  
Sunshine Canyon Landfill



**APPENDIX E**

**WASTE PLACEMENT AREAS  
SECOND SEMIANNUAL 2018 MONITORING PERIOD**

C:\Users\cbarrett\Documents\Republic\Sunshine Canyon LF\Exhibits\Semi-annual Report\DWG SETS\SO18.0100-SCL-2018-2-SMI-ANNUAL REPORT.dwg Feb 11, 2019 - 2:22pm By: cbarrett



- LEGEND**
- 1500 — EXISTING 10 FT CONTOUR
  - — PROPERTY BOUNDARY
  - - - - CITY/COUNTY LIMIT
  - . - . - . APPROVED LIMITS OF REFUSE PER 2002 JTD
  - — PERMIT LINER LIMIT

This drawing has not been published but rather has been prepared by Geo-Logic Associates, Inc. for use by the client named in the title block, solely in respect of the construction operation, and maintenance of the facility named in the title block. Geo-Logic Associates, Inc. shall not be liable for the use of this drawing on any other facility or for any other purpose.

FOR REVIEW ONLY  
EXISTING TOPOGRAPHY PREPARED BY COOPER AERIAL SURVEYS DATED FEBRUARY 5, 2018

REV. NO.	DATE	DESCRIPTION	APPROVED BY
REV1	DATE1	DESCRIPTION1	DRAWN1
REV2	DATE2	DESCRIPTION2	DRAWN2
REV3	DATE3	DESCRIPTION3	DRAWN3
REV4	DATE4	DESCRIPTION4	DRAWN4
REV5	DATE5	DESCRIPTION5	DRAWN5
REV6	DATE6	DESCRIPTION6	DRAWN6

DATE OF ISSUE: FEBRUARY 2019  
 DESIGNED BY: C BARRETT  
 DRAWN BY: C BARRETT  
 CHECKED BY: R JOHNSON  
 APPROVED BY: R JOHNSON



**Geo-Logic ASSOCIATES**  
 2777 E. GUASTI RD.  
 ONTARIO, CA 91761  
 909) 626-2282  
 www.geo-logic.com



SUNSHINE CANYON LANDFILL  
 SYLMAR, CALIFORNIA  
 SEMIANNUAL GROUNDWATER MONITORING REPORT  
 DISPOSAL AREAS - JULY 2018 - DECEMBER 2018

DWG NO. **1**  
 PROJECT NO. SO18.0100.00

**APPENDIX F**

**WASTE ACCEPTANCE REPORTS**



INVOICE TO	
CUSTOMER NAME	fresh & ready
ATTN:	ila dabo
ADDRESS	1145 ARROYO ST
CITY	SAN FERNANDO, CA
STATE	
ZIP CODE	91340
TEL. NO.	(818) 837-7600 FAX NO.

SITE LOCATION	
SITE NAME	fresh & ready
ADDRESS	1145 ARROYO ST
CITY	SAN FERNANDO, CA
STATE	
ZIP CODE	91340
TEL. NO.	(818) 837-7600 FAX NO.
AUTHORIZED BY:	ila dabo TITLE
CONTACT	ila dabo TITLE

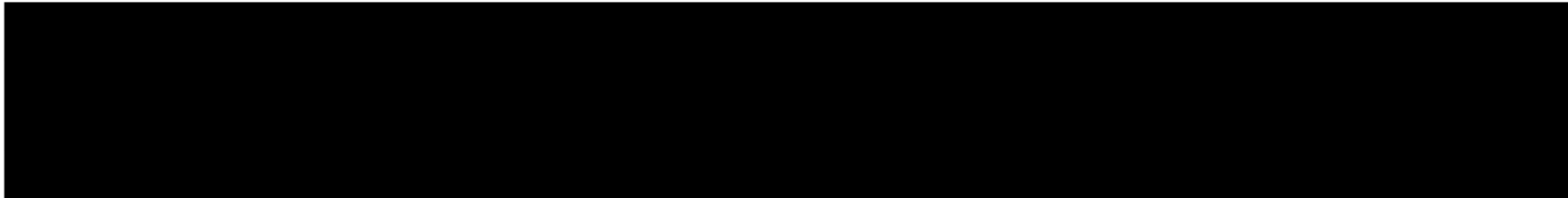


Temporary Service Agreement

AGREEMENT NUMBER A183826568

ACCOUNT NUMBER 902 -

EMAIL [ila@freshandreadyfoods.com](mailto:ila@freshandreadyfoods.com)



BY: \_\_\_\_\_  
(AUTHORIZED SIGNATURE)

TITLE: \_\_\_\_\_

BY:   
(AUTHORIZED SIGNATURE)  
**Ila Dabo**  
CUSTOMER NAME (PLEASE PRINT)

TITLE: **Director of QA**  
**11/27/18**  
DATE OF AGREEMENT

FOR OFFICE USE ONLY											
I.D. NUMBER											DOES FACILITY HAVE A HAZARDOUS WASTE GENERATOR I.D. NUMBER?
											<input type="checkbox"/> YES <input type="checkbox"/> NO
NATIONAL ACCOUNT NUMBER			CUSTOMER CATEG.		CASH TOLERANCE		SUSPEND		CREDIT ANALYST		
							Yes				
SITE NUMBER	EFFECTIVE SERVICE DATE	TERM	REVIEW DATE	C.P.I.	CONTRACT STATUS	PURCHASE ORDER NUMBER		NAICS			
	11/28/2018	1	9/1/2019	7	05			722300			
TERRITORY	SALES REPRESENTATIVE		TAX CODE	TAX EXEMPTION NUMBER							
	Jeffrey Cole			No							
RENEW.	MIG	CREDIT APPROVAL	CREDIT LIMIT	CONTRACT APPROVAL		ENTERED BY	DATE				
<input type="checkbox"/>	<input type="checkbox"/>										

TERMS AND CONDITIONS

**SERVICES.** Customer grants to Company the right to collect, transport, and dispose of or recycle all of customer's non-hazardous solid waste materials (including Recyclable Materials) (collectively, "Waste Materials"), and Company agrees to furnish such services as permitted by Applicable Laws. Company agrees to respond to customer's inquiries regarding the services within 30 days of such inquiry.

**TERM.** THE TERM OF THIS AGREEMENT SHALL START ON THE DATE ON WHICH SERVICE UNDER THIS AGREEMENT COMMENCES AND SHALL CONTINUE UNTIL THE EARLIER OF CUSTOMER GIVING WRITTEN NOTICE TO COMPANY OF THE FINAL PULL UNDER THIS AGREEMENT OR 30 DAYS AFTER WRITTEN NOTICE TO COMPANY. COMPANY MAY TERMINATE THIS AGREEMENT AT ANY TIME BY ORAL OR WRITTEN NOTICE TO CUSTOMER. COMPANY SHALL REMOVE ALL EQUIPMENT PROVIDED TO CUSTOMER WITHIN 30 DAYS OF THE EFFECTIVE DATE OF THE TERMINATION OF SERVICES.

**WASTE MATERIALS.** The Waste Materials shall not contain any hazardous materials, wastes or substances; toxic substances, wastes or pollutants; contaminants; pollutants; infectious wastes; medical wastes; or radioactive wastes (collectively, "Excluded Waste"), each as defined by applicable federal, state or local laws or regulations (collectively, "Applicable Laws"). **CUSTOMER SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS COMPANY FROM AND AGAINST ANY AND ALL CLAIMS, DAMAGES, SUITS, PENALTIES, FINES, REMEDIATION COSTS, AND LIABILITIES (INCLUDING COURT COSTS AND REASONABLE ATTORNEYS' FEES) (COLLECTIVELY, "LOSSES") RESULTING FROM THE INCLUSION OF EXCLUDED WASTE IN THE WASTE MATERIALS.**

**TITLE.** Company shall acquire title to Waste Materials when they are loaded into Company's truck. Title to and liability for any Excluded Waste shall remain with Customer and shall at no time pass to Company.

CONTINUED ON NEXT PAGE

TERMS AND CONDITIONS (Continued from previous page)

**PAYMENT.** Customer shall pay Company for the services and equipment furnished by Company at the rates provided in this Agreement. Customer shall pay all taxes, fees and other governmental charges assessed against or passed through to Company (other than income or real property taxes). Customer shall pay such fees as the Company may impose from time to time by notice to Customer (including, by way of example only, late payment fees, administrative fees and environmental fees), with Company to determine the amounts of such fees in its discretion up to the maximum amount allowed by Applicable Law. Without limiting the foregoing, Customer shall pay Company: (a) a fee of \$50 (which Company may increase from time to time by notice to Customer) for each check submitted by Customer that is an insufficient funds check or is returned or dishonored; and (b) fuel/environmental recovery fees in the amount shown on each of Company's invoices, which amount Company may increase or decrease from time to time by showing the amount on the invoice. Customer shall pay Company within 20 days after the date of Company's invoice. At any time after Company becomes concerned about Customer's creditworthiness or after Customer has made any late payment, Company may request, and if requested Customer shall pay, a deposit in an amount equal to one month's charges under this Agreement.

**RATE ADJUSTMENTS.** Company may, from time to time by 30 days prior written notice to Customer, increase the rates provided in this Agreement to adjust for any increase in: (a) disposal costs; (b) transportation costs due to a change in location of Customer or the disposal or recycling facility used by Company; (c) the Consumer Price Index for All Urban Consumers (Water, Sewer and Trash Collection Services), U.S. City Average; (d) the average weight per cubic yard of Customer's Waste Materials above the number of pounds per cubic yard upon which the rates provided in this Agreement are based as indicated on the cover page of this Agreement; (e) recycling sorting, processing and related costs; (f) costs related to Customer's failure to separate Recyclable Materials from other Waste Materials, the contamination of the Recyclable Materials, or other decreases in the value of the Recyclable Materials; or (g) Company's costs due to changes in Applicable Laws. Company may increase rates for reasons other than those set forth above with Customer's consent, which may be evidenced verbally, in writing or by the parties' actions and practices.

**SERVICE CHANGES.** The parties may change the type, size or amount of equipment, the type or frequency of service, and correspondingly the rates by agreement of the parties, which may be evidenced verbally, in writing or by the parties' actions and practices. This Agreement shall apply to any change of location of Customer within the area in which Company provides collection and disposal services.

**RECYCLABLE MATERIALS.** This section applies in the event Company has expressly agreed to remove and transport Recyclable Materials (material that Company determines can be recycled typically including, without limitation, aluminum cans (UBC – Used Beverage Containers), cardboard (free of wax), ferrous metal cans, mixed office paper, newspaper and plastics containers) to a material recovery facility, recycling center or similar facility. Customer agrees that Company in its sole discretion may determine any single load is contaminated and may refuse to collect it or may charge Customer for any additional costs, including (but not limited to) sorting, processing, transportation and disposal costs. Customer shall comply with all Applicable Laws regarding the separation of solid waste from Recyclable Materials and use of its best efforts to not place items in the container that may result in the decrease in the value of Recyclable Materials or make the Recyclable Materials unsuitable for recycling.

**RESPONSIBILITY FOR EQUIPMENT; ACCESS.** Any equipment Company furnishes shall remain Company's property. Customer shall be liable for all loss or damage to such equipment (except for normal wear and tear and for loss or damage resulting from Company's handling of the equipment). Customer shall use the equipment only for its proper and intended purpose and shall not overload (by weight or volume), move or alter the equipment. **CUSTOMER SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS COMPANY FROM AND AGAINST ALL LOSSES ARISING FROM ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY (INCLUDING THE EQUIPMENT) ARISING OUT OF CUSTOMER'S USE, OPERATION OR POSSESSION OF THE EQUIPMENT.** Customer shall provide safe, unobstructed access to the equipment on the scheduled collection day. Company may charge an additional fee for any additional collection service required by Customer's failure to provide access.

**DAMAGE TO PAVEMENT.** Company shall not be responsible for any damages to Customer's pavement, curbing or other driving surfaces resulting from Company's providing service at Customer's location.

**SUSPENSION.** If any amount due from Customer is not paid within 60 days after the date of Company's invoice, Company may, without notice and without terminating this Agreement, suspend collecting and disposing of Waste Materials until Customer has paid such amount to Company. If Company suspends service, Customer shall pay Company a service interruption fee in an amount determined by Company in its discretion up to the maximum amount allowed by Applicable Law.

**ASSIGNMENT.** Customer shall not assign this Agreement without Company's prior written consent, which Company shall not unreasonably withhold. Company may assign this Agreement without Customer's consent.

**EXCUSED PERFORMANCE.** Except for Customer's obligation to pay amounts due to Company, any failure or delay in performance due to contingencies beyond a party's reasonable control, including strikes, riots, terrorist acts, compliance with Applicable Laws or governmental orders, fires and acts of God, shall not constitute a breach of this Agreement.

**ATTORNEYS' FEES.** If any litigation is commenced under this Agreement, the successful party shall be entitled to recover, in addition to such other relief as the court may award, its reasonable attorneys' fees, expert witness fees, litigation related expenses, and court or other costs incurred in such litigation or proceeding.

**MISCELLANEOUS.** This Agreement sets forth the entire agreement of the parties and supersedes all prior agreements, whether written or oral, that exist between the parties regarding the subject matter of this Agreement. Company shall have no confidentiality obligation with respect to any Waste Materials. This Agreement shall be binding upon and inure solely to the benefit of the parties and their permitted assigns. If any provision of this Agreement shall be invalid, illegal or unenforceable, it shall be modified so as to be valid, legal and enforceable but so as most nearly to retain the intent of the parties. If such modification is not possible, such provision shall be severed from this Agreement. In either case, the validity, legality and enforceability of the remaining provisions of this Agreement shall not in any way be affected thereby. Customer and Company agree that electronic signatures are valid and effective, and that an electronically stored copy of this Agreement constitutes proof of the signature and contents of this Agreement, as though it were an original.

CUSTOMER'S INITIAL:

ID

DATE:

11/27/18



# Republic Services, Inc.

18500 N. Allied Way, Phoenix, AZ 85054

## SPECIAL WASTE DEPARTMENT DECISION

Waste Profile #  
51231819728

Expiration Date  
11/28/2019

### I. Decision Request:

Initial     Recertification     Change

Disposal Facility: 5123 - Sunshine Canyon Landfill

Generator Name: FRESH & READY FOODS LLC

Generator Site Address: 1145 ARROYO ST

City: SAN FERNANDO

County:

State: CA

Zip:

Name of Waste: LETTUCE AND FRESH READY TO EAT PRODUCTS WITH LETTUCE

Estimated Annual Volume: 15,000 Pounds

### II. Special Waste Department Decision:    Approved    Rejected

Management Method(s):     Landfill     Solidification     Bioremediation     Transfer Facility

Problematic Special Waste according to Republic?     Yes     No

If yes, which one? \_\_\_\_\_

Approved by Special Waste Review Committee?     Yes     No     Not Applicable

### Precautions, Conditions or Limitations on Approval

This material must be buried immediately upon receipt at the landfill.

Special Waste Analyst Signature: \_\_\_\_\_

Date: 11/28/2018

Name (Printed): Suzanne Glass

### III. Facility Decision:

Approved     Rejected

### Precautions, Conditions or Limitations on Approval

By signing below, the General Manager or Designee agrees that a fully executed Special Waste Service Agreement is on file for this profile and that the special waste file is complete.

CHRIS COYLE, GM

General Manager or Designee: \_\_\_\_\_

Date: 11/28/2018

Name (Printed): \_\_\_\_\_



Requested Disposal Facility: 5123 Sunshine Canyon LF CA

Waste Profile # 5123 18 19728
----------------------------------

Sales Rep #:
--------------

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

I. Generator Information

Generator Name: FRESH & READY FOODS LLC			
Generator Site Address: 1145 ARROYO ST			
City: SAN FERNANDO	County: LOS ANGELES	State: California	Zip: 91340
State ID/Reg No:	State Approval/Waste Code:	(if applicable)	NAICS #:
Generator Mailing Address (if different):			
City:	County:	State: -- Select a State --	Zip:
Generator Contact Name: ILA DABO		Email: ila@freshandreadyfoods.com	
Phone Number: 8188377600	Ext: 118	Fax Number: 8188377655	

II. Billing Information

Bill To: FRESH & READY FOODS LLC	Contact Name: JO BASS
Billing Address: 1145 ARROYO ST	Email: jbass@freshandreadyfoods.com
City: SAN FERNANDO	State: CA
Zip: 91340	Phone: 8188377600

III. Waste Stream Information

Name of Waste: LETTUCE AND FRESH READY TO EAT PRODUCTS WITH LETTUCE	
Process Generating Waste: WAREHOUSE, PRODUCTION OF READY TO EAT, REFRIGERATED FOOD ITEMS <i>Food Safety Alert from csc ID</i>	
Type of Waste:	<input checked="" type="checkbox"/> INDUSTRIAL PROCESS WASTE <input type="checkbox"/> POLLUTION CONTROL WASTE
Physical State:	<input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID
Method of Shipment:	<input type="checkbox"/> BULK <input type="checkbox"/> DRUM <input checked="" type="checkbox"/> BAGGED <input type="checkbox"/> OTHER: INDIVIDUALLY PACKED
Estimated Annual Volume:	15000 Pounds
Frequency:	<input checked="" type="checkbox"/> ONE TIME <input type="checkbox"/> ONGOING
Disposal Consideration:	<input checked="" type="checkbox"/> LANDFILL <input type="checkbox"/> SOLIDIFICATION <input type="checkbox"/> BIOREMEDIATION

IV. Representative Sample Certification

NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input type="checkbox"/> YES or <input type="checkbox"/> NO
--	---

Type of Sample: <input type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE
--

Sample Date: N/A
------------------

Sample ID Numbers:
--------------------





Waste Profile #

**V. Physical Characteristics of Waste**

Characteristic Components	% by Weight (range)
1. LETTUCE	60
2. PLASTIC CONTAINERS	20
3. TORTILLA, MEAT AND OTHER PRODUCE	20
4.	
5.	

Color	Odor (describe)	Does Waste Contain Free Liquids?	% Solids	pH:	Flash Point
GREEN	FRESH FOOD	<input type="checkbox"/> YES or <input checked="" type="checkbox"/> NO	100	N/A	N/A °F

**Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile**

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm)[reference 40 CFR 261.23(a)(5)]?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste a reactive or heat generating waste?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does the waste contain sulfur or sulfur by-products?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste generated at a Federal Superfund Clean Up Site?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste from a TSD facility, TSD like facility or consolidator?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No

**VI. Certification**

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

**ILA DABO DIRECTOR OF QUALITY ASSURANCE**

Authorized Representative Name And Title (Type or Print)

**FRESH & READY FOODS LLC**

Company Name

Authorized Representative Signature

**11/27/2018**

Date



Republic Services, Inc.

18500 N. Allied Way, Phoenix, AZ 85054

SPECIAL WASTE DEPARTMENT DECISION

Waste Profile # 51231621434

Expiration Date 12/13/2020

I. Decision Request:

Initial Recertification Change

Disposal Facility: 5123 - Sunshine Canyon Landfill

Generator Name: Jushi USA Fiberglass Co LTD

Generator Site Address: 4982 4th St

City: Irwindale

County:

State: CA

Zip:

Name of Waste: Fiberglass

Estimated Annual Volume: 40 Tons

II. Special Waste Department Decision: Approved Rejected

Management Method(s): Landfill Solidification Bioremediation Transfer Facility

Problematic Special Waste according to Republic? Yes No

If yes, which one?

Approved by Special Waste Review Committee? Yes No Not Applicable

Precautions, Conditions or Limitations on Approval

Per the Special Waste Change form dated 6-29-2018, the profile frequency was changed from one time to ongoing.

Special Waste Analyst Signature:

Date: 6/29/2018

Name (Printed): Suzanne Glass

III. Facility Decision:

Approved Rejected

Precautions, Conditions or Limitations on Approval

By signing below, the General Manager or Designee agrees that a fully executed Special Waste Service Agreement is on file for this profile and that the special waste file is complete.

General Manager or Designee:

Date: 6/29/2018

Name (Printed):

Chris Coyle



## SPECIAL WASTE PROFILE - RECERTIFICATION

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

Disposal Facility: 5123 Sunshine Canyon LF CA

Waste Profile #
5123-16-21434
<del>51271621434</del>

HL

### I. Generator Information

Generator Name: JUSHI USA Fiberglass Co., Ltd.			
Generator Site Address: 4982 4th St.			
City: Irwindale	County: Los Angeles	State: California	Zip: 91706
State ID/Reg No:	State Approval/Waste Code:		NAICS #:
Generator Mailing Address (if different): <input type="checkbox"/> 4982 4th St.			
City: Irwindale	County:	State: California	Zip: 91706
Generator Contact Name: Hanchen Liu		Email: louis.liu@jushiusa.com	
Phone Number: (906) 370-9955		Fax Number:	

### II. Waste Stream Information

Name of Waste: Fiberglass	
Check Section 1 OR Section 2 below:	
1. <input type="checkbox"/>	<p>There has been a change in the characteristics of the waste stream due to the following:</p> <ul style="list-style-type: none"> <li>a. Change of a raw material used in the waste generating process.</li> <li>b. Change in the waste generating process itself.</li> <li>c. Change in a physical characteristic of the waste.</li> <li>d. New information has been documented concerning the human health effects of exposure to the waste.</li> </ul> <p><b>If any of these changes have occurred, a new laboratory analysis and profile sheet must be completed. Attach copies of the new chemical analysis and new Special Waste Profile with the appropriate signatures.</b></p>
2. <input checked="" type="checkbox"/>	<p>There have been no changes that would alter the physical characteristics of the special waste stream. Updated analytical may be required.</p>

### III. Representative Sample Certification

No Sample Taken

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input type="checkbox"/> YES or <input type="checkbox"/> NO
Type of Sample: <input type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE	
Sample Date:	
Sample ID Numbers:	

### IV. Certification

I hereby certify that to the best of my knowledge and belief, the information contained in the Special Waste Profile - Recertification and the information in the Original Special Waste Profile is true, complete and accurate.

HANCHEN LIU - Director of Business Growth Initiatives  
 Authorized Representative Name And Title (Printed)

*Hanchen Liu*

Authorized Representative Signature

Jushi USA Fiberglass Co., Ltd.

Company Name

06/29/2018

Date





## SPECIAL WASTE PROFILE – CHANGE

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

### I. Generator Information

This form may be used to request changes to an existing Special Waste Profile.			
Generator Name:	Jushi USA Fiberglass Co., Ltd.		5123-16-21434
Name of Waste:	Fiberglass	Waste Profile #	<del>5127-16-21434</del>

### II. Purpose of Change

Description of Change Requested and Reason for Change: (Provide detailed explanation of why the change is requested following the appropriate checked box below).	
<input type="checkbox"/> Volume Increase By:	Is the analysis originally submitted with the Profile representative of the volume Increase? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, complete Section III, below.
<input type="checkbox"/> Extend Expiration Date:	
<input type="checkbox"/> Change or Add Landfill:	
<input type="checkbox"/> Add Additional Laboratory Reports:	<b>Complete Representative Sample Certification, Section III, below.</b>
<input type="checkbox"/> Add MSDS:	
<input type="checkbox"/> Generator Name Change:	
<input checked="" type="checkbox"/> Other:	Complete and update the old profile, and it is an ongoing profile.  <i>Hanchen Liu</i>

### III. Representative Sample Certification

No Sample Taken

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input type="checkbox"/> YES or <input type="checkbox"/> NO
Type of Sample: <input type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE	
Sample Date:	
Sample ID Numbers:	

### IV. Certification

I hereby certify that the waste and the process generating the waste are unchanged and are accurately represented in the original profile.	
HANCHEN LIU - Director of Business Growth Initiatives <hr/> Authorized Representative Name and Title (Printed) <hr/> <hr/> Authorized Representative Signature	Jushi USA Fiberglass Co., Ltd. <hr/> Company Name 06/29/2018 <hr/> Date



# Republic Services, Inc.

18500 N. Allied Way, Phoenix, AZ 85054

## SPECIAL WASTE DEPARTMENT DECISION

Waste Profile #  
51231621434

Expiration Date  
12/13/2017

### I. Decision Request:

Initial    Recertification    Change

Disposal Facility: 5123 - Sunshine Canyon Landfill

Generator Name: Jushi USA Fiberglass Co LTD

Generator Site Address: 4982 4th St

City: Irwindale

County:

State: CA

Zip:

Name of Waste: Fiberglass

Estimated Annual Volume: 40 Tons

### II. Special Waste Department Decision:   Approved   Rejected

Management Method(s):    Landfill    Solidification    Bioremediation    Transfer Facility

Problematic Special Waste according to Republic?    Yes    No

If yes, which one? \_\_\_\_\_

Approved by Special Waste Review Committee?    Yes    No    Not Applicable

### Precautions, Conditions or Limitations on Approval

Special Waste Analyst Signature: \_\_\_\_\_

Name (Printed): Suzanne Glass

Date: 12/13/2016

### III. Facility Decision:

Approved    Rejected

### Precautions, Conditions or Limitations on Approval

By signing below, the General Manager or Designee agrees that a fully executed Special Waste Service Agreement is on file for this profile and that the special waste file is complete.

General Manager or Designee: \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Date: 12/13/2016



Requested Disposal Facility: 5123 Sunshine Canyon LF CA

Waste Profile #
5123 16 21434
Sales Rep #: 585 - Ed Antolin

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

I. Generator Information

Generator Name: JUSHI USA FIBERGLASS CO., LTD.			
Generator Site Address: 4982 4TH ST.			
City: IRWINDALE	County: LOS ANGELES	State: California	Zip: 91706
State ID/Reg No:	State Approval/Waste Code:	(if applicable)	NAICS # :
Generator Mailing Address (if different): 4982 4TH ST.			
City: IRWINDALE	County:	State: California	Zip: 91706
Generator Contact Name: Hanhcen Liu		Email: louis.liu@jushiusa.com	
Phone Number: (626) 960-2038	Ext:	Fax Number: (626) 960-2037	

II. Billing Information

Bill To: JUSHI USA FIBERGLASS CO., LTD		Contact Name: Sharon Zhong	
Billing Address: 4982 TH ST.		Email: Sharon.zhong@jushiusa.com	
City: IRWINDALE	State: CA	Zip: 91706	Phone: (626) 960-2038

III. Waste Stream Information

Name of Waste: FIBERGLASS	
Process Generating Waste: Non-moving B grade products	
Type of Waste:	<input checked="" type="checkbox"/> INDUSTRIAL PROCESS WASTE <input type="checkbox"/> POLLUTION CONTROL WASTE
Physical State:	<input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID
Method of Shipment:	<input type="checkbox"/> BULK <input type="checkbox"/> DRUM <input type="checkbox"/> BAGGED <input checked="" type="checkbox"/> OTHER: PALLET
Estimated Annual Volume:	40 Tons
Frequency:	<input checked="" type="checkbox"/> ONE TIME <input type="checkbox"/> ONGOING
Disposal Consideration:	<input checked="" type="checkbox"/> LANDFILL <input type="checkbox"/> SOLIDIFICATION <input type="checkbox"/> BIOREMEDIATION

IV. Representative Sample Certification

NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input type="checkbox"/> YES or <input type="checkbox"/> NO
Type of Sample:	<input type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE
Sample Date:	
Sample ID Numbers:	



Waste Profile #
51231621434

**V. Physical Characteristics of Waste**

Characteristic Components		% by Weight (range)			
1. Direct Roving		100%			
2. Roving goods					
3.					
4.					
5.					
Color	Odor (describe)	Does Waste Contain Free Liquids?	% Solids	pH:	Flash Point
White	NA	<input type="checkbox"/> YES or <input checked="" type="checkbox"/> NO	100	NA	NA °F

**Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile**

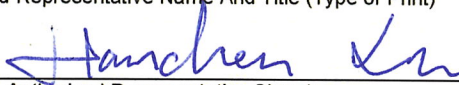
Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm)[reference 40 CFR 261.23(a)(5)]?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste a reactive or heat generating waste?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does the waste contain sulfur or sulfur by-products?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste generated at a Federal Superfund Clean Up Site?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste from a TSD facility, TSD like facility or consolidator?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No

**VI. Certification**

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

HANCHEN LIU <hr/> Authorized Representative Name And Title (Type or Print)	JUSHI USA FIBERGLASS CO., LTD. <hr/> Company Name
 <hr/> Authorized Representative Signature	11/18/2016 <hr/> Date





SPECIAL WASTE SERVICE AGREEMENT
NON-HAZARDOUS WASTES

Special Waste Profile Number: 51231621434

Generator Billing Information

Name: JUSHI USA FIBERGLASS CO. LTD. acct # 333395
Address: 4982 4TH ST
City: IRWINDALE
State: CA Zip: 91706
Phone: 906-370-9955 Fax:
Contact: HANCHEN LIU

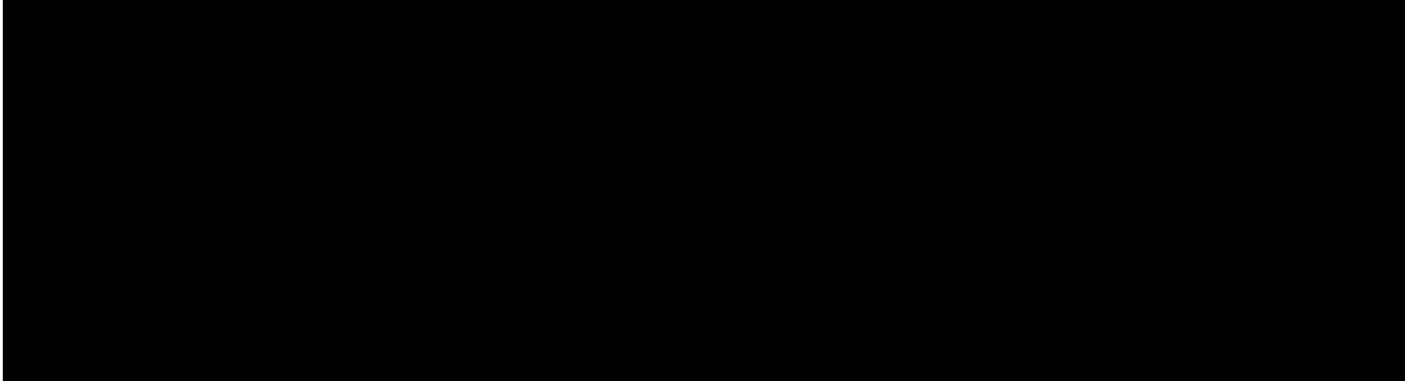
Republic Waste Location (Company)

SUNSHINE CANYON LANDFILL (5123)
14747 SAN FERNANDO ROAD
SYLMAR, CA 91342
818.362.2141

Project: FIBERGLASS—4982 4TH ST County and State of Origin: LOS ANGELES, CA

Additional Information:

- 1. Special Waste Service. Subject to the terms and conditions contained herein, the Company and the Generator agree to be legally bound hereby...
2. Acceptable Waste. Only those Special Wastes described in Paragraph 3 herein and in any Special Waste Profile(s) which number is identical to the contract number referenced above...



(B) Incorporation by Reference. In addition to Special Waste Profile(s), the following documents are incorporated by reference into this Agreement as if fully set forth herein.

- 1) N/A
2) N/A

4. Term of Agreement. This Agreement is effective for 12 months, commencing 7/2/18 and shall automatically be renewed for a similar term thereafter unless either party shall give written notice (via certified mail) of termination to the other party at least thirty (30) days prior written notice.

THE COMPANY AND THE GENERATOR, IN CONSIDERATION OF THE MUTUAL OBLIGATIONS CONTAINED HEREIN, AGREE THAT THIS IS A LEGALLY BINDING AGREEMENT WHICH IS SUBJECT TO THE TERMS AND CONDITIONS SET FORTH ON THIS PAGE AND ON THE REVERSE SIDE OF THIS DOCUMENT. IN ADDITION, THE GENERATOR IS CERTIFYING THE ATTACHED TERMS AND CONDITIONS HAVE BEEN REVIEWED AND INITIALLED AT THE BOTTOM OF THE PAGE.

GENERATOR

Signature of Hanchen Liu
SIGNATURE (AUTHORIZED REPRESENTATIVE)
HANCHEN LIU / Director of BGL
NAME AND TITLE (PLEASE PRINT)
07/02/2018
DATE

REPUBLIC SERVICES, INC/COMPANY

Signature of Edward Antolin
SIGNATURE (AUTHORIZED REPRESENTATIVE)
Edward Antolin MESE
NAME AND TITLE (PLEASE PRINT)
7/3/18
DATE

# Terms and Conditions of Special Waste Service Agreement

5. **The Agreement.** This agreement of the parties ("Agreement") for the disposal of Special Waste shall consist of this Agreement, riders to the Agreement (if any) and any Application, permit and approval that may be applicable to such Waste.
  6. **Waste Accepted at Facility.** Generator represents, warrants and covenants that the Waste delivered to Company at its Facility hereunder will be Acceptable Waste and will not contain any unacceptable quantity of hazardous materials or substances, radioactive materials or substances, or toxic waste or substances, as defined by applicable federal, state, local or provincial laws or regulations. Any Waste which does not meet these requirements shall hereinafter be referred to as "Unacceptable Waste". The Generator shall in all matters relating to the collection, transportation and disposal of the Waste hereunder, comply with all applicable federal, state and local laws, regulations, rules and orders regarding the same. The word "Facility" shall mean any landfill, transfer station or other location used to transfer, process or otherwise dispose of such Waste.
  7. **Special Waste.** Generator represents, warrants and covenants that the Waste delivered to Company hereunder (i) will not contain any Special Waste that is not specifically described on any Application which is attached hereto or which is subsequently approved by the Company, (ii) will meet the material description as set forth in any Application and otherwise in all significant respects and (iii) will not contain Unacceptable Waste. The parties may incorporate additional Special Waste as part of this Agreement if prior to delivery of such Waste to Company, Generator has provided an Application for such Waste and Company has approved disposal of such Waste within the limitations and conditions contained in Company's written notice of approval of Special Waste Disposal. Title to any and all Waste handled or disposed of by Company shall at all times remain with Generator and Broker (if a Broker is involved).
  8. **Rights of Refusal/Rejection.** The Generator shall inspect all Waste at the place(s) of collection and shall remove any and all Unacceptable Waste. Company has the right to refuse, or to reject after acceptance, any load(s) of Waste(s) delivered to its Facility including if the Company believes the Generator has breached (or is breaching) its representations, warranties, covenants or agreements hereunder, or any applicable federal, state or local laws, regulations, rules or orders, even if only a portion of such Waste load is unacceptable. The Company shall have the right to inspect all vehicles and containers of Waste haulers, including the Generator's vehicles, in order to determine whether the Waste is Acceptable Waste or Unacceptable Waste pursuant to this Agreement and all applicable federal, state and local laws, rules and regulations. The Company's exercise, or failure to exercise, its rights hereunder shall not operate to relieve the Generator of its responsibilities or liability under this Agreement. The Generator shall be responsible for, and bear all reasonable expenses and damages incurred by the Company, as a result of the Unacceptable Waste and in the reloading and removal of Unacceptable Waste disposed in the Facility. The Company, may also, in its sole discretion, require the Generator to promptly remove the Unacceptable Waste.
  9. **Limited License to Enter.** This Agreement provides Generator with a license to enter the Facility for the limited purpose of, and only to the extent necessary for, off-loading Acceptable Waste at the Facility in the manner directed by Company. Except in an emergency, Generator's personnel shall not leave the immediate vicinity of their vehicle. After off-loading the Waste, Generator's personnel shall promptly leave the Facility. Under no circumstances shall Generator or its personnel engage in any scavenging of Waste or other materials at the Facility. The Company reserves the right to make and enforce reasonable rules and regulations concerning the operation of the Facility, the conduct of the drivers and others on the Facility premises, quantities and sources of Waste, and any other matters necessary or desirable for the safe, legal and efficient operation of the Facility including, but not limited to, speed limits on haul roads imposed by the Company, and the wearing of hard hats and other personal protection equipment by all individuals allowed on the Facility premises. Generator agrees to conform to such rules and regulations as they may be established and amended from time to time. Company may refuse to accept Waste from and shall deny an entrance license to, any of Generator's personnel whom Company believes is under the influence of alcohol or other chemical substances. Generator shall be solely responsible for its employees and subcontractors performing their obligations in a safe manner when at the facility of Company.
  10. **Charges and Payment.** Payment shall be made by Generator within sixty (60) days after receipt of invoice from Company. In the event that any amount is overdue, the Company may terminate this Agreement. Generator agrees to pay a finance charge equal to the maximum interest rate permitted by law. Generator shall be liable for all taxes, fees, or other charges imposed upon the disposal of the Waste by federal, state, local or provincial laws and regulations. Company, from time to time, may modify its rates upon sixty (60) days written notice to Generator.
  11. **Termination.** Generator's obligations, representations, warranties and covenants regarding the Waste delivered and all indemnities shall survive termination of this Agreement. Should Generator materially default in any of its obligations hereunder, then Company may immediately terminate this Agreement and Generator shall be liable for all costs and damages incurred by the Company.
  12. **Driver's Knowledge and Authority.** Generator represents, warrants and covenants that its drivers who deliver Waste to Company's Facility have been advised by Generator of the Company's prohibition on deliveries of hazardous materials or substances, radioactive materials or substances, or toxic waste or substances or any other Unacceptable Waste to the Facility of Company's restrictions on deliveries of Special Waste to the Facility, of the definitions of "Hazardous Waste and Hazardous Substances" as provided by applicable federal, state and local law, rules and regulations and "Special Waste" as provided herein, and of the terms of this license to enter Company's Facility.
  13. **Indemnification.** Generator shall indemnify, defend and hold harmless the Company and its subsidiaries, affiliates and parent corporations, as applicable and their respective officers, directors, lenders, employees, subcontractors and agents from and against any and all claims, suits, losses, liabilities, assessments, damages, fines, costs and expenses, including reasonable attorneys fees arising under federal, state or local laws, regulations or ordinances, or relating to the content of the Waste, or arising out of or in connection with any breach of this Agreement or arising out of the negligent collection, transportation and disposal of Waste by Generator or Generator's employees, agents, subcontractors or representatives thereof. Generator shall also be responsible for increased inspection, testing, study and analysis costs made necessary due to reasonable concerns of the Company as to the content of the Waste following discovery of potentially Unacceptable Waste. This indemnification and other obligations stated in this paragraph shall survive the termination of this Agreement.
  14. **Insurance.** Generator shall maintain in full force and effect throughout the term of this Agreement the following types of insurance in at least the amounts specified below:

Coverages	Minimum Amounts of Insurance
Worker's Compensation	Statutory
General Liability	\$500,000 combined single limit
Automobile Liability	\$500,000 combined single limit
- All insurance will be by insurers authorized to do business in the state in which the Facility is located. Prior to Generator being allowed on Facility premises, Generator shall provide the Company with certificates of insurance or other satisfactory evidence that such insurance has been procured and is in force. Said policies shall not thereafter be canceled, be permitted to expire or lapse, or be changed without thirty (30) days advance written notice to the Company. Generator warrants that it will secure the above minimum amounts of insurance from any transportation of the Waste to the Facility.
15. **Failure to Perform.** Neither party hereto shall be liable for its failure to perform hereunder due to circumstances not its fault and beyond its reasonable control, including, but not limited to, strikes or other labor disputes, riots, protests, civil disturbances or sabotage, changes in law, fires, floods, compliance with government requests, explosions, accidents, weather, lack of required natural resources, or acts of God affecting either party hereto. In the event of any of the circumstances provided for in the preceding sentence, including, but not limited to, whether any federal, state or local court or governmental authority takes any action which would (i) close or restrict operations at the Facility, (ii) limit the quantity or prohibit the disposal of Waste at the Facility, or (iii) limit the ability of or prohibit Generator from delivering Waste to the Facility, the Company shall have the right, at its option, to reduce, suspend or terminate Generator's access to the Facility immediately, without prior notice and without any additional liabilities between the parties, other than Generator's payment obligation hereunder. Neither Party is required hereunder to settle any labor dispute against its own best judgment.
  16. **Other Termination.** The occurrence of any of the following events shall also constitute an event of default by the Generator and shall give the Company the right to immediately terminate this Agreement:
    - (A) A petition for reorganization or bankruptcy filed by or against the Generator.
    - (B) Failure by Generator to pay any amounts due to Company.
    - (C) Any breach by Generator of any of its obligations pursuant to the Agreement.

Generator shall be liable for and shall indemnify, defend and hold harmless Company from any losses, claims expenses or damages incurred by the Company as a result of termination hereunder.
  17. **Assignment.** Generator may not assign, transfer or otherwise vest in any other Company, entity or person, in whole or in part, any of its rights or obligations under the Agreement without the prior written consent of the Company, provided, however, that the Company may without any such prior written consent, assign its rights and/or obligations under the Agreement to a subsidiary or affiliate corporation.
  18. **Right of Disposal.** This Agreement does not grant any rights to dispose of Waste other than in accordance herewith. The Company reserves the right to immediately terminate access to the Facility by Generator and Generator's personnel in the event of breach or violation by Generator of any of the terms of this Agreement, the Company's operating rules or payment policies or any applicable laws or regulations.
  19. **Continuing Compliance.** The Generator has a continuing obligation to inform the Company of any new information, or information not previously provided to the Company by Generator which may affect the acceptability of the Waste by the Company. Further, the Generator shall comply with all Company requests for evidence of Generator's continuing compliance with the terms of the Agreement including but not limited to the following: (i) providing new, updated Waste profiles on the Waste(s) offered for disposal or, (ii) providing appropriate certification that the Waste being offered for disposal is accurately reflected by the appropriate Application or, (iii) re-sample the Waste at Generator's expense if reasonable cause exists as to its acceptability under the terms of this Agreement or, (iv) allow the Company to re-sample the Waste at Generator's expense if reasonable cause exists as to its acceptability under the terms of this Agreement or (v) all of the above.
  20. **Miscellaneous.**
    - (A) This Agreement shall be governed by the laws of the State in which the Facility is located.
    - (B) No waiver of a breach of any of the obligations contained in the Agreement shall be construed to be a waiver of any prior or succeeding breach of the same obligation or of any other obligation of this Agreement.
    - (C) No modification, release, discharge or waiver of any provision or obligation hereof shall be of any force, or effect, unless in writing signed by all parties to this Agreement.
    - (D) Generator shall treat as confidential and not disclose to others during or subsequent to the terms of this Agreement, except as is necessary to perform this Agreement, or to comply with any applicable law or regulation any information (including any technical information, experience or date) regarding the Company's plans, programs, plants, processes, products, costs, equipment or operations which may come within the knowledge of the Generator or its employees in the performance of this Agreement, without in each instance securing the prior written consent of the other Company.
    - (E) If any term, phrase, obligation or provision of this Agreement shall be held to be invalid, illegal or unenforceable in any respect, this Agreement shall remain in effect and be construed without regard to such term, phrase, obligation or provision.
    - (F) This Agreement constitutes the entire understanding between the parties, replacing and amending any prior agreements between the parties, and shall be binding upon all parties hereto, their successors, heirs, representatives and assigns. Any provision, term or condition in any acknowledgement, purchase order or other response by Generator which is in addition to or different from the provisions of this Agreement shall be deemed objected to by the Company and shall be of no effect.
    - (G) Generator represents, warrants and covenants that it is and, during the term of this Agreement will remain, in compliance with and will perform its obligations pursuant to all applicable laws and regulations and shall indemnify, defend and hold harmless the Company from any breach thereof.
    - (H) It is the understanding and agreement of the parties that the Company is an independent contractor, and is not an agent, nor an authorized representative of the Generator.
  21. **Notices.** All notices herein provided for shall be considered as having been given upon being placed in the mail, certified postage prepaid addressed to the Company or Generator at the address herein set forth in this Agreement or to such other address as may be given to the other party in writing.
  22. **Liquidated Damages.** In the event that this Agreement is terminated by the Generator in a manner not in accordance with paragraph 4 hereof, or terminated due to a breach of this Agreement by the Generator, the Generator shall pay, as liquidated damages, and not as a penalty, the greater of an amount equal to six (6) months' service charges or the Generator's most recent monthly charge multiplied by six (6). The Generator shall be given credit for any advance payments made hereunder, however, in computing the amount owed as liquidated damages hereunder. The Generator acknowledges that this liquidated damages clause is reasonable and is applicable to recover damages related to its investment in equipment, development of landfills and hiring of employees undertaken by the Company to service its customers including the Generator. This liquidated damages clause in no way relieves the Generator from its obligations and liability for other cost or damages as set forth elsewhere in this Agreement.

GENERATOR:  Republic Services, Inc/COMPANY:  May 2009





Republic Services, Inc.

18500 N. Allied Way, Phoenix, AZ 85054

SPECIAL WASTE DEPARTMENT DECISION

Waste Profile # 51231810761		Expiration Date 6/29/2019	
I. Decision Request: <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Recertification <input type="checkbox"/> Change			
Disposal Facility: 5123 - Sunshine Canyon Landfill			
Generator Name: HOMELAND SECURITY INVESTIGATIONS			
Generator Site Address: 501 W OCEAN BLVD STE 7200			
City: LONG BEACH	County:	State: CA	Zip:
Name of Waste: BOXES CONTAINING PAPER ROLLED CIGARETTES			
Estimated Annual Volume: 1 Tons			

II. Special Waste Department Decision:  Approved  Rejected

Management Method(s):  Landfill  Solidification  Bioremediation  Transfer Facility

Problematic Special Waste according to Republic?  Yes  No

If yes, which one? \_\_\_\_\_

Approved by Special Waste Review Committee?  Yes  No  Not Applicable

Precautions, Conditions or Limitations on Approval

This material must be buried immediately upon receipt at the landfill.

Special Waste Analyst Signature: [Signature]  
Date: 6/29/2018

Name (Printed): Holly Wilson

III. Facility Decision:  Approved  Rejected

Precautions, Conditions or Limitations on Approval

\_\_\_\_\_

By signing below, the General Manager or Designee agrees that a fully executed Special Waste Service Agreement is on file for this profile and that the special waste file is complete.

General Manager or Designee: [Signature]  
Date: 6/29/2018

Name (Printed): Chris Lopez



Requested Disposal Facility: 5123 Sunshine Canyon LF CA

Waste Profile # <b>5123 18 10761</b>
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Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

**I. Generator Information**

Sales Rep #:
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Generator Name: Homeland Security Investigations			
Generator Site Address: 501 W. Ocean Blvd. Suite 7200			
City: Long Beach	County: Los Angeles	State: California	Zip: 90802
State ID/Reg No:	State Approval/Waste Code:	(if applicable)	NAICS # :
Generator Mailing Address (if different): <input type="checkbox"/> 501 W. Ocean Blvd. Suite 7200			
City: Long Beach	County:	State: California	Zip: 90802
Generator Contact Name: Rafael Torres		Email:	
Phone Number: (562) 500-6329	Ext:	Fax Number:	

**II. Billing Information**

Bill To: DHS	Contact Name: Blossie Daniels		
Billing Address: 501 W. Ocean Blvd Suite 7200	Email: blossomie.b.daniels@ice.dhs.gov		
City: Long Beach	State: CA	Zip: 90802	Phone: (562) 624-4044

**III. Waste Stream Information**

Name of Waste: Boxes containing paper rolled cigarettes	
Process Generating Waste: Government seizure for failing to pay applicable federal excise taxes.	
Type of Waste:	<input checked="" type="checkbox"/> INDUSTRIAL PROCESS WASTE <input type="checkbox"/> POLLUTION CONTROL WASTE
Physical State:	<input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID
Method of Shipment:	<input type="checkbox"/> BULK <input type="checkbox"/> DRUM <input type="checkbox"/> BAGGED <input checked="" type="checkbox"/> OTHER: Cardboard Box
Estimated Annual Volume:	1 Tons
Frequency:	<input checked="" type="checkbox"/> ONE TIME <input type="checkbox"/> ONGOING
Disposal Consideration:	<input checked="" type="checkbox"/> LANDFILL <input type="checkbox"/> SOLIDIFICATION <input type="checkbox"/> BIOREMEDIATION

**IV. Representative Sample Certification**

NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input type="checkbox"/> YES or <input type="checkbox"/> NO
Type of Sample: <input type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE	
Sample Date:	
Sample ID Numbers:	



Waste Profile #

**V. Physical Characteristics of Waste**

Characteristic Components	% by Weight (range)
1. Cardboard boxes containing smaller cardboard boxes containing packed cigarettes	100
2.	
3.	
4.	
5.	

Color Wh/brn	Odor (describe) Tobacco	Does Waste Contain Free Liquids? <input type="checkbox"/> YES or <input checked="" type="checkbox"/> NO	% Solids 100	pH: na	Flash Point na °F
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**Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile**


Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm)[reference 40 CFR 261.23(a)(5)]?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste a reactive or heat generating waste?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does the waste contain sulfur or sulfur by-products?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste generated at a Federal Superfund Clean Up Site?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste from a TSD facility, TSD like facility or consolidator?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No

**VI. Certification**

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

Rafael Torres/Special Agent _____ Authorized Representative Name And Title (Type or Print)	Homeland Security Investigations _____ Company Name
 _____ Authorized Representative Signature	06/28/2018 _____ Date



SPECIAL WASTE SERVICE AGREEMENT
NON-HAZARDOUS WASTES

Special Waste Profile Number: 51231810761

Generator Billing Information

Name: DHS (ACCOUNT # 321)
Address: 501 W OCEAN BLVD STE 7200
City: LONG BEACH
State: CA Zip: 90802
Phone: 562-624-4044 Fax:
Contact: BLOSSIE DANIELS

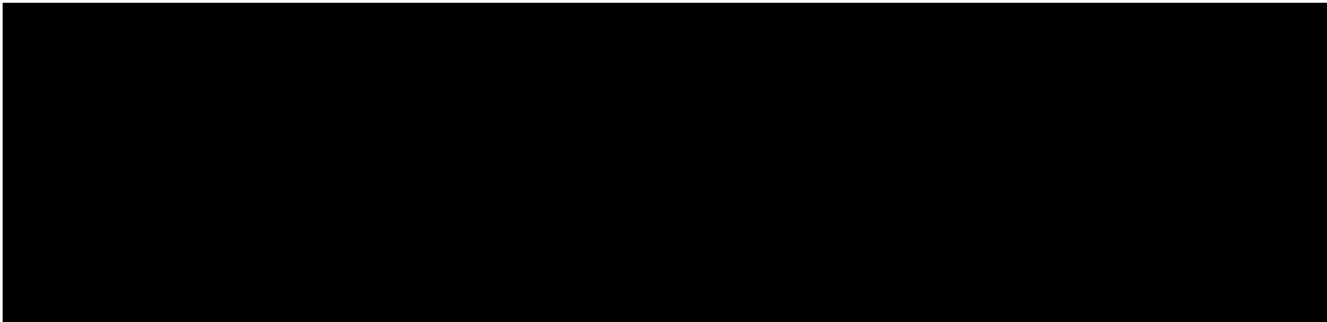
Republic Waste Location (Company)

SUNSHINE CANYON LANDFILL (5123)
14747 SAN FERNANDO ROAD
SYLMAR, CA 91342
818 362 2141

Project: TOBACCO PRODUCTS - CIGARETTES
County and State of Origin: LOS ANGELES, CA

Additional Information:

- 1. Special Waste Service. Subject to the terms and conditions contained herein, the Company and the Generator agree to be legally bound hereby and the Company agrees to accept at its Facility, Acceptable Waste (hereinafter referred to as "Special Waste" or "Waste") delivered by Generator, and which is acceptable to the Company as herein provided.
2. Acceptable Waste. Only those Special Wastes described in Paragraph 3 herein and in any Special Waste Profile(s) which number is identical to the contract number referenced above, and which Profile(s) are hereby incorporated by reference herein, and which Waste is subsequently approved by the Company and is otherwise in accordance with all laws, regulations and permits, shall be acceptable for disposal at the Facility ("Acceptable Waste").



Generator shall also be liable for all taxes, fees, or other charges imposed by federal, state, local or provincial laws and regulations.

Cannot Exceed Daily Volume of 1 TON Without Prior Approval of Company.

(B) Incorporation by Reference. In addition to Special Waste Profile(s), the following documents are incorporated by reference into this Agreement as if fully set forth herein.

- 1) N/A
2) N/A

4. Term of Agreement. This Agreement is effective for 12 months, commencing 7/2/2018 and shall automatically be renewed for a similar term thereafter unless either party shall give written notice (via certified mail) of termination to the other party at least thirty (30) days prior written notice.

THE COMPANY AND THE GENERATOR, IN CONSIDERATION OF THE MUTUAL OBLIGATIONS CONTAINED HEREIN, AGREE THAT THIS IS A LEGALLY BINDING AGREEMENT WHICH IS SUBJECT TO THE TERMS AND CONDITIONS SET FORTH ON THIS PAGE AND ON THE REVERSE SIDE OF THIS DOCUMENT. IN ADDITION, THE GENERATOR IS CERTIFYING THE ATTACHED TERMS AND CONDITIONS HAVE BEEN REVIEWED AND INITIALLED AT THE BOTTOM OF THE PAGE.

GENERATOR

Blossie Daniels
SIGNATURE (AUTHORIZED REPRESENTATIVE)

Blossie Daniels, Mission Support Specialist
NAME AND TITLE (PLEASE PRINT)

July 10, 2018
DATE

REPUBLIC SERVICES, INC/COMPANY

[Signature]
SIGNATURE (AUTHORIZED REPRESENTATIVE)

Director of MP6: ENU SOCS
NAME AND TITLE (PLEASE PRINT)

7-17-18
DATE

## Terms and Conditions of Special Waste Service Agreement

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13. **Indemnification.** Generator shall indemnify, defend and hold harmless the Company and its subsidiaries, affiliates and parent corporations, as applicable and their respective officers, directors, lenders, employees, subcontractors and agents from and against any and all claims, suits, losses, liabilities, assessments, damages, fines, costs and expenses, including reasonable attorneys fees arising under federal, state or local laws, regulations or ordinances, or relating to the content of the Waste, or arising out of or in connection with any breach of this Agreement or arising out of the negligent collection, transportation and disposal of Waste by Generator or Generator's employees, agents, subcontractors or representatives thereof. Generator shall also be responsible for increased inspection, testing, study and analysis costs made necessary due to reasonable concerns of the Company as to the content of the Waste following discovery of potentially Unacceptable Waste. This indemnification and other obligations stated in this paragraph shall survive the termination of this Agreement.
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General Liability	\$500,000 combined single limit
Automobile Liability	\$500,000 combined single limit

All insurance will be by insurers authorized to do business in the state in which the Facility is located. Prior to Generator being allowed on Facility premises, Generator shall provide the Company with certificates of insurance or other satisfactory evidence that such insurance has been procured and is in force. Said policies shall not thereafter be canceled, be permitted to expire or lapse, or be changed without thirty (30) days advance written notice to the Company. Generator warrants that it will secure the above minimum amounts of insurance from any transportation of the Waste to the Facility.

15. **Failure to Perform.** Neither party hereto shall be liable for its failure to perform hereunder due to circumstances not its fault and beyond its reasonable control, including, but not limited to, strikes or other labor disputes, riots, protests, civil disturbances or sabotage, changes in law, fires, floods, compliance with government requests, explosions, accidents, weather, lack of required natural resources, or acts of God affecting either party hereto. In the event of any of the circumstances provided for in the preceding sentence, including, but not limited to, whether any federal, state or local court or governmental authority takes any action which would (i) close or restrict operations at the Facility, (ii) limit the quantity or prohibit the disposal of Waste at the Facility, or (iii) limit the ability of or prohibit Generator from delivering Waste to the Facility, the Company shall have the right, at its option, to reduce, suspend or terminate Generator's access to the Facility immediately, without prior notice and without any additional liabilities between the parties, other than Generator's payment obligation hereunder. Neither Party is required hereunder to settle any labor dispute against its own best judgment.

16. **Other Termination.** The occurrence of any of the following events shall also constitute an event of default by the Generator and shall give the Company the right to immediately terminate this Agreement:

- (A) A petition for reorganization or bankruptcy filed by or against the Generator.
- (B) Failure by Generator to pay any amounts due to Company.
- (C) Any breach by Generator of any of its obligations pursuant to the Agreement.

Generator shall be liable for and shall indemnify, defend and hold harmless Company from any losses, claims expenses or damages incurred by the Company as a result of termination hereunder.

17. **Assignment.** Generator may not assign, transfer or otherwise vest in any other Company, entity or person, in whole or in part, any of its rights or obligations under the Agreement without the prior written consent of the Company, provided, however, that the Company may without any such prior written consent, assign its rights and/or obligations under the Agreement to a subsidiary or affiliate corporation.

18. **Right of Disposal.** This Agreement does not grant any rights to dispose of Waste other than in accordance herewith. The Company reserves the right to immediately terminate access to the Facility by Generator and Generator's personnel in the event of breach or violation by Generator of any of the terms of this Agreement, the Company's operating rules or payment policies or any applicable laws or regulations.

19. **Continuing Compliance.** The Generator has a continuing obligation to inform the Company of any new information, or information not previously provided to the Company by Generator which may affect the acceptability of the Waste by the Company. Further, the Generator shall comply with all Company requests for evidence of Generator's continuing compliance with the terms of the Agreement including but not limited to the following: (i) providing new, updated Waste profiles on the Waste(s) offered for disposal or, (ii) providing appropriate certification that the Waste being offered for disposal is accurately reflected by the appropriate Application or, (iii) re-sample the Waste at Generator's expense if reasonable cause exists as to its acceptability under the terms of this Agreement or, (iv) allow the Company to re-sample the Waste at Generator's expense if reasonable cause exists as to its acceptability under the terms of this Agreement or (v) all of the above.

### 20. Miscellaneous.

- (A) This Agreement shall be governed by the laws of the State in which the Facility is located.
- (B) No waiver of a breach of any of the obligations contained in the Agreement shall be construed to be a waiver of any prior or succeeding breach of the same obligation or of any other obligation of this Agreement.
- (C) No modification, release, discharge or waiver of any provision or obligation hereof shall be of any force, or effect, unless in writing signed by all parties to this Agreement.
- (D) Generator shall treat as confidential and not disclose to others during or subsequent to the terms of this Agreement, except as is necessary to perform this Agreement, or to comply with any applicable law or regulation any information (including any technical information, experience or date) regarding the Company's plans, programs, plants, processes, products, costs, equipment or operations which may come within the knowledge of the Generator or its employees in the performance of this Agreement, without in each instance securing the prior written consent of the other Company.
- (E) If any term, phrase, obligation or provision of this Agreement shall be held to be invalid, illegal or unenforceable in any respect, this Agreement shall remain in effect and be construed without regard to such term, phrase, obligation or provision.
- (F) This Agreement constitutes the entire understanding between the parties, replacing and amending any prior agreements between the parties, and shall be binding upon all parties hereto, their successors, heirs, representatives and assigns. Any provision, term or condition in any acknowledgement, purchase order or other response by Generator which is in addition to or different from the provisions of this Agreement shall be deemed objected to by the Company and shall be of no effect.
- (G) Generator represents, warrants and covenants that it is and, during the term of this Agreement will remain, in compliance with and will perform its obligations pursuant to all applicable laws and regulations and shall indemnify, defend and hold harmless the Company from any breach thereof.
- (H) It is the understanding and agreement of the parties that the Company is an independent contractor, and is not an agent, nor an authorized representative of the Generator.

21. **Notices.** All notices herein provided for shall be considered as having been given upon being placed in the mail, certified postage prepaid addressed to the Company or Generator at the address herein set forth in this Agreement or to such other address as may be given to the other party in writing.

22. **Liquidated Damages.** In the event that this Agreement is terminated by the Generator in a manner not in accordance with paragraph 4 hereof, or terminated due to a breach of this Agreement by the Generator, the Generator shall pay, as liquidated damages, and not as a penalty, the greater of an amount equal to six (6) months' service charges or the Generator's most recent monthly charge multiplied by six (6). The Generator shall be given credit for any advance payments made hereunder, however, in computing the amount owed as liquidated damages hereunder. The Generator acknowledges that this liquidated damages clause is reasonable and is applicable to recover damages related to its investment in equipment, development of landfills and hiring of employees undertaken by the Company to service its customers including the Generator. This liquidated damages clause in no way relieves the Generator from its obligations and liability for other cost or damages as set forth elsewhere in this Agreement.

GENERATOR: \_\_\_\_\_

Republic Services, Inc/COMPANY: \_\_\_\_\_

May 2009





# Republic Services, Inc.

18500 N. Allied Way, Phoenix, AZ 85054

## SPECIAL WASTE DEPARTMENT DECISION

	Waste Profile # 51231811884	Expiration Date 6/26/2019	
I. Decision Request:	<input checked="" type="checkbox"/> Initial <input type="checkbox"/> Recertification <input type="checkbox"/> Change		
Disposal Facility: 5123 - Sunshine Canyon Landfill			
Generator Name: LAUSD JOHN C FREMONT SENIOR HIGH			
Generator Site Address: 7676 S SAN PEDRO ST			
City: LOS ANGELES	County:	State: CA	Zip:
Name of Waste: NON HAZ ARSENIC AFFECTED SOIL			
Estimated Annual Volume: 25 Cubic Yards			

II. Special Waste Department Decision:     Approved     Rejected

Management Method(s):     Landfill     Solidification     Bioremediation     Transfer Facility

Problematic Special Waste according to Republic?     Yes     No

If yes, which one? \_\_\_\_\_

Approved by Special Waste Review Committee?     Yes     No     Not Applicable

### Precautions, Conditions or Limitations on Approval

Special Waste Analyst Signature: *Joseph M. Sorokach*  
Date: 7/19/2018

Name (Printed): Joseph Sorokach

III. Facility Decision:     Approved     Rejected

### Precautions, Conditions or Limitations on Approval

By signing below, the General Manager or Designee agrees that a fully executed Special Waste Service Agreement is on file for this profile and that the special waste file is complete.

General Manager or Designee: *Chris Coyte*  
Date: 7/19/2018

Name (Printed): Chris Coyte

Requested Disposal Facility: 5123 Sunshine Canyon LF CA

Waste Profile # <b>5123 18 11884</b>
---

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

Sales Rep #: <b>585</b>
-------------------------

**I. Generator Information**

Generator Name: LAUSD John C Fremont Senior High			
Generator Site Address: 7676 S. San Pedro Street			
City: Los Angeles	County: Los Angeles	State: California	Zip: 90003
State ID/Reg No: NA	State Approval/Waste Code: NA	(if applicable)	NAICS #: NA
Generator Mailing Address (if different): <input checked="" type="checkbox"/> 333 S. Beaudry Avenue, 21st Floor			
City: Los Angeles	County: Los Angeles	State: California	Zip: 90017
Generator Contact Name: Steven Morrill		Email: steven.morrill@lausd.net	
Phone Number: (213) 241-4672	Ext: 14672	Fax Number: (213) 241-3199	

**II. Billing Information**

Bill To: D. John Roser, Inc.	Contact Name: Natalie Roser
Billing Address: 31356 Via Colinas, Unit 111	Email: seedondig@aol.com
City: Westlake Village	State: CA
Zip: 91362	Phone: (818) 706-2411

**III. Waste Stream Information**

Name of Waste: Non hazardous arsenic affected soil	
Process Generating Waste: Bucket augering through arsenic impacted contaminated soil along the baseball field fenceline for the installation of poles and netting.	
<i>Arsenic impacted soil profiled as non-hazardous</i>	
Type of Waste:	<input type="checkbox"/> INDUSTRIAL PROCESS WASTE <input checked="" type="checkbox"/> POLLUTION CONTROL WASTE
Physical State:	<input checked="" type="checkbox"/> SOLID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> POWDER <input type="checkbox"/> LIQUID
Method of Shipment:	<input checked="" type="checkbox"/> BULK <input type="checkbox"/> DRUM <input type="checkbox"/> BAGGED <input type="checkbox"/> OTHER:
Estimated Annual Volume:	25 Cubic Yards
Frequency:	<input checked="" type="checkbox"/> ONE TIME <input type="checkbox"/> ONGOING
Disposal Consideration:	<input checked="" type="checkbox"/> LANDFILL <input type="checkbox"/> SOLIDIFICATION <input type="checkbox"/> BIOREMEDIATION

**IV. Representative Sample Certification**

NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	<input checked="" type="checkbox"/> YES or <input type="checkbox"/> NO
Type of Sample:	<input checked="" type="checkbox"/> COMPOSITE SAMPLE <input type="checkbox"/> GRAB SAMPLE
Sample Date:	06/20/2018
Sample ID Numbers:	COMP-A 10, COMP-B 20, COMP-C 10, COMP-D 20, COMP-E 10, COMP-F 20



Waste Profile #

**V. Physical Characteristics of Waste**

Characteristic Components		% by Weight (range)			
1. Soil		99-100			
2. Debris		0-1			
3.					
4.					
5.					
Color	Odor (describe)	Does Waste Contain Free Liquids?	% Solids	pH:	Flash Point
Various	No odor	<input type="checkbox"/> YES or <input checked="" type="checkbox"/> NO	100	NA	NA °F

**Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile**

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm)[reference 40 CFR 261.23(a)(5)]?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste a reactive or heat generating waste?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Does the waste contain sulfur or sulfur by-products?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste generated at a Federal Superfund Clean Up Site?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No
Is this waste from a TSD facility, TSD like facility or consolidator?	<input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No

**VI. Certification**

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

Steven Morrill, Site Assessment Project Manager

LAUSD-OEHS

Authorized Representative Name And Title (Type or Print)

Company Name



07/18/2018

Authorized Representative Signature

Date



**THIRD PARTY SIGNATURE AUTHORIZATION  
for Special Waste Disposal**

Date: 7/18/18

This Authorization is only valid for 3 years from the above date.

To Whom It May Concern:


Please be advised that the following company/individual has been appointed to work as our agent for purposes of managing waste materials that we may generate.

Name of Authorized Agent <b>Don Roser</b>	Title <b>Owner/Partner</b>
Name of Company <b>D. John Roser, Inc</b>	Telephone Number <b>(818) 706-2411</b>

The above broker/individual is authorized to act as our authorized agent for the following purposes:

- Complete and sign Special Waste Profile.
- Complete and sign Special Waste Profile-Recertification.
- Authorize amendments to Special Waste Profile.
- Sign contracts to dispose and/or transport material.
- Sign certifications necessary to comply with landfill requirements.
- Sign manifests to initiate shipment to disposal facilities.

Our authorized agent will notify us prior to any action stated above, and will provide us with copies of any documents bearing our name.

Name of Company <b>LAUSD-OEHS</b>	Mailing Address 333 S. Beaudry Ave, 21st Floor, Los Angeles, CA 90017
Generator Contact (Print Name) <b>Steven Morrill</b>	Title <b>Site Assessment Project Manager</b>
Signature 	Telephone Number <b>(213) 241-4672</b>

**To:**  
Steven Morrill, PE  
Site Assessment Project Manager  
Contract Professional  
Office of Environmental Health and Safety  
333 South Beaudry Avenue, 21-223-5  
Los Angeles, CA 90017

**CC:**  
Laurie Fernandez, AECOM

# Memo

**Subject:** Waste Profile Analytical Results, Fremont High School, 7676 S. San Pedro Street, Los Angeles, California

On June 19 and 20, 2018, six 10-cubic yard bins of waste soil were generated during bucket-auger drilling activities at Fremont High School located at 7676 S. San Pedro Street in Los Angeles, California (the Site). Ten 3-foot diameter borings were advanced to 20 feet below ground surface (bgs) to install poles for netting adjacent to the baseball field at the Site. Potentially-impacted arsenic soil from five of these borings was placed in the bins, with the upper 10 feet of soil and the lower 10 feet of soil being placed in separate bins.

At the completion of drilling activities, a composite soil sample was collected for waste profiling purposes from each of the six bins, for a total of six soil samples. The samples were labeled and submitted to SunStar Laboratories, Inc., of Lake Forest, California, for chemical analysis under standard chain-of-custody procedures. The soil samples were analyzed for Title 22 metals by U.S. Environmental Protection Agency (USEPA) Method 6010B/7471A, volatile organic compounds (VOCs) by USEPA Method 8260B, and total petroleum hydrocarbons by carbon-chain breakdown (TPHcc) by USEPA Method 8015B.

The analytical results of the waste samples are provided in the attached laboratory report. Based on the results, the soil from all bins can be profiled as non-hazardous waste for disposal purposes.



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

26 June 2018

Laurie Fernandez  
AECOM  
999 W. Town and Country Road  
Orange, CA 92868-4713  
RE: Fremont HS

Enclosed are the results of analyses for samples received by the laboratory on 06/20/18 14:57. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rose Fasheh  
Project Manager



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
COMP-A 10	T181997-01	Soil	06/20/18 09:20	06/20/18 14:57
COMP-B 20	T181997-02	Soil	06/20/18 09:35	06/20/18 14:57
COMP-C 10	T181997-03	Soil	06/20/18 11:24	06/20/18 14:57
COMP-D 20	T181997-04	Soil	06/20/18 11:56	06/20/18 14:57
COMP-E 10	T181997-05	Soil	06/20/18 12:18	06/20/18 14:57
COMP-F 20	T181997-06	Soil	06/20/18 12:33	06/20/18 14:57

SunStar Laboratories, Inc.

Rose Fasheh, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**DETECTIONS SUMMARY**

**Sample ID:** COMP-A 10

**Laboratory ID:** T181997-01

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	130	1.0		mg/kg	EPA 6010B	
Chromium	19	2.0		mg/kg	EPA 6010B	
Cobalt	9.0	2.0		mg/kg	EPA 6010B	
Copper	25	1.0		mg/kg	EPA 6010B	
Nickel	8.8	2.0		mg/kg	EPA 6010B	
Vanadium	50	5.0		mg/kg	EPA 6010B	
Zinc	67	1.0		mg/kg	EPA 6010B	

**Sample ID:** COMP-B 20

**Laboratory ID:** T181997-02

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	140	1.0		mg/kg	EPA 6010B	
Chromium	21	2.0		mg/kg	EPA 6010B	
Cobalt	10	2.0		mg/kg	EPA 6010B	
Copper	27	1.0		mg/kg	EPA 6010B	
Nickel	10	2.0		mg/kg	EPA 6010B	
Vanadium	56	5.0		mg/kg	EPA 6010B	
Zinc	69	1.0		mg/kg	EPA 6010B	

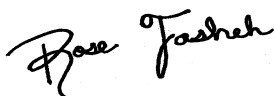
**Sample ID:** COMP-C 10

**Laboratory ID:** T181997-03

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Barium	130	1.0		mg/kg	EPA 6010B	
Chromium	20	2.0		mg/kg	EPA 6010B	
Cobalt	9.6	2.0		mg/kg	EPA 6010B	
Copper	27	1.0		mg/kg	EPA 6010B	
Lead	12	3.0		mg/kg	EPA 6010B	
Nickel	9.8	2.0		mg/kg	EPA 6010B	
Vanadium	52	5.0		mg/kg	EPA 6010B	
Zinc	71	1.0		mg/kg	EPA 6010B	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

Sample ID: COMP-D 20

Laboratory ID: T181997-04

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
C29-C40 (MORO)	62	10		mg/kg	EPA 8015B	
Barium	140	1.0		mg/kg	EPA 6010B	
Chromium	21	2.0		mg/kg	EPA 6010B	
Cobalt	8.6	2.0		mg/kg	EPA 6010B	
Copper	30	1.0		mg/kg	EPA 6010B	
Lead	13	3.0		mg/kg	EPA 6010B	
Nickel	10	2.0		mg/kg	EPA 6010B	
Vanadium	52	5.0		mg/kg	EPA 6010B	
Zinc	87	1.0		mg/kg	EPA 6010B	

Sample ID: COMP-E 10

Laboratory ID: T181997-05

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Arsenic	41	5.0		mg/kg	EPA 6010B	
Barium	130	1.0		mg/kg	EPA 6010B	
Chromium	19	2.0		mg/kg	EPA 6010B	
Cobalt	9.6	2.0		mg/kg	EPA 6010B	
Copper	23	1.0		mg/kg	EPA 6010B	
Nickel	8.6	2.0		mg/kg	EPA 6010B	
Vanadium	51	5.0		mg/kg	EPA 6010B	
Zinc	66	1.0		mg/kg	EPA 6010B	

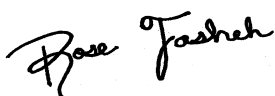
Sample ID: COMP-F 20

Laboratory ID: T181997-06

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Arsenic	11	5.0		mg/kg	EPA 6010B	
Barium	150	1.0		mg/kg	EPA 6010B	
Chromium	22	2.0		mg/kg	EPA 6010B	
Cobalt	11	2.0		mg/kg	EPA 6010B	
Copper	28	1.0		mg/kg	EPA 6010B	
Nickel	11	2.0		mg/kg	EPA 6010B	
Vanadium	57	5.0		mg/kg	EPA 6010B	
Zinc	70	1.0		mg/kg	EPA 6010B	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-A 10**  
**T181997-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8062031	06/20/18	06/23/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		114 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

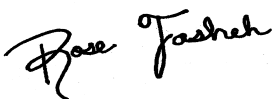
Antimony	ND	3.0	mg/kg	1	8062034	06/20/18	06/22/18	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>130</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	06/22/18	"	
Cadmium	ND	2.0	"	"	"	"	06/22/18	"	
<b>Chromium</b>	<b>19</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>9.0</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>25</b>	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>8.8</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>50</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>67</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8062033	06/20/18	06/21/18	EPA 7471A Soil	
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SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-A 10**  
**T181997-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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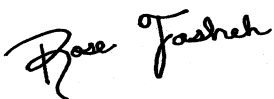
**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bromobenzene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B
Bromochloromethane	ND	5.0	"	"	"	"	"	"
Bromodichloromethane	ND	5.0	"	"	"	"	"	"
Bromoform	ND	5.0	"	"	"	"	"	"
Bromomethane	ND	5.0	"	"	"	"	"	"
n-Butylbenzene	ND	5.0	"	"	"	"	"	"
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"
Chlorobenzene	ND	5.0	"	"	"	"	"	"
Chloroethane	ND	5.0	"	"	"	"	"	"
Chloroform	ND	5.0	"	"	"	"	"	"
Chloromethane	ND	5.0	"	"	"	"	"	"
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"

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Rose Fasheh, Project Manager



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AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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**COMP-A 10**  
**T181997-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		104 %	95.7-135		"	"	"	"	
Surrogate: Toluene-d8		102 %	85.5-116		"	"	"	"	

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-B 20**  
**T181997-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8062031	06/20/18	06/23/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		115 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

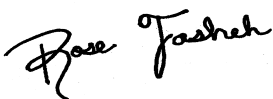
Antimony	ND	3.0	mg/kg	1	8062034	06/20/18	06/22/18	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>140</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>21</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>10</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>27</b>	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>10</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>56</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>69</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8062033	06/20/18	06/21/18	EPA 7471A Soil	
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Rose Fasheh, Project Manager



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999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-B 20**  
**T181997-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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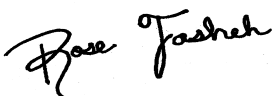
**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bromobenzene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B
Bromochloromethane	ND	5.0	"	"	"	"	"	"
Bromodichloromethane	ND	5.0	"	"	"	"	"	"
Bromoform	ND	5.0	"	"	"	"	"	"
Bromomethane	ND	5.0	"	"	"	"	"	"
n-Butylbenzene	ND	5.0	"	"	"	"	"	"
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"
Chlorobenzene	ND	5.0	"	"	"	"	"	"
Chloroethane	ND	5.0	"	"	"	"	"	"
Chloroform	ND	5.0	"	"	"	"	"	"
Chloromethane	ND	5.0	"	"	"	"	"	"
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"

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Rose Fasheh, Project Manager



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AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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**COMP-B 20**  
**T181997-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		103 %	95.7-135		"	"	"	"	
Surrogate: Toluene-d8		102 %	85.5-116		"	"	"	"	

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Rose Fasheh, Project Manager



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**COMP-C 10**  
**T181997-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8062031	06/20/18	06/23/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		110 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	8062034	06/20/18	06/22/18	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>130</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>20</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>9.6</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>27</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>12</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>9.8</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>52</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>71</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8062033	06/20/18	06/21/18	EPA 7471A Soil	
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**COMP-C 10**  
**T181997-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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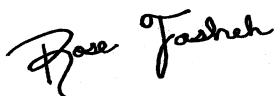
**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

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Rose Fasheh, Project Manager



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AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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**COMP-C 10**  
**T181997-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		103 %	95.7-135		"	"	"	"	
Surrogate: Toluene-d8		101 %	85.5-116		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-D 20**  
**T181997-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8062031	06/20/18	06/23/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
<b>C29-C40 (MORO)</b>	<b>62</b>	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		114 %	65-135	"	"	"	"	"	

**Metals by EPA 6010B**

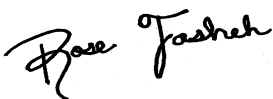
Antimony	ND	3.0	mg/kg	1	8062034	06/20/18	06/22/18	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>140</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	06/22/18	"	
Cadmium	ND	2.0	"	"	"	"	06/22/18	"	
<b>Chromium</b>	<b>21</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>8.6</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>30</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>13</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>10</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>52</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>87</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8062033	06/20/18	06/21/18	EPA 7471A Soil	
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SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-D 20**  
**T181997-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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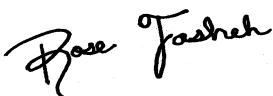
**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager





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AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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**COMP-D 20**  
**T181997-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.6 %		81.2-123	"	"	"	"	
Surrogate: Dibromofluoromethane		112 %		95.7-135	"	"	"	"	
Surrogate: Toluene-d8		94.2 %		85.5-116	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-E 10**  
**T181997-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8062031	06/20/18	06/23/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		112 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

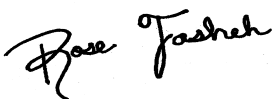
Antimony	ND	3.0	mg/kg	1	8062034	06/20/18	06/22/18	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
<b>Arsenic</b>	<b>41</b>	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>130</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>19</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>9.6</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>23</b>	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>8.6</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>51</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>66</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8062033	06/20/18	06/21/18	EPA 7471A Soil	
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SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-E 10**  
**T181997-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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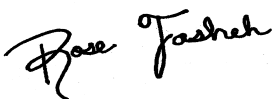
**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Bromobenzene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager



25712 Commercentre Drive  
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AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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**COMP-E 10**  
**T181997-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		106 %	95.7-135		"	"	"	"	
Surrogate: Toluene-d8		100 %	85.5-116		"	"	"	"	

SunStar Laboratories, Inc.

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Rose Fasheh, Project Manager

AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-F 20**  
**T181997-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Extractable Petroleum Hydrocarbons by 8015B**

C6-C12 (GRO)	ND	10	mg/kg	1	8062031	06/20/18	06/23/18	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		114 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

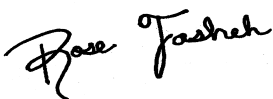
Antimony	ND	3.0	mg/kg	1	8062034	06/20/18	06/22/18	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
<b>Arsenic</b>	<b>11</b>	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>150</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	06/22/18	"	
Cadmium	ND	2.0	"	"	"	"	06/22/18	"	
<b>Chromium</b>	<b>22</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>11</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>28</b>	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>11</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>57</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>70</b>	1.0	"	"	"	"	"	"	

**Cold Vapor Extraction EPA 7470/7471**

Mercury	ND	0.10	mg/kg	1	8062033	06/20/18	06/21/18	EPA 7471A Soil	
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AECOM  
999 W. Town and Country Road  
Orange CA, 92868-4713

Project: Fremont HS  
Project Number: 60578944.1  
Project Manager: Laurie Fernandez

Reported:  
06/26/18 10:35

**COMP-F 20**  
**T181997-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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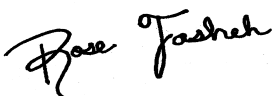
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**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Bromobenzene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B
Bromochloromethane	ND	5.0	"	"	"	"	"	"
Bromodichloromethane	ND	5.0	"	"	"	"	"	"
Bromoform	ND	5.0	"	"	"	"	"	"
Bromomethane	ND	5.0	"	"	"	"	"	"
n-Butylbenzene	ND	5.0	"	"	"	"	"	"
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"
Chlorobenzene	ND	5.0	"	"	"	"	"	"
Chloroethane	ND	5.0	"	"	"	"	"	"
Chloroform	ND	5.0	"	"	"	"	"	"
Chloromethane	ND	5.0	"	"	"	"	"	"
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"
Dibromochloromethane	ND	5.0	"	"	"	"	"	"
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"
Dibromomethane	ND	5.0	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"

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**COMP-F 20**  
**T181997-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	8062032	06/20/18	06/20/18	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	81.2-123		"	"	"	"	
Surrogate: Dibromofluoromethane		113 %	95.7-135		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	85.5-116		"	"	"	"	

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**Extractable Petroleum Hydrocarbons by 8015B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062031 - EPA 3550B GC**

<b>Blank (8062031-BLK1)</b>		Prepared: 06/20/18 Analyzed: 06/23/18								
C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	114		"	102		112	65-135			
<b>LCS (8062031-BS1)</b>		Prepared: 06/20/18 Analyzed: 06/23/18								
C13-C28 (DRO)	540	10	mg/kg	510		107	75-125			
Surrogate: p-Terphenyl	111		"	102		109	65-135			
<b>Matrix Spike (8062031-MS1)</b>		<b>Source: T181997-01</b>		Prepared: 06/20/18 Analyzed: 06/23/18						
C13-C28 (DRO)	570	10	mg/kg	505	ND	113	75-125			
Surrogate: p-Terphenyl	111		"	101		110	65-135			
<b>Matrix Spike Dup (8062031-MSD1)</b>		<b>Source: T181997-01</b>		Prepared: 06/20/18 Analyzed: 06/23/18						
C13-C28 (DRO)	550	10	mg/kg	490	ND	113	75-125	2.38	20	
Surrogate: p-Terphenyl	111		"	98.0		113	65-135			

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**Metals by EPA 6010B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062034 - EPA 3050B**

**Blank (8062034-BLK1)**

Prepared: 06/20/18 Analyzed: 06/22/18

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

**LCS (8062034-BS1)**

Prepared: 06/20/18 Analyzed: 06/22/18

Arsenic	106	5.0	mg/kg	100		106	75-125			
Barium	105	1.0	"	100		105	75-125			
Cadmium	105	2.0	"	100		105	75-125			
Chromium	115	2.0	"	100		115	75-125			
Lead	103	3.0	"	100		103	75-125			

**Matrix Spike (8062034-MS1)**

Source: T181997-01

Prepared: 06/20/18 Analyzed: 06/22/18

Arsenic	93.9	5.0	mg/kg	93.5	4.64	95.5	75-125			
Barium	231	1.0	"	93.5	133	105	75-125			
Cadmium	96.8	2.0	"	93.5	ND	104	75-125			
Chromium	118	2.0	"	93.5	18.6	106	75-125			
Lead	93.5	3.0	"	93.5	ND	100	75-125			

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**Metals by EPA 6010B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062034 - EPA 3050B**

Matrix Spike Dup (8062034-MSD1)	Source: T181997-01			Prepared: 06/20/18		Analyzed: 06/22/18				
Arsenic	99.3	5.0	mg/kg	97.1	4.64	97.5	75-125	5.61	20	
Barium	235	1.0	"	97.1	133	105	75-125	1.68	20	
Cadmium	101	2.0	"	97.1	ND	104	75-125	4.63	20	
Chromium	125	2.0	"	97.1	18.6	110	75-125	6.41	20	
Lead	99.4	3.0	"	97.1	ND	102	75-125	6.17	20	

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**Cold Vapor Extraction EPA 7470/7471 - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062033 - EPA 7471A Soil**

<b>Blank (8062033-BLK1)</b>		Prepared: 06/20/18 Analyzed: 06/21/18								
Mercury	ND	0.10	mg/kg							
<b>LCS (8062033-BS1)</b>		Prepared: 06/20/18 Analyzed: 06/21/18								
Mercury	0.331	0.10	mg/kg	0.403		82.2	80-120			
<b>Matrix Spike (8062033-MS1)</b>		<b>Source: T181942-11</b>		Prepared: 06/20/18 Analyzed: 06/21/18						
Mercury	0.744	0.10	mg/kg	0.397	0.391	88.7	75-125			
<b>Matrix Spike Dup (8062033-MSD1)</b>		<b>Source: T181942-11</b>		Prepared: 06/20/18 Analyzed: 06/21/18						
Mercury	0.615	0.10	mg/kg	0.403	0.391	55.5	75-125	18.9	20	QR-04

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AECOM	Project: Fremont HS	
999 W. Town and Country Road	Project Number: 60578944.1	Reported:
Orange CA, 92868-4713	Project Manager: Laurie Fernandez	06/26/18 10:35

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062032 - EPA 5030 GCMS**

**Blank (8062032-BLK1)**

Prepared & Analyzed: 06/20/18

Bromobenzene	ND	5.0	ug/kg
Bromochloromethane	ND	5.0	"
Bromodichloromethane	ND	5.0	"
Bromoform	ND	5.0	"
Bromomethane	ND	5.0	"
n-Butylbenzene	ND	5.0	"
sec-Butylbenzene	ND	5.0	"
tert-Butylbenzene	ND	5.0	"
Carbon tetrachloride	ND	5.0	"
Chlorobenzene	ND	5.0	"
Chloroethane	ND	5.0	"
Chloroform	ND	5.0	"
Chloromethane	ND	5.0	"
2-Chlorotoluene	ND	5.0	"
4-Chlorotoluene	ND	5.0	"
Dibromochloromethane	ND	5.0	"
1,2-Dibromo-3-chloropropane	ND	10	"
1,2-Dibromoethane (EDB)	ND	5.0	"
Dibromomethane	ND	5.0	"
1,2-Dichlorobenzene	ND	5.0	"
1,3-Dichlorobenzene	ND	5.0	"
1,4-Dichlorobenzene	ND	5.0	"
Dichlorodifluoromethane	ND	5.0	"
1,1-Dichloroethane	ND	5.0	"
1,2-Dichloroethane	ND	5.0	"
1,1-Dichloroethene	ND	5.0	"
cis-1,2-Dichloroethene	ND	5.0	"
trans-1,2-Dichloroethene	ND	5.0	"
1,2-Dichloropropane	ND	5.0	"
1,3-Dichloropropane	ND	5.0	"
2,2-Dichloropropane	ND	5.0	"
1,1-Dichloropropene	ND	5.0	"
cis-1,3-Dichloropropene	ND	5.0	"
trans-1,3-Dichloropropene	ND	5.0	"
Hexachlorobutadiene	ND	5.0	"
Isopropylbenzene	ND	5.0	"

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062032 - EPA 5030 GCMS**

**Blank (8062032-BLK1)**

Prepared & Analyzed: 06/20/18

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: 4-Bromofluorobenzene	38.6		"	40.0		96.5	81.2-123			
Surrogate: Dibromofluoromethane	37.8		"	40.0		94.4	95.7-135			S-GC
Surrogate: Toluene-d8	39.9		"	40.0		99.8	85.5-116			

**LCS (8062032-BS1)**

Prepared: 06/20/18 Analyzed: 06/21/18

Chlorobenzene	81.6	5.0	ug/kg	99.2		82.3	75-125			
1,1-Dichloroethene	89.3	5.0	"	99.2		90.0	75-125			
Trichloroethene	77.9	5.0	"	99.2		78.5	75-125			
Benzene	82.2	5.0	"	99.2		82.8	75-125			
Toluene	81.0	5.0	"	99.2		81.6	75-125			
Surrogate: 4-Bromofluorobenzene	41.0		"	39.7		103	81.2-123			
Surrogate: Dibromofluoromethane	40.6		"	39.7		102	95.7-135			
Surrogate: Toluene-d8	40.1		"	39.7		101	85.5-116			

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AECOM	Project: Fremont HS	
999 W. Town and Country Road	Project Number: 60578944.1	Reported:
Orange CA, 92868-4713	Project Manager: Laurie Fernandez	06/26/18 10:35

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 8062032 - EPA 5030 GCMS**

**Matrix Spike (8062032-MS1)**

Source: T181997-01

Prepared: 06/20/18 Analyzed: 06/21/18

Chlorobenzene	97.1	5.0	ug/kg	99.4	ND	97.7	75-125			
1,1-Dichloroethene	104	5.0	"	99.4	ND	105	75-125			
Trichloroethene	96.7	5.0	"	99.4	ND	97.3	75-125			
Benzene	98.8	5.0	"	99.4	ND	99.4	75-125			
Toluene	96.0	5.0	"	99.4	ND	96.6	75-125			
Surrogate: 4-Bromofluorobenzene	41.2		"	39.8		104	81.2-123			
Surrogate: Dibromofluoromethane	41.7		"	39.8		105	95.7-135			
Surrogate: Toluene-d8	40.6		"	39.8		102	85.5-116			

**Matrix Spike Dup (8062032-MSD1)**

Source: T181997-01

Prepared: 06/20/18 Analyzed: 06/21/18

Chlorobenzene	103	5.0	ug/kg	100	ND	103	75-125	5.69	20	
1,1-Dichloroethene	113	5.0	"	100	ND	113	75-125	8.31	20	
Trichloroethene	103	5.0	"	100	ND	103	75-125	6.66	20	
Benzene	107	5.0	"	100	ND	107	75-125	8.28	20	
Toluene	103	5.0	"	100	ND	103	75-125	7.34	20	
Surrogate: 4-Bromofluorobenzene	41.0		"	40.0		103	81.2-123			
Surrogate: Dibromofluoromethane	43.1		"	40.0		108	95.7-135			
Surrogate: Toluene-d8	40.5		"	40.0		101	85.5-116			

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rose Fasheh, Project Manager





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AECOM 999 W. Town and Country Road Orange CA, 92868-4713	Project: Fremont HS Project Number: 60578944.1 Project Manager: Laurie Fernandez	Reported: 06/26/18 10:35
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**Notes and Definitions**

- S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- QR-04 The percent recovery and/or RPD was outside acceptance criteria. Results accepted based upon percent recovery results in duplicate QC sample and the CCV and CCB results.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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