

# QC Sample Results

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

Job ID: 440-272708-1

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID: 440-272872-B-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 627351**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 627173**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.00400	0.00421		mg/L		105	75 - 125

**Lab Sample ID: 440-272872-B-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 627351**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 627173**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		0.00400	0.00386		mg/L		97	75 - 125	8	20

## Method: 350.1 - Nitrogen, Ammonia

**Lab Sample ID: MB 440-627188/10**  
**Matrix: Water**  
**Analysis Batch: 627188**

**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			10/09/20 13:27	1

**Lab Sample ID: LCS 440-627188/11**  
**Matrix: Water**  
**Analysis Batch: 627188**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	5.00	5.25		mg/L		105	90 - 110

**Lab Sample ID: MRL 440-627188/9**  
**Matrix: Water**  
**Analysis Batch: 627188**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	0.200	0.252		mg/L		126	50 - 150

**Lab Sample ID: 440-272884-O-1 MS**  
**Matrix: Water**  
**Analysis Batch: 627188**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	0.14	J	5.00	5.15		mg/L		100	90 - 110

**Lab Sample ID: 440-272884-O-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 627188**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	0.14	J	5.00	5.06		mg/L		98	90 - 110	2	15

# QC Sample Results

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

Job ID: 440-272708-1

## Method: 351.2 - Nitrogen, Total Kjeldahl

**Lab Sample ID: MB 570-100462/5-A**  
**Matrix: Water**  
**Analysis Batch: 100460**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 100462**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		0.20	0.047	mg/L		10/08/20 10:00	10/08/20 13:42	1

**Lab Sample ID: LCS 570-100462/6-A**  
**Matrix: Water**  
**Analysis Batch: 100460**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 100462**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	1.00	0.975		mg/L		98	90 - 110

**Lab Sample ID: LCSD 570-100462/7-A**  
**Matrix: Water**  
**Analysis Batch: 100460**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 100462**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	1.00	0.998		mg/L		100	90 - 110	2	20

**Lab Sample ID: 240-137351-V-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 100460**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 100462**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	0.74	F1	1.00	2.04	F1	mg/L		130	90 - 110

**Lab Sample ID: 240-137351-V-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 100460**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 100462**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Kjeldahl Nitrogen	0.74	F1	1.00	1.88	F1	mg/L		114	90 - 110	8	20

## Method: 410.4 - COD

**Lab Sample ID: MB 440-627143/3**  
**Matrix: Water**  
**Analysis Batch: 627143**

**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			10/09/20 10:44	1

**Lab Sample ID: LCS 440-627143/4**  
**Matrix: Water**  
**Analysis Batch: 627143**

**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

# QC Sample Results

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

Job ID: 440-272708-1

## Method: 410.4 - COD (Continued)

**Lab Sample ID: 440-272529-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 627143**

**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	78		200	287		mg/L		104	70 - 120

**Lab Sample ID: 440-272529-B-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 627143**

**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	78		200	282		mg/L		102	70 - 120	2	15

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

**Lab Sample ID: MB 440-626761/1**  
**Matrix: Water**  
**Analysis Batch: 626761**

**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			10/06/20 10:35	1

**Lab Sample ID: LCS 440-626761/2**  
**Matrix: Water**  
**Analysis Batch: 626761**

**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	970		mg/L		97	90 - 110

**Lab Sample ID: 440-272680-B-4 DU**  
**Matrix: Water**  
**Analysis Batch: 626761**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	550		568		mg/L		3	5

## Method: SM 2540D - Solids, Total Suspended (TSS)

**Lab Sample ID: MB 440-626807/1**  
**Matrix: Water**  
**Analysis Batch: 626807**

**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			10/06/20 14:49	1

**Lab Sample ID: LCS 440-626807/2**  
**Matrix: Water**  
**Analysis Batch: 626807**

**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	996		mg/L		100	85 - 115

# QC Sample Results

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

Job ID: 440-272708-1

## Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 440-272703-B-1 DU  
Matrix: Water  
Analysis Batch: 626807

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	240		263		mg/L		9	10

## Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 440-626889/1-A  
Matrix: Water  
Analysis Batch: 626925

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 626889

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.025	0.013	mg/L		10/07/20 10:52	10/07/20 14:54	1

Lab Sample ID: LCS 440-626889/2-A  
Matrix: Water  
Analysis Batch: 626925

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 626889

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.200	0.191		mg/L		96	80 - 120

Lab Sample ID: 440-272658-A-7-B MS  
Matrix: Water  
Analysis Batch: 626925

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 626889

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	ND		0.200	0.194		mg/L		97	75 - 125

Lab Sample ID: 440-272658-A-7-C MSD  
Matrix: Water  
Analysis Batch: 626925

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 626889

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Cyanide, Total	ND		0.200	0.202		mg/L		101	75 - 125	4	20

## Method: SM 4500 H+ B - pH

Lab Sample ID: 440-272708-1 DU  
Matrix: Water  
Analysis Batch: 626720

Client Sample ID: LR-2R  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.4		SU		0.1	2

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

Lab Sample ID: MB 440-627068/3  
Matrix: Water  
Analysis Batch: 627068

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			10/08/20 17:25	1

# QC Sample Results

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

Job ID: 440-272708-1

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

**Lab Sample ID: LCS 440-627068/4**  
**Matrix: Water**  
**Analysis Batch: 627068**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.501	0.442		mg/L		88	80 - 120

**Lab Sample ID: 440-272786-L-1 MS**  
**Matrix: Water**  
**Analysis Batch: 627068**

**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	0.501	0.345	F1	mg/L		69	70 - 130

**Lab Sample ID: 440-272786-L-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 627068**

**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 Sulfide	ND	F1	0.501	0.398		mg/L		79	70 - 130	14	30

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-626731/1**  
**Matrix: Water**  
**Analysis Batch: 626731**

**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			10/06/20 08:23	1

**Lab Sample ID: LCS 440-626731/5**  
**Matrix: Water**  
**Analysis Batch: 626731**

**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	203		mg/L		102	85 - 115

**Lab Sample ID: LCSD 440-626731/6**  
**Matrix: Water**  
**Analysis Batch: 626731**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Biochemical Oxygen Demand	199	203		mg/L		102	85 - 115	0	20

**Lab Sample ID: LCSD 440-626731/7**  
**Matrix: Water**  
**Analysis Batch: 626731**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Biochemical Oxygen Demand	199	198		mg/L		99	85 - 115	3	20

# QC Sample Results

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

Job ID: 440-272708-1

## Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: 440-272695-A-1 DU  
Matrix: Water  
Analysis Batch: 626731

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Biochemical Oxygen Demand	5.7		5.73		mg/L		0.7	20

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

# QC Association Summary

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

Job ID: 440-272708-1

## GC/MS VOA

### Analysis Batch: 100980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8260B	
440-272708-2	Deep Leachate	Total/NA	Water	8260B	
440-272708-3	Field Blank	Total/NA	Water	8260B	
440-272708-4	Trip Blank	Total/NA	Water	8260B	
MB 570-100980/7	Method Blank	Total/NA	Water	8260B	
LCS 570-100980/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-100980/4	Lab Control Sample Dup	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 99867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	3510C	
440-272708-2	Deep Leachate	Total/NA	Water	3510C	
MB 570-99867/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-99867/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-99867/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Prep Batch: 100001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	3510C	
440-272708-2	Deep Leachate	Total/NA	Water	3510C	
MB 570-100001/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-100001/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-100001/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
440-272708-1 MS	LR-2R	Total/NA	Water	3510C	
440-272708-1 MSD	LR-2R	Total/NA	Water	3510C	

### Analysis Batch: 100088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8270C	99867
440-272708-2	Deep Leachate	Total/NA	Water	8270C	99867
MB 570-99867/1-A	Method Blank	Total/NA	Water	8270C	99867
LCS 570-99867/2-A	Lab Control Sample	Total/NA	Water	8270C	99867
LCSD 570-99867/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	99867

### Analysis Batch: 100093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-2	Deep Leachate	Total/NA	Water	8270C SIM ID	100001
MB 570-100001/1-A	Method Blank	Total/NA	Water	8270C SIM ID	100001
LCS 570-100001/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	100001
LCSD 570-100001/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	100001
440-272708-1 MS	LR-2R	Total/NA	Water	8270C SIM ID	100001
440-272708-1 MSD	LR-2R	Total/NA	Water	8270C SIM ID	100001

### Analysis Batch: 100150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8270C	99867
440-272708-2	Deep Leachate	Total/NA	Water	8270C	99867
MB 570-99867/1-A	Method Blank	Total/NA	Water	8270C	99867
LCS 570-99867/2-A	Lab Control Sample	Total/NA	Water	8270C	99867

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# QC Association Summary

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

Job ID: 440-272708-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 100150 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-99867/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	99867

### Analysis Batch: 100439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8270C SIM ID	100001

### Prep Batch: 100608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	3510C	
440-272708-2	Deep Leachate	Total/NA	Water	3510C	
MB 570-100608/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-100608/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-100608/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 101135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8270C LL	100608
440-272708-2	Deep Leachate	Total/NA	Water	8270C LL	100608
LCS 570-100608/2-A	Lab Control Sample	Total/NA	Water	8270C LL	100608
LCSD 570-100608/3-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	100608

### Analysis Batch: 101406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-100608/1-A	Method Blank	Total/NA	Water	8270C LL	100608

## GC Semi VOA

### Prep Batch: 99960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	3510C	
440-272708-2	Deep Leachate	Total/NA	Water	3510C	
MB 570-99960/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-99960/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 570-99960/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-99960/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 570-99960/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 100333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8082	99960
440-272708-2	Deep Leachate	Total/NA	Water	8082	99960
MB 570-99960/1-A	Method Blank	Total/NA	Water	8082	99960
LCS 570-99960/4-A	Lab Control Sample	Total/NA	Water	8082	99960
LCSD 570-99960/5-A	Lab Control Sample Dup	Total/NA	Water	8082	99960

### Prep Batch: 100450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	3510C	
440-272708-2	Deep Leachate	Total/NA	Water	3510C	
MB 570-100450/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-100450/2-A	Lab Control Sample	Total/NA	Water	3510C	

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# QC Association Summary

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

Job ID: 440-272708-1

## GC Semi VOA (Continued)

### Prep Batch: 100450 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-100450/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 100502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8081A	99960
440-272708-2	Deep Leachate	Total/NA	Water	8081A	99960
MB 570-99960/1-A	Method Blank	Total/NA	Water	8081A	99960
LCS 570-99960/2-A	Lab Control Sample	Total/NA	Water	8081A	99960
LCSD 570-99960/3-A	Lab Control Sample Dup	Total/NA	Water	8081A	99960

### Analysis Batch: 100729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8141A	100450
440-272708-2	Deep Leachate	Total/NA	Water	8141A	100450
MB 570-100450/1-A	Method Blank	Total/NA	Water	8141A	100450
LCS 570-100450/2-A	Lab Control Sample	Total/NA	Water	8141A	100450
LCSD 570-100450/3-A	Lab Control Sample Dup	Total/NA	Water	8141A	100450

### Prep Batch: 100935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8151A	
440-272708-2	Deep Leachate	Total/NA	Water	8151A	
MB 570-100935/1-A	Method Blank	Total/NA	Water	8151A	
LCS 570-100935/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 570-100935/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	
570-40484-A-1-A MS	Matrix Spike	Total/NA	Water	8151A	
570-40484-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	8151A	

### Analysis Batch: 101752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-100935/1-A	Method Blank	Total/NA	Water	8151A	100935
LCS 570-100935/2-A	Lab Control Sample	Total/NA	Water	8151A	100935
LCSD 570-100935/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	100935
570-40484-A-1-A MS	Matrix Spike	Total/NA	Water	8151A	100935
570-40484-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	8151A	100935

### Analysis Batch: 102013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	8151A	100935
440-272708-2	Deep Leachate	Total/NA	Water	8151A	100935

## HPLC/IC

### Analysis Batch: 626618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	300.0	
440-272708-2	Deep Leachate	Total/NA	Water	300.0	
MB 440-626618/6	Method Blank	Total/NA	Water	300.0	
LCS 440-626618/5	Lab Control Sample	Total/NA	Water	300.0	
440-272697-G-4 MS	Matrix Spike	Total/NA	Water	300.0	
440-272697-G-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Eurofins Calscience Irvine

# QC Association Summary

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

Job ID: 440-272708-1

## Metals

### Prep Batch: 627035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total Recoverable	Water	3005A	
440-272708-2	Deep Leachate	Total Recoverable	Water	3005A	
MB 440-627035/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-627035/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-272697-I-4-C MS	Matrix Spike	Total Recoverable	Water	3005A	
440-272697-I-4-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 627164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total Recoverable	Water	6010B	627035
440-272708-2	Deep Leachate	Total Recoverable	Water	6010B	627035
MB 440-627035/1-A	Method Blank	Total Recoverable	Water	6010B	627035
LCS 440-627035/2-A	Lab Control Sample	Total Recoverable	Water	6010B	627035
440-272697-I-4-C MS	Matrix Spike	Total Recoverable	Water	6010B	627035
440-272697-I-4-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	627035

### Prep Batch: 627173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	7470A	
440-272708-2	Deep Leachate	Total/NA	Water	7470A	
MB 440-627173/1-A	Method Blank	Total/NA	Water	7470A	
LCS 440-627173/2-A	Lab Control Sample	Total/NA	Water	7470A	
440-272872-B-1-B MS	Matrix Spike	Total/NA	Water	7470A	
440-272872-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

### Analysis Batch: 627351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	7470A	627173
440-272708-2	Deep Leachate	Total/NA	Water	7470A	627173
MB 440-627173/1-A	Method Blank	Total/NA	Water	7470A	627173
LCS 440-627173/2-A	Lab Control Sample	Total/NA	Water	7470A	627173
440-272872-B-1-B MS	Matrix Spike	Total/NA	Water	7470A	627173
440-272872-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	627173

## General Chemistry

### Analysis Batch: 100460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	351.2	100462
440-272708-2	Deep Leachate	Total/NA	Water	351.2	100462
MB 570-100462/5-A	Method Blank	Total/NA	Water	351.2	100462
LCS 570-100462/6-A	Lab Control Sample	Total/NA	Water	351.2	100462
LCSD 570-100462/7-A	Lab Control Sample Dup	Total/NA	Water	351.2	100462
240-137351-V-1-B MS	Matrix Spike	Total/NA	Water	351.2	100462
240-137351-V-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	100462

### Prep Batch: 100462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	351.2	
440-272708-2	Deep Leachate	Total/NA	Water	351.2	
MB 570-100462/5-A	Method Blank	Total/NA	Water	351.2	

Eurofins Calscience Irvine

# QC Association Summary

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

Job ID: 440-272708-1

## General Chemistry (Continued)

### Prep Batch: 100462 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-100462/6-A	Lab Control Sample	Total/NA	Water	351.2	
LCSD 570-100462/7-A	Lab Control Sample Dup	Total/NA	Water	351.2	
240-137351-V-1-B MS	Matrix Spike	Total/NA	Water	351.2	
240-137351-V-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	351.2	

### Analysis Batch: 626720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	SM 4500 H+ B	
440-272708-2	Deep Leachate	Total/NA	Water	SM 4500 H+ B	
440-272708-1 DU	LR-2R	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 626731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	SM5210B	
440-272708-2	Deep Leachate	Total/NA	Water	SM5210B	
USB 440-626731/1	Method Blank	Total/NA	Water	SM5210B	
LCS 440-626731/5	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-626731/6	Lab Control Sample Dup	Total/NA	Water	SM5210B	
LCSD 440-626731/7	Lab Control Sample Dup	Total/NA	Water	SM5210B	
440-272695-A-1 DU	Duplicate	Total/NA	Water	SM5210B	

### Analysis Batch: 626761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	SM 2540C	
440-272708-2	Deep Leachate	Total/NA	Water	SM 2540C	
MB 440-626761/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-626761/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-272680-B-4 DU	Duplicate	Total/NA	Water	SM 2540C	

### Analysis Batch: 626807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	SM 2540D	
440-272708-2	Deep Leachate	Total/NA	Water	SM 2540D	
MB 440-626807/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 440-626807/2	Lab Control Sample	Total/NA	Water	SM 2540D	
440-272703-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	

### Prep Batch: 626889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	Distill/CN	
440-272708-2	Deep Leachate	Total/NA	Water	Distill/CN	
MB 440-626889/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 440-626889/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
440-272658-A-7-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-272658-A-7-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	

### Analysis Batch: 626925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	SM 4500 CN E	626889
440-272708-2	Deep Leachate	Total/NA	Water	SM 4500 CN E	626889
MB 440-626889/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	626889

Eurofins Calscience Irvine

# QC Association Summary

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

Job ID: 440-272708-1

## General Chemistry (Continued)

### Analysis Batch: 626925 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-626889/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	626889
440-272658-A-7-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	626889
440-272658-A-7-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	626889

### Analysis Batch: 627068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	SM 4500 S2 D	
440-272708-2	Deep Leachate	Total/NA	Water	SM 4500 S2 D	
MB 440-627068/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-627068/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-272786-L-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
440-272786-L-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 627143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	410.4	
440-272708-2	Deep Leachate	Total/NA	Water	410.4	
MB 440-627143/3	Method Blank	Total/NA	Water	410.4	
LCS 440-627143/4	Lab Control Sample	Total/NA	Water	410.4	
440-272529-B-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-272529-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

### Analysis Batch: 627188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-272708-1	LR-2R	Total/NA	Water	350.1	
440-272708-2	Deep Leachate	Total/NA	Water	350.1	
MB 440-627188/10	Method Blank	Total/NA	Water	350.1	
LCS 440-627188/11	Lab Control Sample	Total/NA	Water	350.1	
MRL 440-627188/9	Lab Control Sample	Total/NA	Water	350.1	
440-272884-O-1 MS	Matrix Spike	Total/NA	Water	350.1	
440-272884-O-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

# Definitions/Glossary

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

Job ID: 440-272708-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD 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.

### GC/MS VOA TICs

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Indicates an Estimated Value for TICs
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*3	ISTD response or retention time outside acceptable 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.
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.
X	Surrogate recovery exceeds control limits

### GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate recovery exceeds 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
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 exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
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
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)

## Definitions/Glossary

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

Job ID: 440-272708-1

### Glossary (Continued)

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

EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Accreditation/Certification Summary

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

Job ID: 440-272708-1

## Laboratory: Eurofins Calscience Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-21
Arizona	State	AZ0671	10-13-20
California	Los Angeles County Sanitation Districts	10256	06-30-21
California	State	2706	06-30-21
Guam	State	20-004R	01-23-21
Hawaii	State	CA01531	01-29-21
Kansas	NELAP	E-10420	07-31-21
Nevada	State	CA015312021-1	07-31-21
Oregon	NELAP	4028 - 008	01-29-21
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-21

## Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-20
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-29-21
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

# Chain of Custody Record



Environment Testing  
TestAmerica

Address: \_\_\_\_\_ TAL-8210

Regulatory Program:  DW  NPDES  RCRA  Other

Project Manager: Kyle W. Schenck  
 Telf: 777-626-2282  
 Email: kwschenck@eurofins.com

Client Contact  
 Company Name: Geo-Logic Associates  
 Address: 2777 E. Gresham Rd. Suite 101  
 City/State/Zip: Ontario, CA 91761  
 Phone: 909-626-2282  
 Fax: 909-626-1233  
 Project Name: Republic Services Leachate Sampling  
 Site: Sunshine Canyon Leachate  
 PO# \_\_\_\_\_

Site Contact: Jose  
 Lab Contact: Robyn  
 Date: 10-6-20  
 Carrier: Bureau  
 COC No.: \_\_\_\_\_ of \_\_\_\_\_ COCs  
 Sampler: M. Campbell  
 For Lab Use Only:  
 Walk-in Client:  
 Lab Sampling:  
 Job / SDG No.: 50201006

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
LR-2R	10-5-20	11:15	G	Leachate	26	M	X	
Deep Leachate		11:45	G	Leachate	26	X	X	
Field Blank			G	Lab	4	X	X	
Tap Blank			G	Lab	4	X	X	

Sample Specific Notes:  
 EPA 3762 Appendix II  
 EPA 3351 Appendix II  
 EPA 6010B Appendix II  
 EPA 6010C Appendix II  
 EPA 6010D Appendix II  
 EPA 6010E Appendix II  
 EPA 6010F Appendix II  
 EPA 6010G Appendix II  
 EPA 6010H Appendix II  
 EPA 6010I Appendix II  
 EPA 6010J Appendix II  
 EPA 6010K Appendix II  
 EPA 6010L Appendix II  
 EPA 6010M Appendix II  
 EPA 6010N Appendix II  
 EPA 6010O Appendix II  
 EPA 6010P Appendix II  
 EPA 6010Q Appendix II  
 EPA 6010R Appendix II  
 EPA 6010S Appendix II  
 EPA 6010T Appendix II  
 EPA 6010U Appendix II  
 EPA 6010V Appendix II  
 EPA 6010W Appendix II  
 EPA 6010X Appendix II  
 EPA 6010Y Appendix II  
 EPA 6010Z Appendix II

Barcode: 440-272708 Chain of Custody

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  
 Dispose by Lab  
 Archive for \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:  
 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  Unknown

Custody Seal No.: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Company: Geo-Logic Associates  
 Date/Time: 10/5/20 1415  
 Company: EC-IRV  
 Date/Time: 10/5/20 1652  
 Company: EC-IRV  
 Date/Time: 10/20/20 1652

Therm ID No.: 09/110 1.5/0.6 12-13  
 Cooler Temp. (°C) Obs'd: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Received In Laboratory by: \_\_\_\_\_





**Eurofins Calscience Irvine**

17461 Derian Ave Suite 100  
Irvine, CA 92614-5817  
Phone: 949-261-1022 Fax: 949-260-3297

**Chain of Custody Record**



**eurofins** Environment Testing America

<b>Client Information (Sub Contract Lab)</b>	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:	Phone:	Tomova, Rossina D		440-162637.1
Shipping/Receiving		E-Mail:	State of Origin:	Page:
		Rossina.Tomova@Eurofinset.com	California	Page 1 of 1

Company: Eurofins Calscience LLC	Accreditations Required (See note):	Job #: 440-272708-1
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Address: 7440 Lincoln Way,	Due Date Requested: 10/16/2020	<b>Analysis Requested</b>	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S 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)
City: Garden Grove	TAT Requested (days):		
State, Zip: CA, 92841	PO #:		
Phone: 714-895-5494(Tel) 714-894-7501(Fax)	WO #:		
Email:			
Project Name: Republic Sunshine Canyon	Project #: 44007851		
Site:	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, An=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested													Total Number of containers	Special Instructions/Note:
							8260B_LL/8030C (MOD) Appendix II +MTBE+TBA+TCS	8260B_LL/8030C_UP (MOD) A+A	8081A/3510C Standard 8081A Pesticide list	8082/3510C Standard 8082 PCB list	8141A_LL/8510C_LL 8141-Full appendix II	8151A/8151A_AP 8151A (herbicides) appendix II list	8270C_SIM_MS_ID/3510C 1,4-Dioxane - SIM_MS_ID	8270C/3510C (MOD) 8270C-appendix II-low level	8270C_LL/8510C_LL (MOD) 8270C-appendix II-low level	351.2/351.2_Prep Total Kjeldahl Nitrogen (TKN)					
LR-2R (440-272708-1)	10/5/20	09:15 Pacific		Water	X	X	X	X	X	X	X	X	X	X	X	X	X	19			
Deep Leachate (440-272708-2)	10/5/20	11:45 Pacific		Water		X	X	X	X	X	X	X	X	X	X	X	X	19			
Field Blank (440-272708-3)	10/5/20	00:01 Pacific		Water		X	X											4			
Trip Blank (440-272708-4)	10/5/20	00:01 Pacific		Water		X	X											4			

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

<b>Possible Hazard Identification</b>	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>
Unconfirmed	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:
Primary Deliverable Rank: 2	

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10-6-20 8:25	Company: E-ITL	Received by:  Date/Time: 10/6/2020 0825
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2-8/2-0, 2-6/1-8 JGK
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## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-272708-1

**Login Number: 272708**

**List Number: 1**

**Creator: Escalante, Maria I**

**List Source: Eurofins 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	

# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-272708-1

**Login Number: 272708**

**List Number: 2**

**Creator: Cortez Diaz, Antonio**

**List Source: Eurofins Calscience**

**List Creation: 10/06/20 02:36 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8/2.0 2.6/1.8
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?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Isotope Dilution Summary

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

Job ID: 440-272708-1

**Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-150)
440-272708-1	LR-2R	41 *3
440-272708-1 MS	LR-2R	67
440-272708-1 MSD	LR-2R	65
440-272708-2	Deep Leachate	20
LCS 570-100001/2-A	Lab Control Sample	45
LCSD 570-100001/3-A	Lab Control Sample Dup	46
MB 570-100001/1-A	Method Blank	48

### Surrogate Legend

DXE = 1,4-Dioxane-d8



## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: Sunshine Cyn Re-test Project No.: 5020.1006  
 Well I.D.: DW-5A and DW-5B Sampling Date: 11-19-20  
 Collected By: ML Purge start Time: 8:03  
 Casing Diameter (inches): 4 Purge Stop time: 8:29  
 Starting Water Level: 13.35 Sampling (Well Recovery) Time: 8:39  
 Total Depth (feet): 100.46 Ending Water Level (feet): 17.11  
 Water column (feet): 87.11 Total Purged (gallons): 2.5  
 Screen Length (feet): \_\_\_\_\_ Duplicate Sample: YES  NO  
 Sample Method:  Micro Purge  Low Flow  
 Horiba Model S/N: U-52/W5412BQ Field Blank taken at this well

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
8:14	1.0	14.92	8.01	1.58	3.0	1.83	18.43	-89
8:19	1.5	15.73	8.03	1.58	2.9	1.28	18.52	-112
8:22	1.75	16.03	8.03	1.58	2.7	1.24	18.53	-125
8:24	2.0	16.48	8.03	1.58	2.6	1.19	18.53	-127
8:27	2.25	16.80	8.03	1.57	2.5	1.16	18.54	-132
8:29	2.50	17.11	8.04	1.57	2.6	1.14	18.53	-136

Purge Sampling Rates: 65 psi ref. 11 30 discharge 19  
water is clear with a slight odor

Well condition: OK

Additional Info/Comments: clear, cold, very windy  
Field Blank taken at this well

Name: Mike Campbell Signature: Mike Campbell

# GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility: <u>Sunshine Cyp</u>	Well ID: <u>DW-5</u>	Date: <u>11-19-20</u>
<b>Access:</b>		
Accessibility: Good: <input checked="" type="checkbox"/>	Fair: <input type="checkbox"/>	Poor: <input type="checkbox"/>
Vicinity of well clear of weeds and/or debris: Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>	
Presence of depressions or standing water around well: Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>	
Remarks: <u>concrete debris around the well</u>		
<b>Concrete Pad:</b>		
Integrity: Good: <input type="checkbox"/>	Inadequate: <input type="checkbox"/>	<u>NA</u>
Presence of depressions or standing water around well: Yes: <input type="checkbox"/>	No: <input type="checkbox"/>	
Remarks: <u>concrete pad is buried</u>		
<b>Protective Outer Casing:</b>		
Material: <u>metal</u>		
Condition of Protective Casing: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	
Condition of Locking Cap: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	
Condition of Lock: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	
Condition of Weepholes: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	
Remarks:		
<b>Well Riser:</b>		
Material: <u>PVC</u>		
Condition of Riser: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	
Condition of Riser Cap: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	
Measurement reference point: Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>	
Remarks:		
<b>Dedicated Pump:</b>		
Type: <u>Bladder</u>		
Condition: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	Missing: <input type="checkbox"/>
Pumping Rate (gpm): <u>NA</u>	Current (Hz): <u>NA</u>	
Remarks:		

Field Certification: Mull Campbell Field Tech 11-19-20  
 Signed Title Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

**Site Name:** Sunshine Cyn Re-test **Project No.:** 5020-1006  
**Well I.D.:** P2-2A and P2-2B **Sampling Date:** 11-19-20  
**Collected By:** ML **Purge start Time:** 10:59  
**Casing Diameter (inches):** 2 **Purge Stop time:** 11:29  
**Starting Water Level:** 121.02 **Sampling (Well Recovery) Time:** 11:34  
**Total Depth (feet):** 157.53 **Ending Water Level (feet):** 127.05  
**Water column (feet):** 36.51 **Total Purged (gallons):** 2.0  
**Screen Length (feet):** \_\_\_\_\_ **Duplicate Sample:** YES  NO   
**Sample Method:** Micro Purge  Low Flow   
**Horiba Model S/N:** U-52/W541WB00

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
11:08	0.5	122.92	8.18	4.92	1.3	2.82	24.20	-150
11:15	1.0	124.54	8.33	5.03	0.9	2.69	23.90	-106
11:18	1.25	125.32	8.33	5.03	0.0	2.49	23.86	-96
11:22	1.50	126.07	8.33	5.03	0.0	2.40	23.89	-93
11:25	1.75	126.57	8.33	5.03	0.0	2.37	23.86	-91
11:29	2.0	127.05	8.33	5.03	0.0	2.34	23.86	-90

**Purge Sampling Rates:** 80 psi refill 30 discharge 19

**Well condition:** OK across a concrete channel to the well, required carrying sampling equipment and sample bottles  
**Additional Info/Comments:** clear, mild, very windy

**Name:** Mike Campbell **Signature:** Mike Campbell



GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility: <u>Sunshine Cyn</u>		Well ID: <u>PZ-2</u>		Date: <u>11-19-20</u>	
Access:					
Accessibility:		Good: _____	Fair: _____	Poor: <u>✓</u>	
Vicinity of well clear of weeds and/or debris:				Yes: _____	No: <u>✓</u>
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>Required carrying sampling equipment and containers across concrete channel</u>					
Concrete Pad:					
Integrity:		Good: _____	Inadequate: _____	<u>NA</u>	
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>NO concrete pad well inside 36" HDPE pipe</u>					
Protective Outer Casing:		Material: <u>metal</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: <u>✓</u>	Damaged: _____		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: <u>✓</u>	Damaged: _____		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____	Missing: _____	
Pumping Rate (gpm):		<u>NA</u>	Current (Hz): <u>NA</u>		
Remarks:					

Field Certification: Mike Campbell Signed      Field Tech Title      11-19-20 Date

# Geo-Logic ASSOCIATES

## FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) Sunshine Cyn PROJECT NAME / NUMBER 5020, 1006

Instrument Make/Model # u-52/w541w600

Date/Time	pH	Electrical Conductivity (µMhos/cm) (4.49 mg/Kg)	Turbidity (NTU) (0)	DO (mg/L or %)	Guidance Remarks	Comments
11-19-20 7:03						
Pre. Cal	4.10	4.50	0.3	9.74		
Calibration	4.60	4.49	0.0	10.66		
Calibration Successful? (Y/N)	yes					
Satisfies Protocol?	yes					
Calibration by	m					
Physical Condition of Unit					Good	
					Did calibration meet criteria in the sampling protocol? (Y or N)	
					enter YES or NO	
					Signature or initials	<i>m</i>

# Chain of Custody Record

Address: \_\_\_\_\_ Regulatory Program:  DW  WDES  RCRA  Other: \_\_\_\_\_

**Client Contact**  
 Company Name: Geo-Logic Associates  
 Address: 11415 West Bernardo Ct  
 City/State/Zip: San Diego, CA 92127  
 Phone: 658-481-1136  
 Fax: 658-451-1085  
 Project Name: Republic Services  
 Site: Sunshard Canyon L/E  
 P O # \_\_\_\_\_

**Project Manager:** Kelly Welch  
**Tel/Fax:** Kelly Welch  
**Analysis Turnaround Time:** \_\_\_\_\_  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below: \_\_\_\_\_  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact:** Fish Mills  
**Lab Contact:** Assin. Toward  
**Date:** 11-19-20  
**Carrier:** 77A

**COC No:** \_\_\_\_\_ of \_\_\_\_\_ COCs  
**Sampler:** M. Scaphid  
**For Lab Use Only:** \_\_\_\_\_  
**Walk-in Client:** \_\_\_\_\_  
**Lab Sampling:** \_\_\_\_\_  
**Job / SDG No.:** 5020-1006

Sample Identification	Sample Date	Sample Time	Sample Type (G-cont, G-cont)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS/MSD (Y/N)	
						Y	N	Y	N
DW-5A	11-19-20	0839	G	GW	6	N	X	X	
DW-5B		0839	G	GW	6	N	X	X	
PZ-2-A		1134	G	GW	1	N	X	X	
PZ-2-B		1134	G	GW	1	N	X	X	
Field Blank				Lab	4		X	X	
Trip Blank				Lab	2		X	X	

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

**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/OC Requirements & Comments:** \_\_\_\_\_

**Custody Seal Intact:**  Yes  No  
**Custody Seal No.:** \_\_\_\_\_  
**Cooler Temp. (C):** Obs'd: \_\_\_\_\_  
**Term ID No.:** \_\_\_\_\_

**Relinquished by:** Mike Capell  
 Company: Geo-Logic Associates  
 Date/Time: 11-19-20  
 Received by: William Rivera  
 Company: FCI-RV  
 Date/Time: 11/19/20 1403

**Relinquished by:** \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

## ANALYTICAL REPORT

Eurofins Calscience Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-275154-1

Client Project/Site: Republic Sunshine Canyon  
Revision: 1

**For:**

Geo-Logic Associates  
11415 West Bernardo Court  
Suite 200  
San Diego, California 92127

Attn: Kyle Welchans



Authorized for release by:  
2/10/2021 3:02:47 PM

Rossina Tomova, Project Manager I  
(949)260-3276  
[Rossina.Tomova@Eurofinset.com](mailto:Rossina.Tomova@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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

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



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# Sample Summary

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

Job ID: 440-275154-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-275154-1	DW-5-A	Water	11/19/20 08:39	11/19/20 16:15	
440-275154-2	DW-5-B	Water	11/19/20 08:39	11/19/20 16:15	
440-275154-3	PZ-2-A	Water	11/19/20 11:34	11/19/20 16:15	
440-275154-4	PZ-2-B	Water	11/19/20 11:34	11/19/20 16:15	
440-275154-5	Field Blank	Water	11/19/20 00:01	11/19/20 16:15	
440-275154-6	Trip Blank	Water	11/19/20 00:01	11/19/20 16:15	

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# Case Narrative

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

Job ID: 440-275154-1

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## Job ID: 440-275154-1

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### Laboratory: Eurofins Calscience Irvine

#### Narrative

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#### Job Narrative 440-275154-1

#### Comments

Report was revised to include Toluene.  
No additional comments.

#### Receipt

The samples were received on 11/19/2020 4:15 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5° C.

#### GC/MS VOA

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-111945.

Method 8260B: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: DW-5-A (440-275154-1) and DW-5-B (440-275154-2). 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

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

Job ID: 440-275154-1

## Client Sample ID: DW-5-A

Date Collected: 11/19/20 08:39

Date Received: 11/19/20 16:15

## Lab Sample ID: 440-275154-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		16	8.0	ug/L			11/24/20 16:28	2
Naphthalene	ND		2.0	0.64	ug/L			11/24/20 16:28	2
Toluene	ND		1.0	0.66	ug/L			11/24/20 16:28	2
Vinyl chloride	ND		1.0	0.80	ug/L			11/24/20 16:28	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 128		11/24/20 16:28	2
Dibromofluoromethane (Surr)	94		80 - 127		11/24/20 16:28	2
Toluene-d8 (Surr)	99		80 - 120		11/24/20 16:28	2
4-Bromofluorobenzene (Surr)	92		68 - 120		11/24/20 16:28	2

## Client Sample ID: DW-5-B

Date Collected: 11/19/20 08:39

Date Received: 11/19/20 16:15

## Lab Sample ID: 440-275154-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		16	8.0	ug/L			11/24/20 16:54	2
Naphthalene	ND		2.0	0.64	ug/L			11/24/20 16:54	2
Toluene	ND		1.0	0.66	ug/L			11/24/20 16:54	2
Vinyl chloride	ND		1.0	0.80	ug/L			11/24/20 16:54	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		80 - 128		11/24/20 16:54	2
Dibromofluoromethane (Surr)	93		80 - 127		11/24/20 16:54	2
Toluene-d8 (Surr)	101		80 - 120		11/24/20 16:54	2
4-Bromofluorobenzene (Surr)	92		68 - 120		11/24/20 16:54	2

## Client Sample ID: PZ-2-A

Date Collected: 11/19/20 11:34

Date Received: 11/19/20 16:15

## Lab Sample ID: 440-275154-3

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.5		0.10	0.050	mg/L			11/23/20 10:13	1

## Client Sample ID: PZ-2-B

Date Collected: 11/19/20 11:34

Date Received: 11/19/20 16:15

## Lab Sample ID: 440-275154-4

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.5		0.10	0.050	mg/L			11/23/20 10:28	1

## Client Sample ID: Field Blank

Date Collected: 11/19/20 00:01

Date Received: 11/19/20 16:15

## Lab Sample ID: 440-275154-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		8.0	4.0	ug/L			11/24/20 17:20	1
Naphthalene	ND		1.0	0.32	ug/L			11/24/20 17:20	1

Eurofins Calscience Irvine



# Client Sample Results

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

Job ID: 440-275154-1

## Client Sample ID: Field Blank

Lab Sample ID: 440-275154-5

Date Collected: 11/19/20 00:01

Matrix: Water

Date Received: 11/19/20 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.50	0.33	ug/L			11/24/20 17:20	1
Vinyl chloride	ND		0.50	0.40	ug/L			11/24/20 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 128		11/24/20 17:20	1
Dibromofluoromethane (Surr)	94		80 - 127		11/24/20 17:20	1
Toluene-d8 (Surr)	98		80 - 120		11/24/20 17:20	1
4-Bromofluorobenzene (Surr)	89		68 - 120		11/24/20 17:20	1

## Client Sample ID: Trip Blank

Lab Sample ID: 440-275154-6

Date Collected: 11/19/20 00:01

Matrix: Water

Date Received: 11/19/20 16:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.7	J	8.0	4.0	ug/L			11/24/20 17:45	1
Naphthalene	ND		1.0	0.32	ug/L			11/24/20 17:45	1
Toluene	ND		0.50	0.33	ug/L			11/24/20 17:45	1
Vinyl chloride	ND		0.50	0.40	ug/L			11/24/20 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 128		11/24/20 17:45	1
Dibromofluoromethane (Surr)	94		80 - 127		11/24/20 17:45	1
Toluene-d8 (Surr)	99		80 - 120		11/24/20 17:45	1
4-Bromofluorobenzene (Surr)	93		68 - 120		11/24/20 17:45	1

# Method Summary

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

Job ID: 440-275154-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
SM 5310C	TOC	SM	TAL IRV
5030C	Purge and Trap	SW846	ECL 2

#### Protocol References:

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

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

#### Laboratory References:

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-275154-1

**Client Sample ID: DW-5-A**

**Lab Sample ID: 440-275154-1**

**Date Collected: 11/19/20 08:39**

**Matrix: Water**

**Date Received: 11/19/20 16:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	20 mL	20 mL	111945	11/24/20 16:28	OH1	ECL 2

**Client Sample ID: DW-5-B**

**Lab Sample ID: 440-275154-2**

**Date Collected: 11/19/20 08:39**

**Matrix: Water**

**Date Received: 11/19/20 16:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	20 mL	20 mL	111945	11/24/20 16:54	OH1	ECL 2

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

**Lab Sample ID: 440-275154-3**

**Date Collected: 11/19/20 11:34**

**Matrix: Water**

**Date Received: 11/19/20 16:15**

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	631853	11/23/20 10:13	YO8L	TAL IRV

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

**Lab Sample ID: 440-275154-4**

**Date Collected: 11/19/20 11:34**

**Matrix: Water**

**Date Received: 11/19/20 16:15**

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	631853	11/23/20 10:28	YO8L	TAL IRV

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-275154-5**

**Date Collected: 11/19/20 00:01**

**Matrix: Water**

**Date Received: 11/19/20 16:15**

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	20 mL	20 mL	111945	11/24/20 17:20	OH1	ECL 2

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-275154-6**

**Date Collected: 11/19/20 00:01**

**Matrix: Water**

**Date Received: 11/19/20 16:15**

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	20 mL	20 mL	111945	11/24/20 17:45	OH1	ECL 2

**Laboratory References:**

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-275154-1

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

**Lab Sample ID: MB 570-111945/6**  
**Matrix: Water**  
**Analysis Batch: 111945**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		8.0	4.0	ug/L			11/24/20 12:06	1
Naphthalene	ND		1.0	0.32	ug/L			11/24/20 12:06	1
Toluene	ND		0.50	0.33	ug/L			11/24/20 12:06	1
Vinyl chloride	ND		0.50	0.40	ug/L			11/24/20 12:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 128		11/24/20 12:06	1
Dibromofluoromethane (Surr)	96		80 - 127		11/24/20 12:06	1
Toluene-d8 (Surr)	99		80 - 120		11/24/20 12:06	1
4-Bromofluorobenzene (Surr)	93		68 - 120		11/24/20 12:06	1

**Lab Sample ID: LCS 570-111945/3**  
**Matrix: Water**  
**Analysis Batch: 111945**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10.0	9.56		ug/L		96	58 - 131
Naphthalene	10.0	10.7		ug/L		107	80 - 125
Toluene	10.0	10.9		ug/L		109	80 - 120
Vinyl chloride	10.0	9.48		ug/L		95	72 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		80 - 128
Dibromofluoromethane (Surr)	96		80 - 127
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	96		68 - 120

**Lab Sample ID: LCSD 570-111945/4**  
**Matrix: Water**  
**Analysis Batch: 111945**

**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
Acetone	10.0	10.9		ug/L		109	58 - 131	13	30
Naphthalene	10.0	9.15		ug/L		91	80 - 125	15	16
Toluene	10.0	10.3		ug/L		103	80 - 120	6	13
Vinyl chloride	10.0	8.84		ug/L		88	72 - 126	7	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		80 - 128
Dibromofluoromethane (Surr)	95		80 - 127
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	99		68 - 120

# QC Sample Results

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

Job ID: 440-275154-1

## Method: SM 5310C - TOC

**Lab Sample ID: MB 440-631853/8**  
**Matrix: Water**  
**Analysis Batch: 631853**

**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			11/23/20 10:00	1

**Lab Sample ID: LCS 440-631853/7**  
**Matrix: Water**  
**Analysis Batch: 631853**

**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	5.00	5.33		mg/L		107	85 - 115

**Lab Sample ID: MRL 440-631853/6**  
**Matrix: Water**  
**Analysis Batch: 631853**

**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	0.105		mg/L		105	50 - 150

**Lab Sample ID: 440-275154-3 MS**  
**Matrix: Water**  
**Analysis Batch: 631853**

**Client Sample ID: PZ-2-A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2.5		6.00	8.23		mg/L		96	85 - 115

**Lab Sample ID: 440-275154-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 631853**

**Client Sample ID: PZ-2-A**  
**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	2.5		6.00	8.26		mg/L		96	85 - 115	0	20

# QC Association Summary

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

Job ID: 440-275154-1

## GC/MS VOA

### Analysis Batch: 111945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275154-1	DW-5-A	Total/NA	Water	8260B	
440-275154-2	DW-5-B	Total/NA	Water	8260B	
440-275154-5	Field Blank	Total/NA	Water	8260B	
440-275154-6	Trip Blank	Total/NA	Water	8260B	
MB 570-111945/6	Method Blank	Total/NA	Water	8260B	
LCS 570-111945/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-111945/4	Lab Control Sample Dup	Total/NA	Water	8260B	

## General Chemistry

### Analysis Batch: 631853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-275154-3	PZ-2-A	Total/NA	Water	SM 5310C	
440-275154-4	PZ-2-B	Total/NA	Water	SM 5310C	
MB 440-631853/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-631853/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-631853/6	Lab Control Sample	Total/NA	Water	SM 5310C	
440-275154-3 MS	PZ-2-A	Total/NA	Water	SM 5310C	
440-275154-3 MSD	PZ-2-A	Total/NA	Water	SM 5310C	

# Definitions/Glossary

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

Job ID: 440-275154-1

## 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.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Accreditation/Certification Summary

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

Job ID: 440-275154-1

## Laboratory: Eurofins Calscience Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-21
Arizona	State	AZ0671	02-03-21
California	Los Angeles County Sanitation Districts	10256	06-30-21
California	State	2706	06-30-21
Guam	State	21-003R	01-23-21
Hawaii	State	CA01531	01-29-21
Kansas	NELAP	E-10420	07-31-21
Nevada	State	CA015312021-5	11-23-20
Oregon	NELAP	4028 - 009	01-29-21
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-21

## Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-29-21
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

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

Eurofins Calscience Irvine



# Chain of Custody Record



Environment Testing  
TestAmerica

Address: \_\_\_\_\_

Regulatory Program:  DW  NPDES  RCRA  Other:

TAL-8210

<b>Client Contact</b> Company Name: <u>Geo-Logic Associates</u> Address: <u>11415 West Bernardo Ct</u> City/State/Zip: <u>San Diego, Ca 92127</u> Phone: <u>858-481-1136</u> Fax: <u>858-951-1087</u> Project Name: <u>Republic Services</u> Site: <u>Sunshine Canyon L/F</u> PO# _____		<b>Project Manager:</b> <u>Kyle Wetchen</u> Tel/Email: <u>k.wetchen@geo-logic.com</u> <b>Analysis Turnaround Time</b> <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		<b>Site Contact:</b> <u>Fresh Mills</u> <b>Lab Contact:</b> <u>Reshma Torrujo</u> Date: <u>11-19-20</u> Carrier: <u>T/A</u>		COC No: _____ _____ of _____ COCs Sampler: <u>M. Campbell</u> For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____ <u>5020-1000</u>										
<b>Sample Identification</b>		Sample Date	Sample Time	Sample Type (G=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N) Perform MS / MSD (Y/N) EPA 8260 B (Ketone) Methylene Chloride EPA 8211 (1916) Organic Carbon	Sample Specific Notes:								
<u>DW-5A</u>		<u>11-19-20</u>	<u>0839</u>	<u>G</u>	<u>GW</u>	<u>6</u>	<u>NYX</u>									
<u>DW-5B</u>			<u>0839</u>		<u>GW</u>	<u>6</u>	<u>YX</u>									
<u>PZ-2A</u> <u>PZ-2-A</u>			<u>1134</u>		<u>GW</u>	<u>1</u>						<u>X</u>				
<u>PZ-2B</u> <u>PZ-2-B</u>			<u>1134</u>		<u>GW</u>	<u>1</u>						<u>X</u>				
<u>Field Blank</u>					<u>Lab</u>	<u>4</u>						<u>XX</u>				
<u>Trip Blank</u>					<u>Lab</u>	<u>2</u>						<u>XY</u>				
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. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									
Special Instructions/QC Requirements & Comments:																
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: _____		Cooler Temp. (°C): Obs'd: _____ Cor'd: _____		Therm ID No.: _____										
Relinquished by: <u>Nate Capell</u>		Company: <u>Geo-Logic Associates</u>		Date/Time: <u>11-19-20/1403</u>		Received by: <u>William Rivera</u>		Company: <u>EC-IRU</u>		Date/Time: <u>11/19/20 1403</u>						
Relinquished by: <u>William Rivera</u>		Company: <u>EC-IRU</u>		Date/Time: <u>11/19/20 1615</u>		Received by: _____		Company: <u>EC-IRU</u>		Date/Time: <u>11/19/20 1615</u>						
Relinquished by: _____		Company: _____		Date/Time: _____		Received in Laboratory by: _____		Company: _____		Date/Time: _____						



440-275154 Chain of Custody

11/19/20  
CR

1.4/1.5 #93

**Eurofins Calscience Irvine**

17461 Derian Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone: 949-261-1022 Fax: 949-260-3297

**Chain of Custody Record**



Environment Testing  
 America

<b>Client Information (Sub Contract Lab)</b>				Sampler:	Lab PM: Tomova, Rossina D	Carrier Tracking No(s):	COC No: 440-164475.1																			
Client Contact: Shipping/Receiving				Phone:	E-Mail: Rossina.Tomova@Eurofinset.com	State of Origin: California	Page: Page 1 of 1																			
Company: Eurofins Calscience LLC				Accreditations Required (See note):			Job #: 440-275154-1																			
Address: 7440 Lincoln Way,				Due Date Requested: 12/4/2020	<b>Analysis Requested</b>			Preservation Codes: A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate              O - AsNaO2 D - Nitric Acid              P - Na2O4S 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)																		
City: Garden Grove				TAT Requested (days):																						
State, Zip: CA, 92841				PO #:																						
Phone: 714-895-5494(Tel) 714-894-7501(Fax)				WO #:																						
Email:																										
Project Name: Republic Sunshine Canyon				Project #: 44007851	Total Number of containers																					
Site:				SSOW#:																						
<b>Sample Identification - Client ID (Lab ID)</b>				<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/oil)</b>	<b>Field Filtered Sample (Yes or No)</b>	<b>Perform: MS/MSD (Yes or No)</b>	<b>8260B_LL/6030C (MOD) Appendix II</b>	<b>+MTBE+TBA+TICS</b>	<b>8260B_LL/6030C_UP (MOD) A+A</b>											<b>Special Instructions/Note:</b>			
DW-5A (440-275154-1)				11/19/20	08:39 Pacific		Water		X	X															6	
DW-5B (440-275154-2)				11/19/20	08:39 Pacific		Water		X	X															6	
Field Blank (440-275154-5)				11/19/20	00:01 Pacific		Water		X	X															4	
Trip Blank (440-275154-6)				11/19/20	00:01 Pacific		Water		X	X															2	
Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.																										
<b>Possible Hazard Identification</b>													<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>													
Unconfirmed													<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months													
Deliverable Requested: I, II, III, IV, Other (specify)													Primary Deliverable Rank: 2 Special Instructions/QC Requirements:													
Empty Kit Relinquished by:													Date:				Time:				Method of Shipment:					
Relinquished by:				Date/Time: 11/19/20 18:40				Company: ECI RV				Received by:				Date/Time: 11/19/20 18:40				Company: ECI						
Relinquished by:				Date/Time: 11/19/20 19:10				Company: ECI				Received by:				Date/Time: 11/19/20 19:10				Company: ECI						
Relinquished by:				Date/Time:				Company:				Received by:				Date/Time:				Company:						
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No													Custody Seal No.: 2.7 / 1.9 ECI													



## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-275154-1

**Login Number: 275154**

**List Number: 1**

**Creator: Escalante, Maria I**

**List Source: Eurofins 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	

## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-275154-1

**Login Number: 275154**

**List Number: 2**

**Creator: Cortez Diaz, Antonio**

**List Source: Eurofins Calscience**

**List Creation: 11/20/20 12:31 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
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	1.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	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	

**GROUNDWATER MONITORING PROGRAM  
WATER LEVEL SURVEY RECORD SHEET**

SITE NAME: Sunshine Cyn.

DATE: 12-21-20

PROJECT NUMBER: 5020-1006

WATER LEVEL MAKE/MODEL: QED & Solinst 101

FIELD PERSONNEL: BS, MC

WELL ID	CONSTRUCTION TOTAL DEPTH (TD)	ACTUAL TOTAL DEPTH (TD)	DEPTH TO WATER (DTW)	COMMENTS
MW-1			15.99	
MW-2A			33.54	
MW-2B			17.58	
MW-5			18.50	
MW-6			16.09	
MW-8			17.71	
MW-9			22.39	
MW-13R			17.59	
MW-14			13.68	
DW-1			TOC	
DW-2			25.08	
DW-3			156.44	
DW-4			32.18	
DW-5			13.43	
CM-5R			224.26	
CM-9R3			13.02	
CM-10R			48.88	
CM-11R			19.88	
PZ-1			94.09	
PZ-2			120.93	
PZ-3			223.58	
PZ-4			110.02	
EW-2			22.76	
EW-3			18.03	
EW-4			17.45	
OM-3			15.97	

REMARKS:

SIGNATURE



## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:	<u>Sunshine Cyn</u>	Project No.:	<u>5020-1006</u>
Well I.D.:	<u>CM-9R3</u>	Sampling Date:	<u>12-22-20</u>
Collected By:	<u>ML</u>	Purge start Time:	<u>8:45</u>
Casing Diameter (inches):	<u>4</u>	Purge Stop time:	<u>9:03</u>
Starting Water Level:	<u>13.02</u>	Sampling (Well Recovery) Time:	<u>9:13</u>
Total Depth (feet):	<u>23.35</u>	Ending Water Level (feet):	<u>14.26</u>
Water column (feet):	<u>10.33</u>	Total Purged (gallons):	<u>2.5</u>
Screen Length (feet):		Duplicate Sample:	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method:	<u>Micro Purge</u> Low Flow		
Horiba Model S/N:	<u>U-52/45414B00</u>		

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
8:51	1.0	13.90	6.19	3.91	59.7	1.88	16.94	-96
8:55	1.5	13.98	6.17	3.90	49.8	1.43	17.00	-93
8:57	1.75	14.10	6.16	3.88	44.7	1.36	16.97	-89
8:59	2.0	14.18	6.14	3.86	43.8	1.32	17.00	-87
9:01	2.25	14.22	6.13	3.86	39.7	1.30	17.05	-84
9:03	2.50	14.26	6.12	3.85	38.1	1.28	17.04	-82

Purge Sampling Rates: 25 psi ref. 11 30 discharge 9  
water contained redish brown color with no odc

Well condition: OK

Additional Info/Comments: Clear

Name: Mike Campbell Signature: Mike Campbell

**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>CM-9R3</u>		Date: <u>12-22-20</u>	
Access:					
Accessibility:		Good: _____	Fair: <u>✓</u>	Poor: _____	
Vicinity of well clear of weeds and/or debris:				Yes: _____	No: <u>✓</u>
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>vegetation on path to well</u>					
Concrete Pad:					
Integrity:		Good: _____	Inadequate: _____	<u>NA</u>	
Presence of depressions or standing water around well:				Yes: _____	No: _____
Remarks: <u>Pad is buried</u>					
Protective Outer Casing:		Material: <u>metal</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: _____	Damaged: <u>✓</u>		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: _____	Damaged: <u>✓</u>		
Remarks: <u>Mount 3/4 buried lid to mount not secure</u>					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____		Missing: _____
Pumping Rate (gpm):		<u>NA</u>	Current (Hz):		<u>NA</u>
Remarks:					

Field Certification: Mark Campbell Signed Field Tech Title 12-22-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>5020-1006</u>
Well I.D.: <u>CM-10R</u>	Sampling Date: <u>12-22-20</u>
Collected By: <u>mc</u>	Purge start Time: <u>6:41</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>7:01</u>
Starting Water Level: <u>49.89</u>	Sampling (Well Recovery) Time: <u>7:15</u>
Total Depth (feet): <u>110.90</u>	Ending Water Level (feet): <u>49.3</u>
Water column (feet): <u>62.02</u>	Total Purged (gallons): <u>2.5</u>
Screen Length (feet): _____	Duplicate Sample: <input checked="" type="radio"/> YES <input type="radio"/> NO
Sample Method: <u>Micro Purge</u> <small>Low Flow</small>	
Horiba Model S/N: <u>U-521WSY1WBDD</u>	<u>Duplicate taken at this well</u>

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
6:49	1.0	49.16	6.64	2.50	1.9	1.86	20.04	-309
6:53	1.5	49.24	6.65	2.52	1.9	1.56	20.09	-312
6:55	1.75	49.28	6.65	2.55	1.4	1.47	20.14	-311
6:57	2.0	49.30	6.65	2.55	1.1	1.44	20.16	-315
6:59	2.25	49.30	6.65	2.55	1.2	1.42	20.15	-311
7:01	2.50	49.31	6.65	2.54	1.0	1.41	20.18	-315

Purge Sampling Rates: 50 psi refill 40 discharge 12  
water is clear with a strong odor

Well condition: OK

Additional Info/Comments: clear, cool, breezy

Name: Mike Campbell Signature: Mike Campbell



**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>CM-10R</u>		Date: <u>12-22-20</u>	
Access:					
Accessibility:		Good: <input checked="" type="checkbox"/>	Fair: <input type="checkbox"/>	Poor: <input type="checkbox"/>	
Vicinity of well clear of weeds and/or debris:				Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>
Presence of depressions or standing water around well:				Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
Remarks:					
Concrete Pad:					
Integrity:		Good: <input checked="" type="checkbox"/>	Inadequate: <input type="checkbox"/>		
Presence of depressions or standing water around well:				Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
Remarks:					
Protective Outer Casing:		Material: <u>metal</u>			
Condition of Protective Casing:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Locking Cap:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Lock:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Weepholes:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Riser Cap:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Measurement reference point:		Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		Missing: <input type="checkbox"/>
Pumping Rate (gpm): <u>NA</u>		Current (Hz): <u>NA</u>			
Remarks:					

Field Certification: Mike Coyne Field Tech 12-22-20  
 Signed Title Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>5020.1006</u>
Well I.D.: <u>CM-11R</u>	Sampling Date: <u>12.22.20</u>
Collected By: <u>MC</u>	Purge start Time: <u>7:49</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>8:33</u>
Starting Water Level: <u>19.89</u>	Sampling (Well Recovery) Time: <u>8:45</u>
Total Depth (feet): <u>30.70</u>	Ending Water Level (feet): <u>20.83</u>
Water column (feet): <u>10.82</u>	Total Purged (gallons): <u>2.0</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method: <u>Micro Purge</u> Low Flow	
Horiba Model S/N: <u>U-521W541W600</u>	

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
8:01	0.5	20.35	6.03	4.00	0.0	2.03	15.82	-10
8:12	1.0	20.50	5.94	3.98	0.0	1.98	15.85	-6
8:17	1.25	20.61	5.84	3.86	0.3	1.84	15.87	0
8:22	1.50	20.71	5.79	3.82	0.0	1.80	15.89	2
8:28	1.75	20.78	5.75	3.78	0.0	1.78	15.89	3
8:33	2.0	20.83	5.69	3.75	0.0	1.76	15.90	5

**Purge Sampling Rates:** 30 psi refill 25 discharge 5  
water is clear with no odor

**Well condition:** OK  
Heavy vegetation on path to well  
**Additional Info/Comments:** clear, mild breeze

**Name:** Mike Compton      **Signature:** Mike Compton

GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility:	<u>Sunshine Cyn</u>	Well ID:	<u>CM-11R</u>	Date:	<u>12-22-20</u>
Access:	Accessibility: Good: _____ Fair: <u>✓</u> Poor: _____				
	Vicinity of well clear of weeds and/or debris: Yes: _____ No: <u>✓</u>				
	Presence of depressions or standing water around well: Yes: _____ No: <u>✓</u>				
Remarks:	<u>Required 4X4 to backup drainage channel. Vegetation around well manhole!</u>				
Concrete Pad:	Integrity: Good: <u>✓</u> Inadequate: _____				
	Presence of depressions or standing water around well: Yes: _____ No: <u>✓</u>				
Remarks:	<u>Half of the concrete pad is buried</u>				
Protective Outer Casing:	Material: <u>Metal</u>				
	Condition of Protective Casing: Good: <u>✓</u> Damaged: _____				
	Condition of Locking Cap: Good: <u>✓</u> Damaged: _____				
	Condition of Lock: Good: <u>✓</u> Damaged: _____				
	Condition of Weepholes: Good: <u>✓</u> Damaged: _____				
Remarks:					
Well Riser:	Material: <u>PVC</u>				
	Condition of Riser: Good: <u>✓</u> Damaged: _____				
	Condition of Riser Cap: Good: <u>✓</u> Damaged: _____				
	Measurement reference point: Yes: <u>✓</u> No: _____				
Remarks:					
Dedicated Pump:	Type: <u>Bladder</u>				
	Condition: Good: <u>✓</u> Damaged: _____ Missing: _____				
	Pumping Rate (gpm): <u>NA</u> Current (Hz): <u>NA</u>				
Remarks:					

Field Certification: Mile Campbell Field Tech 12-22-20  
Signed Title Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>Su20.1006</u>
Well I.D.: <u>MW-1</u>	Sampling Date: <u>12-29-20</u>
Collected By: <u>ML</u>	Purge start Time: <u>8:24</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>8:44</u>
Starting Water Level: <u>16.05</u>	Sampling (Well Recovery) Time: <u>8:54</u>
Total Depth (feet): <u>28.86</u>	Ending Water Level (feet): <u>16.15</u>
Water column (feet): <u>12.81</u>	Total Purged (gallons): <u>2.50</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="radio"/> NO <input checked="" type="radio"/>
Sample Method: <u>Micro Purge</u> Low Flow	
Horiba Model S/N: <u>u-52/w541wB0p</u>	

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
8:32	1.0	16.11	6.62	2.54	7.4	1.90	18.00	-135
8:36	1.5	16.15	6.62	2.50	6.9	1.40	18.24	-139
8:38	1.75	16.15	6.62	2.51	7.0	1.36	18.42	-141
8:40	2.0	11	6.62	2.50	6.3	1.30	18.56	-142
8:42	2.25	11	6.62	2.50	5.5	1.31	18.59	-143
8:44	2.50	v	6.62	2.48	5.4	1.29	18.66	-144

**Purge Sampling Rates:** 20 psi refill 30 discharge 12  
water centime yellowish brown cold with no odor

**Well condition:** OK

**Additional Info/Comments:** clear, cold, windy

**Name:** Mike Campbell      **Signature:** Mike Campbell

GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility:	<u>Sunshue Cyn</u>	Well ID:	<u>MW-1</u>	Date:	<u>12-29-20</u>
Access:	Accessibility: Good: <input checked="" type="checkbox"/>	Fair: <input type="checkbox"/>	Poor: <input type="checkbox"/>	Vicinity of well clear of weeds and/or debris: Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>
	Presence of depressions or standing water around well: Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>	Remarks:		
Concrete Pad:	Integrity: Good: <input checked="" type="checkbox"/>	Inadequate: <input type="checkbox"/>	Presence of depressions or standing water around well: Yes: <input type="checkbox"/>	No: <input type="checkbox"/>	Remarks: <u>Concrete pad is not visible</u>
Protective Outer Casing:	Material: <u>metal</u>	Condition of Protective Casing: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	Condition of Locking Cap: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>
	Condition of Lock: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	Condition of Weepholes: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	Remarks:
Well Riser:	Material: <u>PVC</u>	Condition of Riser: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	Condition of Riser Cap: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>
	Measurement reference point: Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>	Remarks:		
Dedicated Pump:	Type: <u>Bladder</u>	Condition: Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>	Missing: <input type="checkbox"/>	Pumping Rate (gpm): <u>NA</u>
	Current (Hz): <u>NA</u>	Remarks:			

Field Certification: Mike Capell Signed Field Tech Title 12-29-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

<p>Site Name: <u>Sunshine Conyco</u></p> <p>Well I.D.: <u>MW-5</u></p> <p>Collected By: <u>MC</u></p> <p>Casing Diameter (inches): <u>2</u></p> <p>Starting Water Level: <u>18.55</u></p> <p>Total Depth (feet): <u>25.65</u></p> <p>Water column (feet): <u>7.10</u></p> <p>Screen Length (feet): _____</p> <p>Sample Method: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Micro Purge</span> <span style="margin-left: 20px;">Low Flow</span></p> <p>Horiba Model S/N: <u>4.52/WSY14BPP</u></p>	<p>Project No.: <u>SO20-1006</u></p> <p>Sampling Date: <u>12-29-20</u></p> <p>Purge start Time: <u>11:27</u></p> <p>Purge Stop time: <u>11:48</u></p> <p>Sampling (Well Recovery) Time: <u>12:00</u></p> <p>Ending Water Level (feet): <u>18.85</u></p> <p>Total Purged (gallons): <u>2.5</u></p> <p>Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p>
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TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
11:37	1.0	18.81	6.63	3.39	8.1	1.39	19.22	-118
11:41	1.5	18.84	6.62	3.38	3.6	1.22	19.09	-125
11:43	1.75	18.85	6.62	3.36	2.7	1.15	19.12	-126
11:44	2.0	11	6.62	3.36	2.4	1.09	19.16	-127
<del>11:46</del>	2.25	11	6.62	3.36	2.0	1.06	19.16	-127
11:48	2.50	1	6.62	3.36	1.9	1.03	19.14	-128

**Purge Sampling Rates:** 20 psi ref. 1' 30 discharge //  
water contains greenish brown tint with no odor

**Well condition:** OK Fallen branches, and asphalt debris around the well  
Required stringing air hoses to sample the well

**Additional Info/Comments:** mostly clear, cold, windy

**Name:** Mike Campbell      **Signature:** Mike Campbell

**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>MW-5</u>		Date: <u>12-29-20</u>	
Access:					
Accessibility:		Good: _____	Fair: <u>✓</u>	Poor: _____	
Vicinity of well clear of weeds and/or debris:				Yes: _____	No: <u>✓</u>
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>Asphalt debris and fallen branches in vicinity of the well. Had to string air hose to well to sample.</u>					
Concrete Pad:					
Integrity:		Good: <u>N/A</u>	Inadequate: _____		
Presence of depressions or standing water around well:				Yes: _____	No: _____
Remarks: <u>Concrete pad is not visible</u>					
Protective Outer Casing:		Material: <u>Metal</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: <u>✓</u>	Damaged: _____		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: <u>✓</u>	Damaged: _____		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____		Missing: _____
Pumping Rate (gpm): <u>NA</u>		Current (Hz): <u>NA</u>			
Remarks:					

Field Certification: Mike Cypell Field Tech 12-29-20  
 Signed Title Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:	<u>Sunshine Cyn</u>	Project No.:	<u>5020-1006</u>
Well I.D.:	<u>MW-6</u>	Sampling Date:	<u>12-21-20</u>
Collected By:	<u>ML</u>	Purge start Time:	<u>10:11</u>
Casing Diameter (inches):	<u>2</u>	Purge Stop time:	<u>10:54</u>
Starting Water Level:	<u>16.09</u>	Sampling (Well Recovery) Time:	<u>11:10</u>
Total Depth (feet):	<u>20.50</u>	Ending Water Level (feet):	<u>16.92</u>
Water column (feet):	<u>4.43</u>	Total Purged (gallons):	<u>1.75</u>
Screen Length (feet):		Duplicate Sample:	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method:	<u>Micro Purge</u> Low Flow		
Horiba Model S/N:	<u>L-521/W541WBOP</u>		

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
10:25	0.5	16.63	6.85	3.33	1.4	1.35	23.76	-296
10:37	1.0	16.89	6.83	3.29	0.0	1.20	24.06	-323
10:44	1.25	16.91	6.82	3.28	0.0	1.18	24.02	-331
10:47	1.5	16.92	6.82	3.25	0.0	1.15	24.13	-338
10:54	1.75	16.92	6.81	3.24	0.0	1.12	24.11	-341

Purge Sampling Rates: 25 psi      refill 30      discharge 6

Well condition: OK  
 Additional Info/Comments: Carried sampling equipment and containers down dirt path to clear, very windy

Name: Mike Campbell      Signature: Mike Campbell



**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cays</u>		Well ID: <u>MWB</u>		Date: <u>12-21-20</u>	
Access:					
Accessibility:		Good: _____	Fair: <u>✓</u>	Poor: _____	
Vicinity of well clear of weeds and/or debris:				Yes: <u>✓</u>	No: _____
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>Carried sampling equipment and sample containers down long dirt path to the well</u>					
Concrete Pad:					
Integrity:		Good: <u>✓</u>	Inadequate: _____		
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks:					
Protective Outer Casing:		Material: <u><del>Steel</del> metal</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: <u>✓</u>	Damaged: _____		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: _____	Damaged: _____		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____		Missing: _____
Pumping Rate (gpm):		<u>NA</u>	Current (Hz):		<u>NA</u>
Remarks:					

Field Certification: Mike Capillo Signed Field Tech Title 12-21-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

<p>Site Name: <u>Sunshine Cyn</u></p> <p>Well I.D.: <u>MW-13R</u></p> <p>Collected By: <u>ML</u></p> <p>Casing Diameter (inches): <u>4</u></p> <p>Starting Water Level: <u>17.59</u></p> <p>Total Depth (feet): <u>28.47</u></p> <p>Water column (feet): <u>10.88</u></p> <p>Screen Length (feet): _____</p> <p>Sample Method: <u>Micro Purge</u> Low Flow</p> <p>Horiba Model S/N: <u>U-52/W5Y1WB00</u></p>	<p>Project No.: <u>5022.1006</u></p> <p>Sampling Date: <u>12-21-20</u></p> <p>Purge start Time: <u>11:40</u></p> <p>Purge Stop time: <u>12:26</u></p> <p>Sampling (Well Recovery) Time: <u>12:35</u></p> <p>Ending Water Level (feet): <u>17.97</u></p> <p>Total Purged (gallons): <u>1.75</u></p> <p>Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p>
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TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
11:56	0.5	17.85	7.14	1.86	0.0	1.49	23.65	-397
12:02	0.75	17.91	7.15	1.88	0.0	1.18	23.26	-403
12:08	1.0	17.96	7.14	1.88	0.0	1.14	23.23	-405
12:14	1.25	17.97	7.14	1.89	0.0	1.08	23.24	-406
12:20	1.5	17.97	7.14	1.89	0.0	1.05	23.21	-406
12:26	1.75	17.97	7.14	1.88	0.0	1.03	23.22	-407

Purge Sampling Rates: 30 psi retail 30 discharge  
water contains blackish green tint with a strong sulfur odor

Well condition: OK  
carried sampling equipment and sample containers to the well

Additional Info/Comments: clear, warm, windy and dusty  
heavy traffic, refuse trucks near the well  
very low yield well

Name: Mike Campbell Signature: Mike Campbell

### GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility:	<u>Sunhwa Cy</u>	Well ID:	<u>MW-13R</u>	Date:	<u>12-21-20</u>
Access:	Accessibility: Good: _____ Fair: <u>✓</u> Poor: _____				
	Vicinity of well clear of weeds and/or debris: Yes: <u>✓</u> No: _____				
	Presence of depressions or standing water around well: Yes: _____ No: <u>✓</u>				
	Remarks: <u>Carried sampling equipment and sample containers to the well</u>				
Concrete Pad:	Integrity: Good: <u>✓</u> Inadequate: _____				
	Presence of depressions or standing water around well: Yes: _____ No: <u>✓</u>				
	Remarks: _____				
Protective Outer Casing:	Material: <u>Metal</u>				
	Condition of Protective Casing: Good: <u>✓</u> Damaged: _____				
	Condition of Locking Cap: Good: <u>✓</u> Damaged: _____				
	Condition of Lock: Good: <u>✓</u> Damaged: _____				
	Condition of Weepholes: Good: _____ Damaged: _____				
	Remarks: _____				
Well Riser:	Material: <u>PVC</u>				
	Condition of Riser: Good: <u>✓</u> Damaged: _____				
	Condition of Riser Cap: Good: <u>✓</u> Damaged: _____				
	Measurement reference point: Yes: <u>✓</u> No: _____				
	Remarks: _____				
Dedicated Pump:	Type: <u>Bladder</u>				
	Condition: Good: <u>✓</u> Damaged: _____ Missing: _____				
	Pumping Rate (gpm): <u>N/A</u> Current (Hz): <u>N/A</u>				
	Remarks: _____				

Field Certification: Mull Campbell Field Tech 12-21-20  
Signed Title Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>S020-1006</u>
Well I.D.: <u>MW-14</u>	Sampling Date: <u>12-21-20</u>
Collected By: <u>mc</u>	Purge start Time: <u>9:17</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>9:36</u>
Starting Water Level: <u>13.68</u>	Sampling (Well Recovery) Time: <u>9:46</u>
Total Depth (feet): <u>27.35</u>	Ending Water Level (feet): <u>14.21</u>
Water column (feet): <u>13.67</u>	Total Purged (gallons): <u>2.5</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method: <u>Micro Purge</u> Low Flow	
Horiba Model S/N: <u>L-52/W5414BDP</u>	

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
9:24	1.0	14.11	6.66	3.09	0.3	1.64	21.15	90
9:28	1.5	14.17	6.62	3.06	0.4	1.44	21.23	94
9:30	1.75	14.19	6.61	3.04	0.0	1.50	21.24	97
9:32	2.0	14.20	6.60	3.03	0.0	1.38	21.27	98
9:34	2.25	14.20	6.59	3.03	0.0	1.43	21.29	99
9:36	2.5	14.21	6.59	3.03	0.0	1.42	21.33	100

Purge Sampling Rates: 25 psi ref. 11, 25 discharge 0  
water is clear w. no odc

Well condition: OK  
carried sampling equipment and bottles down long trail  
 Additional Info/Comments: clear, mild, wind

Name: Mike Compter Signature: Mike Compter

**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>MW-14</u>		Date: <u>12-21-20</u>	
<b>Access:</b>					
Accessibility:		Good: _____	Fair: <u>✓</u>	Poor: _____	
Vicinity of well clear of weeds and/or debris:				Yes: _____	No: <u>✓</u>
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>Carried sampling equipment and bottles down a long dirt path to the well.</u>					
<b>Concrete Pad:</b>					
Integrity:		Good: <u>✓</u>	Inadequate: _____		
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks:					
<b>Protective Outer Casing:</b>					
		Material: <u>metal</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: <u>✓</u>	Damaged: _____		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: <u>✓</u>	Damaged: _____		
Remarks:					
<b>Well Riser:</b>					
		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
<b>Dedicated Pump:</b>					
		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____	Missing: _____	
Pumping Rate (gpm): <u>NA</u>		Current (Hz): <u>NA</u>			
Remarks:					

Field Certification: [Signature] Field Tech 12-21-20  
 Signed Title Date

**GROUNDWATER MONITORING PROGRAM  
WELL DATA SHEET**

Site Name.: Sunshine Cem.  
 Well I.D.: DW-1  
 Collected By: BS  
 Casing Diameter (inches): 4  
 Starting Water Level: TOC  
 Total Depth (feet): /  
 Water column (feet): /  
 Screen Length (feet): /  
 Purge Volume (gallons): /  
 Horiba Model S/N: 28554944

Project No.: S020.1006  
 Sampling Date: 12-22-20  
 Purge start Time: /  
 Purge Stop time: /  
 Sampling Time: 0940  
 Ending Water Level (feet): /  
 Total Purged (gallons): /  
 PID/FID Reading: /  
 Duplicate Sample: YES  NO

GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
<u>0.00</u>	<u>—</u>	<u>8.56</u>	<u>4.06</u>	<u>21.5</u>	<u>6</u>	<u>14.99</u>	<u>-208</u>

Purge Sampling Rates: Samples taken a discharge tube  
Field Blank taken here

Well condition: OK

Additional Info/Comments: clear, sunny, cold

Name: B. Satnes

Signature: [Signature]

# GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility: Sensitivex Corp. Well ID: DW-1 Date: 12/22/20

Access:

Accessibility: Good:  Fair:  Poor:

Vicinity of well clear of weeds and/or debris: Yes:  No:

Presence of depressions or standing water around well: Yes:  No:

Remarks: Standing water approx. 15 ft. away from the well

Concrete Pad:

Integrity: Good:  Inadequate:

Presence of depressions or standing water around well: Yes:  No:

Remarks:

Protective Outer Casing: Material: Metall

Condition of Protective Casing: Good:  Damaged: Corroded

Condition of Locking Cap: Good:  Damaged:

Condition of Lock: Good: Needs a new lock Damaged:

Condition of Weepholes: Good:  Damaged:

Remarks:

Well Riser: Material: PVC

Condition of Riser: Good:  Damaged:

Condition of Riser Cap: Good:  Damaged:

Measurement reference point: Yes: N/A No:

Remarks:

Dedicated Pump: Type: Drape Rise

Condition: Good:  Damaged:  Missing:

Pumping Rate (gpm): N/A Current (Hz): N/A

Remarks:

Field Certification: Bert Klein GW Manager 12/22/20  
 Signed Title Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:	<u>Sunshine Cyn</u>	Project No.:	<u>5020.1006</u>
Well I.D.:	<u>DW-2</u>	Sampling Date:	<u>12-28-20</u>
Collected By:	<u>mc</u>	Purge start Time:	<u>10:21</u>
Casing Diameter (inches):	<u>4</u>	Purge Stop time:	<u>10:41</u>
Starting Water Level:	<u>24.98</u>	Sampling (Well Recovery) Time:	<u>10:51</u>
Total Depth (feet):	<u>70.92</u>	Ending Water Level (feet):	<u>28.05</u>
Water column (feet):	<u>46.92</u>	Total Purged (gallons):	<u>2.51</u>
Screen Length (feet):	_____	Duplicate Sample:	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method:	<input checked="" type="checkbox"/> Micro Purge <input type="checkbox"/> Low Flow		
Horiba Model S/N:	<u>4-57125Y1W600</u>		

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
10:29	1.0	26.56	7.33	2.38	0.0	1.81	17.84	-139
10:33	1.5	27.43	7.33	2.39	0.0	1.50	17.84	-139
10:35	1.75	27.68	7.32	2.39	0.0	1.42	17.84	-140
10:37	2.0	27.82	7.32	2.39	0.0	1.36	17.81	-140
10:39	2.25	27.95	7.31	2.39	0.0	1.33	17.86	-140
10:41	2.50	28.02	7.31	2.39	0.2	1.30	17.84	-141

Purge Sampling Rates: 40 psi refill 30 discharge 15 min

Well condition: OK

Additional Info/Comments: Rain, breezy, cool

Name: Mike Campbell Signature: Mike Campbell



**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility:	Sunshine Cyn	Well ID:	Dw-2	Date:	12-28-26
<b>Access:</b>					
Accessibility:	Good: _____	Fair: <input checked="" type="checkbox"/>	Poor: _____		
Vicinity of well clear of weeds and/or debris:	Yes: <input checked="" type="checkbox"/>		No: _____		
Presence of depressions or standing water around well:	Yes: _____		No: <input checked="" type="checkbox"/>		
Remarks:	Some vegetation around the well and path to the well				
<b>Concrete Pad:</b>					
Integrity:	Good: <input checked="" type="checkbox"/>	Inadequate: _____			
Presence of depressions or standing water around well:	Yes: _____		No: <input checked="" type="checkbox"/>		
Remarks:					
<b>Protective Outer Casing:</b>					
	Material:	Metal			
Condition of Protective Casing:	Good: <input checked="" type="checkbox"/>	Damaged: _____			
Condition of Locking Cap:	Good: <input checked="" type="checkbox"/>	Damaged: _____			
Condition of Lock:	Good: <input checked="" type="checkbox"/>	Damaged: _____			
Condition of Weepholes:	Good: <input checked="" type="checkbox"/>	Damaged: _____			
Remarks:					
<b>Well Riser:</b>					
	Material:	PVC			
Condition of Riser:	Good: <input checked="" type="checkbox"/>	Damaged: _____			
Condition of Riser Cap:	Good: <input checked="" type="checkbox"/>	Damaged: _____			
Measurement reference point:	Yes: <input checked="" type="checkbox"/>	No: _____			
Remarks:					
<b>Dedicated Pump:</b>					
	Type:	Bladder			
Condition:	Good: <input checked="" type="checkbox"/>	Damaged: _____	Missing: _____		
Pumping Rate (gpm):	NA	Current (Hz):	NA		
Remarks:					

Field Certification: Mark Cagell Signed      Field Tech Title      12-28-26 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>5020.1006</u>
Well I.D.: <u>DW-3</u>	Sampling Date: <u>12-29-20</u>
Collected By: <u>ML</u>	Purge start Time: <u>7:24</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>7:45</u>
Starting Water Level: <u>156.73</u>	Sampling (Well Recovery) Time: <u>7:55</u>
Total Depth (feet): <u>248.65</u>	Ending Water Level (feet): <u>160.13</u>
Water column (feet): <u>91.92</u>	Total Purged (gallons): <u>2.5</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method: <u>Micro Purge</u> Low Flow	
Horiba Model S/N: <u>M-521 WSY1W60P</u>	<u>Field Blanks taken at this well</u>

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
7:32	1.0	158.35	6.97	1.92	0.0	1.90	18.53	-84
7:36	1.5	159.12	7.00	1.93	0.0	1.76	18.57	-89
7:38	1.75	159.46	7.02	1.93	0.0	1.63	18.61	-91
7:40	2.0	159.63	7.02	1.93	0.0	1.61	18.63	-93
7:43	2.25	159.84	7.03	1.93	0.0	1.55	18.62	-94
7:45	2.50	160.13	7.03	1.92	0.0	1.52	18.63	-95

**Purge Sampling Rates:** 120 psi refill 40 discharge 15  
water is clear with no odor

**Well condition:** OK

**Additional Info/Comments:** clear, cold, windy

**Name:** Mike Campbell      **Signature:** Mike Campbell

**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>DW-3</u>		Date: <u>12-29-20</u>	
Access:					
Accessibility:		Good: <u>✓</u>	Fair: _____	Poor: _____	
Vicinity of well clear of weeds and/or debris:				Yes: <u>✓</u>	No: _____
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks:					
Concrete Pad:					
Integrity:		Good: <u>✓</u>	Inadequate: _____		
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks:					
Protective Outer Casing:		Material: <u>metal</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: <u>✓</u>	Damaged: _____		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: <u>✓</u>	Damaged: _____		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____	Missing: _____	
Pumping Rate (gpm):		<u>NA</u>	Current (Hz):		<u>NA</u>
Remarks:					

Field Certification: Mike Campbell Signed Field Tech Title 12-29-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

<p>Site Name: <u>Sunshine Cyn</u></p> <p>Well I.D.: <u>PZ-2</u></p> <p>Collected By: <u>ML</u></p> <p>Casing Diameter (inches): <u>2</u></p> <p>Starting Water Level: <u>120.93</u></p> <p>Total Depth (feet): <u>157.53</u></p> <p>Water column (feet): <u>36.60</u></p> <p>Screen Length (feet): _____</p> <p>Sample Method: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Micro Purge</span> Low Flow</p> <p>Horiba Model S/N: <u>V.52</u></p>	<p>Project No.: <u>5020.1006</u></p> <p>Sampling Date: <u>12-21-20</u></p> <p>Purge start Time: <u>7:45</u></p> <p>Purge Stop time: <u>8:17</u></p> <p>Sampling (Well Recovery) Time: <u>8:27</u></p> <p>Ending Water Level (feet): <u>127.48</u></p> <p>Total Purged (gallons): <u>2.0</u></p> <p>Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p>
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TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
7:55	1.5	123.30	8.29	4.98	1.2	1.26	22.59	-100
8:03	1.0	124.52	8.35	4.98	0.6	.62	22.47	-68
8:07	1.25	125.47	8.35	4.97	0.6	.56	22.57	-61
8:10	1.50	126.11	8.35	4.97	0.4	.57	22.50	-57
8:13	1.75	126.62	8.35	4.97	0.2	.53	22.46	-55
8:17	2.0	127.48	8.35	4.97	0.1	.51	22.50	-53

Purge Sampling Rates: 80 psi ref. 30 discharge 19

Well condition: OK Required carrying equipment and sample bottles across a concrete channel to the well

Additional Info/Comments: clear mild, very windy

Name: Mike Campbell Signature: Mike Campbell

GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility:	Sunshine Cyn	Well ID:	P2-2	Date:	12-21-20
Access:					
Accessibility:	Good: _____	Fair: _____	Poor:	✓	
Vicinity of well clear of weeds and/or debris:	Yes: _____	No:	✓		
Presence of depressions or standing water around well:	Yes: _____	No:	_____		
Remarks:	Carried sampling equipment and sample containers across a concrete channel				
Concrete Pad:					
Integrity:	Good: _____	Inadequate:	N/A		
Presence of depressions or standing water around well:	Yes: _____	No:	_____		
Remarks:	NO concrete pad				
Protective Outer Casing:					
Material:	metal				
Condition of Protective Casing:	Good: ✓	Damaged:	_____		
Condition of Locking Cap:	Good: ✓	Damaged:	_____		
Condition of Lock:	Good: ✓	Damaged:	_____		
Condition of Weepholes:	Good: _____	Damaged:	_____		
Remarks:	_____				
Well Riser:					
Material:	PVC				
Condition of Riser:	Good: ✓	Damaged:	_____		
Condition of Riser Cap:	Good: ✓	Damaged:	_____		
Measurement reference point:	Yes: ✓	No:	_____		
Remarks:	_____				
Dedicated Pump:					
Type:	Bladder				
Condition:	Good: ✓	Damaged:	_____		Missing: _____
Pumping Rate (gpm):	NA		Current (Hz):	NA	
Remarks:	_____				

Field Certification: Mark Coughlin Signed Field Tech Title 12.21.20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

<p>Site Name: <u>Sunshine Cyn</u></p> <p>Well I.D.: <u>P24</u></p> <p>Collected By: <u>mc</u></p> <p>Casing Diameter (inches): <u>2</u></p> <p>Starting Water Level: <u>110.02</u></p> <p>Total Depth (feet): <u>118.95</u></p> <p>Water column (feet): <u>8.93</u></p> <p>Screen Length (feet): _____</p> <p>Sample Method: <u>Micro Purge</u> <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/></p> <p>Horiba Model S/N: <u>H-52/W5Y14B0P</u></p>	<p>Project No.: <u>S020.1006</u></p> <p>Sampling Date: <u>12.20.20</u></p> <p>Purge start Time: <u>9:05</u></p> <p>Purge Stop time: <u>9:33</u></p> <p>Sampling (Well Recovery) Time: <u>9:43</u></p> <p>Ending Water Level (feet): <u>113.36</u></p> <p>Total Purged (gallons): <u>2.5</u></p> <p>Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p><i>Field Blanks taken at this well</i></p>
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TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
9:15	1.0	112.28	6.92	1.39	11.6	1.90	21.61	-116
9:21	1.5	112.66	6.93	1.39	7.6	1.50	21.67	-122
9:24	1.75	112.83	6.94	1.38	6.2	1.44	21.72	-123
9:27	2.0	113.00	6.94	1.39	5.3	1.40	21.68	-123
9:30	2.25	113.19	6.94	1.38	4.7	1.38	21.72	-123
9:33	2.50	113.36	6.93	1.38	4.4	1.37	21.74	-124

**Purge Sampling Rates:** 90 psi refill 30 discharge 15  
water is clear with a slight odor

**Well condition:** OK

**Additional Info/Comments:** cloudy, rainy, cool

**Name:** Mike Campbell      **Signature:** Mike Campbell

# GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility: <u>Sunshine Cyn</u>	Well ID: <u>PZ-4</u>	Date: <u>12-28-20</u>
Access:		
Accessibility: Good: _____ Fair: <u>✓</u> Poor: _____	Vicinity of well clear of weeds and/or debris: Yes: <u>✓</u> No: _____	
Presence of depressions or standing water around well: Yes: _____ No: <u>✓</u>	Remarks: _____	
Concrete Pad:		
Integrity: Good: <u>✓</u> Inadequate: _____	Presence of depressions or standing water around well: Yes: _____ No: <u>✓</u>	
Remarks: <u>Flushmount</u>		
Protective Outer Casing: Material: <u>metal Flushmount</u>		
Condition of Protective Casing: Good: <u>✓</u> Damaged: _____	Condition of Locking Cap: Good: <u>NA</u> Damaged: _____	
Condition of Lock: Good: <u>NA</u> Damaged: _____	Condition of Weepholes: Good: <u>NA</u> Damaged: _____	
Remarks: _____		
Well Riser: Material: <u>PVC</u>		
Condition of Riser: Good: <u>✓</u> Damaged: _____	Condition of Riser Cap: Good: <u>✓</u> Damaged: _____	
Measurement reference point: Yes: <u>✓</u> No: _____	Remarks: _____	
Dedicated Pump: Type: <u>Bladder</u>		
Condition: Good: <u>✓</u> Damaged: _____ Missing: _____	Pumping Rate (gpm): <u>NA</u> Current (Hz): <u>NA</u>	
Remarks: _____		

Field Certification: Michael Capell Signed Field Tech Title 12-28-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>5020.1006</u>
Well I.D.: <u>DW-5</u>	Sampling Date: <u>12-29-20</u>
Collected By: <u>mc</u>	Purge start Time: <u>9:28</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>9:58</u>
Starting Water Level: <u>13.45</u>	Sampling (Well Recovery) Time: <u>10:05</u>
Total Depth (feet): <u>100.46</u>	Ending Water Level (feet): <u>17.14</u>
Water column (feet): <u>87.01</u>	Total Purged (gallons): <u>2.5</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="radio"/> NO <input checked="" type="radio"/>
Sample Method: <u>Micro Purge</u> Low Flow	
Horiba Model S/N: <u>U-52/w541wBDD</u>	

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
9:40	1.0	15.32	8.06	1.62	0.7	1.66	16.07	-178
9:46	1.5	15.93	8.05	1.60	2.0	1.30	16.36	-186
9:49	1.75	16.42	8.04	1.59	3.8	1.26	16.44	-194
9:52	2.0	16.67	8.04	1.59	4.1	1.21	16.48	-196
9:55	2.25	16.90	8.04	1.59	3.7	1.19	16.51	-197
9:58	2.50	17.14	8.04	1.58	0.9	1.17	16.56	-199

**Purge Sampling Rates:** 65 psi refill 30 discharge 2l  
water is mostly clear with no odor water contains slight greenish ~~mc~~ that brown tint

**Well condition:** OK  
concrete debris around the well monument

**Additional Info/Comments:** mostly clear, cold, windy  
Water contains heavy effluences, difficult to get zero head space in VOAS. Misters in area of well

**Name:** Mike Campbell      **Signature:** Mike Campbell



**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>DW-5</u>		Date: <u>12-29-20</u>	
Access:					
Accessibility:		Good: <input checked="" type="checkbox"/>	Fair: <input type="checkbox"/>	Poor: <input type="checkbox"/>	
Vicinity of well clear of weeds and/or debris:				Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
Presence of depressions or standing water around well:				Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
Remarks: <u>Construction debris (concrete) around the monument</u>					
Concrete Pad:					
Integrity:		Good: <input checked="" type="checkbox"/>	Inadequate: <input type="checkbox"/>		
Presence of depressions or standing water around well:				Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
Remarks: <u>Concrete pad not visible</u>					
Protective Outer Casing:		Material: <u>Metal</u>			
Condition of Protective Casing:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Locking Cap:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Lock:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Weepholes:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Condition of Riser Cap:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		
Measurement reference point:		Yes: <input checked="" type="checkbox"/>	No: <input type="checkbox"/>		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <input checked="" type="checkbox"/>	Damaged: <input type="checkbox"/>		Missing: <input type="checkbox"/>
Pumping Rate (gpm): <u>NA</u>		Current (Hz): <u>NA</u>			
Remarks:					

Field Certification: Mike Capelli Signed      Field Tech Title      12-29-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: Sunshine Canyon Project No.: 50201006  
 Well I.D.: nw-2A Sampling Date: 12-28-2020  
 Collected By: CV Purge start Time: 0824  
 Casing Diameter (inches): 4" Purge Stop time: 0910  
 Starting Water Level: 33.54 Sampling (Well Recovery) Time: 0930  
 Total Depth (feet): 41.27 Ending Water Level (feet): 35.24  
 Water column (feet): 7.73 Total Purged (gallons): 2 1/2  
 Screen Length (feet): - Duplicate Sample: YES  NO   
 Sample Method: Micro Purge Low Flow  
 Horiba Model S/N: 4-52-WGL-PSGR5

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0836	1/2	34.14	6.37	2.88	1.1	2.51	21.15	-54
0845	1	34.37	6.37	2.90	1.2	2.26	21.16	-61
0849	1 1/4	34.54	6.37	2.91	1.1	2.13	21.10	-64
0854	1 1/2	34.64	6.36	2.92	1.0	1.96	21.09	-66
0858	1 3/4	34.84	6.36	2.93	1.0	1.80	21.12	-69
0902	2	35.02	6.36	2.94	1.1	1.70	21.17	-71
0906	2 1/4	35.15	6.36	2.94	1.1	1.67	21.23	-72
0910	2 1/2	35.24	6.36	2.95	1.0	1.60	21.26	-73

Purge Sampling Rates: 25 PSI Refill 20 Discharge 6

Well condition: POOR ACCESS Heavy Vegetation to Southside of Wells. Heavy Erosion Around Wells. Low Yield Well. Extra time to fill Bottles.

Additional Info/Comments: Cloudy Raining on and off. Slight odor and light tint yellowish to water. Very light.

Name: CHRISTIAN VALENZUELA Signature: [Signature]

# GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility:	<u>Sunrise Canyon</u>	Well ID:	<u>MW-2A</u>	Date:	<u>12-28-2020</u>
Access:	Accessibility: Good: <input type="checkbox"/> Fair: <input type="checkbox"/> Poor: <input checked="" type="checkbox"/> Vicinity of well clear of weeds and/or debris: Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/> Presence of depressions or standing water around well: Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> Remarks: <u>Carried sampling equipment and containers down slope. Observed <del>to</del> erosion around well. Heavy vegetation around.</u>				
Concrete Pad:	Integrity: Good: <input type="checkbox"/> Inadequate: <input type="checkbox"/> Presence of depressions or standing water around well: Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> Remarks: <u>Concrete pad is buried</u>				
Protective Outer Casing:	Material: <u>metal</u> Condition of Protective Casing: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Condition of Locking Cap: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Condition of Lock: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Condition of Weepholes: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Remarks:				
Well Riser:	Material: <u>PVC</u> Condition of Riser: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Condition of Riser Cap: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Measurement reference point: Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> Remarks:				
Dedicated Pump:	Type: <u>Bladder</u> Condition: Good: <input checked="" type="checkbox"/> Damaged: <input type="checkbox"/> Missing: <input type="checkbox"/> Pumping Rate (gpm): <u>N/A</u> Current (Hz): <u>N/A</u> Remarks:				

Field Certification: [Signature] Signed Field Tech Title 12-28-2020 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: Sunshine Canyon Project No.: 5020.1006  
 Well I.D.: MW-2B Sampling Date: 12-28-2020  
 Collected By: CV Purge start Time: 0957  
 Casing Diameter (inches): 4 Purge Stop time: 1014  
 Starting Water Level: 17.58 Sampling (Well Recovery) Time: 1034  
 Total Depth (feet): 70.90 Ending Water Level (feet): 21.62  
 Water column (feet): 53.32 Total Purged (gallons): 2 1/2  
 Screen Length (feet): - Duplicate Sample: YES  NO   
 Sample Method: Micro Purge  Low Flow   
 Horiba Model S/N: 4-52 W6648CR5

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1005	1	19.58	7.13	2.91	0.1	2.41	21.80	-115
1007	1 1/2	20.21	7.14	2.91	0.2	2.33	21.89	-114
1010	2	21.02	7.13	2.90	0.0	2.18	21.92	-113
1012	2 1/4	21.22	7.13	2.91	0.1	2.12	21.97	-113
1014	2 1/2	21.62	7.13	2.91	0.0	2.10	22.05	-113

Purge Sampling Rates: 40 PSI 35 Refill DIS 14

Well condition: OK Heavy Vegetation to south and erosion around well carried sampling equipment to well

Additional Info/Comments: cloudy, cool, rain on and off

Name: Christian Valenzuela Signature: [Signature]

## GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility: SUNSHINE CANYON Well ID: MW-2B Date: 12-28-2020

**Access:**  
 Accessibility: Good:  Fair:  Poor:   
 Vicinity of well clear of weeds and/or debris: Yes:  No:   
 Presence of depressions or standing water around well: Yes:  No:   
 Remarks: carried sampling equipment and containers down a slope through heavy vegetation to well, observed erosion around well.

**Concrete Pad:**  
 Integrity: Good:  Inadequate:   
 Presence of depressions or standing water around well: Yes:  No:   
 Remarks: Half the pad is buried cant see Integrity

**Protective Outer Casing:** Material: metal  
 Condition of Protective Casing: Good:  Damaged:   
 Condition of Locking Cap: Good:  Damaged:   
 Condition of Lock: Good:  Damaged:   
 Condition of Weepholes: Good:  Damaged:   
 Remarks:

**Well Riser:** Material: PVC  
 Condition of Riser: Good:  Damaged:   
 Condition of Riser Cap: Good:  Damaged:   
 Measurement reference point: Yes:  No:   
 Remarks:

**Dedicated Pump:** Type: Bladder  
 Condition: Good:  Damaged:  Missing:   
 Pumping Rate (gpm): N/A Current (Hz): N/A  
 Remarks:

Field Certification: Christina Williams Signed Field Tech Title 12-28-2020 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine Cyn</u>	Project No.: <u>5020-1006</u>
Well I.D.: <u>MW-9</u>	Sampling Date: <u>12-28-20</u>
Collected By: <u>MC</u>	Purge start Time: <u>11:22</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>12:12</u>
Starting Water Level: <u>22.39</u>	Sampling (Well Recovery) Time: <u>12:25</u>
Total Depth (feet): <u>25.90</u>	Ending Water Level (feet): <u>22.50</u>
Water column (feet): <u>3.51</u>	Total Purged (gallons): <u>1.5</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method: <u>Micro Purge</u> Low Flow	
Horiba Model S/N: <u>L152/W5414BAP</u>	

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
11:34	.25	22.46	6.47	3.62	1.1	1.66	19.37	-97
11:42	.50	22.48	6.46	3.63	1.0	1.38	19.45	-99
11:49	.75	22.49	6.46	3.61	1.1	1.29	19.55	-101
11:57	1.0	22.49	6.45	3.62	0.7	1.24	19.61	-101
12:04	1.25	22.50	6.45	3.62	0.0	1.21	19.66	-102
12:12	1.50	22.50	6.44	3.61	0.0	1.18	19.70	-102

Purge Sampling Rates: 25 psi refill 25 discharge 3.0  
water contains a greenish tint with an odor

Well condition: OK

Additional Info/Comments: Heavy rainy cool

Name: Mike Campbell Signature: Mike Campbell

**GROUNDWATER MONITORING WELL INSPECTION REPORT**

Facility: <u>Sunshine Cyn</u>		Well ID: <u>MW-9</u>		Date: <u>12-28-20</u>	
Access:					
Accessibility:		Good: _____	Fair: <u>✓</u>	Poor: _____	
Vicinity of well clear of weeds and/or debris:				Yes: <u>✓</u>	No: _____
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks: <u>Required carrying sampling equipment and containers to the well</u>					
Concrete Pad:					
Integrity:		Good: <u>✓</u>	Inadequate: _____		
Presence of depressions or standing water around well:				Yes: _____	No: <u>✓</u>
Remarks:					
Protective Outer Casing:		Material: <u>Metal Flushmount</u>			
Condition of Protective Casing:		Good: <u>✓</u>	Damaged: _____		
Condition of Locking Cap:		Good: <u>✓</u>	Damaged: _____		
Condition of Lock:		Good: <u>✓</u>	Damaged: _____		
Condition of Weepholes:		Good: <u>✓</u>	Damaged: _____		
Remarks:					
Well Riser:		Material: <u>PVC</u>			
Condition of Riser:		Good: <u>✓</u>	Damaged: _____		
Condition of Riser Cap:		Good: <u>✓</u>	Damaged: _____		
Measurement reference point:		Yes: <u>✓</u>	No: _____		
Remarks:					
Dedicated Pump:		Type: <u>Bladder</u>			
Condition:		Good: <u>✓</u>	Damaged: _____		Missing: _____
Pumping Rate (gpm): <u>NA</u>		Current (Hz): <u>NA</u>			
Remarks:					

Field Certification: Mike Cahill Signed      Field Tech Title      12-28-20 Date

## GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: <u>Sunshine canyon</u>	Project No.: <u>5020-1006</u>
Well I.D.: <u>DW-4</u>	Sampling Date: <u>12-28-2020</u>
Collected By: <u>CV</u>	Purge start Time: <u>1102</u>
Casing Diameter (inches): <u>4</u>	Purge Stop time: <u>1118</u>
Starting Water Level: <u>32.18</u>	Sampling (Well Recovery) Time: <u>1138</u>
Total Depth (feet): <u>134.60</u>	Ending Water Level (feet): <u>34.76</u>
Water column (feet): <u>102.42</u>	Total Purged (gallons): <u>2 3/4</u>
Screen Length (feet): _____	Duplicate Sample: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Sample Method: <u>Micro Purge</u> <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/>	
Horiba Model S/N: <u>U-52 W66P8GR5</u>	

TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1107	1	33.43	7.28	3.10	0.3	3.52	21.02	-175
1110	1 1/2	34.06	7.26	3.11	0.0	2.76	20.97	-166
1112	2	34.40	7.24	3.11	0.0	2.31	20.95	-152
1113	2 1/4	34.61	7.24	3.11	0.0	2.25	20.87	-147
1116	2 1/2	34.69	7.24	3.11	0.0	2.15	20.85	-146
1118	2 3/4	34.76	7.24	3.10	0.0	2.10	20.80	-146

Purge Sampling Rates: 75 PSI      REFILL 30      D/S 16

Well condition: OK, Heavy vegetation to south of well. Heavy erosion ground well carried sampling equipment to well.

Additional Info/Comments: COOL, CLOUDY, Raining, Windy

Name: Christian Valenzuela      Signature: Christian Valenzuela



# GROUNDWATER MONITORING WELL INSPECTION REPORT

Facility: Sunshine Cyn Well ID: DW-4 Date: 12-28-2020

Access:

Accessibility: Good:  Fair:  Poor:

Vicinity of well clear of weeds and/or debris: Yes:  No:

Presence of depressions or standing water around well: Yes:  No:

Remarks: carried sampling equipment and containers down slope through mud and vegetation. Heavy Erosion Around well

Concrete Pad:

Integrity: Good:  Inadequate:

Presence of depressions or standing water around well: Yes:  No:

Remarks: Buried, not able to see Integrity.

Protective Outer Casing: Material: metal

Condition of Protective Casing: Good:  Damaged:

Condition of Locking Cap: Good:  Damaged:

Condition of Lock: Good:  Damaged:

Condition of Weepholes: Good:  Damaged:

Remarks:

Well Riser: Material: PVC

Condition of Riser: Good:  Damaged:

Condition of Riser Cap: Good:  Damaged:

Measurement reference point: Yes:  No:

Remarks:

Dedicated Pump: Type: Bladder

Condition: Good:  Damaged:  Missing:

Pumping Rate (gpm): N/A Current (Hz): N/A

Remarks:

Field Certification: Christina V... Field Tech 12-28-2020  
 Signed Title Date

## GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name: Sunshine Cyn. Project No.: 5020, 1002

Station I.D.: Extraction Trench Sampling Date: 12-21-20

Collected By: BS Sampling Time: 0957

Horiba Model S/N: R8J549414 Duplicate Sample: YES  NO

COLOR	ODOR	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
Yellowish	Yes	6.42	4.85	42.5	6.15	20.73	-66

Surface water conditions (including stream flow rate, stream depth): Samples taken @  
filter element

Additional Info/Comments: Sunny, cool

Paul Anlin

**GROUNDWATER MONITORING PROGRAM  
 LEACHATE DATA SHEET**

SITE: Sunshine Canyon

Station I.D.: Subdrain N  
 Collected By: BS  
 Horiba Model S/N: R8554944

Sampling Date: 12/22/20  
 Sampling Time: 1040  
 Duplicate Sample: YES  NO

us/cm

COLOR	ODOR	pH	CONDUCTIVITY us/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
<u>Dark rust</u>	<u>Yes</u>	<u>6.49</u>	<u>3.81</u>	<u>0.2</u>	<u>1.61</u>	<u>14.41</u>	<u>6</u>

Leachate sampling station conditions: Collect samples & sample pan.

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Additional Info/Comments: Clear, sunny, cool

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Benjamin

## GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name: Sunshine Cyn, Project No.: SR20.1006  
 Station I.D.: combined Sampling Date: 12-21-20  
subdrains Sampling Time: 1140  
 Collected By: RS Duplicate Sample: YES NO  
 Horiba Model S/N: R855494H

COLOR	ODOR	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
<u>off yellow</u>	<u>Yes</u>	<u>6.51</u>	<u>3.08</u>	<u>74.4</u>	<u>4.91</u>	<u>20.18</u>	<u>-62</u>

Surface water conditions (including stream flow rate, stream depth): samples taken @  
sample from 0.2" HDPE pipe 5x the flow meter

Additional Info/Comments: Seamy, warm

Paul J. [Signature]

**GROUNDWATER MONITORING PROGRAM  
 SURFACE WATER DATA SHEET**

Site Name: Sunshine

Project No.: 2020.1006

Station I.D.: LY-6

Sampling Date: 12/22/20

Collected By: RS

Sampling Time: NA

Horiba Model S/N: NA

Duplicate Sample: YES NO

COLOR	ODOR	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
			NA				

Surface water conditions (including stream flow rate, stream depth): The lysimeter appears to be dry, no samples collected - check with Mark Vincent for any liquid level.

Additional Info/Comments: Sunny, clear

Brent Salas

## GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name: Sunshine cyn

Project No.: 3020.1086

Station I.D.: LY-7

Sampling Date: 12/21/20

Collected By: RS

Sampling Time: 0904

Horiba Model S/N: R8554944

Duplicate Sample: YES  NO

COLOR	ODOR	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
<u>hint of yellow</u>	<u>yes</u>	<u>6.46</u>	<u>4.79</u>	<u>6</u>	<u>1.29</u>	<u>31.45</u>	<u>-61</u>

Surface water conditions (including stream flow rate, stream depth): Collected Sample at  
Sample point Effluent side of the lysimeter

Field Blank taken here

Additional Info/Comments: windy, sunny, cool

RS Julin

# Geo-Logic ASSOCIATES

## FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) Sunshine Gym PROJECT NAME / NUMBER 5620-1006

Instrument Make/Model # V.52/W54/WBDP

Date/Time	pH	Electrical Conductivity (µMhos/cm) (4.49 mg/Kg)	Turbidity (NTU) (0)	DO (mg/L or %)	Guidance Remarks	Comments
12/21/20 7:12						
Pre. Cal	4.08	4.51	0.3	10.07		
Calibration	4.00	4.49	0.0	9.83		
Calibration Successful? (Y/N)	yes					
Satites Protocol?	yes					
Calibration by	<i>[Signature]</i>					
Physical Condition of Unit					Good	
					Signature or initials	<i>[Signature]</i>
					Did calibration meet criteria in the sampling protocol? (Y or N)	

# Geo-Logic ASSOCIATES

## FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) Sunshine cys PROJECT NAME / NUMBER 5020.1008

Instrument Make/Model # U-5c/WSY1250

Date/Time	pH	Electrical Conductivity (µMhos/cm) (4.49 mg/Kg)	Turbidity (NTU) (0)	DO (mg/L or %)	Guidance Remarks	Comments
12-22-28 6:27						
Pre. Cal	4.28	4.57	3.0	9.17		
Calibration	4.00	4.49	0.1	10.44		
Calibration Successful? (Y/N)	Yes					
Satifies Protocol?	Yes					
Calibration by	[Signature]					
Physical Condition of Unit					Good	



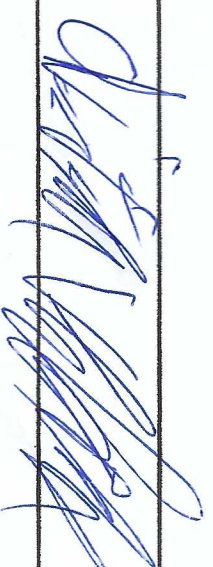
# Geo-Logic ASSOCIATES

## FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) SUNSHINE CANYON

PROJECT NAME / NUMBER 5020.1006

Instrument Make/Model # V-52 WESTAR5

Date/Time	pH	Electrical Conductivity (µMhos/cm) (4.49 mg/Kg)	Turbidity (NTU) (0)	DO (mg/L or %)	Guidance Remarks	Comments
B-28320 0745						
Pre. Cal	4.12	4.46	0.0	8.39		
Calibration	4.00	4.48	0.0	9.77		
Calibration Successful? (Y/N)	YES				enter YES or NO	
Satisfies Protocol?	YES				Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by	CRV				Signature or initials	
Physical Condition of Unit <u>OK</u>						

# Geo-Logic ASSOCIATES

## FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) Sunshine Cyn PROJECT NAME / NUMBER 5026-1006

Instrument Make/Model # W-52/W5 Y1W B00

Date/Time	pH	Electrical Conductivity (µMhos/cm) (4.49 mg/Kg)	Turbidity (NTU) (0)	DO (mg/L or %)	Guidance Remarks	Comments
12-28-20 6:25	3.87	4.45	0.0	11.43		
Pre. Cal	4.00	4.50	0.0	11.32		
Calibration Successful? (Y/N)	NE)				enter YES or NO	
Satisfies Protocol?	NE)				Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by	na				Signature or initials	Mik Singh
Physical Condition of Unit						
Good						

# Geo-Logic ASSOCIATES

## FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) Sunshine Cyn PROJECT NAME / NUMBER 50220. 1006

Instrument Make/Model # h-52 / w5412-BDP

Date/Time	pH	Electrical Conductivity (µMhos/cm) (4.49 mg/Kg)	Turbidity (NTU) (0)	DO (mg/L or %)	Guidance Remarks	Comments
12-29-20 6:45						
Pre. Cal	4.14	4.52	0.2	12.54		
Calibration	3.99	4.51	0.0	12.07		
Calibration Successful? (Y/N)	yes				enter YES or NO	
Satisfies Protocol?	yes				Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by	<u>z</u>				Signature or initials	<u>Zule Smith</u>
Physical Condition of Unit					Good	

# Chain of Custody Record 316182



Regulatory Program:  DW  NPDES  RCRA  Other:

### Client Contact

Company Name: *Geo-Lynx Associates*  
 Address: *1415 W. Barnhardt Ct Suite 200*  
 City/State/Zip: *558-451-1138 / MN 55127*  
 Phone: *558-451-1138*  
 Fax: *558-451-1087*  
 Project Name: *Republic Services Sanghiere Spill*  
 Site: *Sanghiere Canyon Campfire*  
 P O #

Project Manager: *Kyle Weichers*  
 Tel/Fax: *558-451-1138*  
 Analysis Turnaround Time

CALENDAR DAYS  WORKING DAYS  
 TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Site Contact: *Tash Mills*  
 Lab Contact: *Rossier*  
 Date: *12-21-20*  
 Carrier: *Eurochem*

COC No.: *1* of *1* COCs  
 Sampler: *1455mc*  
 For Lab Use Only:  
 Walk-in Client:  
 Lab Sampling:  
 Job / SDG No.: *5070.1000*

### Sample Identification

Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)
<i>12-21-20</i>	<i>11:10</i>	<i>G</i>	<i>GW</i>	<i>12</i>	<i>MN</i>	<i>X</i>
<i>MW-6</i>	<i>12:35</i>		<i>GW</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>MW-13R</i>	<i>09:46</i>		<i>SW</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>MW-14</i>	<i>08:27</i>		<i>GW</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>PZ-2</i>	<i>09:04</i>		<i>WN</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>LY-7</i>	<i>11:40</i>		<i>WN</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>Combined Subdrains</i>	<i>09:57</i>		<i>WN</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>Extraction Trench</i>			<i>WN</i>	<i>1</i>	<i>MN</i>	<i>X</i>
<i>Field Blank</i>			<i>Lab H2O</i>	<i>4</i>	<i>MN</i>	<i>X</i>
<i>Trip Blank</i>			<i>Lab H2O</i>	<i>4</i>	<i>MN</i>	<i>X</i>

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.  
 Special Instructions/QC Requirements & Comments: *metals over next field A1000.*

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

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Cor'd:	Therm ID No.:
Relinquished by: <i>Mike Campbell</i>	Company: <i>Geo-Lynx Associates</i>	Received by: <i>Lillian Rivera</i>	Company: <i>EC-IRV</i>	Date/Time: <i>12/21/20 1400</i>
Relinquished by:	Company:	Received in Laboratory by:	Company:	Date/Time:

# Chain of Custody Record 316177



THE LEADER IN ENVIRONMENTAL TESTING  
**TestAmerica Laboratories, Inc.**  
 TAL-8210 (07/13)

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact: **GALA ReproBiotic** Project Manager: **Kyle Wicketon** Site Contact: **J. Mills** Date: **12-22-20** Carrier: **TA**

Address: **11415 SW 15th Ave, Boynton Beach, FL 33426** Tel/Fax: **858-451-1136** Lab Contact: **R. Tamara**

City/State/Zip: **S. D. FL 92127** Analysis Turnaround Time:  CALENDAR DAYS  WORKING DAYS

Phone: **858-451-1136** TAT if different from Below:  2 weeks  1 week  2 days  1 day

Fax: **858-451-1087** Project Name: **Sanushine CM, CTF**

Site: **Sanushine CM, CTF** P O #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
GM-9R3	12/22/20	0913	G	GMW 12			X EPA 8260 B-VOCs
GM-10R		0715		GMW 12			X 40 CFR 258 App A
GM-11R		0845		GMW 12			X Dichlorodifluoroethane and
DW-1		0940		GMW 12			X 8270-14-Dioxin
Subchron N		1040		GMW 12			X Total Alkalinity & Hardness
Duplicate				GMW 12			X Ammonia as N
1st Blank				GMW 12			X COD (110.4, chloride free, 5 min)
2nd Blank				GMW 12			X Nitrate-N
				GMW 12			X 6010B - Total B, Ca, Fe, Mg, Mn, P, Ni, Pb
				GMW 12			X TDS (60.1), TCC (100)
				GMW 12			X 340.2 - Fluoride
				GMW 12			X 376.2 - Sulfide
				GMW 12			X 8010 - Total Hardness
				GMW 12			X 8010 - Total Hardness

COC No: \_\_\_\_\_ of \_\_\_\_\_ COCs  
 Sampler: **BS, MC**  
 For Lab Use Only:  
 Walk-in Client: \_\_\_\_\_  
 Lab Sampling: \_\_\_\_\_  
 Job / SDG No.: \_\_\_\_\_  
 Sample Specific Notes:

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.

Special Instructions/QC Requirements & Comments: **Mergis are not held in lab.**

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

Custody Seal Intact:  Yes  No Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Cor'd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_

Relinquished by: **[Signature]** Company: **Geo-USA** Date/Time: **12/22/20 11:20**

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

17461 Berrian Ave  
Suite 100  
Irvine, CA 92614  
Phone: 949.261.1022 Fax:

Regulatory Program:  DW  NPDES  RCRA  Other:

Company Name: <u>GA/Republic</u>		Project Manager: <u>Kyle Welches</u>		Site Contact: <u>Josh Mills</u>		Date: <u>12-28-20</u>		COC No.:	
Address: <u>11715 W. Benedict Ct Suite 206</u>		Tel/Fax: <u>950-451-1136</u>		Lab Contact: <u>William Rivera</u>		Carrier: <u>TR</u>		Sampler: <u>MC</u>	
City/State/Zip: <u>San Diego, CA 92121</u>		Analysis Turnaround Time		Perform MS / MSD (Y / N)		EPA 210.6 - Volatile Organics		For Lab Use Only:	
Phone: <u>950-451-1136</u>		<input type="checkbox"/> CALENDAR DAYS		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics		Walk-in Client:	
Fax: <u>950-451-1087</u>		<input type="checkbox"/> WORKING DAYS		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics		Lab Sampling:	
Project Name: <u>Republic Services Inc.</u>		TAT if different from Below		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics		Job / SDG No.:	
Site: <u>Sunshine Canyon Landfill</u>		2 weeks		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics		<u>50301006</u>	
P O #		1 week		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics		Sample Specific Notes:	
		2 days		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics			
		1 day		EPA 210.6 - Volatile Organics		EPA 210.6 - Volatile Organics			
Sample Identification			Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Carrier
MW-2A			12-28-20	0930G	G	GW 12	1	Y	
MW-2B				10:34	G		1	Y	
MW-9				12:25	G		1	Y	
DW-3				10:51	G		1	Y	
DW-4				11:38	G		1	Y	
PZ-4				0943	G		1	Y	
Field Blank					G		1	Y	
Trip Blank					G		1	Y	

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.

Special Instructions/QC Requirements & Comments:  
Metals are not field filtered

Non-Hazardous:  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seals Intact:  Yes  No

Custody Seal No.:

Relinquished by: Michael Capell Company: Geo-Logi Date/Time: 12/28/20 Received by: William Rivera Company: TC TR Date/Time: 12/28/20

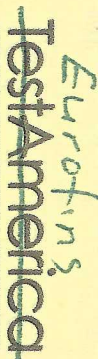
Relinquished by: Company: Date/Time:

Relinquished by: Company: Date/Time:

Cooler Temp. (°C): Obs'd: Corrd: Term ID No.:

# Chain of Custody Record

316181



THE LEADER IN ENVIRONMENTAL TESTING  
TestAmerica Laboratories, Inc.  
TAL-8210 (0719)

Regulatory Program:  DW  NPDES  RCRA  Other:

### Client Contact

Company Name: Geo-Logic / Republic  
Address: 11415 W. Bernardo Ct. Suite 200  
City/State/Zip: San Diego, CA 92127  
Phone: 858-451-1336  
Fax: 858-451-1087  
Project Name: Republic Services, Inc.  
Site: Sunshine Canyon Landfill  
P.O.#

### Project Manager: Kyle Welchens

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: Josh Mills

Lab Contact: Resistant Turner  
Date: 12-29-20  
Carrier: T/A

### COC No. \_\_\_\_\_ of \_\_\_\_\_ COCs

Sampler: \_\_\_\_\_  
For Lab Use Only:  
Walk-in Client: \_\_\_\_\_  
Lab Sampling: \_\_\_\_\_  
Job / SDG No.: 5020-1006

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.
-----------------------	-------------	-------------	------------------------------	--------	------------

MW-1	12-29-20	0854	G	GW	12
MW-5		12:00			12
DW-3		0755			12
DW-5		10:05			12
Field Blank				Lab	4
Trp Blank				Lab	4

Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
	EPA 8460B-VOCs
	50 CFR 258 Apdx. 1
	Dichlorodiphenylmethane and MTBE
	EPA 310.1 - Total Alkalinity and Bicarbonate
	EPA 350.2 Ammonia/N
	EPA 410.4 COD
	EPA 300.6 Chloride
	Bromide, Nitrate-N, Sulfate
	EPA 6010B - Total B/Ca Fe/Mg, Mn, K, Pb
	EPA 160.1 Total Dissolved Solids
	EPA 415.1 Total Organic Carbon
	EPA 340.2 - Fluoride
	EPA 376.2 - Sulfide
	SM-4500-CO2C-Je Carbon Dioxide
	EPA 8270, 1,4-Dioxane

Sample Specific Notes:  
\_\_\_\_\_

Preservation Used: 1=Ice; 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other \_\_\_\_\_

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

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.

Special Instructions/QC Requirements & Comments:  
Metals are not field filtered

Non-hazard  Flammable  Skin Irritant  Poison B  Unknown

Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Corr'd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_

Custody Seals Intact:  Yes  No  
Custody Seal No.: \_\_\_\_\_  
Relinquished by: Michael Campbell  
Company: Geo-Logic Associates  
Date/Time: 12-29-20/1400

Received by: William Rivera  
Company: EC-IRV  
Date/Time: 12/29/20 1400

Relinquished by: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

Received in Laboratory by: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

## ANALYTICAL REPORT

Eurofins Calscience Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-276408-1

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:  
1/7/2021 3:54:56 PM

Rossina Tomova, Project Manager I  
(949)260-3276  
[Rossina.Tomova@Eurofinset.com](mailto:Rossina.Tomova@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

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

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

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





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# Sample Summary

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

Job ID: 440-276408-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-276408-1	MW-6	Water	12/21/20 11:10	12/21/20 17:20	
440-276408-2	MW-13R	Water	12/21/20 12:35	12/21/20 17:20	
440-276408-3	MW-14	Water	12/21/20 09:46	12/21/20 17:20	
440-276408-4	PZ-2	Water	12/21/20 08:27	12/21/20 17:20	
440-276408-5	LY-7	Water	12/21/20 09:04	12/21/20 17:20	
440-276408-6	Combined Subdrains	Water	12/21/20 11:40	12/21/20 17:20	
440-276408-7	Extraction Trench	Water	12/21/20 09:57	12/21/20 17:20	
440-276408-8	Field Blank	Water	12/21/20 00:01	12/21/20 17:20	
440-276408-9	Trip Blank	Water	12/21/20 00:01	12/21/20 17:20	

# Case Narrative

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

Job ID: 440-276408-1

## Job ID: 440-276408-1

### Laboratory: Eurofins Calscience Irvine

#### Narrative

#### Job Narrative 440-276408-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/21/2020 5:20 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 0.5° C.

#### GC/MS VOA

Method 8260B: Due to the matrix, the initial volume(s) used for the following sample deviated from the standard procedure: MW-13R (440-276408-2). The reporting limits (RLs) have been adjusted proportionately.

Method 8260B: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: Extraction Trench (440-276408-7). Elevated reporting limits (RLs) are provided.

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-118326.

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 570-118832 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-119023.

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

#### GC/MS Semi VOA

Method 8270C SIM ID: Results for sample Extraction Trench (440-276408-7) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

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

#### HPLC/IC

Method 300.0: The following sample was diluted due to the nature of the sample matrix: PZ-2 (440-276408-4). Elevated reporting limits (RLs) are provided.

Method 300.0: The following samples were diluted due to the nature of the sample matrix: LY-7 (440-276408-5) and Extraction Trench (440-276408-7). 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 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 7: LY-7 (440-276408-5). The samples were preserved to the appropriate pH in the laboratory. Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

Method 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 (440-276408-7). The samples were preserved to the appropriate pH in the laboratory. Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

# Case Narrative

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

Job ID: 440-276408-1

---

## Job ID: 440-276408-1 (Continued)

---

### Laboratory: Eurofins Calscience Irvine (Continued)

Method 6010B: The method blank for preparation batch 440-634774 and analytical batch 440-634857 contained Iron 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 SM 2320B: The following samples are associated with these LCS and Method Blank. MW-6 (440-276408-1), MW-13R (440-276408-2), MW-14 (440-276408-3), PZ-2 (440-276408-4), LY-7 (440-276408-5), Combined Subdrains (440-276408-6), Extraction Trench (440-276408-7), (LCS 440-634597/29), (MB 440-634597/30) and (440-276408-G-1 DU)

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

### Organic Prep

Method 3510C: The following sample formed emulsions during the extraction procedure: Extraction Trench (440-276408-7). The emulsions were broken up using sodium sulfate. The samples had emulsion. Possible low surrogate recovery.

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

Job ID: 440-276408-1

**Client Sample ID: MW-6**

**Lab Sample ID: 440-276408-1**

Date Collected: 12/21/20 11:10

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 15:30	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 15:30	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 15:30	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 15:30	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 15:30	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 15:30	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 15:30	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 15:30	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 15:30	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 15:30	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 15:30	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 15:30	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 15:30	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 15:30	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 15:30	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 15:30	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 15:30	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 15:30	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 15:30	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 15:30	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 15:30	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 15:30	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 15:30	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 15:30	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 15:30	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 15:30	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 15:30	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 15:30	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 15:30	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 15:30	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 15:30	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 15:30	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 15:30	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 15:30	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 15:30	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 15:30	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 15:30	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 15:30	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 15:30	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 15:30	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 15:30	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 15:30	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 15:30	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 15:30	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 15:30	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 15:30	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 15:30	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 15:30	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 15:30	1

# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: MW-6**

**Lab Sample ID: 440-276408-1**

Date Collected: 12/21/20 11:10

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 15:30	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 15:30	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 15:30	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 15:30	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 15:30	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 15:30	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 15:30	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 15:30	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 15:30	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 15:30	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 15:30	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 15:30	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 15:30	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 15:30	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 15:30	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 15:30	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 15:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 15:30	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	31	T J	ug/L		1.79			12/23/20 15:30	1
Unknown	9.0	T J	ug/L		2.13			12/23/20 15:30	1
Unknown	18	T J	ug/L		2.44			12/23/20 15:30	1
Unknown	23	T J	ug/L		2.54			12/23/20 15:30	1
Ethane, 1-chloro-1-fluoro-	160	T J N	ug/L		2.59	1615-75-4		12/23/20 15:30	1
Unknown	14	T J	ug/L		2.74			12/23/20 15:30	1
Unknown	16	T J	ug/L		2.82			12/23/20 15:30	1
Unknown	22	T J	ug/L		2.90			12/23/20 15:30	1
Unknown	12	T J	ug/L		3.11			12/23/20 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/23/20 15:30	1
4-Bromofluorobenzene (Surr)	97		68 - 120		12/23/20 15:30	1
Dibromofluoromethane (Surr)	93		80 - 127		12/23/20 15:30	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/23/20 15:30	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/26/20 12:41	12/29/20 01:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	39		15 - 150	12/26/20 12:41	12/29/20 01:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		46 - 128	12/26/20 12:41	12/29/20 01:12	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37		5.0	2.5	mg/L			12/22/20 13:44	10
Nitrate as N	ND		0.11	0.055	mg/L			12/22/20 00:47	1
Bromide	1.2		0.50	0.25	mg/L			12/22/20 00:47	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: MW-6**

**Lab Sample ID: 440-276408-1**

Date Collected: 12/21/20 11:10

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1		0.50	0.25	mg/L			12/22/20 00:47	1
Sulfate	1900		50	25	mg/L			12/22/20 14:37	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.73		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:50	1
Calcium	340		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:50	1
Iron	0.19		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:50	1
Magnesium	190		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:50	1
Manganese	0.76		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:50	1
Potassium	5.1		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:50	1
Sodium	310		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:50	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	16	J	20	10	mg/L			12/23/20 13:03	1
Total Dissolved Solids	3400		20	10	mg/L			12/28/20 10:03	1
Ammonia (as N)	0.61		0.50	0.10	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	8.1		1.0	0.54	mg/L			12/23/20 17:27	20
Total Organic Carbon	6.6		0.50	0.25	mg/L			01/06/21 11:01	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	460		4.0	4.0	mg/L			12/22/20 07:35	1
Bicarbonate Alkalinity as CaCO3	460		4.0	4.0	mg/L			12/22/20 07:35	1
Carbon Dioxide, Free	28		2.0	2.0	mg/L			01/04/21 15:06	1

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

**Lab Sample ID: 440-276408-2**

Date Collected: 12/21/20 12:35

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		40	26	ug/L			12/23/20 15:56	80
1,1,1,2-Tetrachloroethane	ND		40	21	ug/L			12/23/20 15:56	80
1,1,1-Trichloroethane	ND		40	21	ug/L			12/23/20 15:56	80
1,1,2,2-Tetrachloroethane	ND		40	16	ug/L			12/23/20 15:56	80
1,1,2-Trichloroethane	ND		40	6.8	ug/L			12/23/20 15:56	80
1,1-Dichloroethane	ND		40	28	ug/L			12/23/20 15:56	80
1,1-Dichloroethene	ND		40	31	ug/L			12/23/20 15:56	80
1,1-Dichloropropene	ND		40	19	ug/L			12/23/20 15:56	80
1,2,4-Trichlorobenzene	ND		40	30	ug/L			12/23/20 15:56	80
1,2-Dibromo-3-Chloropropane	ND		80	51	ug/L			12/23/20 15:56	80
1,2-Dichlorobenzene	ND		40	18	ug/L			12/23/20 15:56	80
1,2-Dichloroethane	ND		40	12	ug/L			12/23/20 15:56	80
1,2-Dichloropropane	ND		40	19	ug/L			12/23/20 15:56	80
1,3-Dichlorobenzene	ND		40	21	ug/L			12/23/20 15:56	80
1,3-Dichloropropane	ND		40	16	ug/L			12/23/20 15:56	80
1,4-Dichlorobenzene	ND		40	18	ug/L			12/23/20 15:56	80
2,2-Dichloropropane	ND		40	32	ug/L			12/23/20 15:56	80
2-Chloro-1,3-butadiene	ND		160	150	ug/L			12/23/20 15:56	80
2-Hexanone	ND		480	350	ug/L			12/23/20 15:56	80

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# Client Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276408-2**

Date Collected: 12/21/20 12:35

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		640	320	ug/L			12/23/20 15:56	80
Acetonitrile	ND		800	310	ug/L			12/23/20 15:56	80
Acrolein	ND		320	180	ug/L			12/23/20 15:56	80
Acrylonitrile	ND		400	69	ug/L			12/23/20 15:56	80
Benzene	ND		40	21	ug/L			12/23/20 15:56	80
Allyl chloride	ND		160	30	ug/L			12/23/20 15:56	80
Bromoform	ND		40	31	ug/L			12/23/20 15:56	80
Bromomethane	ND		80	75	ug/L			12/23/20 15:56	80
Carbon disulfide	ND		80	20	ug/L			12/23/20 15:56	80
Carbon tetrachloride	ND		40	22	ug/L			12/23/20 15:56	80
Chlorobenzene	ND		40	19	ug/L			12/23/20 15:56	80
Bromochloromethane	ND		80	28	ug/L			12/23/20 15:56	80
Chloroethane	ND		40	35	ug/L			12/23/20 15:56	80
Chloroform	ND		40	23	ug/L			12/23/20 15:56	80
Chloromethane	ND		80	24	ug/L			12/23/20 15:56	80
cis-1,2-Dichloroethene	ND		40	24	ug/L			12/23/20 15:56	80
cis-1,3-Dichloropropene	ND		40	15	ug/L			12/23/20 15:56	80
Dibromochloromethane	ND		40	22	ug/L			12/23/20 15:56	80
Dibromomethane	ND		40	18	ug/L			12/23/20 15:56	80
Bromodichloromethane	ND		40	18	ug/L			12/23/20 15:56	80
Dichlorodifluoromethane	ND		80	54	ug/L			12/23/20 15:56	80
Ethyl methacrylate	ND		160	95	ug/L			12/23/20 15:56	80
Ethylbenzene	ND		40	28	ug/L			12/23/20 15:56	80
Iodomethane	ND		2000	470	ug/L			12/23/20 15:56	80
Isobutyl alcohol	ND		800	460	ug/L			12/23/20 15:56	80
m,p-Xylene	ND		80	63	ug/L			12/23/20 15:56	80
Methylacrylonitrile	ND		160	57	ug/L			12/23/20 15:56	80
Methyl methacrylate	ND		160	87	ug/L			12/23/20 15:56	80
Methylene Chloride	ND		80	38	ug/L			12/23/20 15:56	80
Methyl tert-butyl ether	ND		40	16	ug/L			12/23/20 15:56	80
Naphthalene	ND		80	25	ug/L			12/23/20 15:56	80
o-Xylene	ND		40	28	ug/L			12/23/20 15:56	80
Propionitrile	ND		400	300	ug/L			12/23/20 15:56	80
Styrene	ND		40	22	ug/L			12/23/20 15:56	80
t-Butanol	ND		400	320	ug/L			12/23/20 15:56	80
Tetrachloroethene	ND		40	23	ug/L			12/23/20 15:56	80
Tetrahydrofuran	ND		160	85	ug/L			12/23/20 15:56	80
Toluene	ND		40	26	ug/L			12/23/20 15:56	80
trans-1,2-Dichloroethene	ND		40	29	ug/L			12/23/20 15:56	80
trans-1,3-Dichloropropene	ND		40	14	ug/L			12/23/20 15:56	80
trans-1,4-Dichloro-2-butene	ND		160	100	ug/L			12/23/20 15:56	80
Trichloroethene	ND		40	23	ug/L			12/23/20 15:56	80
Trichlorofluoromethane	ND		40	24	ug/L			12/23/20 15:56	80
Vinyl acetate	ND		400	250	ug/L			12/23/20 15:56	80
Vinyl chloride	ND		40	32	ug/L			12/23/20 15:56	80
1,2-Dibromoethane (EDB)	ND		40	11	ug/L			12/23/20 15:56	80
2-Butanone (MEK)	ND		400	240	ug/L			12/23/20 15:56	80
4-Methyl-2-pentanone (MIBK)	ND		400	180	ug/L			12/23/20 15:56	80



# Client Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276408-2**

**Date Collected: 12/21/20 12:35**

**Matrix: Water**

**Date Received: 12/21/20 17:20**

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	3900	T J	ug/L		1.73			12/23/20 15:56	80
Unknown	2100	T J	ug/L		1.82			12/23/20 15:56	80
Unknown	3100	T J	ug/L		1.85			12/23/20 15:56	80
Sulfur dioxide	820000	T J N	ug/L		2.03	7446-09-5		12/23/20 15:56	80
Unknown	610	T J	ug/L		3.00			12/23/20 15:56	80
Unknown	840	T J	ug/L		3.01			12/23/20 15:56	80
Unknown	1800	T J	ug/L		3.03			12/23/20 15:56	80
Unknown	550	T J	ug/L		3.07			12/23/20 15:56	80
Unknown	1500	T J	ug/L		3.08			12/23/20 15:56	80

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/23/20 15:56	80
4-Bromofluorobenzene (Surr)	98		68 - 120		12/23/20 15:56	80
Dibromofluoromethane (Surr)	99		80 - 127		12/23/20 15:56	80
1,2-Dichloroethane-d4 (Surr)	105		80 - 128		12/23/20 15:56	80

### Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.6		0.50	0.34	ug/L		12/26/20 12:41	12/29/20 01:27	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,4-Dioxane-d8	37		15 - 150				12/26/20 12:41	12/29/20 01:27	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Nitrobenzene-d5 (Surr)	90		46 - 128				12/26/20 12:41	12/29/20 01:27	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		25	13	mg/L			12/22/20 01:39	50
Nitrate as N	ND		0.11	0.055	mg/L			12/22/20 01:22	1
Bromide	1.1		0.50	0.25	mg/L			12/22/20 01:22	1
Fluoride	0.40	J	0.50	0.25	mg/L			12/22/20 01:22	1
Sulfate	340		25	13	mg/L			12/22/20 01:39	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.91		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:53	1
Calcium	130		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:53	1
Iron	0.18		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:53	1
Magnesium	100		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:53	1
Manganese	0.23		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:53	1
Potassium	23		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:53	1
Sodium	170		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:53	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	230		20	10	mg/L			12/23/20 13:04	1
Total Dissolved Solids	1400		10	5.0	mg/L			12/28/20 10:03	1
Ammonia (as N)	5.5		2.5	0.50	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	96		5.0	2.7	mg/L			12/23/20 17:28	100
Total Organic Carbon	22		0.50	0.25	mg/L			01/06/21 11:16	5

# Client Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276408-2**

Date Collected: 12/21/20 12:35

Matrix: Water

Date Received: 12/21/20 17:20

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	710		4.0	4.0	mg/L			12/22/20 07:49	1
Bicarbonate Alkalinity as CaCO3	710		4.0	4.0	mg/L			12/22/20 07:49	1
Carbon Dioxide, Free	18		2.0	2.0	mg/L			01/04/21 15:06	1

**Client Sample ID: MW-14**

**Lab Sample ID: 440-276408-3**

Date Collected: 12/21/20 09:46

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 16:22	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 16:22	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 16:22	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 16:22	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 16:22	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 16:22	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 16:22	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 16:22	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 16:22	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 16:22	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 16:22	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 16:22	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 16:22	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 16:22	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 16:22	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 16:22	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 16:22	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 16:22	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 16:22	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 16:22	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 16:22	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 16:22	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 16:22	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 16:22	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 16:22	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 16:22	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 16:22	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 16:22	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 16:22	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 16:22	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 16:22	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 16:22	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 16:22	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 16:22	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 16:22	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 16:22	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 16:22	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 16:22	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 16:22	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 16:22	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 16:22	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: MW-14**

**Lab Sample ID: 440-276408-3**

Date Collected: 12/21/20 09:46

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 16:22	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 16:22	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 16:22	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 16:22	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 16:22	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 16:22	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 16:22	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 16:22	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 16:22	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 16:22	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 16:22	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 16:22	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 16:22	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 16:22	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 16:22	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 16:22	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 16:22	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 16:22	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 16:22	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 16:22	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 16:22	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 16:22	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 16:22	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 16:22	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 16:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 16:22	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	130	T J	ug/L		1.75			12/23/20 16:22	1
Sulfur dioxide	140	T J N	ug/L		1.97	7446-09-5		12/23/20 16:22	1
Unknown	89	T J	ug/L		2.14			12/23/20 16:22	1
Unknown	49	T J	ug/L		2.31			12/23/20 16:22	1
Unknown	87	T J	ug/L		2.45			12/23/20 16:22	1
Ethane, 1-chloro-1-fluoro-	350	T J N	ug/L		2.59	1615-75-4		12/23/20 16:22	1
Unknown	57	T J	ug/L		2.71			12/23/20 16:22	1
Unknown	28	T J	ug/L		2.88			12/23/20 16:22	1
Unknown	27	T J	ug/L		2.97			12/23/20 16:22	1
Unknown	53	T J	ug/L		3.05			12/23/20 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/23/20 16:22	1
4-Bromofluorobenzene (Surr)	95		68 - 120		12/23/20 16:22	1
Dibromofluoromethane (Surr)	97		80 - 127		12/23/20 16:22	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/23/20 16:22	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/26/20 12:41	12/29/20 01:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	31		15 - 150	12/26/20 12:41	12/29/20 01:41	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: MW-14**  
Date Collected: 12/21/20 09:46  
Date Received: 12/21/20 17:20

**Lab Sample ID: 440-276408-3**  
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	99		46 - 128	12/26/20 12:41	12/29/20 01:41	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		5.0	2.5	mg/L			12/22/20 15:34	10
Nitrate as N	0.51		0.11	0.055	mg/L			12/22/20 01:57	1
Bromide	0.57		0.50	0.25	mg/L			12/22/20 01:57	1
Fluoride	0.84		0.50	0.25	mg/L			12/22/20 01:57	1
Sulfate	1900		50	25	mg/L			12/22/20 15:51	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 19:00	1
Calcium	410		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 19:00	1
Iron	0.15		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 19:00	1
Magnesium	170		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 19:00	1
Manganese	4.7		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 19:00	1
Potassium	7.8		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 19:00	1
Sodium	220		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 19:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	18	J	20	10	mg/L			12/23/20 13:04	1
Total Dissolved Solids	3300		20	10	mg/L			12/28/20 10:03	1
Ammonia (as N)	ND		0.50	0.10	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	ND		0.050	0.027	mg/L			12/23/20 17:28	1
Total Organic Carbon	4.6		0.10	0.050	mg/L			01/06/21 11:32	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	310		4.0	4.0	mg/L			12/22/20 07:58	1
Bicarbonate Alkalinity as CaCO3	310		4.0	4.0	mg/L			12/22/20 07:58	1
Carbon Dioxide, Free	32		2.0	2.0	mg/L			01/04/21 15:06	1

**Client Sample ID: PZ-2**  
Date Collected: 12/21/20 08:27  
Date Received: 12/21/20 17:20

**Lab Sample ID: 440-276408-4**  
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		0.50	0.32	ug/L			12/23/20 16:47	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 16:47	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 16:47	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 16:47	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 16:47	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 16:47	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 16:47	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 16:47	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 16:47	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 16:47	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 16:47	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 16:47	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 16:47	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: PZ-2**

**Lab Sample ID: 440-276408-4**

Date Collected: 12/21/20 08:27

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 16:47	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 16:47	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 16:47	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 16:47	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 16:47	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 16:47	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 16:47	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 16:47	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 16:47	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 16:47	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 16:47	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 16:47	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 16:47	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 16:47	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 16:47	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 16:47	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 16:47	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 16:47	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 16:47	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 16:47	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 16:47	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 16:47	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 16:47	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 16:47	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 16:47	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 16:47	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 16:47	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 16:47	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 16:47	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 16:47	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 16:47	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 16:47	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 16:47	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 16:47	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 16:47	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 16:47	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 16:47	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 16:47	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 16:47	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 16:47	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 16:47	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 16:47	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 16:47	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 16:47	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 16:47	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 16:47	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 16:47	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 16:47	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 16:47	1

# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: PZ-2**

**Lab Sample ID: 440-276408-4**

Date Collected: 12/21/20 08:27

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 16:47	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 16:47	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 16:47	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 16:47	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 16:47	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	88	T J	ug/L		1.76			12/23/20 16:47	1
Unknown	76	T J	ug/L		1.98			12/23/20 16:47	1
1-Penten-3-yne	19	T J N	ug/L		2.10	646-05-9		12/23/20 16:47	1
Unknown	57	T J	ug/L		2.15			12/23/20 16:47	1
Unknown	36	T J	ug/L		2.27			12/23/20 16:47	1
Unknown	53	T J	ug/L		2.46			12/23/20 16:47	1
Unknown	27	T J	ug/L		2.56			12/23/20 16:47	1
Unknown	27	T J	ug/L		2.67			12/23/20 16:47	1
Unknown	15	T J	ug/L		2.82			12/23/20 16:47	1
Unknown	26	T J	ug/L		3.02			12/23/20 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/23/20 16:47	1
4-Bromofluorobenzene (Surr)	97		68 - 120		12/23/20 16:47	1
Dibromofluoromethane (Surr)	98		80 - 127		12/23/20 16:47	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 128		12/23/20 16:47	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/26/20 12:41	12/29/20 01:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 150	12/26/20 12:41	12/29/20 01:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	95		46 - 128	12/26/20 12:41	12/29/20 01:56	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>12</b>		2.5	1.3	mg/L			12/22/20 02:32	5
Nitrate as N	ND		0.55	0.28	mg/L			12/22/20 02:32	5
Bromide	ND		2.5	1.3	mg/L			12/22/20 02:32	5
Fluoride	ND		2.5	1.3	mg/L			12/22/20 02:32	5
<b>Sulfate</b>	<b>2700</b>		100	50	mg/L			12/22/20 02:50	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>1.4</b>		0.050	0.025	mg/L		12/28/20 09:47	12/29/20 18:20	1
<b>Calcium</b>	<b>16</b>		0.10	0.050	mg/L		12/28/20 09:47	12/29/20 18:20	1
Iron	ND		0.10	0.050	mg/L		12/28/20 09:47	12/29/20 18:20	1
<b>Magnesium</b>	<b>14</b>		0.020	0.010	mg/L		12/28/20 09:47	12/29/20 18:20	1
<b>Manganese</b>	<b>0.032</b>		0.020	0.015	mg/L		12/28/20 09:47	12/29/20 18:20	1
<b>Potassium</b>	<b>3.0</b>		0.50	0.25	mg/L		12/28/20 09:47	12/29/20 18:20	1
<b>Sodium</b>	<b>1200</b>		2.5	1.3	mg/L		12/28/20 09:47	12/30/20 19:03	5

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: PZ-2**

**Lab Sample ID: 440-276408-4**

Date Collected: 12/21/20 08:27

Matrix: Water

Date Received: 12/21/20 17:20

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/23/20 13:04	1
<b>Total Dissolved Solids</b>	<b>4000</b>		100	50	mg/L			12/28/20 10:03	1
<b>Ammonia (as N)</b>	<b>2.1</b>		0.50	0.10	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	ND		0.050	0.027	mg/L			12/23/20 17:28	1
<b>Total Organic Carbon</b>	<b>2.4</b>		0.10	0.050	mg/L			01/06/21 11:48	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Alkalinity as CaCO3</b>	<b>360</b>		4.0	4.0	mg/L			12/22/20 08:09	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>340</b>		4.0	4.0	mg/L			12/22/20 08:09	1
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			01/04/21 15:06	1

**Client Sample ID: LY-7**

**Lab Sample ID: 440-276408-5**

Date Collected: 12/21/20 09:04

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/28/20 17:45	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/28/20 17:45	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/28/20 17:45	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/28/20 17:45	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/28/20 17:45	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/28/20 17:45	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/28/20 17:45	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/28/20 17:45	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/28/20 17:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/28/20 17:45	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/28/20 17:45	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/28/20 17:45	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/28/20 17:45	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/28/20 17:45	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/28/20 17:45	1
<b>1,4-Dichlorobenzene</b>	<b>1.4</b>		0.50	0.22	ug/L			12/28/20 17:45	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/28/20 17:45	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/28/20 17:45	1
2-Hexanone	ND		6.0	4.3	ug/L			12/28/20 17:45	1
Acetone	ND		8.0	4.0	ug/L			12/28/20 17:45	1
Acetonitrile	ND		10	3.9	ug/L			12/28/20 17:45	1
Acrolein	ND		4.0	2.2	ug/L			12/28/20 17:45	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/28/20 17:45	1
<b>Benzene</b>	<b>0.59</b>		0.50	0.27	ug/L			12/28/20 17:45	1
Allyl chloride	ND		2.0	0.38	ug/L			12/28/20 17:45	1
Bromoform	ND		0.50	0.39	ug/L			12/28/20 17:45	1
Bromomethane	ND		1.0	0.93	ug/L			12/28/20 17:45	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/28/20 17:45	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/28/20 17:45	1
<b>Chlorobenzene</b>	<b>0.30</b>	<b>J</b>	0.50	0.24	ug/L			12/28/20 17:45	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/28/20 17:45	1
Chloroethane	ND		0.50	0.44	ug/L			12/28/20 17:45	1
Chloroform	ND		0.50	0.28	ug/L			12/28/20 17:45	1
Chloromethane	ND		1.0	0.29	ug/L			12/28/20 17:45	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: LY-7**

**Lab Sample ID: 440-276408-5**

Date Collected: 12/21/20 09:04

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>cis-1,2-Dichloroethene</b>	<b>2.0</b>		0.50	0.30	ug/L			12/28/20 17:45	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/28/20 17:45	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/28/20 17:45	1
Dibromomethane	ND		0.50	0.23	ug/L			12/28/20 17:45	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/28/20 17:45	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/28/20 17:45	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/28/20 17:45	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/28/20 17:45	1
Iodomethane	ND		25	5.9	ug/L			12/28/20 17:45	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/28/20 17:45	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/28/20 17:45	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/28/20 17:45	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/28/20 17:45	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/28/20 17:45	1
<b>Methyl tert-butyl ether</b>	<b>2.9</b>		0.50	0.21	ug/L			12/28/20 17:45	1
Naphthalene	ND		1.0	0.32	ug/L			12/28/20 17:45	1
o-Xylene	ND		0.50	0.35	ug/L			12/28/20 17:45	1
Propionitrile	ND		5.0	3.7	ug/L			12/28/20 17:45	1
Styrene	ND		0.50	0.28	ug/L			12/28/20 17:45	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/28/20 17:45	1
<b>Tetrahydrofuran</b>	<b>1.4 J</b>		2.0	1.1	ug/L			12/28/20 17:45	1
Toluene	ND		0.50	0.33	ug/L			12/28/20 17:45	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/28/20 17:45	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/28/20 17:45	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/28/20 17:45	1
Trichloroethene	ND		0.50	0.29	ug/L			12/28/20 17:45	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/28/20 17:45	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/28/20 17:45	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/28/20 17:45	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/28/20 17:45	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/28/20 17:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/28/20 17:45	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Norflurane	80	T J N	ug/L		1.74	811-97-2		12/28/20 17:45	1
Ethane, 1,1-difluoro-	95	T J N	ug/L		1.80	75-37-6		12/28/20 17:45	1
Methane, chlorodifluoro-	56	T J N	ug/L		1.85	75-45-6		12/28/20 17:45	1
Unknown	28	T J	ug/L		1.98			12/28/20 17:45	1
Unknown	52	T J	ug/L		2.00			12/28/20 17:45	1
1-Propene, 2-methyl-	90	T J N	ug/L		2.14	115-11-7		12/28/20 17:45	1
Unknown	53	T J	ug/L		2.31			12/28/20 17:45	1
Unknown	44	T J	ug/L		2.47			12/28/20 17:45	1
Unknown	28	T J	ug/L		2.59			12/28/20 17:45	1
Unknown	58	T J	ug/L		2.79			12/28/20 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/28/20 17:45	1
4-Bromofluorobenzene (Surr)	103		68 - 120		12/28/20 17:45	1
Dibromofluoromethane (Surr)	95		80 - 127		12/28/20 17:45	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 128		12/28/20 17:45	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: LY-7**

**Lab Sample ID: 440-276408-5**

Date Collected: 12/21/20 09:04

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butanol	660		20	16	ug/L			12/28/20 23:45	4

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	360	T J	ug/L		1.80			12/28/20 23:45	4
Unknown	160	T J	ug/L		2.14			12/28/20 23:45	4
Unknown	100	T J	ug/L		2.27			12/28/20 23:45	4
Unknown	250	T J	ug/L		2.30			12/28/20 23:45	4
Unknown	170	T J	ug/L		2.47			12/28/20 23:45	4
Unknown	96	T J	ug/L		2.49			12/28/20 23:45	4
Unknown	170	T J	ug/L		2.57			12/28/20 23:45	4
Unknown	110	T J	ug/L		2.89			12/28/20 23:45	4
Unknown	100	T J	ug/L		2.97			12/28/20 23:45	4
Unknown	88	T J	ug/L		3.03			12/28/20 23:45	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/28/20 23:45	4
4-Bromofluorobenzene (Surr)	98		68 - 120		12/28/20 23:45	4
Dibromofluoromethane (Surr)	98		80 - 127		12/28/20 23:45	4
1,2-Dichloroethane-d4 (Surr)	103		80 - 128		12/28/20 23:45	4

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	23		0.50	0.34	ug/L		12/26/20 12:41	12/29/20 02:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	29		15 - 150	12/26/20 12:41	12/29/20 02:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	100		46 - 128	12/26/20 12:41	12/29/20 02:11	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430		50	25	mg/L			12/22/20 03:25	100
Nitrate as N	ND		0.22	0.11	mg/L			12/22/20 03:07	2
Bromide	2.6		1.0	0.50	mg/L			12/22/20 03:07	2
Fluoride	ND		1.0	0.50	mg/L			12/22/20 03:07	2
Sulfate	480		50	25	mg/L			12/22/20 03:25	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	5.5		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 20:07	1
Calcium	190		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:07	1
Iron	1.4	B	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:07	1
Magnesium	130		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 20:07	1
Manganese	2.5		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 20:07	1
Potassium	29		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 20:07	1
Sodium	860		1.0	0.52	mg/L		12/29/20 10:17	12/30/20 14:12	2

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	130		20	10	mg/L			12/23/20 13:04	1
Total Dissolved Solids	3500		100	50	mg/L			12/28/20 10:03	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: LY-7**

**Lab Sample ID: 440-276408-5**

Date Collected: 12/21/20 09:04

Matrix: Water

Date Received: 12/21/20 17:20

## General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ammonia (as N)</b>	<b>17</b>		2.5	0.50	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	ND		0.050	0.027	mg/L			12/23/20 17:28	1
<b>Total Organic Carbon</b>	<b>52</b>		1.0	0.50	mg/L			01/06/21 15:34	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Alkalinity as CaCO3</b>	<b>2200</b>		4.0	4.0	mg/L			12/22/20 08:40	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>2200</b>		4.0	4.0	mg/L			12/22/20 08:40	1
<b>Carbon Dioxide, Free</b>	<b>150</b>		2.0	2.0	mg/L			01/04/21 15:06	1

**Client Sample ID: Combined Subdrains**

**Lab Sample ID: 440-276408-6**

Date Collected: 12/21/20 11:40

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 17:39	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 17:39	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 17:39	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 17:39	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 17:39	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 17:39	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 17:39	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 17:39	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 17:39	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 17:39	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 17:39	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 17:39	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 17:39	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 17:39	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 17:39	1
<b>1,4-Dichlorobenzene</b>	<b>1.7</b>		0.50	0.22	ug/L			12/23/20 17:39	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 17:39	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 17:39	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 17:39	1
<b>Acetone</b>	<b>58</b>		8.0	4.0	ug/L			12/23/20 17:39	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 17:39	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 17:39	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 17:39	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 17:39	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 17:39	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 17:39	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 17:39	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 17:39	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 17:39	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 17:39	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 17:39	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 17:39	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 17:39	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 17:39	1
<b>cis-1,2-Dichloroethene</b>	<b>1.3</b>		0.50	0.30	ug/L			12/23/20 17:39	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 17:39	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: Combined Subdrains**

**Lab Sample ID: 440-276408-6**

Date Collected: 12/21/20 11:40

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 17:39	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 17:39	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 17:39	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 17:39	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 17:39	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 17:39	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 17:39	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 17:39	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 17:39	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 17:39	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 17:39	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 17:39	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 17:39	1
<b>Naphthalene</b>	<b>0.52</b>	<b>J</b>	1.0	0.32	ug/L			12/23/20 17:39	1
<b>o-Xylene</b>	<b>0.38</b>	<b>J</b>	0.50	0.35	ug/L			12/23/20 17:39	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 17:39	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 17:39	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 17:39	1
<b>Tetrachloroethene</b>	<b>0.37</b>	<b>J</b>	0.50	0.29	ug/L			12/23/20 17:39	1
<b>Tetrahydrofuran</b>	<b>2.9</b>		2.0	1.1	ug/L			12/23/20 17:39	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 17:39	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 17:39	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 17:39	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 17:39	1
<b>Trichloroethene</b>	<b>0.39</b>	<b>J</b>	0.50	0.29	ug/L			12/23/20 17:39	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 17:39	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 17:39	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 17:39	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 17:39	1
<b>2-Butanone (MEK)</b>	<b>3.9</b>	<b>J</b>	5.0	3.0	ug/L			12/23/20 17:39	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 17:39	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	42	T J	ug/L		1.80			12/23/20 17:39	1
Unknown	67	T J	ug/L		1.85			12/23/20 17:39	1
Unknown	41	T J	ug/L		1.98			12/23/20 17:39	1
Unknown	48	T J	ug/L		2.14			12/23/20 17:39	1
Unknown	25	T J	ug/L		2.25			12/23/20 17:39	1
Unknown	71	T J	ug/L		2.45			12/23/20 17:39	1
Unknown	31	T J	ug/L		3.08			12/23/20 17:39	1
Tricyclo[6.3.0.0(4,7)]undec-2-en-5-one, 9-[(2-methoxyethoxy)]	73	T J N	ug/L		4.72	1000154-01-7		12/23/20 17:39	1
D-Limonene	42	T J N	ug/L		14.36	5989-27-5		12/23/20 17:39	1
4-Isopropyltoluene	36		ug/L		14.41	99-87-6		12/23/20 17:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/23/20 17:39	1
4-Bromofluorobenzene (Surr)	105		68 - 120		12/23/20 17:39	1
Dibromofluoromethane (Surr)	97		80 - 127		12/23/20 17:39	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/23/20 17:39	1

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# Client Sample Results

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

Job ID: 440-276408-1

## Client Sample ID: Combined Subdrains

Lab Sample ID: 440-276408-6

Date Collected: 12/21/20 11:40

Matrix: Water

Date Received: 12/21/20 17:20

### Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	27		0.50	0.34	ug/L		12/26/20 12:41	12/29/20 02:26	1
<b>Isotope Dilution</b>									
	%Recovery	Qualifier	Limits						
1,4-Dioxane-d8	34		15 - 150						
<b>Surrogate</b>									
	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	91		46 - 128						

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	210		25	13	mg/L			12/22/20 04:36	50
Nitrate as N	1.2		0.11	0.055	mg/L			12/22/20 04:18	1
Bromide	2.1		0.50	0.25	mg/L			12/22/20 04:18	1
Fluoride	1.0		0.50	0.25	mg/L			12/22/20 04:18	1
Sulfate	1800		25	13	mg/L			12/22/20 04:36	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.84		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 19:05	1
Calcium	350		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 19:05	1
Iron	5.2		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 19:05	1
Magnesium	250		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 19:05	1
Manganese	3.1		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 19:05	1
Potassium	18		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 19:05	1
Sodium	220		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 19:05	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	56		20	10	mg/L			12/23/20 13:04	1
Total Dissolved Solids	2500		20	10	mg/L			12/28/20 10:03	1
Ammonia (as N)	8.9		2.5	0.50	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	0.30		0.050	0.027	mg/L			12/23/20 17:28	1
Total Organic Carbon	28		1.0	0.50	mg/L			01/06/21 12:18	10
<b>Alkalinity</b>									
	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	450		4.0	4.0	mg/L			12/22/20 08:51	1
Bicarbonate Alkalinity as CaCO3	450		4.0	4.0	mg/L			12/22/20 08:51	1
Carbon Dioxide, Free	63		2.0	2.0	mg/L			01/04/21 15:06	1

## Client Sample ID: Extraction Trench

Lab Sample ID: 440-276408-7

Date Collected: 12/21/20 09:57

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		2.0	1.3	ug/L			12/23/20 18:04	4
1,1,1,2-Tetrachloroethane	ND		2.0	1.0	ug/L			12/23/20 18:04	4
1,1,1-Trichloroethane	ND		2.0	1.1	ug/L			12/23/20 18:04	4
1,1,2,2-Tetrachloroethane	ND		2.0	0.78	ug/L			12/23/20 18:04	4
1,1,2-Trichloroethane	ND		2.0	0.34	ug/L			12/23/20 18:04	4
1,1-Dichloroethane	ND		2.0	1.4	ug/L			12/23/20 18:04	4
1,1-Dichloroethene	ND		2.0	1.6	ug/L			12/23/20 18:04	4

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: Extraction Trench**

**Lab Sample ID: 440-276408-7**

Date Collected: 12/21/20 09:57

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		2.0	0.97	ug/L			12/23/20 18:04	4
1,2,4-Trichlorobenzene	ND		2.0	1.5	ug/L			12/23/20 18:04	4
1,2-Dibromo-3-Chloropropane	ND		4.0	2.6	ug/L			12/23/20 18:04	4
1,2-Dichlorobenzene	ND		2.0	0.92	ug/L			12/23/20 18:04	4
1,2-Dichloroethane	ND		2.0	0.60	ug/L			12/23/20 18:04	4
1,2-Dichloropropane	ND		2.0	0.96	ug/L			12/23/20 18:04	4
1,3-Dichlorobenzene	ND		2.0	1.0	ug/L			12/23/20 18:04	4
1,3-Dichloropropane	ND		2.0	0.82	ug/L			12/23/20 18:04	4
1,4-Dichlorobenzene	ND		2.0	0.90	ug/L			12/23/20 18:04	4
2,2-Dichloropropane	ND		2.0	1.6	ug/L			12/23/20 18:04	4
2-Chloro-1,3-butadiene	ND		8.0	7.3	ug/L			12/23/20 18:04	4
2-Hexanone	ND		24	17	ug/L			12/23/20 18:04	4
Acetone	ND		32	16	ug/L			12/23/20 18:04	4
Acetonitrile	ND		40	16	ug/L			12/23/20 18:04	4
Acrolein	ND		16	8.8	ug/L			12/23/20 18:04	4
Acrylonitrile	ND		20	3.5	ug/L			12/23/20 18:04	4
Benzene	ND		2.0	1.1	ug/L			12/23/20 18:04	4
Allyl chloride	ND		8.0	1.5	ug/L			12/23/20 18:04	4
Bromoform	ND		2.0	1.6	ug/L			12/23/20 18:04	4
Bromomethane	ND		4.0	3.7	ug/L			12/23/20 18:04	4
Carbon disulfide	ND		4.0	0.98	ug/L			12/23/20 18:04	4
Carbon tetrachloride	ND		2.0	1.1	ug/L			12/23/20 18:04	4
Chlorobenzene	ND		2.0	0.95	ug/L			12/23/20 18:04	4
Bromochloromethane	ND		4.0	1.4	ug/L			12/23/20 18:04	4
Chloroethane	ND		2.0	1.8	ug/L			12/23/20 18:04	4
Chloroform	ND		2.0	1.1	ug/L			12/23/20 18:04	4
Chloromethane	ND		4.0	1.2	ug/L			12/23/20 18:04	4
cis-1,2-Dichloroethene	ND		2.0	1.2	ug/L			12/23/20 18:04	4
cis-1,3-Dichloropropene	ND		2.0	0.77	ug/L			12/23/20 18:04	4
Dibromochloromethane	ND		2.0	1.1	ug/L			12/23/20 18:04	4
Dibromomethane	ND		2.0	0.92	ug/L			12/23/20 18:04	4
Bromodichloromethane	ND		2.0	0.89	ug/L			12/23/20 18:04	4
Dichlorodifluoromethane	ND		4.0	2.7	ug/L			12/23/20 18:04	4
Ethyl methacrylate	ND		8.0	4.7	ug/L			12/23/20 18:04	4
Ethylbenzene	ND		2.0	1.4	ug/L			12/23/20 18:04	4
Iodomethane	ND		100	24	ug/L			12/23/20 18:04	4
Isobutyl alcohol	ND		40	23	ug/L			12/23/20 18:04	4
m,p-Xylene	ND		4.0	3.1	ug/L			12/23/20 18:04	4
Methylacrylonitrile	ND		8.0	2.8	ug/L			12/23/20 18:04	4
Methyl methacrylate	ND		8.0	4.4	ug/L			12/23/20 18:04	4
Methylene Chloride	ND		4.0	1.9	ug/L			12/23/20 18:04	4
Methyl tert-butyl ether	ND		2.0	0.82	ug/L			12/23/20 18:04	4
Naphthalene	ND		4.0	1.3	ug/L			12/23/20 18:04	4
o-Xylene	ND		2.0	1.4	ug/L			12/23/20 18:04	4
Propionitrile	ND		20	15	ug/L			12/23/20 18:04	4
Styrene	ND		2.0	1.1	ug/L			12/23/20 18:04	4
t-Butanol	ND		20	16	ug/L			12/23/20 18:04	4
Tetrachloroethene	ND		2.0	1.2	ug/L			12/23/20 18:04	4
<b>Tetrahydrofuran</b>	<b>16</b>		8.0	4.3	ug/L			12/23/20 18:04	4

# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: Extraction Trench**

**Lab Sample ID: 440-276408-7**

Date Collected: 12/21/20 09:57

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		2.0	1.3	ug/L			12/23/20 18:04	4
trans-1,2-Dichloroethene	ND		2.0	1.4	ug/L			12/23/20 18:04	4
trans-1,3-Dichloropropene	ND		2.0	0.69	ug/L			12/23/20 18:04	4
trans-1,4-Dichloro-2-butene	ND		8.0	5.2	ug/L			12/23/20 18:04	4
Trichloroethene	ND		2.0	1.2	ug/L			12/23/20 18:04	4
Trichlorofluoromethane	ND		2.0	1.2	ug/L			12/23/20 18:04	4
Vinyl acetate	ND		20	13	ug/L			12/23/20 18:04	4
Vinyl chloride	ND		2.0	1.6	ug/L			12/23/20 18:04	4
1,2-Dibromoethane (EDB)	ND		2.0	0.55	ug/L			12/23/20 18:04	4
2-Butanone (MEK)	ND		20	12	ug/L			12/23/20 18:04	4
4-Methyl-2-pentanone (MIBK)	ND		20	9.0	ug/L			12/23/20 18:04	4

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	120	T J	ug/L		1.86			12/23/20 18:04	4
Unknown	120	T J	ug/L		2.14			12/23/20 18:04	4
Unknown	110	T J	ug/L		2.20			12/23/20 18:04	4
Unknown	270	T J	ug/L		2.31			12/23/20 18:04	4
Unknown	230	T J	ug/L		2.45			12/23/20 18:04	4
Unknown	91	T J	ug/L		2.79			12/23/20 18:04	4
Unknown	120	T J	ug/L		2.83			12/23/20 18:04	4
Unknown	100	T J	ug/L		3.00			12/23/20 18:04	4
Unknown	140	T J	ug/L		3.06			12/23/20 18:04	4
1-Butanol, 3-methoxy-	270	T J N	ug/L		4.71	2517-43-3		12/23/20 18:04	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/23/20 18:04	4
4-Bromofluorobenzene (Surr)	98		68 - 120		12/23/20 18:04	4
Dibromofluoromethane (Surr)	96		80 - 127		12/23/20 18:04	4
1,2-Dichloroethane-d4 (Surr)	102		80 - 128		12/23/20 18:04	4

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	110		2.5	1.7	ug/L		12/26/20 12:41	12/29/20 14:56	5
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	27	*3	15 - 150	12/26/20 12:41	12/29/20 14:56	5			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	46	*3	46 - 128	12/26/20 12:41	12/29/20 14:56	5			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	780		50	25	mg/L			12/22/20 05:11	100
Nitrate as N	ND		0.22	0.11	mg/L			12/22/20 04:53	2
Bromide	10		1.0	0.50	mg/L			12/22/20 04:53	2
Fluoride	ND		1.0	0.50	mg/L			12/22/20 04:53	2
Sulfate	1200		50	25	mg/L			12/22/20 05:11	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.3		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 20:09	1
Calcium	470		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:09	1

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# Client Sample Results

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

Job ID: 440-276408-1

## Client Sample ID: Extraction Trench

Lab Sample ID: 440-276408-7

Date Collected: 12/21/20 09:57

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	85	B	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:09	1
Magnesium	230		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 20:09	1
Manganese	2.8		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 20:09	1
Potassium	68		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 20:09	1
Sodium	540		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 14:15	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	470		20	10	mg/L			12/23/20 13:04	1
Total Dissolved Solids	4200		50	25	mg/L			12/28/20 10:03	1
Ammonia (as N)	26		5.0	1.0	mg/L		12/22/20 05:00	12/22/20 08:00	1
Total Sulfide	ND		0.050	0.027	mg/L			12/23/20 17:28	1
Total Organic Carbon	130		5.0	2.5	mg/L			01/07/21 07:35	50

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	1300		4.0	4.0	mg/L			12/22/20 09:16	1
Bicarbonate Alkalinity as CaCO3	1300		4.0	4.0	mg/L			12/22/20 09:16	1
Carbon Dioxide, Free	200		2.0	2.0	mg/L			01/04/21 15:06	1

## Client Sample ID: Field Blank

Lab Sample ID: 440-276408-8

Date Collected: 12/21/20 00:01

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 12:31	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 12:31	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 12:31	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 12:31	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 12:31	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 12:31	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 12:31	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 12:31	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 12:31	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 12:31	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 12:31	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 12:31	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 12:31	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 12:31	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 12:31	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 12:31	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 12:31	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 12:31	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 12:31	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 12:31	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 12:31	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 12:31	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 12:31	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 12:31	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 12:31	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 12:31	1

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# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276408-8**

**Date Collected: 12/21/20 00:01**

**Matrix: Water**

**Date Received: 12/21/20 17:20**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 12:31	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 12:31	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 12:31	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 12:31	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 12:31	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 12:31	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 12:31	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 12:31	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 12:31	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 12:31	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 12:31	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 12:31	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 12:31	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 12:31	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 12:31	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 12:31	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 12:31	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 12:31	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 12:31	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 12:31	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 12:31	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 12:31	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 12:31	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 12:31	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 12:31	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 12:31	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 12:31	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 12:31	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 12:31	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 12:31	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 12:31	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 12:31	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 12:31	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 12:31	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 12:31	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 12:31	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 12:31	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 12:31	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 12:31	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 12:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 12:31	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	72	TJ	ug/L		1.74			12/23/20 12:31	1
Unknown	9.2	TJ	ug/L		1.99			12/23/20 12:31	1
Unknown	9.4	TJ	ug/L		2.22			12/23/20 12:31	1
Unknown	11	TJ	ug/L		2.45			12/23/20 12:31	1
Unknown	33	TJ	ug/L		2.47			12/23/20 12:31	1
Unknown	7.9	TJ	ug/L		2.80			12/23/20 12:31	1



# Client Sample Results

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

Job ID: 440-276408-1

## Client Sample ID: Field Blank

Date Collected: 12/21/20 00:01

Date Received: 12/21/20 17:20

## Lab Sample ID: 440-276408-8

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		12/23/20 12:31	1
4-Bromofluorobenzene (Surr)	99		68 - 120		12/23/20 12:31	1
Dibromofluoromethane (Surr)	95		80 - 127		12/23/20 12:31	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 128		12/23/20 12:31	1

## Client Sample ID: Trip Blank

Date Collected: 12/21/20 00:01

Date Received: 12/21/20 17:20

## Lab Sample ID: 440-276408-9

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		0.50	0.32	ug/L			12/23/20 12:57	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 12:57	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 12:57	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 12:57	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 12:57	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 12:57	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 12:57	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 12:57	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 12:57	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 12:57	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 12:57	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 12:57	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 12:57	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 12:57	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 12:57	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 12:57	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 12:57	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 12:57	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 12:57	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 12:57	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 12:57	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 12:57	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 12:57	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 12:57	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 12:57	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 12:57	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 12:57	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 12:57	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 12:57	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 12:57	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 12:57	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 12:57	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 12:57	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 12:57	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 12:57	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 12:57	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 12:57	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 12:57	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 12:57	1

# Client Sample Results

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

Job ID: 440-276408-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276408-9**

Date Collected: 12/21/20 00:01

Matrix: Water

Date Received: 12/21/20 17:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 12:57	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 12:57	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 12:57	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 12:57	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 12:57	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 12:57	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 12:57	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 12:57	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 12:57	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 12:57	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 12:57	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 12:57	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 12:57	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 12:57	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 12:57	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 12:57	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 12:57	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 12:57	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 12:57	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 12:57	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 12:57	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 12:57	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 12:57	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 12:57	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 12:57	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 12:57	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 12:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 12:57	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	180	T J	ug/L		1.73			12/23/20 12:57	1
Unknown	14	T J	ug/L		2.14			12/23/20 12:57	1
Unknown	21	T J	ug/L		2.28			12/23/20 12:57	1
Unknown	13	T J	ug/L		2.32			12/23/20 12:57	1
1-Buten-3-yne, 2-methyl-	14	T J N	ug/L		2.39	78-80-8		12/23/20 12:57	1
Unknown	29	T J	ug/L		2.46			12/23/20 12:57	1
Unknown	29	T J	ug/L		2.49			12/23/20 12:57	1
Unknown	19	T J	ug/L		2.58			12/23/20 12:57	1
Unknown	16	T J	ug/L		3.00			12/23/20 12:57	1
Unknown	16	T J	ug/L		3.22			12/23/20 12:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		12/23/20 12:57	1
4-Bromofluorobenzene (Surr)	98		68 - 120		12/23/20 12:57	1
Dibromofluoromethane (Surr)	95		80 - 127		12/23/20 12:57	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 128		12/23/20 12:57	1

# Method Summary

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

Job ID: 440-276408-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	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 NH3 D	Ammonia	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
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2
SM 4500 NH3 B	Distillation, Ammonia	SM	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:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-276408-1

**Client Sample ID: MW-6**

**Lab Sample ID: 440-276408-1**

**Date Collected: 12/21/20 11:10**

**Matrix: Water**

**Date Received: 12/21/20 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	20 mL	20 mL	118326	12/23/20 15:30	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			118989	12/29/20 01:12	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1			634196	12/22/20 00:47	OH1	TAL IRV
Total/NA	Analysis	300.0		1			634197	12/22/20 00:47	OH1	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	634339	12/22/20 13:44	NTN	TAL IRV
Total/NA	Analysis	300.0		100			634339	12/22/20 14:37	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 18:50	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:03	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 07:35	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		20	7.5 mL	7.5 mL	634530	12/23/20 17:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	635469	01/06/21 11:01	YZ	TAL IRV

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

**Lab Sample ID: 440-276408-2**

**Date Collected: 12/21/20 12:35**

**Matrix: Water**

**Date Received: 12/21/20 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		80	20 mL	20 mL	118326	12/23/20 15:56	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			118989	12/29/20 01:27	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1			634196	12/22/20 01:22	OH1	TAL IRV
Total/NA	Analysis	300.0		1			634197	12/22/20 01:22	OH1	TAL IRV
Total/NA	Analysis	300.0		50			634197	12/22/20 01:39	OH1	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 18:53	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:04	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 07:49	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		100	7.5 mL	7.5 mL	634530	12/23/20 17:28	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	635469	01/06/21 11:16	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276408-1

**Client Sample ID: MW-14**

**Lab Sample ID: 440-276408-3**

**Date Collected: 12/21/20 09:46**

**Matrix: Water**

**Date Received: 12/21/20 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	20 mL	20 mL	118326	12/23/20 16:22	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			118989	12/29/20 01:41	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1			634196	12/22/20 01:57	OH1	TAL IRV
Total/NA	Analysis	300.0		1			634197	12/22/20 01:57	OH1	TAL IRV
Total/NA	Analysis	300.0		10	5 mL	1.0 mL	634339	12/22/20 15:34	NTN	TAL IRV
Total/NA	Analysis	300.0		100			634339	12/22/20 15:51	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 19:00	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:04	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 07:58	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634530	12/23/20 17:28	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 11:32	YZ	TAL IRV

**Client Sample ID: PZ-2**

**Lab Sample ID: 440-276408-4**

**Date Collected: 12/21/20 08:27**

**Matrix: Water**

**Date Received: 12/21/20 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	20 mL	20 mL	118326	12/23/20 16:47	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			118989	12/29/20 01:56	AJ2Q	ECL 1
Total/NA	Analysis	300.0		5			634196	12/22/20 02:32	OH1	TAL IRV
Total/NA	Analysis	300.0		5			634197	12/22/20 02:32	OH1	TAL IRV
Total/NA	Analysis	300.0		200			634197	12/22/20 02:50	OH1	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634841	12/29/20 18:20	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		5			635019	12/30/20 19:03	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:04	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 08:09	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634530	12/23/20 17:28	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 11:48	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276408-1

**Client Sample ID: LY-7**

**Lab Sample ID: 440-276408-5**

**Date Collected: 12/21/20 09:04**

**Matrix: Water**

**Date Received: 12/21/20 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	20 mL	20 mL	118832	12/28/20 17:45	UJHB	ECL 2
Total/NA	Analysis	8260B	DL	4	20 mL	20 mL	119023	12/28/20 23:45	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			118989	12/29/20 02:11	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2			634196	12/22/20 03:07	OH1	TAL IRV
Total/NA	Analysis	300.0		2			634197	12/22/20 03:07	OH1	TAL IRV
Total/NA	Analysis	300.0		100			634197	12/22/20 03:25	OH1	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 20:07	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		2			634959	12/30/20 14:12	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:04	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 08:40	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634530	12/23/20 17:28	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	635469	01/06/21 15:34	YZ	TAL IRV

**Client Sample ID: Combined Subdrains**

**Lab Sample ID: 440-276408-6**

**Date Collected: 12/21/20 11:40**

**Matrix: Water**

**Date Received: 12/21/20 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	20 mL	20 mL	118326	12/23/20 17:39	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			118989	12/29/20 02:26	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1			634196	12/22/20 04:18	OH1	TAL IRV
Total/NA	Analysis	300.0		1			634197	12/22/20 04:18	OH1	TAL IRV
Total/NA	Analysis	300.0		50			634197	12/22/20 04:36	OH1	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 19:05	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:04	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 08:51	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634530	12/23/20 17:28	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	635469	01/06/21 12:18	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276408-1

## Client Sample ID: Extraction Trench

Lab Sample ID: 440-276408-7

Date Collected: 12/21/20 09:57

Matrix: Water

Date Received: 12/21/20 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		4	20 mL	20 mL	118326	12/23/20 18:04	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	118751	12/26/20 12:41	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		5			118990	12/29/20 14:56	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2			634196	12/22/20 04:53	OH1	TAL IRV
Total/NA	Analysis	300.0		2			634197	12/22/20 04:53	OH1	TAL IRV
Total/NA	Analysis	300.0		100			634197	12/22/20 05:11	OH1	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 20:09	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 14:15	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634503	12/23/20 13:04	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634359	12/22/20 09:16	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	634647	12/28/20 10:03	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635212	01/04/21 15:06	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			5.0 mL	50 mL	634330	12/22/20 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634352	12/22/20 08:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634530	12/23/20 17:28	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		50	100 mL	100 mL	635505	01/07/21 07:35	YZ	TAL IRV

## Client Sample ID: Field Blank

Lab Sample ID: 440-276408-8

Date Collected: 12/21/20 00:01

Matrix: Water

Date Received: 12/21/20 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	20 mL	20 mL	118326	12/23/20 12:31	UJHB	ECL 2

## Client Sample ID: Trip Blank

Lab Sample ID: 440-276408-9

Date Collected: 12/21/20 00:01

Matrix: Water

Date Received: 12/21/20 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	20 mL	20 mL	118326	12/23/20 12:57	UJHB	ECL 2

**Laboratory References:**

- ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494
- ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494
- TAL IRV = Eurofins Calscience 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

Job ID: 440-276408-1

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

**Lab Sample ID: MB 570-118326/8**  
**Matrix: Water**  
**Analysis Batch: 118326**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 12:05	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 12:05	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 12:05	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 12:05	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 12:05	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 12:05	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 12:05	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 12:05	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 12:05	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 12:05	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 12:05	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 12:05	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 12:05	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 12:05	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 12:05	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 12:05	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 12:05	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 12:05	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 12:05	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 12:05	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 12:05	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 12:05	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 12:05	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 12:05	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 12:05	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 12:05	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 12:05	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 12:05	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 12:05	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 12:05	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 12:05	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 12:05	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 12:05	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 12:05	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 12:05	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 12:05	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 12:05	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 12:05	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 12:05	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 12:05	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 12:05	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 12:05	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 12:05	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 12:05	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 12:05	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 12:05	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 12:05	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 12:05	1



# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: MB 570-118326/8**  
**Matrix: Water**  
**Analysis Batch: 118326**

**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	0.21	ug/L			12/23/20 12:05	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 12:05	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 12:05	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 12:05	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 12:05	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 12:05	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 12:05	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 12:05	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 12:05	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 12:05	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 12:05	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 12:05	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 12:05	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 12:05	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 12:05	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 12:05	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 12:05	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 12:05	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 12:05	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/23/20 12:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/23/20 12:05	1
4-Bromofluorobenzene (Surr)	99		68 - 120		12/23/20 12:05	1
Dibromofluoromethane (Surr)	94		80 - 127		12/23/20 12:05	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 128		12/23/20 12:05	1

**Lab Sample ID: LCS 570-118326/4**  
**Matrix: Water**  
**Analysis Batch: 118326**

**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	10.0	10.3		ug/L		103	80 - 120
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	80 - 126
1,1,1-Trichloroethane	10.0	9.74		ug/L		97	80 - 125
1,1,2,2-Tetrachloroethane	10.0	10.5		ug/L		105	80 - 120
1,1,2-Trichloroethane	10.0	9.91		ug/L		99	80 - 120
1,1-Dichloroethane	10.0	9.19		ug/L		92	77 - 120
1,1-Dichloroethene	10.0	9.11		ug/L		91	74 - 128
1,1-Dichloropropene	10.0	9.37		ug/L		94	79 - 125
1,2,4-Trichlorobenzene	10.0	11.4		ug/L		114	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	11.4		ug/L		114	67 - 120
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	80 - 120
1,2-Dichloroethane	10.0	10.4		ug/L		104	80 - 123
1,2-Dichloropropane	10.0	9.77		ug/L		98	80 - 120
1,3-Dichlorobenzene	10.0	10.9		ug/L		109	80 - 120

Eurofins Calscience Irvine

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCS 570-118326/4**  
**Matrix: Water**  
**Analysis Batch: 118326**

**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	10.0	10.1		ug/L		101	80 - 120
1,4-Dichlorobenzene	10.0	10.7		ug/L		107	80 - 120
2,2-Dichloropropane	10.0	10.1		ug/L		101	77 - 139
2-Hexanone	10.0	10.7		ug/L		107	66 - 129
Acetone	10.0	9.84		ug/L		98	58 - 131
Acrolein	20.0	19.4		ug/L		97	61 - 144
Acrylonitrile	10.0	9.72		ug/L		97	53 - 130
Benzene	10.0	9.76		ug/L		98	80 - 120
Bromoform	10.0	11.8		ug/L		118	70 - 141
Bromomethane	10.0	10.5		ug/L		105	50 - 150
Carbon disulfide	10.0	8.87		ug/L		89	65 - 136
Carbon tetrachloride	10.0	10.4		ug/L		104	75 - 142
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Bromochloromethane	10.0	9.49		ug/L		95	80 - 120
Chloroethane	10.0	8.72		ug/L		87	74 - 123
Chloroform	10.0	9.76		ug/L		98	80 - 120
Chloromethane	10.0	10.1		ug/L		101	54 - 140
cis-1,2-Dichloroethene	10.0	9.52		ug/L		95	80 - 121
cis-1,3-Dichloropropene	10.0	9.94		ug/L		99	80 - 120
Dibromochloromethane	10.0	11.0		ug/L		110	80 - 128
Dibromomethane	10.0	9.83		ug/L		98	80 - 120
Bromodichloromethane	10.0	10.6		ug/L		106	80 - 126
Dichlorodifluoromethane	10.0	11.4		ug/L		114	63 - 135
Ethylbenzene	10.0	10.2		ug/L		102	80 - 120
m,p-Xylene	20.0	21.1		ug/L		105	80 - 120
Methylene Chloride	10.0	8.73		ug/L		87	71 - 125
Methyl tert-butyl ether	10.0	8.74		ug/L		87	70 - 121
Naphthalene	10.0	11.0		ug/L		110	80 - 125
o-Xylene	10.0	10.5		ug/L		105	80 - 120
Styrene	10.0	10.3		ug/L		103	80 - 120
t-Butanol	50.0	50.9		ug/L		102	77 - 124
Tetrachloroethene	10.0	10.9		ug/L		109	80 - 126
Toluene	10.0	9.93		ug/L		99	80 - 120
trans-1,2-Dichloroethene	10.0	9.14		ug/L		91	74 - 121
trans-1,3-Dichloropropene	10.0	10.8		ug/L		108	80 - 123
Trichloroethene	10.0	9.85		ug/L		99	80 - 120
Trichlorofluoromethane	10.0	11.2		ug/L		112	74 - 137
Vinyl acetate	10.0	10.8		ug/L		108	50 - 150
Vinyl chloride	10.0	10.2		ug/L		102	72 - 126
1,2-Dibromoethane (EDB)	10.0	10.3		ug/L		103	80 - 120
2-Butanone (MEK)	10.0	9.49		ug/L		95	50 - 127
4-Methyl-2-pentanone (MIBK)	10.0	10.2		ug/L		102	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	102		68 - 120
Dibromofluoromethane (Surr)	97		80 - 127
1,2-Dichloroethane-d4 (Surr)	99		80 - 128

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCSD 570-118326/5**  
**Matrix: Water**  
**Analysis Batch: 118326**

**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
1,2,3-Trichloropropane	10.0	10.4		ug/L		104	80 - 120	1	20
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	80 - 126	1	20
1,1,1-Trichloroethane	10.0	9.44		ug/L		94	80 - 125	3	20
1,1,2,2-Tetrachloroethane	10.0	10.6		ug/L		106	80 - 120	1	20
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	80 - 120	2	20
1,1-Dichloroethane	10.0	8.91		ug/L		89	77 - 120	3	20
1,1-Dichloroethene	10.0	8.79		ug/L		88	74 - 128	4	20
1,1-Dichloropropene	10.0	9.20		ug/L		92	79 - 125	2	20
1,2,4-Trichlorobenzene	10.0	11.5		ug/L		115	80 - 120	1	20
1,2-Dibromo-3-Chloropropane	10.0	11.0		ug/L		110	67 - 120	3	20
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	80 - 120	0	20
1,2-Dichloroethane	10.0	10.3		ug/L		103	80 - 123	1	20
1,2-Dichloropropane	10.0	9.58		ug/L		96	80 - 120	2	20
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	80 - 120	0	20
1,3-Dichloropropane	10.0	9.99		ug/L		100	80 - 120	1	20
1,4-Dichlorobenzene	10.0	10.6		ug/L		106	80 - 120	1	20
2,2-Dichloropropane	10.0	9.71		ug/L		97	77 - 139	4	20
2-Hexanone	10.0	11.1		ug/L		111	66 - 129	3	21
Acetone	10.0	10.8		ug/L		108	58 - 131	9	30
Acrolein	20.0	19.2		ug/L		96	61 - 144	1	30
Acrylonitrile	10.0	9.72		ug/L		97	53 - 130	0	30
Benzene	10.0	9.39		ug/L		94	80 - 120	4	20
Bromoform	10.0	12.0		ug/L		120	70 - 141	2	20
Bromomethane	10.0	9.86		ug/L		99	50 - 150	6	22
Carbon disulfide	10.0	8.60		ug/L		86	65 - 136	3	20
Carbon tetrachloride	10.0	10.0		ug/L		100	75 - 142	4	20
Chlorobenzene	10.0	10.3		ug/L		103	80 - 120	1	20
Bromochloromethane	10.0	9.70		ug/L		97	80 - 120	2	20
Chloroethane	10.0	8.46		ug/L		85	74 - 123	3	20
Chloroform	10.0	9.58		ug/L		96	80 - 120	2	20
Chloromethane	10.0	9.77		ug/L		98	54 - 140	3	20
cis-1,2-Dichloroethene	10.0	9.32		ug/L		93	80 - 121	2	20
cis-1,3-Dichloropropene	10.0	9.65		ug/L		97	80 - 120	3	20
Dibromochloromethane	10.0	11.0		ug/L		110	80 - 128	0	20
Dibromomethane	10.0	9.83		ug/L		98	80 - 120	0	20
Bromodichloromethane	10.0	10.2		ug/L		102	80 - 126	3	20
Dichlorodifluoromethane	10.0	11.0		ug/L		110	63 - 135	4	20
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120	1	20
m,p-Xylene	20.0	20.8		ug/L		104	80 - 120	1	20
Methylene Chloride	10.0	8.68		ug/L		87	71 - 125	1	20
Methyl tert-butyl ether	10.0	8.68		ug/L		87	70 - 121	1	20
Naphthalene	10.0	10.9		ug/L		109	80 - 125	0	20
o-Xylene	10.0	10.5		ug/L		105	80 - 120	1	20
Styrene	10.0	10.3		ug/L		103	80 - 120	0	20
t-Butanol	50.0	54.9		ug/L		110	77 - 124	7	23
Tetrachloroethene	10.0	10.7		ug/L		107	80 - 126	2	20
Toluene	10.0	9.47		ug/L		95	80 - 120	5	20
trans-1,2-Dichloroethene	10.0	8.92		ug/L		89	74 - 121	2	20

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# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCSD 570-118326/5**  
**Matrix: Water**  
**Analysis Batch: 118326**

**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
trans-1,3-Dichloropropene	10.0	10.9		ug/L		109	80 - 123	0	20
Trichloroethene	10.0	9.60		ug/L		96	80 - 120	3	20
Trichlorofluoromethane	10.0	10.8		ug/L		108	74 - 137	3	20
Vinyl acetate	10.0	10.7		ug/L		107	50 - 150	1	28
Vinyl chloride	10.0	9.73		ug/L		97	72 - 126	5	20
1,2-Dibromoethane (EDB)	10.0	10.4		ug/L		104	80 - 120	0	20
2-Butanone (MEK)	10.0	10.3		ug/L		103	50 - 127	9	26
4-Methyl-2-pentanone (MIBK)	10.0	9.66		ug/L		97	72 - 120	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	102		68 - 120
Dibromofluoromethane (Surr)	100		80 - 127
1,2-Dichloroethane-d4 (Surr)	103		80 - 128

**Lab Sample ID: MB 570-118832/8**  
**Matrix: Water**  
**Analysis Batch: 118832**

**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		0.50	0.32	ug/L			12/28/20 11:02	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/28/20 11:02	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/28/20 11:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/28/20 11:02	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/28/20 11:02	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/28/20 11:02	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/28/20 11:02	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/28/20 11:02	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/28/20 11:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/28/20 11:02	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/28/20 11:02	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/28/20 11:02	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/28/20 11:02	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/28/20 11:02	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/28/20 11:02	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/28/20 11:02	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/28/20 11:02	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/28/20 11:02	1
2-Hexanone	ND		6.0	4.3	ug/L			12/28/20 11:02	1
Acetone	ND		8.0	4.0	ug/L			12/28/20 11:02	1
Acetonitrile	ND		10	3.9	ug/L			12/28/20 11:02	1
Acrolein	ND		4.0	2.2	ug/L			12/28/20 11:02	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/28/20 11:02	1
Benzene	ND		0.50	0.27	ug/L			12/28/20 11:02	1
Allyl chloride	ND		2.0	0.38	ug/L			12/28/20 11:02	1
Bromoform	ND		0.50	0.39	ug/L			12/28/20 11:02	1
Bromomethane	ND		1.0	0.93	ug/L			12/28/20 11:02	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/28/20 11:02	1

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: MB 570-118832/8**  
**Matrix: Water**  
**Analysis Batch: 118832**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/28/20 11:02	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/28/20 11:02	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/28/20 11:02	1
Chloroethane	ND		0.50	0.44	ug/L			12/28/20 11:02	1
Chloroform	ND		0.50	0.28	ug/L			12/28/20 11:02	1
Chloromethane	ND		1.0	0.29	ug/L			12/28/20 11:02	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/28/20 11:02	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/28/20 11:02	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/28/20 11:02	1
Dibromomethane	ND		0.50	0.23	ug/L			12/28/20 11:02	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/28/20 11:02	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/28/20 11:02	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/28/20 11:02	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/28/20 11:02	1
Iodomethane	ND		25	5.9	ug/L			12/28/20 11:02	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/28/20 11:02	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/28/20 11:02	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/28/20 11:02	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/28/20 11:02	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/28/20 11:02	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/28/20 11:02	1
Naphthalene	ND		1.0	0.32	ug/L			12/28/20 11:02	1
o-Xylene	ND		0.50	0.35	ug/L			12/28/20 11:02	1
Propionitrile	ND		5.0	3.7	ug/L			12/28/20 11:02	1
Styrene	ND		0.50	0.28	ug/L			12/28/20 11:02	1
t-Butanol	ND		5.0	4.0	ug/L			12/28/20 11:02	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/28/20 11:02	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/28/20 11:02	1
Toluene	ND		0.50	0.33	ug/L			12/28/20 11:02	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/28/20 11:02	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/28/20 11:02	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/28/20 11:02	1
Trichloroethene	ND		0.50	0.29	ug/L			12/28/20 11:02	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/28/20 11:02	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/28/20 11:02	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/28/20 11:02	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/28/20 11:02	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/28/20 11:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/28/20 11:02	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Tentatively Identified Compound</i>	None		ug/L					12/28/20 11:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	99		80 - 120		12/28/20 11:02	1
<i>4-Bromofluorobenzene (Surr)</i>	96		68 - 120		12/28/20 11:02	1
<i>Dibromofluoromethane (Surr)</i>	96		80 - 127		12/28/20 11:02	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		80 - 128		12/28/20 11:02	1

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# QC Sample Results

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

Job ID: 440-276408-1

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

Lab Sample ID: LCS 570-118832/4

Matrix: Water

Analysis Batch: 118832

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	10.0	9.85		ug/L		98	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.95		ug/L		99	80 - 126
1,1,1-Trichloroethane	10.0	9.63		ug/L		96	80 - 125
1,1,2,2-Tetrachloroethane	10.0	9.22		ug/L		92	80 - 120
1,1,2-Trichloroethane	10.0	9.21		ug/L		92	80 - 120
1,1-Dichloroethane	10.0	9.17		ug/L		92	77 - 120
1,1-Dichloroethene	10.0	8.99		ug/L		90	74 - 128
1,1-Dichloropropene	10.0	9.25		ug/L		93	79 - 125
1,2,4-Trichlorobenzene	10.0	9.63		ug/L		96	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.51		ug/L		95	67 - 120
1,2-Dichlorobenzene	10.0	9.33		ug/L		93	80 - 120
1,2-Dichloroethane	10.0	10.3		ug/L		103	80 - 123
1,2-Dichloropropane	10.0	9.76		ug/L		98	80 - 120
1,3-Dichlorobenzene	10.0	9.23		ug/L		92	80 - 120
1,3-Dichloropropane	10.0	9.42		ug/L		94	80 - 120
1,4-Dichlorobenzene	10.0	9.15		ug/L		91	80 - 120
2,2-Dichloropropane	10.0	10.6		ug/L		106	77 - 139
2-Hexanone	10.0	10.4		ug/L		104	66 - 129
Acetone	10.0	10.9		ug/L		109	58 - 131
Acrolein	20.0	21.0		ug/L		105	61 - 144
Acrylonitrile	10.0	8.92		ug/L		89	53 - 130
Benzene	10.0	9.59		ug/L		96	80 - 120
Bromoform	10.0	10.2		ug/L		102	70 - 141
Bromomethane	10.0	10.5		ug/L		105	50 - 150
Carbon disulfide	10.0	8.69		ug/L		87	65 - 136
Carbon tetrachloride	10.0	10.2		ug/L		102	75 - 142
Chlorobenzene	10.0	9.58		ug/L		96	80 - 120
Bromochloromethane	10.0	9.43		ug/L		94	80 - 120
Chloroethane	10.0	9.32		ug/L		93	74 - 123
Chloroform	10.0	9.64		ug/L		96	80 - 120
Chloromethane	10.0	11.4		ug/L		114	54 - 140
cis-1,2-Dichloroethene	10.0	9.31		ug/L		93	80 - 121
cis-1,3-Dichloropropene	10.0	9.87		ug/L		99	80 - 120
Dibromochloromethane	10.0	10.1		ug/L		101	80 - 128
Dibromomethane	10.0	9.59		ug/L		96	80 - 120
Bromodichloromethane	10.0	10.2		ug/L		102	80 - 126
Dichlorodifluoromethane	10.0	13.4		ug/L		134	63 - 135
Ethylbenzene	10.0	9.43		ug/L		94	80 - 120
m,p-Xylene	20.0	19.4		ug/L		97	80 - 120
Methylene Chloride	10.0	8.88		ug/L		89	71 - 125
Methyl tert-butyl ether	10.0	8.73		ug/L		87	70 - 121
Naphthalene	10.0	9.33		ug/L		93	80 - 125
o-Xylene	10.0	9.76		ug/L		98	80 - 120
Styrene	10.0	9.65		ug/L		96	80 - 120
t-Butanol	50.0	52.8		ug/L		106	77 - 124
Tetrachloroethene	10.0	9.79		ug/L		98	80 - 126
Toluene	10.0	9.60		ug/L		96	80 - 120
trans-1,2-Dichloroethene	10.0	9.03		ug/L		90	74 - 121

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# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCS 570-118832/4**  
**Matrix: Water**  
**Analysis Batch: 118832**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	80 - 123
Trichloroethene	10.0	9.61		ug/L		96	80 - 120
Trichlorofluoromethane	10.0	11.7		ug/L		117	74 - 137
Vinyl acetate	10.0	11.7		ug/L		117	50 - 150
Vinyl chloride	10.0	11.1		ug/L		111	72 - 126
1,2-Dibromoethane (EDB)	10.0	9.39		ug/L		94	80 - 120
2-Butanone (MEK)	10.0	9.42		ug/L		94	50 - 127
4-Methyl-2-pentanone (MIBK)	10.0	10.5		ug/L		105	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	108		68 - 120
Dibromofluoromethane (Surr)	100		80 - 127
1,2-Dichloroethane-d4 (Surr)	101		80 - 128

**Lab Sample ID: LCSD 570-118832/5**  
**Matrix: Water**  
**Analysis Batch: 118832**

**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
1,2,3-Trichloropropane	10.0	10.2		ug/L		102	80 - 120	4	20
1,1,1,2-Tetrachloroethane	10.0	10.4		ug/L		104	80 - 126	4	20
1,1,1-Trichloroethane	10.0	9.32		ug/L		93	80 - 125	3	20
1,1,2,2-Tetrachloroethane	10.0	10.0		ug/L		100	80 - 120	8	20
1,1,2-Trichloroethane	10.0	9.37		ug/L		94	80 - 120	2	20
1,1-Dichloroethane	10.0	8.94		ug/L		89	77 - 120	3	20
1,1-Dichloroethene	10.0	8.70		ug/L		87	74 - 128	3	20
1,1-Dichloropropene	10.0	8.85		ug/L		88	79 - 125	4	20
1,2,4-Trichlorobenzene	10.0	10.3		ug/L		103	80 - 120	7	20
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	67 - 120	8	20
1,2-Dichlorobenzene	10.0	9.89		ug/L		99	80 - 120	6	20
1,2-Dichloroethane	10.0	10.4		ug/L		104	80 - 123	1	20
1,2-Dichloropropane	10.0	9.64		ug/L		96	80 - 120	1	20
1,3-Dichlorobenzene	10.0	9.68		ug/L		97	80 - 120	5	20
1,3-Dichloropropane	10.0	9.47		ug/L		95	80 - 120	1	20
1,4-Dichlorobenzene	10.0	9.64		ug/L		96	80 - 120	5	20
2,2-Dichloropropane	10.0	10.2		ug/L		102	77 - 139	4	20
2-Hexanone	10.0	10.2		ug/L		102	66 - 129	3	21
Acetone	10.0	9.54		ug/L		95	58 - 131	13	30
Acrolein	20.0	20.1		ug/L		101	61 - 144	4	30
Acrylonitrile	10.0	9.94		ug/L		99	53 - 130	11	30
Benzene	10.0	9.45		ug/L		94	80 - 120	2	20
Bromoform	10.0	10.9		ug/L		109	70 - 141	6	20
Bromomethane	10.0	10.2		ug/L		102	50 - 150	3	22
Carbon disulfide	10.0	8.38		ug/L		84	65 - 136	4	20
Carbon tetrachloride	10.0	9.81		ug/L		98	75 - 142	4	20
Chlorobenzene	10.0	9.68		ug/L		97	80 - 120	1	20
Bromochloromethane	10.0	9.51		ug/L		95	80 - 120	1	20

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# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCSD 570-118832/5**  
**Matrix: Water**  
**Analysis Batch: 118832**

**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
Chloroethane	10.0	9.23		ug/L		92	74 - 123	1	20
Chloroform	10.0	9.44		ug/L		94	80 - 120	2	20
Chloromethane	10.0	11.1		ug/L		111	54 - 140	3	20
cis-1,2-Dichloroethene	10.0	9.19		ug/L		92	80 - 121	1	20
cis-1,3-Dichloropropene	10.0	9.95		ug/L		100	80 - 120	1	20
Dibromochloromethane	10.0	10.4		ug/L		104	80 - 128	2	20
Dibromomethane	10.0	9.63		ug/L		96	80 - 120	1	20
Bromodichloromethane	10.0	10.2		ug/L		102	80 - 126	0	20
Dichlorodifluoromethane	10.0	12.9		ug/L		129	63 - 135	4	20
Ethylbenzene	10.0	9.55		ug/L		95	80 - 120	1	20
m,p-Xylene	20.0	19.8		ug/L		99	80 - 120	2	20
Methylene Chloride	10.0	8.63		ug/L		86	71 - 125	3	20
Methyl tert-butyl ether	10.0	8.78		ug/L		88	70 - 121	1	20
Naphthalene	10.0	10.0		ug/L		100	80 - 125	7	20
o-Xylene	10.0	10.0		ug/L		100	80 - 120	3	20
Styrene	10.0	9.76		ug/L		98	80 - 120	1	20
t-Butanol	50.0	51.0		ug/L		102	77 - 124	3	23
Tetrachloroethene	10.0	9.81		ug/L		98	80 - 126	0	20
Toluene	10.0	9.55		ug/L		96	80 - 120	0	20
trans-1,2-Dichloroethene	10.0	8.81		ug/L		88	74 - 121	2	20
trans-1,3-Dichloropropene	10.0	10.6		ug/L		106	80 - 123	1	20
Trichloroethene	10.0	9.40		ug/L		94	80 - 120	2	20
Trichlorofluoromethane	10.0	11.3		ug/L		113	74 - 137	4	20
Vinyl acetate	10.0	11.5		ug/L		115	50 - 150	2	28
Vinyl chloride	10.0	10.6		ug/L		106	72 - 126	5	20
1,2-Dibromoethane (EDB)	10.0	9.76		ug/L		98	80 - 120	4	20
2-Butanone (MEK)	10.0	9.37		ug/L		94	50 - 127	1	26
4-Methyl-2-pentanone (MIBK)	10.0	10.5		ug/L		105	72 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	106		68 - 120
Dibromofluoromethane (Surr)	97		80 - 127
1,2-Dichloroethane-d4 (Surr)	101		80 - 128

**Lab Sample ID: 440-276168-C-1 MS**  
**Matrix: Water**  
**Analysis Batch: 118832**

**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		10.0	9.60		ug/L		96	75 - 125
1,1,1,2-Tetrachloroethane	ND		10.0	8.73		ug/L		87	75 - 127
1,1,1-Trichloroethane	ND	F2	10.0	7.91		ug/L		79	72 - 132
1,1,2,2-Tetrachloroethane	ND		10.0	9.52		ug/L		95	75 - 132
1,1,2-Trichloroethane	ND		10.0	8.57		ug/L		86	75 - 125
1,1-Dichloroethane	ND		10.0	7.66		ug/L		77	68 - 128
1,1-Dichloroethene	ND	F2	10.0	7.39		ug/L		74	66 - 126
1,1-Dichloropropene	ND	F2	10.0	7.49		ug/L		75	74 - 134

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# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276168-C-1 MS**

**Client Sample ID: Matrix Spike**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 118832**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	ND		10.0	8.41		ug/L		84	75 - 125
1,2-Dibromo-3-Chloropropane	ND		10.0	10.5		ug/L		105	75 - 127
1,2-Dichlorobenzene	ND		10.0	8.35		ug/L		84	75 - 125
1,2-Dichloroethane	ND		10.0	9.27		ug/L		93	75 - 127
1,2-Dichloropropane	ND		10.0	8.26		ug/L		83	75 - 125
1,3-Dichlorobenzene	ND		10.0	7.73		ug/L		77	75 - 126
1,3-Dichloropropane	ND		10.0	8.70		ug/L		87	75 - 125
1,4-Dichlorobenzene	ND		10.0	7.93		ug/L		79	75 - 125
2,2-Dichloropropane	ND		10.0	8.41		ug/L		84	52 - 160
2-Hexanone	ND		10.0	10.8		ug/L		108	74 - 122
Acetone	ND		10.0	7.04	J	ug/L		70	20 - 180
Acrolein	ND		20.0	19.2		ug/L		96	80 - 120
Acrylonitrile	ND		10.0	8.81		ug/L		88	68 - 134
Benzene	ND		10.0	7.94		ug/L		79	75 - 125
Bromoform	ND		10.0	9.72		ug/L		97	71 - 137
Bromomethane	ND		10.0	9.84		ug/L		98	37 - 181
Carbon disulfide	ND	F2	10.0	7.68		ug/L		77	58 - 136
Carbon tetrachloride	ND	F2	10.0	8.36		ug/L		84	69 - 135
Chlorobenzene	ND		10.0	8.27		ug/L		83	75 - 125
Bromochloromethane	ND		10.0	8.42		ug/L		84	75 - 128
Chloroethane	ND		10.0	9.60		ug/L		96	20 - 180
Chloroform	ND		10.0	8.20		ug/L		82	75 - 129
Chloromethane	ND		10.0	11.0		ug/L		110	41 - 149
cis-1,2-Dichloroethene	ND		10.0	7.90		ug/L		79	75 - 130
cis-1,3-Dichloropropene	ND		10.0	8.36		ug/L		84	75 - 128
Dibromochloromethane	ND		10.0	9.18		ug/L		92	75 - 125
Dibromomethane	ND		10.0	8.74		ug/L		87	75 - 129
Bromodichloromethane	ND		10.0	8.75		ug/L		87	75 - 125
Dichlorodifluoromethane	ND		10.0	12.3		ug/L		123	28 - 172
Ethylbenzene	ND		10.0	8.04		ug/L		80	75 - 125
m,p-Xylene	ND		20.0	16.4		ug/L		82	75 - 125
Methylene Chloride	ND		10.0	7.37		ug/L		74	74 - 128
Methyl tert-butyl ether	ND		10.0	8.41		ug/L		84	71 - 131
Naphthalene	ND		10.0	9.22		ug/L		92	75 - 136
o-Xylene	ND		10.0	8.39		ug/L		84	75 - 127
Styrene	ND		10.0	7.67		ug/L		77	28 - 166
t-Butanol	9.7		50.0	82.0		ug/L		145	20 - 180
Tetrachloroethene	ND		10.0	8.19		ug/L		82	58 - 124
Toluene	ND		10.0	8.24		ug/L		82	75 - 125
trans-1,2-Dichloroethene	ND		10.0	7.44		ug/L		74	73 - 133
trans-1,3-Dichloropropene	ND		10.0	9.27		ug/L		93	75 - 125
Trichloroethene	ND		10.0	7.89		ug/L		79	75 - 125
Trichlorofluoromethane	ND		10.0	11.2		ug/L		112	68 - 134
Vinyl acetate	ND		10.0	10.7		ug/L		107	65 - 137
Vinyl chloride	ND		10.0	11.2		ug/L		112	52 - 142
1,2-Dibromoethane (EDB)	ND		10.0	9.11		ug/L		91	75 - 126
2-Butanone (MEK)	ND		10.0	9.65		ug/L		96	20 - 180
4-Methyl-2-pentanone (MIBK)	ND		10.0	10.3		ug/L		103	65 - 137

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# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276168-C-1 MS**  
**Matrix: Water**  
**Analysis Batch: 118832**

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Toluene-d8 (Surr)</i>	99		80 - 120
<i>4-Bromofluorobenzene (Surr)</i>	107		68 - 120
<i>Dibromofluoromethane (Surr)</i>	98		80 - 127
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		80 - 128

**Lab Sample ID: 440-276168-D-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 118832**

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,2,3-Trichloropropane	ND		10.0	9.48		ug/L		95	75 - 125	1	20
1,1,1,2-Tetrachloroethane	ND		10.0	9.81		ug/L		98	75 - 127	12	20
1,1,1-Trichloroethane	ND	F2	10.0	9.76	F2	ug/L		98	72 - 132	21	20
1,1,2,2-Tetrachloroethane	ND		10.0	9.59		ug/L		96	75 - 132	1	20
1,1,2-Trichloroethane	ND		10.0	9.00		ug/L		90	75 - 125	5	20
1,1-Dichloroethane	ND		10.0	8.96		ug/L		90	68 - 128	16	20
1,1-Dichloroethene	ND	F2	10.0	9.39	F2	ug/L		94	66 - 126	24	20
1,1-Dichloropropene	ND	F2	10.0	9.45	F2	ug/L		95	74 - 134	23	20
1,2,4-Trichlorobenzene	ND		10.0	9.29		ug/L		93	75 - 125	10	20
1,2-Dibromo-3-Chloropropane	ND		10.0	9.75		ug/L		97	75 - 127	8	20
1,2-Dichlorobenzene	ND		10.0	9.34		ug/L		93	75 - 125	11	20
1,2-Dichloroethane	ND		10.0	9.92		ug/L		99	75 - 127	7	20
1,2-Dichloropropane	ND		10.0	9.42		ug/L		94	75 - 125	13	20
1,3-Dichlorobenzene	ND		10.0	9.00		ug/L		90	75 - 126	15	20
1,3-Dichloropropane	ND		10.0	9.08		ug/L		91	75 - 125	4	20
1,4-Dichlorobenzene	ND		10.0	9.11		ug/L		91	75 - 125	14	20
2,2-Dichloropropane	ND		10.0	10.1		ug/L		101	52 - 160	18	20
2-Hexanone	ND		10.0	10.3		ug/L		103	74 - 122	6	20
Acetone	ND		10.0	9.90		ug/L		99	20 - 180	34	52
Acrolein	ND		20.0	22.5		ug/L		113	80 - 120	16	20
Acrylonitrile	ND		10.0	9.46		ug/L		95	68 - 134	7	20
Benzene	ND		10.0	9.19		ug/L		92	75 - 125	15	20
Bromoform	ND		10.0	10.1		ug/L		101	71 - 137	4	20
Bromomethane	ND		10.0	10.2		ug/L		102	37 - 181	4	22
Carbon disulfide	ND	F2	10.0	9.66	F2	ug/L		97	58 - 136	23	20
Carbon tetrachloride	ND	F2	10.0	10.7	F2	ug/L		107	69 - 135	25	20
Chlorobenzene	ND		10.0	9.36		ug/L		94	75 - 125	12	20
Bromochloromethane	ND		10.0	9.43		ug/L		94	75 - 128	11	20
Chloroethane	ND		10.0	9.65		ug/L		97	20 - 180	1	20
Chloroform	ND		10.0	9.34		ug/L		93	75 - 129	13	20
Chloromethane	ND		10.0	11.5		ug/L		115	41 - 149	4	20
cis-1,2-Dichloroethene	ND		10.0	9.28		ug/L		93	75 - 130	16	20
cis-1,3-Dichloropropene	ND		10.0	9.60		ug/L		96	75 - 128	14	20
Dibromochloromethane	ND		10.0	9.94		ug/L		99	75 - 125	8	20
Dibromomethane	ND		10.0	9.48		ug/L		95	75 - 129	8	20
Bromodichloromethane	ND		10.0	9.87		ug/L		99	75 - 125	12	20
Dichlorodifluoromethane	ND		10.0	13.4		ug/L		134	28 - 172	8	20
Ethylbenzene	ND		10.0	9.20		ug/L		92	75 - 125	13	20

# QC Sample Results

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

Job ID: 440-276408-1

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

Lab Sample ID: 440-276168-D-1 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 118832

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
m,p-Xylene	ND		20.0	18.9		ug/L		95	75 - 125	14	20
Methylene Chloride	ND		10.0	8.39		ug/L		84	74 - 128	13	20
Methyl tert-butyl ether	ND		10.0	8.90		ug/L		89	71 - 131	6	20
Naphthalene	ND		10.0	9.65		ug/L		97	75 - 136	5	20
o-Xylene	ND		10.0	9.50		ug/L		95	75 - 127	12	20
Styrene	ND		10.0	8.46		ug/L		85	28 - 166	10	20
t-Butanol	9.7		50.0	75.0		ug/L		131	20 - 180	9	40
Tetrachloroethene	ND		10.0	9.78		ug/L		98	58 - 124	18	20
Toluene	ND		10.0	9.42		ug/L		94	75 - 125	13	20
trans-1,2-Dichloroethene	ND		10.0	8.79		ug/L		88	73 - 133	17	20
trans-1,3-Dichloropropene	ND		10.0	10.1		ug/L		101	75 - 125	8	20
Trichloroethene	ND		10.0	9.25		ug/L		92	75 - 125	16	20
Trichlorofluoromethane	ND		10.0	11.7		ug/L		117	68 - 134	4	20
Vinyl acetate	ND		10.0	11.6		ug/L		116	65 - 137	9	20
Vinyl chloride	ND		10.0	11.5		ug/L		115	52 - 142	3	20
1,2-Dibromoethane (EDB)	ND		10.0	9.51		ug/L		95	75 - 126	4	20
2-Butanone (MEK)	ND		10.0	9.59		ug/L		96	20 - 180	1	40
4-Methyl-2-pentanone (MIBK)	ND		10.0	10.0		ug/L		100	65 - 137	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	106		68 - 120
Dibromofluoromethane (Surr)	101		80 - 127
1,2-Dichloroethane-d4 (Surr)	102		80 - 128

Lab Sample ID: MB 570-119023/8

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 119023

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butanol	ND		5.0	4.0	ug/L			12/28/20 22:53	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/28/20 22:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/28/20 22:53	1
4-Bromofluorobenzene (Surr)	97		68 - 120		12/28/20 22:53	1
Dibromofluoromethane (Surr)	96		80 - 127		12/28/20 22:53	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 128		12/28/20 22:53	1

Lab Sample ID: LCS 570-119023/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 119023

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
t-Butanol	50.0	54.5		ug/L		109	77 - 124

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# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCS 570-119023/4**  
**Matrix: Water**  
**Analysis Batch: 119023**

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	109		68 - 120
Dibromofluoromethane (Surr)	99		80 - 127
1,2-Dichloroethane-d4 (Surr)	103		80 - 128

**Lab Sample ID: LCSD 570-119023/31**  
**Matrix: Water**  
**Analysis Batch: 119023**

**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
t-Butanol	50.0	54.0		ug/L		108	77 - 124	1	23

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	105		68 - 120
Dibromofluoromethane (Surr)	100		80 - 127
1,2-Dichloroethane-d4 (Surr)	101		80 - 128

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

**Lab Sample ID: MB 570-118751/1-A**  
**Matrix: Water**  
**Analysis Batch: 118989**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 118751**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/26/20 12:41	12/28/20 22:01	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	38		15 - 150				12/26/20 12:41	12/28/20 22:01	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	92		46 - 128				12/26/20 12:41	12/28/20 22:01	1

**Lab Sample ID: LCS 570-118751/2-A**  
**Matrix: Water**  
**Analysis Batch: 118989**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118751**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	15.2		ug/L		76	57 - 136
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	44		15 - 150				
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5 (Surr)	96		46 - 128				

# QC Sample Results

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

Job ID: 440-276408-1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) (Continued)

**Lab Sample ID: LCSD 570-118751/3-A**  
**Matrix: Water**  
**Analysis Batch: 118989**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 118751**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	20.0	17.2		ug/L		86	57 - 136	13	20
		<b>LCSD</b>	<b>LCSD</b>						
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,4-Dioxane-d8	41		15 - 150						
		<b>LCSD</b>	<b>LCSD</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Nitrobenzene-d5 (Surr)	93		46 - 128						

**Lab Sample ID: 570-46890-E-3-A MS**  
**Matrix: Water**  
**Analysis Batch: 118989**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 118751**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.6		20.0	17.0		ug/L		72	45 - 139
		<b>MS</b>	<b>MS</b>						
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,4-Dioxane-d8	39		15 - 150						
		<b>MS</b>	<b>MS</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Nitrobenzene-d5 (Surr)	94		46 - 128						

**Lab Sample ID: 570-46890-E-3-B MSD**  
**Matrix: Water**  
**Analysis Batch: 118989**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 118751**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.6		20.0	17.9		ug/L		77	45 - 139	5	17
		<b>MSD</b>	<b>MSD</b>								
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8	43		15 - 150								
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
Nitrobenzene-d5 (Surr)	98		46 - 128								

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-634196/6**  
**Matrix: Water**  
**Analysis Batch: 634196**

**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			12/21/20 10:09	1

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCS 440-634196/5**  
**Matrix: Water**  
**Analysis Batch: 634196**

**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	1.12		mg/L		99	90 - 110

**Lab Sample ID: 440-276409-E-5 MS**  
**Matrix: Water**  
**Analysis Batch: 634196**

**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		22.6	22.3		mg/L		99	80 - 120

**Lab Sample ID: 440-276409-E-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 634196**

**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	ND		22.6	22.3		mg/L		99	80 - 120	0	20

**Lab Sample ID: MB 440-634197/6**  
**Matrix: Water**  
**Analysis Batch: 634197**

**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			12/21/20 10:09	1
Bromide	ND		0.50	0.25	mg/L			12/21/20 10:09	1
Fluoride	ND		0.50	0.25	mg/L			12/21/20 10:09	1
Sulfate	ND		0.50	0.25	mg/L			12/21/20 10:09	1

**Lab Sample ID: LCS 440-634197/5**  
**Matrix: Water**  
**Analysis Batch: 634197**

**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	4.77		mg/L		95	90 - 110
Bromide	5.00	4.92		mg/L		98	90 - 110
Fluoride	5.00	4.80		mg/L		96	90 - 110
Sulfate	5.00	4.98		mg/L		100	90 - 110

**Lab Sample ID: 440-276409-E-5 MS**  
**Matrix: Water**  
**Analysis Batch: 634197**

**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	2000	E	100	2030	E 4	mg/L		65	80 - 120
Bromide	5.1	J	100	102		mg/L		97	80 - 120
Fluoride	ND		100	93.0		mg/L		93	80 - 120
Sulfate	3500	E	100	3570	E 4	mg/L		67	80 - 120

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276409-E-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 634197**

**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	2000	E	100	2030	E 4	mg/L		67	80 - 120	0	20
Bromide	5.1	J	100	102		mg/L		97	80 - 120	0	20
Fluoride	ND		100	93.1		mg/L		93	80 - 120	0	20
Sulfate	3500	E	100	3560	E 4	mg/L		60	80 - 120	0	20

**Lab Sample ID: MB 440-634339/6**  
**Matrix: Water**  
**Analysis Batch: 634339**

**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			12/22/20 11:15	1
Bromide	ND		0.50	0.25	mg/L			12/22/20 11:15	1
Fluoride	ND		0.50	0.25	mg/L			12/22/20 11:15	1
Sulfate	ND		0.50	0.25	mg/L			12/22/20 11:15	1

**Lab Sample ID: LCS 440-634339/5**  
**Matrix: Water**  
**Analysis Batch: 634339**

**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	4.71		mg/L		94	90 - 110
Bromide	5.00	4.84		mg/L		97	90 - 110
Fluoride	5.00	4.75		mg/L		95	90 - 110
Sulfate	5.00	4.92		mg/L		98	90 - 110

**Lab Sample ID: 440-276408-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634339**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	37		50.0	85.4		mg/L		97	80 - 120
Bromide	ND		50.0	49.7		mg/L		99	80 - 120
Fluoride	ND		50.0	49.3		mg/L		99	80 - 120
Sulfate	2300	E	50.0	2320	E 4	mg/L		3	80 - 120

**Lab Sample ID: 440-276408-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634339**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	37		50.0	83.5		mg/L		93	80 - 120	2	20
Bromide	ND		50.0	48.5		mg/L		97	80 - 120	2	20
Fluoride	ND		50.0	48.1		mg/L		96	80 - 120	2	20
Sulfate	2300	E	50.0	2310	E 4	mg/L		-30	80 - 120	1	20

# QC Sample Results

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

Job ID: 440-276408-1

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-634645/1-A**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:18	1
Calcium	ND		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:18	1
Iron	ND		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:18	1
Magnesium	ND		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:18	1
Manganese	ND		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:18	1
Potassium	ND		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:18	1
Sodium	ND		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:18	1

**Lab Sample ID: LCS 440-634645/2-A**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.996		mg/L		100	80 - 120
Calcium	5.00	5.09		mg/L		102	80 - 120
Iron	1.00	1.04		mg/L		104	80 - 120
Magnesium	5.00	4.97		mg/L		99	80 - 120
Manganese	1.00	0.997		mg/L		100	80 - 120
Potassium	10.0	9.89		mg/L		99	80 - 120
Sodium	10.0	9.69		mg/L		97	80 - 120

**Lab Sample ID: 440-276438-I-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.7		1.00	2.77		mg/L		104	75 - 125
Calcium	380		5.00	382	4	mg/L		62	75 - 125
Iron	22		1.00	23.1	4	mg/L		91	75 - 125
Magnesium	240		5.00	238	4	mg/L		56	75 - 125
Manganese	2.6		1.00	3.59		mg/L		95	75 - 125
Potassium	13		10.0	23.0		mg/L		105	75 - 125
Sodium	410		10.0	418	4	mg/L		55	75 - 125

**Lab Sample ID: 440-276438-I-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.7		1.00	2.73		mg/L		100	75 - 125	2	20
Calcium	380		5.00	376	4	mg/L		-64	75 - 125	2	20
Iron	22		1.00	22.6	4	mg/L		49	75 - 125	2	20
Magnesium	240		5.00	237	4	mg/L		24	75 - 125	1	20
Manganese	2.6		1.00	3.54		mg/L		89	75 - 125	2	20
Potassium	13		10.0	22.6		mg/L		101	75 - 125	2	20
Sodium	410		10.0	412	4	mg/L		-10	75 - 125	2	20



# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: MB 440-634774/1-A**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	ND		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:36	1
Calcium	ND		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:36	1
Iron	0.0837	J	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:36	1
Magnesium	ND		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:36	1
Manganese	ND		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:36	1
Potassium	ND		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:36	1

**Lab Sample ID: MB 440-634774/1-A**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sodium	ND		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 13:13	1

**Lab Sample ID: LCS 440-634774/2-A**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	4.86		mg/L		97	80 - 120
Iron	1.00	1.07		mg/L		107	80 - 120
Magnesium	5.00	4.94		mg/L		99	80 - 120
Manganese	1.00	0.954		mg/L		95	80 - 120
Potassium	10.0	9.73		mg/L		97	80 - 120

**Lab Sample ID: LCS 440-634774/2-A**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

**Lab Sample ID: 440-276628-I-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	220		5.00	227	4	mg/L		124	75 - 125
Iron	10	B	1.00	11.1	4	mg/L		101	75 - 125
Magnesium	120		5.00	127	4	mg/L		156	75 - 125
Manganese	1.0		1.00	1.98		mg/L		95	75 - 125
Potassium	5.7		10.0	15.7		mg/L		100	75 - 125

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: 440-276628-I-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Sodium	400		10.0	414	4	mg/L		149	75 - 125

**Lab Sample ID: 440-276628-I-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**  
**%Rec.**  
**RPD**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	0.60		1.00	1.62		mg/L		101	75 - 125	0	20
Calcium	220		5.00	232	4	mg/L		230	75 - 125	2	20
Iron	10	B	1.00	11.3	4	mg/L		123	75 - 125	2	20
Magnesium	120		5.00	130	4	mg/L		204	75 - 125	2	20
Manganese	1.0		1.00	1.99		mg/L		96	75 - 125	0	20
Potassium	5.7		10.0	15.7		mg/L		100	75 - 125	0	20

**Lab Sample ID: 440-276628-I-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**  
**%Rec.**  
**RPD**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sodium	400		10.0	421	4	mg/L		223	75 - 125	2	20

## Method: 410.4 - COD

**Lab Sample ID: MB 440-634503/3**  
**Matrix: Water**  
**Analysis Batch: 634503**

**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			12/23/20 13:03	1

**Lab Sample ID: LCS 440-634503/4**  
**Matrix: Water**  
**Analysis Batch: 634503**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chemical Oxygen Demand	200	209		mg/L		105	90 - 110

**Lab Sample ID: 440-276408-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634503**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Chemical Oxygen Demand	16	J	200	242		mg/L		113	70 - 120

**Lab Sample ID: 440-276408-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634503**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chemical Oxygen Demand	16	J	200	234		mg/L		109	70 - 120	3	15

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# QC Sample Results

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

Job ID: 440-276408-1

## Method: 410.4 - COD (Continued)

**Lab Sample ID: 440-276468-B-1 DU**  
**Matrix: Water**  
**Analysis Batch: 634503**

**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	64		57.9		mg/L		10	15

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-634359/3**  
**Matrix: Water**  
**Analysis Batch: 634359**

**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			12/22/20 07:10	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/22/20 07:10	1

**Lab Sample ID: LCS 440-634359/2**  
**Matrix: Water**  
**Analysis Batch: 634359**

**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	86.4	87.1		mg/L		101	80 - 120

**Lab Sample ID: 440-276408-7 DU**  
**Matrix: Water**  
**Analysis Batch: 634359**

**Client Sample ID: Extraction Trench**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	1300		1310		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	1300		1310		mg/L		2	20

**Lab Sample ID: MB 440-634597/30**  
**Matrix: Water**  
**Analysis Batch: 634597**

**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			12/26/20 14:22	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/26/20 14:22	1

**Lab Sample ID: LCS 440-634597/29**  
**Matrix: Water**  
**Analysis Batch: 634597**

**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	86.4	89.9		mg/L		104	80 - 120

**Lab Sample ID: 440-276408-1 DU**  
**Matrix: Water**  
**Analysis Batch: 634597**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	460		459		mg/L		0.6	20
Bicarbonate Alkalinity as CaCO3	460		459		mg/L		0.6	20

# QC Sample Results

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

Job ID: 440-276408-1

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

Lab Sample ID: MB 440-634647/1  
Matrix: Water  
Analysis Batch: 634647

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			12/28/20 10:03	1

Lab Sample ID: LCS 440-634647/2  
Matrix: Water  
Analysis Batch: 634647

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	962		mg/L		96	90 - 110

Lab Sample ID: 440-276408-1 DU  
Matrix: Water  
Analysis Batch: 634647

Client Sample ID: MW-6  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3400		3420		mg/L		0	5

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

Lab Sample ID: MB 440-635212/1  
Matrix: Water  
Analysis Batch: 635212

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			01/04/21 15:06	1

Lab Sample ID: 440-276408-1 DU  
Matrix: Water  
Analysis Batch: 635212

Client Sample ID: MW-6  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Carbon Dioxide, Free	28		28.2		mg/L		0	20

## Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-634330/2-A  
Matrix: Water  
Analysis Batch: 634352

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 634330

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/22/20 05:00	12/22/20 08:00	1

Lab Sample ID: LCS 440-634330/1-A  
Matrix: Water  
Analysis Batch: 634352

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 634330

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	2.50	2.29		mg/L		92	85 - 115

# QC Sample Results

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

Job ID: 440-276408-1

## Method: SM 4500 NH3 D - Ammonia (Continued)

**Lab Sample ID: 440-276375-E-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 634352**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 634330**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	ND		2.50	2.49		mg/L		100	75 - 125

**Lab Sample ID: 440-276375-E-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 634352**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 634330**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	ND		2.50	2.39		mg/L		96	75 - 125	4	15

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

**Lab Sample ID: MB 440-634530/3**  
**Matrix: Water**  
**Analysis Batch: 634530**

**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			12/23/20 17:27	1

**Lab Sample ID: LCS 440-634530/4**  
**Matrix: Water**  
**Analysis Batch: 634530**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.499	0.462		mg/L		93	80 - 120

**Lab Sample ID: 440-276408-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634530**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	8.1		0.499	8.72	4	mg/L		132	70 - 130

**Lab Sample ID: 440-276408-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634530**

**Client Sample ID: MW-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Sulfide	8.1		0.499	9.15	4	mg/L		218	70 - 130	5	30

## Method: SM 5310C - TOC

**Lab Sample ID: MB 440-635469/8**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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			01/06/21 06:06	1

# QC Sample Results

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

Job ID: 440-276408-1

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

**Lab Sample ID: LCS 440-635469/7**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	5.00	4.93		mg/L		99	85 - 115

**Lab Sample ID: MRL 440-635469/6**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	0.0529	J	mg/L		53	50 - 150

**Lab Sample ID: 440-276203-D-4 MS ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.6		mg/L		109	85 - 115

**Lab Sample ID: 440-276203-D-4 MSD ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.3		mg/L		106	85 - 115	3	20

**Lab Sample ID: MB 440-635505/8**  
**Matrix: Water**  
**Analysis Batch: 635505**

**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			01/07/21 06:49	1

**Lab Sample ID: LCS 440-635505/7**  
**Matrix: Water**  
**Analysis Batch: 635505**

**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	5.00	4.76		mg/L		95	85 - 115

**Lab Sample ID: MRL 440-635505/6**  
**Matrix: Water**  
**Analysis Batch: 635505**

**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	0.0536	J	mg/L		54	50 - 150

**Lab Sample ID: 440-276408-7 MS**  
**Matrix: Water**  
**Analysis Batch: 635505**

**Client Sample ID: Extraction Trench**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	130		35.0	163		mg/L		88	85 - 115

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# QC Sample Results

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

Job ID: 440-276408-1

## Method: SM 5310C - TOC

Lab Sample ID: 440-276408-7 MSD  
Matrix: Water  
Analysis Batch: 635505

Client Sample ID: Extraction Trench  
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	130		35.0	172		mg/L		112	85 - 115	5	20

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

# QC Association Summary

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

Job ID: 440-276408-1

## GC/MS VOA

### Analysis Batch: 118326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	8260B	
440-276408-2	MW-13R	Total/NA	Water	8260B	
440-276408-3	MW-14	Total/NA	Water	8260B	
440-276408-4	PZ-2	Total/NA	Water	8260B	
440-276408-6	Combined Subdrains	Total/NA	Water	8260B	
440-276408-7	Extraction Trench	Total/NA	Water	8260B	
440-276408-8	Field Blank	Total/NA	Water	8260B	
440-276408-9	Trip Blank	Total/NA	Water	8260B	
MB 570-118326/8	Method Blank	Total/NA	Water	8260B	
LCS 570-118326/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-118326/5	Lab Control Sample Dup	Total/NA	Water	8260B	

### Analysis Batch: 118832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-5	LY-7	Total/NA	Water	8260B	
MB 570-118832/8	Method Blank	Total/NA	Water	8260B	
LCS 570-118832/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-118832/5	Lab Control Sample Dup	Total/NA	Water	8260B	
440-276168-C-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-276168-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

### Analysis Batch: 119023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-5 - DL	LY-7	Total/NA	Water	8260B	
MB 570-119023/8	Method Blank	Total/NA	Water	8260B	
LCS 570-119023/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-119023/31	Lab Control Sample Dup	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 118751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	3510C	
440-276408-2	MW-13R	Total/NA	Water	3510C	
440-276408-3	MW-14	Total/NA	Water	3510C	
440-276408-4	PZ-2	Total/NA	Water	3510C	
440-276408-5	LY-7	Total/NA	Water	3510C	
440-276408-6	Combined Subdrains	Total/NA	Water	3510C	
440-276408-7	Extraction Trench	Total/NA	Water	3510C	
MB 570-118751/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-118751/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-118751/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-46890-E-3-A MS	Matrix Spike	Total/NA	Water	3510C	
570-46890-E-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	

### Analysis Batch: 118989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	8270C SIM ID	118751
440-276408-2	MW-13R	Total/NA	Water	8270C SIM ID	118751
440-276408-3	MW-14	Total/NA	Water	8270C SIM ID	118751
440-276408-4	PZ-2	Total/NA	Water	8270C SIM ID	118751

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# QC Association Summary

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

Job ID: 440-276408-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 118989 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-5	LY-7	Total/NA	Water	8270C SIM ID	118751
440-276408-6	Combined Subdrains	Total/NA	Water	8270C SIM ID	118751
MB 570-118751/1-A	Method Blank	Total/NA	Water	8270C SIM ID	118751
LCS 570-118751/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	118751
LCSD 570-118751/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	118751
570-46890-E-3-A MS	Matrix Spike	Total/NA	Water	8270C SIM ID	118751
570-46890-E-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C SIM ID	118751

### Analysis Batch: 118990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-7	Extraction Trench	Total/NA	Water	8270C SIM ID	118751

## HPLC/IC

### Analysis Batch: 634196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	300.0	
440-276408-2	MW-13R	Total/NA	Water	300.0	
440-276408-3	MW-14	Total/NA	Water	300.0	
440-276408-4	PZ-2	Total/NA	Water	300.0	
440-276408-5	LY-7	Total/NA	Water	300.0	
440-276408-6	Combined Subdrains	Total/NA	Water	300.0	
440-276408-7	Extraction Trench	Total/NA	Water	300.0	
MB 440-634196/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634196/5	Lab Control Sample	Total/NA	Water	300.0	
440-276409-E-5 MS	Matrix Spike	Total/NA	Water	300.0	
440-276409-E-5 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 634197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	300.0	
440-276408-2	MW-13R	Total/NA	Water	300.0	
440-276408-2	MW-13R	Total/NA	Water	300.0	
440-276408-3	MW-14	Total/NA	Water	300.0	
440-276408-4	PZ-2	Total/NA	Water	300.0	
440-276408-4	PZ-2	Total/NA	Water	300.0	
440-276408-5	LY-7	Total/NA	Water	300.0	
440-276408-5	LY-7	Total/NA	Water	300.0	
440-276408-6	Combined Subdrains	Total/NA	Water	300.0	
440-276408-6	Combined Subdrains	Total/NA	Water	300.0	
440-276408-7	Extraction Trench	Total/NA	Water	300.0	
440-276408-7	Extraction Trench	Total/NA	Water	300.0	
MB 440-634197/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634197/5	Lab Control Sample	Total/NA	Water	300.0	
440-276409-E-5 MS	Matrix Spike	Total/NA	Water	300.0	
440-276409-E-5 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### Analysis Batch: 634339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	300.0	
440-276408-1	MW-6	Total/NA	Water	300.0	

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# QC Association Summary

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

Job ID: 440-276408-1

## HPLC/IC (Continued)

### Analysis Batch: 634339 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-3	MW-14	Total/NA	Water	300.0	
440-276408-3	MW-14	Total/NA	Water	300.0	
MB 440-634339/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634339/5	Lab Control Sample	Total/NA	Water	300.0	
440-276408-1 MS	MW-6	Total/NA	Water	300.0	
440-276408-1 MSD	MW-6	Total/NA	Water	300.0	

## Metals

### Prep Batch: 634645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total Recoverable	Water	3005A	
440-276408-2	MW-13R	Total Recoverable	Water	3005A	
440-276408-3	MW-14	Total Recoverable	Water	3005A	
440-276408-4	PZ-2	Total Recoverable	Water	3005A	
440-276408-6	Combined Subdrains	Total Recoverable	Water	3005A	
MB 440-634645/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-634645/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276438-I-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-276438-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Prep Batch: 634774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-5	LY-7	Total Recoverable	Water	3005A	
440-276408-7	Extraction Trench	Total Recoverable	Water	3005A	
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276628-I-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-276628-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 634841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-4	PZ-2	Total Recoverable	Water	6010B	634645

### Analysis Batch: 634857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-5	LY-7	Total Recoverable	Water	6010B	634774
440-276408-7	Extraction Trench	Total Recoverable	Water	6010B	634774
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	6010B	634774
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634774
440-276628-I-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	634774
440-276628-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	634774

### Analysis Batch: 634959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-5	LY-7	Total Recoverable	Water	6010B	634774
440-276408-7	Extraction Trench	Total Recoverable	Water	6010B	634774
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	6010B	634774
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634774
440-276628-I-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	634774
440-276628-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	634774

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# QC Association Summary

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

Job ID: 440-276408-1

## Metals

### Analysis Batch: 635019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total Recoverable	Water	6010B	634645
440-276408-2	MW-13R	Total Recoverable	Water	6010B	634645
440-276408-3	MW-14	Total Recoverable	Water	6010B	634645
440-276408-4	PZ-2	Total Recoverable	Water	6010B	634645
440-276408-6	Combined Subdrains	Total Recoverable	Water	6010B	634645
MB 440-634645/1-A	Method Blank	Total Recoverable	Water	6010B	634645
LCS 440-634645/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634645
440-276438-I-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	634645
440-276438-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	634645

## General Chemistry

### Prep Batch: 634330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 4500 NH3 B	
440-276408-2	MW-13R	Total/NA	Water	SM 4500 NH3 B	
440-276408-3	MW-14	Total/NA	Water	SM 4500 NH3 B	
440-276408-4	PZ-2	Total/NA	Water	SM 4500 NH3 B	
440-276408-5	LY-7	Total/NA	Water	SM 4500 NH3 B	
440-276408-6	Combined Subdrains	Total/NA	Water	SM 4500 NH3 B	
440-276408-7	Extraction Trench	Total/NA	Water	SM 4500 NH3 B	
MB 440-634330/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-634330/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-276375-E-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-276375-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 634352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 4500 NH3 D	634330
440-276408-2	MW-13R	Total/NA	Water	SM 4500 NH3 D	634330
440-276408-3	MW-14	Total/NA	Water	SM 4500 NH3 D	634330
440-276408-4	PZ-2	Total/NA	Water	SM 4500 NH3 D	634330
440-276408-5	LY-7	Total/NA	Water	SM 4500 NH3 D	634330
440-276408-6	Combined Subdrains	Total/NA	Water	SM 4500 NH3 D	634330
440-276408-7	Extraction Trench	Total/NA	Water	SM 4500 NH3 D	634330
MB 440-634330/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	634330
LCS 440-634330/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	634330
440-276375-E-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	634330
440-276375-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	634330

### Analysis Batch: 634359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 2320B	
440-276408-2	MW-13R	Total/NA	Water	SM 2320B	
440-276408-3	MW-14	Total/NA	Water	SM 2320B	
440-276408-4	PZ-2	Total/NA	Water	SM 2320B	
440-276408-5	LY-7	Total/NA	Water	SM 2320B	
440-276408-6	Combined Subdrains	Total/NA	Water	SM 2320B	
440-276408-7	Extraction Trench	Total/NA	Water	SM 2320B	
MB 440-634359/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-634359/2	Lab Control Sample	Total/NA	Water	SM 2320B	

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# QC Association Summary

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

Job ID: 440-276408-1

## General Chemistry (Continued)

### Analysis Batch: 634359 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-7 DU	Extraction Trench	Total/NA	Water	SM 2320B	

### Analysis Batch: 634503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	410.4	
440-276408-2	MW-13R	Total/NA	Water	410.4	
440-276408-3	MW-14	Total/NA	Water	410.4	
440-276408-4	PZ-2	Total/NA	Water	410.4	
440-276408-5	LY-7	Total/NA	Water	410.4	
440-276408-6	Combined Subdrains	Total/NA	Water	410.4	
440-276408-7	Extraction Trench	Total/NA	Water	410.4	
MB 440-634503/3	Method Blank	Total/NA	Water	410.4	
LCS 440-634503/4	Lab Control Sample	Total/NA	Water	410.4	
440-276408-1 MS	MW-6	Total/NA	Water	410.4	
440-276408-1 MSD	MW-6	Total/NA	Water	410.4	
440-276468-B-1 DU	Duplicate	Total/NA	Water	410.4	

### Analysis Batch: 634530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 4500 S2 D	
440-276408-2	MW-13R	Total/NA	Water	SM 4500 S2 D	
440-276408-3	MW-14	Total/NA	Water	SM 4500 S2 D	
440-276408-4	PZ-2	Total/NA	Water	SM 4500 S2 D	
440-276408-5	LY-7	Total/NA	Water	SM 4500 S2 D	
440-276408-6	Combined Subdrains	Total/NA	Water	SM 4500 S2 D	
440-276408-7	Extraction Trench	Total/NA	Water	SM 4500 S2 D	
MB 440-634530/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-634530/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-276408-1 MS	MW-6	Total/NA	Water	SM 4500 S2 D	
440-276408-1 MSD	MW-6	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 634597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-634597/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-634597/29	Lab Control Sample	Total/NA	Water	SM 2320B	
440-276408-1 DU	MW-6	Total/NA	Water	SM 2320B	

### Analysis Batch: 634647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 2540C	
440-276408-2	MW-13R	Total/NA	Water	SM 2540C	
440-276408-3	MW-14	Total/NA	Water	SM 2540C	
440-276408-4	PZ-2	Total/NA	Water	SM 2540C	
440-276408-5	LY-7	Total/NA	Water	SM 2540C	
440-276408-6	Combined Subdrains	Total/NA	Water	SM 2540C	
440-276408-7	Extraction Trench	Total/NA	Water	SM 2540C	
MB 440-634647/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-634647/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-276408-1 DU	MW-6	Total/NA	Water	SM 2540C	

# QC Association Summary

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

Job ID: 440-276408-1

## General Chemistry

### Analysis Batch: 635212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 4500 CO2 C	
440-276408-2	MW-13R	Total/NA	Water	SM 4500 CO2 C	
440-276408-3	MW-14	Total/NA	Water	SM 4500 CO2 C	
440-276408-4	PZ-2	Total/NA	Water	SM 4500 CO2 C	
440-276408-5	LY-7	Total/NA	Water	SM 4500 CO2 C	
440-276408-6	Combined Subdrains	Total/NA	Water	SM 4500 CO2 C	
440-276408-7	Extraction Trench	Total/NA	Water	SM 4500 CO2 C	
MB 440-635212/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-276408-1 DU	MW-6	Total/NA	Water	SM 4500 CO2 C	

### Analysis Batch: 635469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-1	MW-6	Total/NA	Water	SM 5310C	
440-276408-2	MW-13R	Total/NA	Water	SM 5310C	
440-276408-3	MW-14	Total/NA	Water	SM 5310C	
440-276408-4	PZ-2	Total/NA	Water	SM 5310C	
440-276408-5	LY-7	Total/NA	Water	SM 5310C	
440-276408-6	Combined Subdrains	Total/NA	Water	SM 5310C	
MB 440-635469/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635469/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635469/6	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276203-D-4 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276203-D-4 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 635505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276408-7	Extraction Trench	Total/NA	Water	SM 5310C	
MB 440-635505/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635505/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635505/6	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276408-7 MS	Extraction Trench	Total/NA	Water	SM 5310C	
440-276408-7 MSD	Extraction Trench	Total/NA	Water	SM 5310C	

# Definitions/Glossary

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

Job ID: 440-276408-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
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
*3	ISTD response or retention time outside acceptable 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.
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.
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
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.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated

# Definitions/Glossary

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

Job ID: 440-276408-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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# Accreditation/Certification Summary

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

Job ID: 440-276408-1

## Laboratory: Eurofins Calscience Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-21
Arizona	State	AZ0671	10-14-21
California	Los Angeles County Sanitation Districts	10256	06-30-21
California	State	2706	06-30-21
Guam	State	20-004R	01-23-21
Hawaii	State	CA01531	01-29-21
Kansas	NELAP	E-10420	07-31-21
Nevada	State	CA015312021-5	07-31-21
Oregon	NELAP	4028 - 008	01-29-21
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-21

## Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-29-21
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

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



Chain of Custody Record 316182

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_

Project Manager: Kyle W. Beshards, Jr. Site Contact: Josh Mills Date: 12-21-20  
 Tell Fax: 858-451-1136 Lab Contact: Josh Mills Carrier: Eurofin  
 Analysis Turnaround Time: \_\_\_\_\_  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from below  
 2 weeks  1 week  2 days  1 day

Company Name: Geo-Logic Associates  
 Address: 11915 W. Beshards Ct. Suite 200  
 City/State/Zip: San Diego, CA 92127  
 Phone: 619-451-1136  
 Fax: 619-451-1087  
 Project Name: Republic Services Sanitary Spill  
 Site: Sunbank Canyon Cont'd

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Carrier	COCs	Sample Specific Notes
MW-6	12-21-20	11:10	G	GW	12	M	N	EPD 3402-Fluoride	1	
MW-13R		12:35		GW	1			EPD 3762-Sulfide		
MW-14		09:46		GW	1			EPD 3762-Sulfide		
PZ-2		08:27		GW	1			EPD 3762-Sulfide		
LY-7		09:04		WW	1			EPD 3762-Sulfide		
Combined Subdrains		11:40		WW	1			EPD 3762-Sulfide		
Extraction Trench		09:57		WW	1			EPD 3762-Sulfide		
Field Blanks				Lab H2O	4			EPD 3762-Sulfide		
Trip Blank				Lab H2O	4			EPD 3762-Sulfide		

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

Special Instructions/QC Requirements & Comments: Metals One max level allowed  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seal No.: \_\_\_\_\_  
 Relinquished by: *Shirley Campbell* Date/Time: 12-21-20/1400  
 Relinquished by: *William Rivera* Date/Time: 12-21-20/1720  
 Relinquished by: \_\_\_\_\_ Date/Time: 12-21-20/1720  
 Received by: *William Rivera* Date/Time: 12-21-20/1500  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received in Laboratory by: *[Signature]* Date/Time: 12-21-20/1720

0.6/0.5; 0.4/0.3 #89



**Eurofins Calscience Irvine**

17461 Derian Ave Suite 100  
Irvine, CA 92614-5817  
Phone 949-261-1022 Fax 949-260-3297

**Chain of Custody Record**



Environment Testing  
America

<b>Client Information (Sub Contract Lab)</b>		Sampler		Lab PM		Carrier Tracking No(s)		COC No:	
Client Contact: Shipping/Receiving		Phone:		E-Mail		State of Origin		Page	
Company Eurofins Calscience LLC		Due Date Requested 1/6/2021		Accreditations Required (See note):		Job #		440-165185 1	
Address 7440 Lincoln Way,		TAT Requested (days)		Analysis Requested		Preservation Codes		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S 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)	
City Garden Grove		Project #:							
State, Zip CA, 92841		SSOW#:							
Phone 714-895-5494(Tel) 714-894-7501(Fax)		Project #:							
Email		SSOW#:							
Project Name: Republic Sunshine Canyon		Project #:		Field Filtered Sample (Yes or No)		Total Number of containers		Special Instructions/Note:	
Site		SSOW#:		Perform MS/MSD (Yes or No)					
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>		<b>Sample Time</b>		<b>Sample Type (C=comp, G=grab)</b>		<b>Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)</b>	
						Preservation Code			
MW-6 (440-276408-1)		12/21/20		11 10 Pacific		Water		Water	
MW-13R (440-276408-2)		12/21/20		12 35 Pacific		Water		Water	
MW-14 (440-276408-3)		12/21/20		09 46 Pacific		Water		Water	
PZ-2 (440-276408-4)		12/21/20		08 27 Pacific		Water		Water	
LY-7 (440-276408-5)		12/21/20		09 04 Pacific		Water		Water	
Combined Subdrains (440-276408-6)		12/21/20		11 40 Pacific		Water		Water	
Extraction Trench (440-276408-7)		12/21/20		09 57 Pacific		Water		Water	
Field Blank (440-276408-8)		12/21/20		00 01 Pacific		Water		Water	
Trip Blank (440-276408-9)		12/21/20		00 01 Pacific		Water		Water	
Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.									
<b>Possible Hazard Identification</b>					<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>				
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested I, II, III, IV, Other (specify)					Primary Deliverable Rank. 2				
Empty Kit Relinquished by					Special Instructions/QC Requirements				
Relinquished by		Date/Time		Company		Received by		Date/Time	
Relinquished by		Date/Time		Company		Received by		Date/Time	
Relinquished by		Date/Time		Company		Received by		Date/Time	
Custody Seals Intact.		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:					
Δ Yes Δ No				27/1/20 5CB					

## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276408-1

**Login Number: 276408**

**List Number: 1**

**Creator: Escalante, Maria I**

**List Source: Eurofins 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	

# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276408-1

**Login Number: 276408**

**List Number: 2**

**Creator: Rivera, Isaac**

**List Source: Eurofins Calscience**

**List Creation: 12/22/20 02:07 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	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	1.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Isotope Dilution Summary

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

Job ID: 440-276408-1

**Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-150)
440-276408-1	MW-6	39
440-276408-2	MW-13R	37
440-276408-3	MW-14	31
440-276408-4	PZ-2	32
440-276408-5	LY-7	29
440-276408-6	Combined Subdrains	34
440-276408-7	Extraction Trench	27 *3
570-46890-E-3-A MS	Matrix Spike	39
570-46890-E-3-B MSD	Matrix Spike Duplicate	43
LCS 570-118751/2-A	Lab Control Sample	44
LCSD 570-118751/3-A	Lab Control Sample Dup	41
MB 570-118751/1-A	Method Blank	38

### Surrogate Legend

DXE = 1,4-Dioxane-d8

## ANALYTICAL REPORT

Eurofins Calscience Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-276438-1

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:  
1/7/2021 12:27:41 PM

Rossina Tomova, Project Manager I  
(949)260-3276  
[Rossina.Tomova@Eurofinset.com](mailto:Rossina.Tomova@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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

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

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



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# Sample Summary

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

Job ID: 440-276438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-276438-1	CM-9R3	Water	12/22/20 09:13	12/22/20 12:35	
440-276438-2	CM-10R	Water	12/22/20 07:15	12/22/20 12:35	
440-276438-3	CM-11R	Water	12/22/20 08:45	12/22/20 12:35	
440-276438-4	DW-1	Water	12/22/20 09:40	12/22/20 12:35	
440-276438-5	Subdrain N	Water	12/22/20 10:40	12/22/20 12:35	
440-276438-6	Duplicate	Water	12/22/20 00:01	12/22/20 12:35	
440-276438-7	Field Blank	Water	12/22/20 00:01	12/22/20 12:35	
440-276438-8	Trip Blank	Water	12/22/20 00:01	12/22/20 12:35	

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# Case Narrative

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

Job ID: 440-276438-1

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## Job ID: 440-276438-1

---

### Laboratory: Eurofins Calscience Irvine

#### Narrative

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#### Job Narrative 440-276438-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/22/2020 12:35 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1° C and 1.5° C.

#### GC/MS VOA

Method 8260B: The following analyte(s) recovered outside control limits for the LCS associated with analytical batch 570-118325: Acrylonitrile and 2-Butanone (MEK). This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method 8260B: The following analyte(s) recovered outside control limits for the LCSD associated with analytical batch 570-118325: Acrylonitrile. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-118325.

Method 8260B: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: Subdrain N (440-276438-5). Elevated reporting limits (RLs) are provided.

Method 8260B: The lot test of the laboratory trip blank water associated with 440-276438-D-8 indicated a detection above, the method detection limit (MDL) for the following analyte(s): Acetone.

No additional analytical or quality issues were noted, other than those described above or 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 300.0: The following samples were diluted due to the nature of the sample matrix: CM-9R3 (440-276438-1), CM-11R (440-276438-3), DW-1 (440-276438-4) and Subdrain N (440-276438-5). 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 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 (440-276438-5). The sample was preserved to the appropriate pH in the laboratory. Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

Method 6010B: The method blank for preparation batch 440-634774 and analytical batch 440-634959 contained Iron 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

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

#### Organic Prep

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

# Case Narrative

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

Job ID: 440-276438-1

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## Job ID: 440-276438-1 (Continued)

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### Laboratory: Eurofins Calscience Irvine (Continued)

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

Job ID: 440-276438-1

**Client Sample ID: CM-9R3**

**Lab Sample ID: 440-276438-1**

Date Collected: 12/22/20 09:13

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 18:54	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 18:54	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 18:54	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 18:54	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 18:54	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 18:54	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 18:54	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 18:54	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 18:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 18:54	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 18:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 18:54	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 18:54	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 18:54	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 18:54	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 18:54	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 18:54	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 18:54	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 18:54	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 18:54	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 18:54	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 18:54	1
Acrylonitrile	ND	*	5.0	0.87	ug/L			12/23/20 18:54	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 18:54	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 18:54	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 18:54	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 18:54	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 18:54	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 18:54	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 18:54	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 18:54	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 18:54	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 18:54	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 18:54	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 18:54	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 18:54	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 18:54	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 18:54	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 18:54	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 18:54	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 18:54	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 18:54	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 18:54	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 18:54	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 18:54	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 18:54	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 18:54	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 18:54	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 18:54	1

# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: CM-9R3**

**Lab Sample ID: 440-276438-1**

Date Collected: 12/22/20 09:13

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 18:54	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 18:54	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 18:54	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 18:54	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 18:54	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 18:54	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 18:54	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 18:54	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 18:54	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 18:54	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 18:54	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 18:54	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 18:54	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 18:54	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 18:54	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 18:54	1
2-Butanone (MEK)	ND	*+	5.0	3.0	ug/L			12/23/20 18:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 18:54	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
N(1,1-Difluoro-2,2-bis-trifluor-methyl ethyl)-aziridine	69	T J N	ug/L		1.42	1000143-33-6		12/23/20 18:54	1
Aspartic acid methyl ester	150	T J N	ug/L		1.44	1000130-17-8		12/23/20 18:54	1
Unknown	1100	T J	ug/L		1.49			12/23/20 18:54	1
Unknown	14	T J	ug/L		1.57			12/23/20 18:54	1
Unknown	48	T J	ug/L		1.63			12/23/20 18:54	1
Unknown	120	T J	ug/L		1.67			12/23/20 18:54	1
Sulfur dioxide	97	T J N	ug/L		1.76	7446-09-5		12/23/20 18:54	1
Unknown	26	T J	ug/L		1.79			12/23/20 18:54	1
Unknown	17	T J	ug/L		1.83			12/23/20 18:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/23/20 18:54	1
4-Bromofluorobenzene (Surr)	93		68 - 120		12/23/20 18:54	1
Dibromofluoromethane (Surr)	101		80 - 127		12/23/20 18:54	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 128		12/23/20 18:54	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/29/20 08:02	12/30/20 11:36	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	37		15 - 150	12/29/20 08:02	12/30/20 11:36	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	82		46 - 128	12/29/20 08:02	12/30/20 11:36	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		1.0	0.50	mg/L			12/23/20 17:02	2
Nitrate as N	ND		0.22	0.11	mg/L			12/23/20 17:02	2

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: CM-9R3**

**Lab Sample ID: 440-276438-1**

Date Collected: 12/22/20 09:13

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/23/20 17:02	2
<b>Fluoride</b>	<b>2.3</b>		1.0	0.50	mg/L			12/23/20 17:02	2

### Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Sulfate</b>	<b>2900</b>		50	25	mg/L			12/23/20 18:00	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>1.7</b>		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:30	1
<b>Calcium</b>	<b>380</b>		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:30	1
<b>Iron</b>	<b>22</b>		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:30	1
<b>Magnesium</b>	<b>240</b>		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:30	1
<b>Manganese</b>	<b>2.6</b>		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:30	1
<b>Potassium</b>	<b>13</b>		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:30	1
<b>Sodium</b>	<b>410</b>		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:30	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/28/20 14:10	1
<b>Total Dissolved Solids</b>	<b>4000</b>		20	10	mg/L			12/29/20 13:30	1
<b>Ammonia (as N)</b>	<b>5.7</b>		2.5	0.50	mg/L		12/28/20 04:00	12/28/20 06:00	1
Total Sulfide	ND	F1	0.050	0.027	mg/L			12/29/20 12:27	1
<b>Total Organic Carbon</b>	<b>7.3</b>		0.10	0.050	mg/L			01/05/21 09:22	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Alkalinity as CaCO3</b>	<b>230</b>		4.0	4.0	mg/L			12/26/20 12:39	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>230</b>		4.0	4.0	mg/L			12/26/20 12:39	1
<b>Carbon Dioxide, Free</b>	<b>53</b>		2.0	2.0	mg/L			01/06/21 14:17	1

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

**Lab Sample ID: 440-276438-2**

Date Collected: 12/22/20 07:15

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 19:21	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 19:21	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 19:21	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 19:21	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 19:21	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 19:21	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 19:21	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 19:21	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 19:21	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 19:21	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 19:21	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 19:21	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 19:21	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 19:21	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 19:21	1

# Client Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: 440-276438-2**

Date Collected: 12/22/20 07:15

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 19:21	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 19:21	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 19:21	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 19:21	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 19:21	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 19:21	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 19:21	1
Acrylonitrile	ND	*+	5.0	0.87	ug/L			12/23/20 19:21	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 19:21	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 19:21	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 19:21	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 19:21	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 19:21	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 19:21	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 19:21	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 19:21	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 19:21	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 19:21	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 19:21	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 19:21	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 19:21	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 19:21	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 19:21	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 19:21	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 19:21	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 19:21	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 19:21	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 19:21	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 19:21	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 19:21	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 19:21	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 19:21	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 19:21	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 19:21	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 19:21	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 19:21	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 19:21	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 19:21	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 19:21	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 19:21	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 19:21	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 19:21	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 19:21	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 19:21	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 19:21	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 19:21	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 19:21	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 19:21	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 19:21	1

# Client Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: 440-276438-2**

Date Collected: 12/22/20 07:15

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 19:21	1
2-Butanone (MEK)	ND	*+	5.0	3.0	ug/L			12/23/20 19:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 19:21	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	230	T J	ug/L		1.43			12/23/20 19:21	1
Unknown	1600	T J	ug/L		1.49			12/23/20 19:21	1
Unknown	46	T J	ug/L		1.61			12/23/20 19:21	1
Unknown	72	T J	ug/L		1.64			12/23/20 19:21	1
Sulfur dioxide	71	T J N	ug/L		1.76	7446-09-5		12/23/20 19:21	1
Sulfur dioxide	17	T J N	ug/L		1.88	7446-09-5		12/23/20 19:21	1
Sulfur dioxide	34	T J N	ug/L		2.62	7446-09-5		12/23/20 19:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/23/20 19:21	1
4-Bromofluorobenzene (Surr)	89		68 - 120		12/23/20 19:21	1
Dibromofluoromethane (Surr)	103		80 - 127		12/23/20 19:21	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 128		12/23/20 19:21	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/29/20 08:02	12/30/20 11:50	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	36		15 - 150	12/29/20 08:02	12/30/20 11:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	87		46 - 128	12/29/20 08:02	12/30/20 11:50	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.0		0.50	0.25	mg/L			12/23/20 18:20	1
Nitrate as N	ND		0.11	0.055	mg/L			12/23/20 18:20	1
Bromide	ND		0.50	0.25	mg/L			12/23/20 18:20	1
Fluoride	1.1		0.50	0.25	mg/L			12/23/20 18:20	1
Sulfate	1400		25	13	mg/L			12/23/20 18:39	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.79		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:40	1
Calcium	230		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:40	1
Iron	0.28		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:40	1
Magnesium	190		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:40	1
Manganese	0.29		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:40	1
Potassium	10		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:40	1
Sodium	160		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:40	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/28/20 14:10	1
Total Dissolved Solids	2000		10	5.0	mg/L			12/29/20 13:30	1
Ammonia (as N)	8.5		2.5	0.50	mg/L		12/28/20 04:00	12/28/20 06:00	1

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# Client Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: 440-276438-2**

Date Collected: 12/22/20 07:15

Matrix: Water

Date Received: 12/22/20 12:35

## General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Sulfide	3.8		0.25	0.14	mg/L			12/29/20 12:27	5
Total Organic Carbon	4.2		0.10	0.050	mg/L			01/06/21 14:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	550		4.0	4.0	mg/L			12/26/20 12:51	1
Bicarbonate Alkalinity as CaCO3	550		4.0	4.0	mg/L			12/26/20 12:51	1
Carbon Dioxide, Free	42		2.0	2.0	mg/L			01/06/21 14:17	1

**Client Sample ID: CM-11R**

**Lab Sample ID: 440-276438-3**

Date Collected: 12/22/20 08:45

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 19:48	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 19:48	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 19:48	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 19:48	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 19:48	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 19:48	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 19:48	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 19:48	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 19:48	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 19:48	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 19:48	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 19:48	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 19:48	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 19:48	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 19:48	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 19:48	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 19:48	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 19:48	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 19:48	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 19:48	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 19:48	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 19:48	1
Acrylonitrile	ND	+	5.0	0.87	ug/L			12/23/20 19:48	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 19:48	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 19:48	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 19:48	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 19:48	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 19:48	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 19:48	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 19:48	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 19:48	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 19:48	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 19:48	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 19:48	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 19:48	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 19:48	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 19:48	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: CM-11R**

**Lab Sample ID: 440-276438-3**

Date Collected: 12/22/20 08:45

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 19:48	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 19:48	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 19:48	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 19:48	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 19:48	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 19:48	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 19:48	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 19:48	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 19:48	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 19:48	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 19:48	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 19:48	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 19:48	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 19:48	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 19:48	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 19:48	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 19:48	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 19:48	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 19:48	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 19:48	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 19:48	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 19:48	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 19:48	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 19:48	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 19:48	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 19:48	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 19:48	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 19:48	1
2-Butanone (MEK)	ND	+	5.0	3.0	ug/L			12/23/20 19:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 19:48	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
2H-Pyran-2-acetic acid, tetrahydro-6-methyl-, cis-	96	T J N	ug/L		1.43	69493-11-4		12/23/20 19:48	1
2H-Pyran-2-acetic acid, tetrahydro-6-methyl-, cis-	130	T J N	ug/L		1.44	69493-11-4		12/23/20 19:48	1
Unknown	1400	T J	ug/L		1.49			12/23/20 19:48	1
Unknown	70	T J	ug/L		1.59			12/23/20 19:48	1
Unknown	80	T J	ug/L		1.64			12/23/20 19:48	1
Unknown	97	T J	ug/L		1.68			12/23/20 19:48	1
Sulfur dioxide	130	T J N	ug/L		1.76	7446-09-5		12/23/20 19:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/23/20 19:48	1
4-Bromofluorobenzene (Surr)	100		68 - 120		12/23/20 19:48	1
Dibromofluoromethane (Surr)	106		80 - 127		12/23/20 19:48	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 128		12/23/20 19:48	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/29/20 08:02	12/30/20 12:05	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: CM-11R**

**Lab Sample ID: 440-276438-3**

Date Collected: 12/22/20 08:45

Matrix: Water

Date Received: 12/22/20 12:35

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	35		15 - 150	12/29/20 08:02	12/30/20 12:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		46 - 128	12/29/20 08:02	12/30/20 12:05	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		1.0	0.50	mg/L			12/23/20 18:59	2
Nitrate as N	0.11	J	0.22	0.11	mg/L			12/23/20 18:59	2
Bromide	ND		1.0	0.50	mg/L			12/23/20 18:59	2
Fluoride	0.56	J	1.0	0.50	mg/L			12/23/20 18:59	2
Sulfate	2500		50	25	mg/L			12/23/20 19:18	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 19:12	1
Calcium	210		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 19:12	1
Iron	0.16		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 19:12	1
Magnesium	140		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 19:12	1
Manganese	3.0		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 19:12	1
Potassium	9.2		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 19:12	1
Sodium	570		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 19:12	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/28/20 14:10	1
Total Dissolved Solids	4400		50	25	mg/L			12/29/20 13:30	1
Ammonia (as N)	2.2		0.50	0.10	mg/L		12/28/20 04:00	12/28/20 06:00	1
Total Sulfide	ND		0.050	0.027	mg/L			12/29/20 12:27	1
Total Organic Carbon	5.0		0.10	0.050	mg/L			01/05/21 09:55	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	61		4.0	4.0	mg/L			12/26/20 12:58	1
Bicarbonate Alkalinity as CaCO3	61		4.0	4.0	mg/L			12/26/20 12:58	1
Carbon Dioxide, Free	53		2.0	2.0	mg/L			01/06/21 14:17	1

**Client Sample ID: DW-1**

**Lab Sample ID: 440-276438-4**

Date Collected: 12/22/20 09:40

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 20:14	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 20:14	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 20:14	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 20:14	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 20:14	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 20:14	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 20:14	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 20:14	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 20:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 20:14	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 20:14	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: DW-1**

**Lab Sample ID: 440-276438-4**

Date Collected: 12/22/20 09:40

Matrix: Water

Date Received: 12/22/20 12:35

**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	0.15	ug/L			12/23/20 20:14	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 20:14	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 20:14	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 20:14	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 20:14	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 20:14	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 20:14	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 20:14	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 20:14	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 20:14	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 20:14	1
Acrylonitrile	ND	*+	5.0	0.87	ug/L			12/23/20 20:14	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 20:14	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 20:14	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 20:14	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 20:14	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 20:14	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 20:14	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 20:14	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 20:14	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 20:14	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 20:14	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 20:14	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 20:14	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 20:14	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 20:14	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 20:14	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 20:14	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 20:14	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 20:14	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 20:14	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 20:14	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 20:14	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 20:14	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 20:14	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 20:14	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 20:14	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 20:14	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 20:14	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 20:14	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 20:14	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 20:14	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 20:14	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 20:14	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 20:14	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 20:14	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 20:14	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 20:14	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 20:14	1

# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: DW-1**

**Lab Sample ID: 440-276438-4**

Date Collected: 12/22/20 09:40

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 20:14	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 20:14	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 20:14	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 20:14	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 20:14	1
2-Butanone (MEK)	ND	+	5.0	3.0	ug/L			12/23/20 20:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 20:14	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
N(1,1-Difluoro-2,2-bis-trifluor-methyl ethyl)-aziridine	170	T J N	ug/L		1.44	1000143-33-6		12/23/20 20:14	1
Germacyclohexane, 1,1-dichloro-	86	T J N	ug/L		1.45	56438-28-9		12/23/20 20:14	1
Unknown	1300	T J	ug/L		1.49			12/23/20 20:14	1
Unknown	74	T J	ug/L		1.61			12/23/20 20:14	1
Unknown	57	T J	ug/L		1.63			12/23/20 20:14	1
Unknown	92	T J	ug/L		1.65			12/23/20 20:14	1
Unknown	69	T J	ug/L		1.69			12/23/20 20:14	1
Sulfur dioxide	190	T J N	ug/L		1.77	7446-09-5		12/23/20 20:14	1
Unknown	39	T J	ug/L		1.83			12/23/20 20:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/23/20 20:14	1
4-Bromofluorobenzene (Surr)	91		68 - 120		12/23/20 20:14	1
Dibromofluoromethane (Surr)	108		80 - 127		12/23/20 20:14	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 128		12/23/20 20:14	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/29/20 08:02	12/30/20 12:20	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	36		15 - 150	12/29/20 08:02	12/30/20 12:20	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	73		46 - 128	12/29/20 08:02	12/30/20 12:20	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		2.5	1.3	mg/L			12/23/20 19:38	5
Nitrate as N	ND		0.55	0.28	mg/L			12/23/20 19:38	5
Bromide	ND		2.5	1.3	mg/L			12/23/20 19:38	5
Fluoride	2.3	J	2.5	1.3	mg/L			12/23/20 19:38	5
Sulfate	1900		100	50	mg/L			12/23/20 19:58	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.1		0.050	0.025	mg/L		12/28/20 09:47	12/29/20 18:08	1
Calcium	2.8		0.10	0.050	mg/L		12/28/20 09:47	12/29/20 18:08	1
Iron	ND		0.10	0.050	mg/L		12/28/20 09:47	12/29/20 18:08	1
Magnesium	1.7		0.020	0.010	mg/L		12/28/20 09:47	12/29/20 18:08	1
Manganese	ND		0.020	0.015	mg/L		12/28/20 09:47	12/29/20 18:08	1
Potassium	1.5		0.50	0.25	mg/L		12/28/20 09:47	12/29/20 18:08	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: DW-1**

**Lab Sample ID: 440-276438-4**

Date Collected: 12/22/20 09:40

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	1100		2.5	1.3	mg/L		12/28/20 09:47	12/30/20 18:43	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/28/20 14:10	1
Total Dissolved Solids	8300		50	25	mg/L			12/29/20 13:30	1
Ammonia (as N)	1.7		0.50	0.10	mg/L		12/28/20 04:00	12/28/20 06:00	1
Total Sulfide	0.46		0.050	0.027	mg/L			12/29/20 12:27	1
Total Organic Carbon	3.2		0.10	0.050	mg/L			01/06/21 14:27	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	550		4.0	4.0	mg/L			12/26/20 13:11	1
Bicarbonate Alkalinity as CaCO3	450		4.0	4.0	mg/L			12/26/20 13:11	1
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			01/06/21 14:17	1

**Client Sample ID: Subdrain N**

**Lab Sample ID: 440-276438-5**

Date Collected: 12/22/20 10:40

Matrix: Water

Date Received: 12/22/20 12:35

**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	0.64	ug/L			12/24/20 00:42	2
1,1,1,2-Tetrachloroethane	ND		1.0	0.51	ug/L			12/24/20 00:42	2
1,1,1-Trichloroethane	ND		1.0	0.53	ug/L			12/24/20 00:42	2
1,1,1,2-Tetrachloroethane	ND		1.0	0.39	ug/L			12/24/20 00:42	2
1,1,2-Trichloroethane	ND		1.0	0.17	ug/L			12/24/20 00:42	2
1,1-Dichloroethane	ND		1.0	0.71	ug/L			12/24/20 00:42	2
1,1-Dichloroethene	ND		1.0	0.78	ug/L			12/24/20 00:42	2
1,1-Dichloropropene	ND		1.0	0.48	ug/L			12/24/20 00:42	2
1,2,4-Trichlorobenzene	ND		1.0	0.75	ug/L			12/24/20 00:42	2
1,2-Dibromo-3-Chloropropane	ND		2.0	1.3	ug/L			12/24/20 00:42	2
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/24/20 00:42	2
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/24/20 00:42	2
1,2-Dichloropropane	ND		1.0	0.48	ug/L			12/24/20 00:42	2
1,3-Dichlorobenzene	ND		1.0	0.51	ug/L			12/24/20 00:42	2
1,3-Dichloropropane	ND		1.0	0.41	ug/L			12/24/20 00:42	2
<b>1,4-Dichlorobenzene</b>	<b>1.2</b>		1.0	0.45	ug/L			12/24/20 00:42	2
2,2-Dichloropropane	ND		1.0	0.79	ug/L			12/24/20 00:42	2
2-Chloro-1,3-butadiene	ND		4.0	3.7	ug/L			12/24/20 00:42	2
2-Hexanone	ND		12	8.6	ug/L			12/24/20 00:42	2
Acetone	ND		16	8.0	ug/L			12/24/20 00:42	2
Acetonitrile	ND		20	7.9	ug/L			12/24/20 00:42	2
Acrolein	ND		8.0	4.4	ug/L			12/24/20 00:42	2
Acrylonitrile	ND	*+	10	1.7	ug/L			12/24/20 00:42	2
Benzene	ND		1.0	0.53	ug/L			12/24/20 00:42	2
Allyl chloride	ND		4.0	0.76	ug/L			12/24/20 00:42	2
Bromoform	ND		1.0	0.78	ug/L			12/24/20 00:42	2
Bromomethane	ND		2.0	1.9	ug/L			12/24/20 00:42	2
Carbon disulfide	ND		2.0	0.49	ug/L			12/24/20 00:42	2
Carbon tetrachloride	ND		1.0	0.54	ug/L			12/24/20 00:42	2
Chlorobenzene	ND		1.0	0.48	ug/L			12/24/20 00:42	2

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Subdrain N**

**Lab Sample ID: 440-276438-5**

Date Collected: 12/22/20 10:40

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		2.0	0.70	ug/L			12/24/20 00:42	2
Chloroethane	ND		1.0	0.88	ug/L			12/24/20 00:42	2
Chloroform	ND		1.0	0.57	ug/L			12/24/20 00:42	2
Chloromethane	ND		2.0	0.59	ug/L			12/24/20 00:42	2
cis-1,2-Dichloroethene	ND		1.0	0.60	ug/L			12/24/20 00:42	2
cis-1,3-Dichloropropene	ND		1.0	0.38	ug/L			12/24/20 00:42	2
Dibromochloromethane	ND		1.0	0.54	ug/L			12/24/20 00:42	2
Dibromomethane	ND		1.0	0.46	ug/L			12/24/20 00:42	2
Bromodichloromethane	ND		1.0	0.45	ug/L			12/24/20 00:42	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			12/24/20 00:42	2
Ethyl methacrylate	ND		4.0	2.4	ug/L			12/24/20 00:42	2
Ethylbenzene	ND		1.0	0.71	ug/L			12/24/20 00:42	2
Iodomethane	ND		50	12	ug/L			12/24/20 00:42	2
Isobutyl alcohol	ND		20	11	ug/L			12/24/20 00:42	2
m,p-Xylene	ND		2.0	1.6	ug/L			12/24/20 00:42	2
Methylacrylonitrile	ND		4.0	1.4	ug/L			12/24/20 00:42	2
Methyl methacrylate	ND		4.0	2.2	ug/L			12/24/20 00:42	2
Methylene Chloride	ND		2.0	0.96	ug/L			12/24/20 00:42	2
<b>Methyl tert-butyl ether</b>	<b>0.98</b>	<b>J</b>	1.0	0.41	ug/L			12/24/20 00:42	2
Naphthalene	ND		2.0	0.64	ug/L			12/24/20 00:42	2
o-Xylene	ND		1.0	0.70	ug/L			12/24/20 00:42	2
Propionitrile	ND		10	7.5	ug/L			12/24/20 00:42	2
Styrene	ND		1.0	0.55	ug/L			12/24/20 00:42	2
<b>t-Butanol</b>	<b>160</b>		10	8.0	ug/L			12/24/20 00:42	2
Tetrachloroethene	ND		1.0	0.58	ug/L			12/24/20 00:42	2
<b>Tetrahydrofuran</b>	<b>7.2</b>		4.0	2.1	ug/L			12/24/20 00:42	2
Toluene	ND		1.0	0.66	ug/L			12/24/20 00:42	2
trans-1,2-Dichloroethene	ND		1.0	0.72	ug/L			12/24/20 00:42	2
trans-1,3-Dichloropropene	ND		1.0	0.35	ug/L			12/24/20 00:42	2
trans-1,4-Dichloro-2-butene	ND		4.0	2.6	ug/L			12/24/20 00:42	2
Trichloroethene	ND		1.0	0.58	ug/L			12/24/20 00:42	2
Trichlorofluoromethane	ND		1.0	0.59	ug/L			12/24/20 00:42	2
Vinyl acetate	ND		10	6.3	ug/L			12/24/20 00:42	2
Vinyl chloride	ND		1.0	0.80	ug/L			12/24/20 00:42	2
1,2-Dibromoethane (EDB)	ND		1.0	0.27	ug/L			12/24/20 00:42	2
2-Butanone (MEK)	ND	*+	10	6.1	ug/L			12/24/20 00:42	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.5	ug/L			12/24/20 00:42	2

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
2H-Pyran-2-acetic acid, tetrahydro-6-methyl-, cis-	180	T J N	ug/L		1.43	69493-11-4		12/24/20 00:42	2
Methanamine, N-methyl-N-nitro-	250	T J N	ug/L		1.45	4164-28-7		12/24/20 00:42	2
Unknown	2000	T J	ug/L		1.48			12/24/20 00:42	2
Unknown	120	T J	ug/L		1.56			12/24/20 00:42	2
Unknown	48	T J	ug/L		1.61			12/24/20 00:42	2
Unknown	25	T J	ug/L		1.66			12/24/20 00:42	2
Sulfur dioxide	100	T J N	ug/L		1.76	7446-09-5		12/24/20 00:42	2
Unknown	29	T J	ug/L		1.91			12/24/20 00:42	2
Unknown	27	T J	ug/L		3.02			12/24/20 00:42	2

# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Subdrain N**

**Lab Sample ID: 440-276438-5**

Date Collected: 12/22/20 10:40

Matrix: Water

Date Received: 12/22/20 12:35

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

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, 1-chloro-4-(trifluoromethyl)-	10	T J N	ug/L		11.14	98-56-6		12/24/20 00:42	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120					12/24/20 00:42	2
4-Bromofluorobenzene (Surr)	94		68 - 120					12/24/20 00:42	2
Dibromofluoromethane (Surr)	100		80 - 127					12/24/20 00:42	2
1,2-Dichloroethane-d4 (Surr)	107		80 - 128					12/24/20 00:42	2

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	28		0.50	0.34	ug/L		12/29/20 08:02	12/30/20 12:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 150				12/29/20 08:02	12/30/20 12:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	80		46 - 128				12/29/20 08:02	12/30/20 12:35	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	240		100	50	mg/L			12/23/20 21:21	200
Nitrate as N	ND		0.55	0.28	mg/L			12/23/20 21:02	5
Bromide	2.9		2.5	1.3	mg/L			12/23/20 21:02	5
Fluoride	ND		2.5	1.3	mg/L			12/23/20 21:02	5
Sulfate	1800		100	50	mg/L			12/23/20 21:21	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.25	0.13	mg/L		12/29/20 10:17	12/30/20 14:10	5
Calcium	490		0.50	0.25	mg/L		12/29/20 10:17	12/30/20 14:10	5
Iron	1200	B	0.50	0.25	mg/L		12/29/20 10:17	12/30/20 14:10	5
Magnesium	230		0.10	0.050	mg/L		12/29/20 10:17	12/30/20 14:10	5
Manganese	4.4		0.10	0.075	mg/L		12/29/20 10:17	12/30/20 14:10	5
Potassium	26		2.5	1.3	mg/L		12/29/20 10:17	12/30/20 14:10	5
Sodium	300		2.5	1.3	mg/L		12/29/20 10:17	12/30/20 14:10	5

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	280		100	50	mg/L			12/28/20 14:11	5
Total Dissolved Solids	4100		50	25	mg/L			12/29/20 13:30	1
Ammonia (as N)	31		25	5.0	mg/L		12/28/20 04:00	12/28/20 06:00	1
Total Sulfide	ND		0.050	0.027	mg/L			12/29/20 12:27	1
Total Organic Carbon	160		5.0	2.5	mg/L			01/06/21 14:40	50
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	850		4.0	4.0	mg/L			12/26/20 13:26	1
Bicarbonate Alkalinity as CaCO3	850		4.0	4.0	mg/L			12/26/20 13:26	1
Carbon Dioxide, Free	6.4		2.0	2.0	mg/L			01/06/21 14:17	1

# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 440-276438-6**

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 20:41	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 20:41	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 20:41	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 20:41	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 20:41	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 20:41	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 20:41	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 20:41	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 20:41	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 20:41	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 20:41	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 20:41	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 20:41	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 20:41	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 20:41	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 20:41	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 20:41	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 20:41	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 20:41	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 20:41	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 20:41	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 20:41	1
Acrylonitrile	ND	+	5.0	0.87	ug/L			12/23/20 20:41	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 20:41	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 20:41	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 20:41	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 20:41	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 20:41	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 20:41	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 20:41	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 20:41	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 20:41	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 20:41	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 20:41	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 20:41	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 20:41	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 20:41	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 20:41	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 20:41	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 20:41	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 20:41	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 20:41	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 20:41	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 20:41	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 20:41	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 20:41	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 20:41	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 20:41	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 20:41	1



# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 440-276438-6**

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 20:41	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 20:41	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 20:41	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 20:41	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 20:41	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 20:41	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 20:41	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 20:41	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 20:41	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 20:41	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 20:41	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 20:41	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 20:41	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 20:41	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 20:41	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 20:41	1
2-Butanone (MEK)	ND	*+	5.0	3.0	ug/L			12/23/20 20:41	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 20:41	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
4-Amino-3,5-dimethyl-1,2,4-triazole	86	T J N	ug/L		1.43	3530-15-2		12/23/20 20:41	1
2H-Pyran-2-acetic acid, tetrahydro-6-methyl-, cis-Unknown	110	T J N	ug/L		1.45	69493-11-4		12/23/20 20:41	1
Unknown	1100	T J	ug/L		1.49			12/23/20 20:41	1
Unknown	34	T J	ug/L		1.66			12/23/20 20:41	1
Sulfur dioxide	50	T J N	ug/L		1.76	7446-09-5		12/23/20 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		12/23/20 20:41	1
4-Bromofluorobenzene (Surr)	90		68 - 120		12/23/20 20:41	1
Dibromofluoromethane (Surr)	100		80 - 127		12/23/20 20:41	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 128		12/23/20 20:41	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/29/20 08:02	12/30/20 12:49	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	36		15 - 150	12/29/20 08:02	12/30/20 12:49	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	85		46 - 128	12/29/20 08:02	12/30/20 12:49	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.0		0.50	0.25	mg/L			12/23/20 21:41	1
Nitrate as N	ND		0.11	0.055	mg/L			12/23/20 21:41	1
Bromide	ND		0.50	0.25	mg/L			12/23/20 21:41	1
Fluoride	1.1		0.50	0.25	mg/L			12/23/20 21:41	1
Sulfate	1400		25	13	mg/L			12/23/20 22:01	50

# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 440-276438-6**

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.83		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:45	1
Calcium	240		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:45	1
Iron	0.30		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:45	1
Magnesium	200		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:45	1
Manganese	0.31		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:45	1
Potassium	11		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:45	1
Sodium	170		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:45	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			12/28/20 14:11	1
Total Dissolved Solids	2000		10	5.0	mg/L			12/29/20 13:30	1
Ammonia (as N)	8.5		2.5	0.50	mg/L		12/28/20 04:00	12/28/20 06:00	1
Total Sulfide	3.8		0.25	0.14	mg/L			12/29/20 12:27	5
Total Organic Carbon	4.2		0.10	0.050	mg/L			01/06/21 14:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	550		4.0	4.0	mg/L			12/26/20 13:42	1
Bicarbonate Alkalinity as CaCO3	550		4.0	4.0	mg/L			12/26/20 13:42	1
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			01/06/21 14:17	1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276438-7**

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 17:07	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 17:07	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 17:07	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 17:07	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 17:07	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 17:07	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 17:07	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 17:07	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 17:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 17:07	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 17:07	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 17:07	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 17:07	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 17:07	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 17:07	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 17:07	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 17:07	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 17:07	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 17:07	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 17:07	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 17:07	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 17:07	1
Acrylonitrile	ND	+	5.0	0.87	ug/L			12/23/20 17:07	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 17:07	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276438-7**

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 17:07	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 17:07	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 17:07	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 17:07	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 17:07	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 17:07	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 17:07	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 17:07	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 17:07	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 17:07	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 17:07	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 17:07	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 17:07	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 17:07	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 17:07	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 17:07	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 17:07	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 17:07	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 17:07	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 17:07	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 17:07	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 17:07	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 17:07	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 17:07	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 17:07	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 17:07	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 17:07	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 17:07	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 17:07	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 17:07	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 17:07	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 17:07	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 17:07	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 17:07	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 17:07	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 17:07	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 17:07	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 17:07	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 17:07	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 17:07	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 17:07	1
2-Butanone (MEK)	ND	+	5.0	3.0	ug/L			12/23/20 17:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 17:07	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
2H-Pyran-2-acetic acid, tetrahydro-6-methyl-, cis-	280	T J N	ug/L		1.44	69493-11-4		12/23/20 17:07	1
Unknown	1300	T J	ug/L		1.49			12/23/20 17:07	1
Unknown	76	T J	ug/L		1.59			12/23/20 17:07	1
Unknown	100	T J	ug/L		1.62			12/23/20 17:07	1

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# Client Sample Results

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

Job ID: 440-276438-1

## Client Sample ID: Field Blank

Lab Sample ID: 440-276438-7

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	54	T J	ug/L		1.64			12/23/20 17:07	1
Unknown	150	T J	ug/L		1.66			12/23/20 17:07	1
Sulfur dioxide	83	T J N	ug/L		1.75	7446-09-5		12/23/20 17:07	1
Unknown	46	T J	ug/L		1.78			12/23/20 17:07	1
Unknown	22	T J	ug/L		1.81			12/23/20 17:07	1
Unknown	21	T J	ug/L		1.88			12/23/20 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/23/20 17:07	1
4-Bromofluorobenzene (Surr)	94		68 - 120		12/23/20 17:07	1
Dibromofluoromethane (Surr)	99		80 - 127		12/23/20 17:07	1
1,2-Dichloroethane-d4 (Surr)	93		80 - 128		12/23/20 17:07	1

## Client Sample ID: Trip Blank

Lab Sample ID: 440-276438-8

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/23/20 17:34	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 17:34	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 17:34	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 17:34	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 17:34	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 17:34	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 17:34	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 17:34	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 17:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 17:34	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 17:34	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 17:34	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 17:34	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 17:34	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 17:34	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 17:34	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 17:34	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 17:34	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 17:34	1
Acetone	4.7	J	8.0	4.0	ug/L			12/23/20 17:34	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 17:34	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 17:34	1
Acrylonitrile	ND	+	5.0	0.87	ug/L			12/23/20 17:34	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 17:34	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 17:34	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 17:34	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 17:34	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 17:34	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 17:34	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 17:34	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 17:34	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276438-8**

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 17:34	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 17:34	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 17:34	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 17:34	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 17:34	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 17:34	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 17:34	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 17:34	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 17:34	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 17:34	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 17:34	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 17:34	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 17:34	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 17:34	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 17:34	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 17:34	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 17:34	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/23/20 17:34	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 17:34	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 17:34	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 17:34	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 17:34	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 17:34	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 17:34	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 17:34	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 17:34	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 17:34	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 17:34	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 17:34	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 17:34	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 17:34	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 17:34	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 17:34	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 17:34	1
2-Butanone (MEK)	ND	*+	5.0	3.0	ug/L			12/23/20 17:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 17:34	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Propanedioic acid	240	T J N	ug/L		1.43	141-82-2		12/23/20 17:34	1
Unknown	1300	T J	ug/L		1.48			12/23/20 17:34	1
Unknown	63	T J	ug/L		1.61			12/23/20 17:34	1
Unknown	56	T J	ug/L		1.64			12/23/20 17:34	1
Unknown	120	T J	ug/L		1.68			12/23/20 17:34	1
Unknown	130	T J	ug/L		1.75			12/23/20 17:34	1
Unknown	28	T J	ug/L		1.82			12/23/20 17:34	1
Unknown	15	T J	ug/L		1.88			12/23/20 17:34	1
Unknown	21	T J	ug/L		1.91			12/23/20 17:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		12/23/20 17:34	1

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# Client Sample Results

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

Job ID: 440-276438-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276438-8**

**Date Collected: 12/22/20 00:01**

**Matrix: Water**

**Date Received: 12/22/20 12:35**

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene (Surr)	89		68 - 120		12/23/20 17:34	1
Dibromofluoromethane (Surr)	98		80 - 127		12/23/20 17:34	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 128		12/23/20 17:34	1

# Method Summary

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

Job ID: 440-276438-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	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 NH3 D	Ammonia	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
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2
SM 4500 NH3 B	Distillation, Ammonia	SM	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:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494  
ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494  
TAL IRV = Eurofins Calscience 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

Job ID: 440-276438-1

**Client Sample ID: CM-9R3**

**Lab Sample ID: 440-276438-1**

**Date Collected: 12/22/20 09:13**

**Matrix: Water**

**Date Received: 12/22/20 12:35**

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	20 mL	20 mL	118325	12/23/20 18:54	A1W	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119107	12/29/20 08:02	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			119267	12/30/20 11:36	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634457	12/23/20 17:02	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634458	12/23/20 17:02	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	100			634458	12/23/20 18:00	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 18:30	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634684	12/28/20 14:10	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634597	12/26/20 12:39	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634800	12/29/20 13:30	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635431	01/06/21 14:17	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	634600	12/28/20 04:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634613	12/28/20 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634794	12/29/20 12:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635367	01/05/21 09:22	YZ	TAL IRV

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

**Lab Sample ID: 440-276438-2**

**Date Collected: 12/22/20 07:15**

**Matrix: Water**

**Date Received: 12/22/20 12:35**

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	20 mL	20 mL	118325	12/23/20 19:21	A1W	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119107	12/29/20 08:02	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			119267	12/30/20 11:50	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634457	12/23/20 18:20	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634458	12/23/20 18:20	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634458	12/23/20 18:39	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 18:40	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634684	12/28/20 14:10	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634597	12/26/20 12:51	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	634800	12/29/20 13:30	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635431	01/06/21 14:17	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	634600	12/28/20 04:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634613	12/28/20 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		5	7.5 mL	7.5 mL	634794	12/29/20 12:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 14:13	YZ	TAL IRV



# Lab Chronicle

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

Job ID: 440-276438-1

**Client Sample ID: CM-11R**

**Lab Sample ID: 440-276438-3**

**Date Collected: 12/22/20 08:45**

**Matrix: Water**

**Date Received: 12/22/20 12:35**

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	20 mL	20 mL	118325	12/23/20 19:48	A1W	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119107	12/29/20 08:02	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			119267	12/30/20 12:05	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634457	12/23/20 18:59	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634458	12/23/20 18:59	NTN	TAL IRV
Total/NA	Analysis	300.0		100			634458	12/23/20 19:18	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 19:12	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634684	12/28/20 14:10	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634597	12/26/20 12:58	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	634800	12/29/20 13:30	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635431	01/06/21 14:17	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634600	12/28/20 04:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634613	12/28/20 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634794	12/29/20 12:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635367	01/05/21 09:55	YZ	TAL IRV

**Client Sample ID: DW-1**

**Lab Sample ID: 440-276438-4**

**Date Collected: 12/22/20 09:40**

**Matrix: Water**

**Date Received: 12/22/20 12:35**

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	20 mL	20 mL	118325	12/23/20 20:14	A1W	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119107	12/29/20 08:02	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			119267	12/30/20 12:20	AJ2Q	ECL 1
Total/NA	Analysis	300.0		5	5 mL	1.0 mL	634457	12/23/20 19:38	NTN	TAL IRV
Total/NA	Analysis	300.0		5	5 mL	1.0 mL	634458	12/23/20 19:38	NTN	TAL IRV
Total/NA	Analysis	300.0		200			634458	12/23/20 19:58	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634841	12/29/20 18:08	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		5			635019	12/30/20 18:43	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634684	12/28/20 14:10	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634597	12/26/20 13:11	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	634800	12/29/20 13:30	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635431	01/06/21 14:17	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634600	12/28/20 04:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634613	12/28/20 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634794	12/29/20 12:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 14:27	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276438-1

## Client Sample ID: Subdrain N

## Lab Sample ID: 440-276438-5

Date Collected: 12/22/20 10:40

Matrix: Water

Date Received: 12/22/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	20 mL	20 mL	118325	12/24/20 00:42	A1W	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119107	12/29/20 08:02	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			119267	12/30/20 12:35	AJ2Q	ECL 1
Total/NA	Analysis	300.0		5			634457	12/23/20 21:02	NTN	TAL IRV
Total/NA	Analysis	300.0		5			634458	12/23/20 21:02	NTN	TAL IRV
Total/NA	Analysis	300.0		200			634458	12/23/20 21:21	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		5			634959	12/30/20 14:10	KE	TAL IRV
Total/NA	Analysis	410.4		5	2 mL	2 mL	634684	12/28/20 14:11	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634597	12/26/20 13:26	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	634800	12/29/20 13:30	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635431	01/06/21 14:17	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			1.0 mL	50 mL	634600	12/28/20 04:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634613	12/28/20 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	634794	12/29/20 12:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		50	100 mL	100 mL	635469	01/06/21 14:40	YZ	TAL IRV

## Client Sample ID: Duplicate

## Lab Sample ID: 440-276438-6

Date Collected: 12/22/20 00:01

Matrix: Water

Date Received: 12/22/20 12:35

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	20 mL	20 mL	118325	12/23/20 20:41	A1W	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119107	12/29/20 08:02	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			119267	12/30/20 12:49	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1			634457	12/23/20 21:41	NTN	TAL IRV
Total/NA	Analysis	300.0		1			634458	12/23/20 21:41	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634458	12/23/20 22:01	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634645	12/28/20 09:47	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635019	12/30/20 18:45	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	634684	12/28/20 14:11	NN	TAL IRV
Total/NA	Analysis	SM 2320B		1			634597	12/26/20 13:42	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	634800	12/29/20 13:30	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635431	01/06/21 14:17	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	634600	12/28/20 04:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634613	12/28/20 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		5	7.5 mL	7.5 mL	634794	12/29/20 12:27	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 14:54	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276438-1

## Client Sample ID: Field Blank

Date Collected: 12/22/20 00:01

Date Received: 12/22/20 12:35

Lab Sample ID: 440-276438-7

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	20 mL	20 mL	118325	12/23/20 17:07	A1W	ECL 2

## Client Sample ID: Trip Blank

Date Collected: 12/22/20 00:01

Date Received: 12/22/20 12:35

Lab Sample ID: 440-276438-8

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	20 mL	20 mL	118325	12/23/20 17:34	A1W	ECL 2

### Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-276438-1

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

**Lab Sample ID: MB 570-118325/13**  
**Matrix: Water**  
**Analysis Batch: 118325**

**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		0.50	0.32	ug/L			12/23/20 16:40	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/23/20 16:40	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/23/20 16:40	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/23/20 16:40	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/23/20 16:40	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/23/20 16:40	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/23/20 16:40	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/23/20 16:40	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/23/20 16:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/23/20 16:40	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/23/20 16:40	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/23/20 16:40	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/23/20 16:40	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/23/20 16:40	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/23/20 16:40	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/23/20 16:40	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/23/20 16:40	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/23/20 16:40	1
2-Hexanone	ND		6.0	4.3	ug/L			12/23/20 16:40	1
Acetone	ND		8.0	4.0	ug/L			12/23/20 16:40	1
Acetonitrile	ND		10	3.9	ug/L			12/23/20 16:40	1
Acrolein	ND		4.0	2.2	ug/L			12/23/20 16:40	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/23/20 16:40	1
Benzene	ND		0.50	0.27	ug/L			12/23/20 16:40	1
Allyl chloride	ND		2.0	0.38	ug/L			12/23/20 16:40	1
Bromoform	ND		0.50	0.39	ug/L			12/23/20 16:40	1
Bromomethane	ND		1.0	0.93	ug/L			12/23/20 16:40	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/23/20 16:40	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/23/20 16:40	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/23/20 16:40	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/23/20 16:40	1
Chloroethane	ND		0.50	0.44	ug/L			12/23/20 16:40	1
Chloroform	ND		0.50	0.28	ug/L			12/23/20 16:40	1
Chloromethane	ND		1.0	0.29	ug/L			12/23/20 16:40	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/23/20 16:40	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/23/20 16:40	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/23/20 16:40	1
Dibromomethane	ND		0.50	0.23	ug/L			12/23/20 16:40	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/23/20 16:40	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/23/20 16:40	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/23/20 16:40	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/23/20 16:40	1
Iodomethane	ND		25	5.9	ug/L			12/23/20 16:40	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/23/20 16:40	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/23/20 16:40	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/23/20 16:40	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/23/20 16:40	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/23/20 16:40	1

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: MB 570-118325/13**  
**Matrix: Water**  
**Analysis Batch: 118325**

**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	0.21	ug/L			12/23/20 16:40	1
Naphthalene	ND		1.0	0.32	ug/L			12/23/20 16:40	1
o-Xylene	ND		0.50	0.35	ug/L			12/23/20 16:40	1
Propionitrile	ND		5.0	3.7	ug/L			12/23/20 16:40	1
Styrene	ND		0.50	0.28	ug/L			12/23/20 16:40	1
t-Butanol	ND		5.0	4.0	ug/L			12/23/20 16:40	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/23/20 16:40	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/23/20 16:40	1
Toluene	ND		0.50	0.33	ug/L			12/23/20 16:40	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/23/20 16:40	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/23/20 16:40	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/23/20 16:40	1
Trichloroethene	ND		0.50	0.29	ug/L			12/23/20 16:40	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/23/20 16:40	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/23/20 16:40	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/23/20 16:40	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/23/20 16:40	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/23/20 16:40	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/23/20 16:40	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/23/20 16:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/23/20 16:40	1
4-Bromofluorobenzene (Surr)	89		68 - 120		12/23/20 16:40	1
Dibromofluoromethane (Surr)	94		80 - 127		12/23/20 16:40	1
1,2-Dichloroethane-d4 (Surr)	87		80 - 128		12/23/20 16:40	1

**Lab Sample ID: LCS 570-118325/9**  
**Matrix: Water**  
**Analysis Batch: 118325**

**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	10.0	10.6		ug/L		106	80 - 120
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	80 - 126
1,1,1-Trichloroethane	10.0	9.45		ug/L		95	80 - 125
1,1,2,2-Tetrachloroethane	10.0	10.5		ug/L		105	80 - 120
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	80 - 120
1,1-Dichloroethane	10.0	11.0		ug/L		110	77 - 120
1,1-Dichloroethene	10.0	10.7		ug/L		107	74 - 128
1,1-Dichloropropene	10.0	10.2		ug/L		102	79 - 125
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	8.61		ug/L		86	67 - 120
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120
1,2-Dichloroethane	10.0	9.44		ug/L		94	80 - 123
1,2-Dichloropropane	10.0	11.1		ug/L		111	80 - 120
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120

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# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: LCS 570-118325/9**  
**Matrix: Water**  
**Analysis Batch: 118325**

**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	10.0	9.78		ug/L		98	80 - 120
1,4-Dichlorobenzene	10.0	9.88		ug/L		99	80 - 120
2,2-Dichloropropane	10.0	10.6		ug/L		106	77 - 139
2-Hexanone	10.0	11.6		ug/L		116	66 - 129
Acetone	10.0	13.1		ug/L		131	58 - 131
Acrolein	20.0	28.0		ug/L		140	61 - 144
Acrylonitrile	10.0	14.1	*+	ug/L		141	53 - 130
Benzene	10.0	9.84		ug/L		98	80 - 120
Bromoform	10.0	10.4		ug/L		104	70 - 141
Bromomethane	10.0	11.6		ug/L		116	50 - 150
Carbon disulfide	10.0	9.79		ug/L		98	65 - 136
Carbon tetrachloride	10.0	10.2		ug/L		102	75 - 142
Chlorobenzene	10.0	9.91		ug/L		99	80 - 120
Bromochloromethane	10.0	10.3		ug/L		103	80 - 120
Chloroethane	10.0	11.5		ug/L		115	74 - 123
Chloroform	10.0	9.98		ug/L		100	80 - 120
Chloromethane	10.0	13.2		ug/L		132	54 - 140
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	80 - 121
cis-1,3-Dichloropropene	10.0	9.78		ug/L		98	80 - 120
Dibromochloromethane	10.0	9.91		ug/L		99	80 - 128
Dibromomethane	10.0	9.27		ug/L		93	80 - 120
Bromodichloromethane	10.0	9.24		ug/L		92	80 - 126
Dichlorodifluoromethane	10.0	10.8		ug/L		108	63 - 135
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120
m,p-Xylene	20.0	20.0		ug/L		100	80 - 120
Methylene Chloride	10.0	10.0		ug/L		100	71 - 125
Methyl tert-butyl ether	10.0	9.62		ug/L		96	70 - 121
Naphthalene	10.0	10.5		ug/L		105	80 - 125
o-Xylene	10.0	10.2		ug/L		102	80 - 120
Styrene	10.0	10.5		ug/L		105	80 - 120
t-Butanol	50.0	58.0		ug/L		116	77 - 124
Tetrachloroethene	10.0	9.82		ug/L		98	80 - 126
Toluene	10.0	9.90		ug/L		99	80 - 120
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	74 - 121
trans-1,3-Dichloropropene	10.0	9.70		ug/L		97	80 - 123
Trichloroethene	10.0	9.55		ug/L		95	80 - 120
Trichlorofluoromethane	10.0	10.5		ug/L		105	74 - 137
Vinyl acetate	10.0	13.3		ug/L		133	50 - 150
Vinyl chloride	10.0	12.3		ug/L		123	72 - 126
1,2-Dibromoethane (EDB)	10.0	10.4		ug/L		104	80 - 120
2-Butanone (MEK)	10.0	13.1	*+	ug/L		131	50 - 127
4-Methyl-2-pentanone (MIBK)	10.0	10.5		ug/L		105	72 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	99		68 - 120
Dibromofluoromethane (Surr)	99		80 - 127
1,2-Dichloroethane-d4 (Surr)	93		80 - 128

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: LCSD 570-118325/10**  
**Matrix: Water**  
**Analysis Batch: 118325**

**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
1,2,3-Trichloropropane	10.0	9.95		ug/L		99	80 - 120	7	20
1,1,1,2-Tetrachloroethane	10.0	9.42		ug/L		94	80 - 126	8	20
1,1,1-Trichloroethane	10.0	8.63		ug/L		86	80 - 125	9	20
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	80 - 120	3	20
1,1,2-Trichloroethane	10.0	9.44		ug/L		94	80 - 120	10	20
1,1-Dichloroethane	10.0	10.1		ug/L		101	77 - 120	9	20
1,1-Dichloroethene	10.0	9.01		ug/L		90	74 - 128	17	20
1,1-Dichloropropene	10.0	9.32		ug/L		93	79 - 125	9	20
1,2,4-Trichlorobenzene	10.0	9.47		ug/L		95	80 - 120	5	20
1,2-Dibromo-3-Chloropropane	10.0	8.16		ug/L		82	67 - 120	5	20
1,2-Dichlorobenzene	10.0	9.33		ug/L		93	80 - 120	10	20
1,2-Dichloroethane	10.0	8.62		ug/L		86	80 - 123	9	20
1,2-Dichloropropane	10.0	10.4		ug/L		104	80 - 120	6	20
1,3-Dichlorobenzene	10.0	9.49		ug/L		95	80 - 120	6	20
1,3-Dichloropropane	10.0	9.28		ug/L		93	80 - 120	5	20
1,4-Dichlorobenzene	10.0	9.24		ug/L		92	80 - 120	7	20
2,2-Dichloropropane	10.0	9.32		ug/L		93	77 - 139	13	20
2-Hexanone	10.0	10.2		ug/L		102	66 - 129	13	21
Acetone	10.0	13.0		ug/L		130	58 - 131	1	30
Acrolein	20.0	25.3		ug/L		126	61 - 144	10	30
Acrylonitrile	10.0	14.1	*+	ug/L		141	53 - 130	0	30
Benzene	10.0	9.21		ug/L		92	80 - 120	7	20
Bromoform	10.0	9.85		ug/L		99	70 - 141	6	20
Bromomethane	10.0	10.3		ug/L		103	50 - 150	12	22
Carbon disulfide	10.0	8.97		ug/L		90	65 - 136	9	20
Carbon tetrachloride	10.0	9.18		ug/L		92	75 - 142	11	20
Chlorobenzene	10.0	9.44		ug/L		94	80 - 120	5	20
Bromochloromethane	10.0	9.80		ug/L		98	80 - 120	5	20
Chloroethane	10.0	10.7		ug/L		107	74 - 123	7	20
Chloroform	10.0	9.26		ug/L		93	80 - 120	8	20
Chloromethane	10.0	12.0		ug/L		120	54 - 140	9	20
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	80 - 121	5	20
cis-1,3-Dichloropropene	10.0	9.41		ug/L		94	80 - 120	4	20
Dibromochloromethane	10.0	9.23		ug/L		92	80 - 128	7	20
Dibromomethane	10.0	9.05		ug/L		91	80 - 120	2	20
Bromodichloromethane	10.0	8.83		ug/L		88	80 - 126	5	20
Dichlorodifluoromethane	10.0	9.77		ug/L		98	63 - 135	10	20
Ethylbenzene	10.0	9.48		ug/L		95	80 - 120	6	20
m,p-Xylene	20.0	18.8		ug/L		94	80 - 120	6	20
Methylene Chloride	10.0	9.26		ug/L		93	71 - 125	8	20
Methyl tert-butyl ether	10.0	9.15		ug/L		92	70 - 121	5	20
Naphthalene	10.0	10.2		ug/L		102	80 - 125	3	20
o-Xylene	10.0	9.71		ug/L		97	80 - 120	5	20
Styrene	10.0	9.90		ug/L		99	80 - 120	6	20
t-Butanol	50.0	54.7		ug/L		109	77 - 124	6	23
Tetrachloroethene	10.0	8.90		ug/L		89	80 - 126	10	20
Toluene	10.0	9.09		ug/L		91	80 - 120	9	20
trans-1,2-Dichloroethene	10.0	9.66		ug/L		97	74 - 121	9	20

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: LCSD 570-118325/10**  
**Matrix: Water**  
**Analysis Batch: 118325**

**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
trans-1,3-Dichloropropene	10.0	8.80		ug/L		88	80 - 123	10	20
Trichloroethene	10.0	8.96		ug/L		90	80 - 120	6	20
Trichlorofluoromethane	10.0	9.64		ug/L		96	74 - 137	9	20
Vinyl acetate	10.0	12.3		ug/L		123	50 - 150	8	28
Vinyl chloride	10.0	11.1		ug/L		111	72 - 126	11	20
1,2-Dibromoethane (EDB)	10.0	9.42		ug/L		94	80 - 120	10	20
2-Butanone (MEK)	10.0	12.4		ug/L		124	50 - 127	5	26
4-Methyl-2-pentanone (MIBK)	10.0	10.5		ug/L		105	72 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	103		68 - 120
Dibromofluoromethane (Surr)	98		80 - 127
1,2-Dichloroethane-d4 (Surr)	90		80 - 128

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

**Lab Sample ID: MB 570-119107/1-A**  
**Matrix: Water**  
**Analysis Batch: 119267**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 119107**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/29/20 08:01	12/30/20 10:23	1
Isotope Dilution	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	37		15 - 150	12/29/20 08:01	12/30/20 10:23	1			
Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	86		46 - 128	12/29/20 08:01	12/30/20 10:23	1			

**Lab Sample ID: LCS 570-119107/2-A**  
**Matrix: Water**  
**Analysis Batch: 119267**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 119107**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	16.3		ug/L		81	57 - 136
Isotope Dilution	LCS %Recovery	LCS Qualifier	LCS Limits				
1,4-Dioxane-d8	36		15 - 150				
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits				
Nitrobenzene-d5 (Surr)	88		46 - 128				



# QC Sample Results

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

Job ID: 440-276438-1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) (Continued)

**Lab Sample ID: LCSD 570-119107/3-A**  
**Matrix: Water**  
**Analysis Batch: 119267**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 119107**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	20.0	17.6		ug/L		88	57 - 136	8	20
		<b>LCSD</b>	<b>LCSD</b>						
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,4-Dioxane-d8	36		15 - 150						
		<b>LCSD</b>	<b>LCSD</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Nitrobenzene-d5 (Surr)	86		46 - 128						

**Lab Sample ID: 440-276438-1 MS**  
**Matrix: Water**  
**Analysis Batch: 119267**

**Client Sample ID: CM-9R3**  
**Prep Type: Total/NA**  
**Prep Batch: 119107**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	17.8		ug/L		89	45 - 139		
		<b>MS</b>	<b>MS</b>								
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8	37		15 - 150								
		<b>MS</b>	<b>MS</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
Nitrobenzene-d5 (Surr)	83		46 - 128								

**Lab Sample ID: 440-276438-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 119267**

**Client Sample ID: CM-9R3**  
**Prep Type: Total/NA**  
**Prep Batch: 119107**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	16.7		ug/L		84	45 - 139	7	17
		<b>MSD</b>	<b>MSD</b>								
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8	36		15 - 150								
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
Nitrobenzene-d5 (Surr)	81		46 - 128								

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-634457/6**  
**Matrix: Water**  
**Analysis Batch: 634457**

**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			12/23/20 10:18	1

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: LCS 440-634457/5**  
**Matrix: Water**  
**Analysis Batch: 634457**

**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	1.13		mg/L		100	90 - 110

**Lab Sample ID: 440-276438-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634457**

**Client Sample ID: CM-9R3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	ND		2.26	2.23		mg/L		99	80 - 120

**Lab Sample ID: 440-276438-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634457**

**Client Sample ID: CM-9R3**  
**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	ND		2.26	2.27		mg/L		100	80 - 120	2	20

**Lab Sample ID: MB 440-634458/6**  
**Matrix: Water**  
**Analysis Batch: 634458**

**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			12/23/20 10:18	1
Bromide	ND		0.50	0.25	mg/L			12/23/20 10:18	1
Fluoride	ND		0.50	0.25	mg/L			12/23/20 10:18	1
Sulfate	ND		0.50	0.25	mg/L			12/23/20 10:18	1

**Lab Sample ID: LCS 440-634458/5**  
**Matrix: Water**  
**Analysis Batch: 634458**

**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	4.86		mg/L		97	90 - 110
Bromide	5.00	4.92		mg/L		98	90 - 110
Fluoride	5.00	4.75		mg/L		95	90 - 110
Sulfate	5.00	4.97		mg/L		99	90 - 110

**Lab Sample ID: 440-276438-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634458**

**Client Sample ID: CM-9R3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	14		10.0	24.7		mg/L		104	80 - 120
Bromide	ND		10.0	9.87		mg/L		99	80 - 120
Fluoride	2.3		10.0	11.7		mg/L		93	80 - 120
Sulfate	3800	E	10.0	3820	E 4	mg/L		91	80 - 120

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: 440-276438-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634458**

**Client Sample ID: CM-9R3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	14		10.0	24.6		mg/L		103	80 - 120	0	20
Bromide	ND		10.0	9.84		mg/L		98	80 - 120	0	20
Fluoride	2.3		10.0	11.0		mg/L		86	80 - 120	6	20
Sulfate	3800	E	10.0	3810	E 4	mg/L		-45	80 - 120	0	20

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-634645/1-A**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/28/20 09:47	12/30/20 18:18	1
Calcium	ND		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:18	1
Iron	ND		0.10	0.050	mg/L		12/28/20 09:47	12/30/20 18:18	1
Magnesium	ND		0.020	0.010	mg/L		12/28/20 09:47	12/30/20 18:18	1
Manganese	ND		0.020	0.015	mg/L		12/28/20 09:47	12/30/20 18:18	1
Potassium	ND		0.50	0.25	mg/L		12/28/20 09:47	12/30/20 18:18	1
Sodium	ND		0.50	0.26	mg/L		12/28/20 09:47	12/30/20 18:18	1

**Lab Sample ID: LCS 440-634645/2-A**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.996		mg/L		100	80 - 120
Calcium	5.00	5.09		mg/L		102	80 - 120
Iron	1.00	1.04		mg/L		104	80 - 120
Magnesium	5.00	4.97		mg/L		99	80 - 120
Manganese	1.00	0.997		mg/L		100	80 - 120
Potassium	10.0	9.89		mg/L		99	80 - 120
Sodium	10.0	9.69		mg/L		97	80 - 120

**Lab Sample ID: 440-276438-1 MS**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: CM-9R3**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.7		1.00	2.77		mg/L		104	75 - 125
Calcium	380		5.00	382	4	mg/L		62	75 - 125
Iron	22		1.00	23.1	4	mg/L		91	75 - 125
Magnesium	240		5.00	238	4	mg/L		56	75 - 125
Manganese	2.6		1.00	3.59		mg/L		95	75 - 125
Potassium	13		10.0	23.0		mg/L		105	75 - 125
Sodium	410		10.0	418	4	mg/L		55	75 - 125

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: 440-276438-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 635019**

**Client Sample ID: CM-9R3**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634645**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Boron	1.7		1.00	2.73		mg/L		100	75 - 125	2	20
Calcium	380		5.00	376	4	mg/L		-64	75 - 125	2	20
Iron	22		1.00	22.6	4	mg/L		49	75 - 125	2	20
Magnesium	240		5.00	237	4	mg/L		24	75 - 125	1	20
Manganese	2.6		1.00	3.54		mg/L		89	75 - 125	2	20
Potassium	13		10.0	22.6		mg/L		101	75 - 125	2	20
Sodium	410		10.0	412	4	mg/L		-10	75 - 125	2	20

**Lab Sample ID: MB 440-634774/1-A**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	ND		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:36	1
Calcium	ND		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:36	1
Iron	0.0837	J	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:36	1
Magnesium	ND		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:36	1
Manganese	ND		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:36	1
Potassium	ND		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:36	1

**Lab Sample ID: MB 440-634774/1-A**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sodium	ND		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 13:13	1

**Lab Sample ID: LCS 440-634774/2-A**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Boron	1.00	0.953		mg/L		95	80 - 120
Calcium	5.00	4.86		mg/L		97	80 - 120
Iron	1.00	1.07		mg/L		107	80 - 120
Magnesium	5.00	4.94		mg/L		99	80 - 120
Manganese	1.00	0.954		mg/L		95	80 - 120
Potassium	10.0	9.73		mg/L		97	80 - 120

**Lab Sample ID: LCS 440-634774/2-A**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Sodium	10.0	9.78		mg/L		98	80 - 120

# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: 440-276628-I-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits
Boron	0.60		1.00	1.62		mg/L		102	75 - 125	
Calcium	220		5.00	227	4	mg/L		124	75 - 125	
Iron	10	B	1.00	11.1	4	mg/L		101	75 - 125	
Magnesium	120		5.00	127	4	mg/L		156	75 - 125	
Manganese	1.0		1.00	1.98		mg/L		95	75 - 125	
Potassium	5.7		10.0	15.7		mg/L		100	75 - 125	

**Lab Sample ID: 440-276628-I-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits
Sodium	400		10.0	414	4	mg/L		149	75 - 125	

**Lab Sample ID: 440-276628-I-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Boron	0.60		1.00	1.62		mg/L		101	75 - 125	0	20	
Calcium	220		5.00	232	4	mg/L		230	75 - 125	2	20	
Iron	10	B	1.00	11.3	4	mg/L		123	75 - 125	2	20	
Magnesium	120		5.00	130	4	mg/L		204	75 - 125	2	20	
Manganese	1.0		1.00	1.99		mg/L		96	75 - 125	0	20	
Potassium	5.7		10.0	15.7		mg/L		100	75 - 125	0	20	

**Lab Sample ID: 440-276628-I-1-C MSD**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Sodium	400		10.0	421	4	mg/L		223	75 - 125	2	20	

## Method: 410.4 - COD

**Lab Sample ID: MB 440-634684/3**  
**Matrix: Water**  
**Analysis Batch: 634684**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chemical Oxygen Demand	ND		20	10	mg/L			12/28/20 14:09	1

**Lab Sample ID: LCS 440-634684/4**  
**Matrix: Water**  
**Analysis Batch: 634684**

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

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

# QC Sample Results

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

Job ID: 440-276438-1

## Method: 410.4 - COD (Continued)

**Lab Sample ID: 440-276438-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634684**

**Client Sample ID: CM-9R3**  
**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	197		mg/L		98	70 - 120

**Lab Sample ID: 440-276438-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634684**

**Client Sample ID: CM-9R3**  
**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	195		mg/L		98	70 - 120	1	15

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-634597/3**  
**Matrix: Water**  
**Analysis Batch: 634597**

**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			12/26/20 09:00	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/26/20 09:00	1

**Lab Sample ID: LCS 440-634597/2**  
**Matrix: Water**  
**Analysis Batch: 634597**

**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	86.4	87.9		mg/L		102	80 - 120

**Lab Sample ID: 440-276467-E-3 DU**  
**Matrix: Water**  
**Analysis Batch: 634597**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	1500		1560		mg/L		4	20
Bicarbonate Alkalinity as CaCO3	1500		1560		mg/L		4	20

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

**Lab Sample ID: MB 440-634800/1**  
**Matrix: Water**  
**Analysis Batch: 634800**

**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			12/29/20 13:30	1

**Lab Sample ID: LCS 440-634800/2**  
**Matrix: Water**  
**Analysis Batch: 634800**

**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	958		mg/L		96	90 - 110

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# QC Sample Results

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

Job ID: 440-276438-1

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

Lab Sample ID: 440-276438-1 DU  
 Matrix: Water  
 Analysis Batch: 634800

Client Sample ID: CM-9R3  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	4000		4000		mg/L		0.2	5

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

Lab Sample ID: MB 440-635431/1  
 Matrix: Water  
 Analysis Batch: 635431

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			01/06/21 14:17	1

Lab Sample ID: 440-276639-K-2 DU  
 Matrix: Water  
 Analysis Batch: 635431

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	48		45.8		mg/L		4	20

## Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-634600/2-A  
 Matrix: Water  
 Analysis Batch: 634613

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 634600

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/28/20 04:00	12/28/20 06:00	1

Lab Sample ID: LCS 440-634600/1-A  
 Matrix: Water  
 Analysis Batch: 634613

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 634600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	2.50	2.19		mg/L		87	85 - 115

Lab Sample ID: 440-276468-A-1-A MS  
 Matrix: Water  
 Analysis Batch: 634613

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA  
 Prep Batch: 634600

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.26	J	2.50	2.69		mg/L		97	75 - 125

Lab Sample ID: 440-276468-A-1-B MSD  
 Matrix: Water  
 Analysis Batch: 634613

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 634600

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.26	J	2.50	2.47		mg/L		89	75 - 125	8	15

# QC Sample Results

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

Job ID: 440-276438-1

## Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: 440-276468-B-1-A DU  
Matrix: Water  
Analysis Batch: 634613

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 634600

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Ammonia (as N)	0.26	J	0.269	J	mg/L		4	15

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

Lab Sample ID: MB 440-634794/3  
Matrix: Water  
Analysis Batch: 634794

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Sulfide	ND		0.050	0.027	mg/L			12/29/20 12:27	1

Lab Sample ID: LCS 440-634794/4  
Matrix: Water  
Analysis Batch: 634794

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Sulfide	0.499	0.489		mg/L		98	80 - 120

Lab Sample ID: 440-276438-1 MS  
Matrix: Water  
Analysis Batch: 634794

Client Sample ID: CM-9R3  
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Total Sulfide	ND	F1	0.499	0.272	F1	mg/L		54	70 - 130

Lab Sample ID: 440-276438-1 MSD  
Matrix: Water  
Analysis Batch: 634794

Client Sample ID: CM-9R3  
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Total Sulfide	ND	F1	0.499	0.289	F1	mg/L		58	70 - 130	6	30

## Method: SM 5310C - TOC

Lab Sample ID: MB 440-635367/8  
Matrix: Water  
Analysis Batch: 635367

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	ND		0.10	0.050	mg/L			01/05/21 05:46	1

Lab Sample ID: LCS 440-635367/7  
Matrix: Water  
Analysis Batch: 635367

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Organic Carbon	5.00	4.96		mg/L		99	85 - 115



# QC Sample Results

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

Job ID: 440-276438-1

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

**Lab Sample ID: MRL 440-635367/4**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	0.0897	J	mg/L		90	50 - 150

**Lab Sample ID: 440-276205-D-3 MS ^2**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	1.5		10.0	12.4		mg/L		109	85 - 115

**Lab Sample ID: 440-276205-D-3 MSD ^2**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	1.5		10.0	12.0		mg/L		105	85 - 115	3	20

**Lab Sample ID: MB 440-635469/8**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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			01/06/21 06:06	1

**Lab Sample ID: LCS 440-635469/7**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	5.00	4.93		mg/L		99	85 - 115

**Lab Sample ID: MRL 440-635469/6**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	0.0529	J	mg/L		53	50 - 150

**Lab Sample ID: 440-276203-D-4 MS ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.6		mg/L		109	85 - 115

**Lab Sample ID: 440-276203-D-4 MSD ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.3		mg/L		106	85 - 115	3	20

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# QC Association Summary

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

Job ID: 440-276438-1

## GC/MS VOA

### Analysis Batch: 118325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	8260B	
440-276438-2	CM-10R	Total/NA	Water	8260B	
440-276438-3	CM-11R	Total/NA	Water	8260B	
440-276438-4	DW-1	Total/NA	Water	8260B	
440-276438-5	Subdrain N	Total/NA	Water	8260B	
440-276438-6	Duplicate	Total/NA	Water	8260B	
440-276438-7	Field Blank	Total/NA	Water	8260B	
440-276438-8	Trip Blank	Total/NA	Water	8260B	
MB 570-118325/13	Method Blank	Total/NA	Water	8260B	
LCS 570-118325/9	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-118325/10	Lab Control Sample Dup	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 119107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	3510C	
440-276438-2	CM-10R	Total/NA	Water	3510C	
440-276438-3	CM-11R	Total/NA	Water	3510C	
440-276438-4	DW-1	Total/NA	Water	3510C	
440-276438-5	Subdrain N	Total/NA	Water	3510C	
440-276438-6	Duplicate	Total/NA	Water	3510C	
MB 570-119107/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-119107/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-119107/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
440-276438-1 MS	CM-9R3	Total/NA	Water	3510C	
440-276438-1 MSD	CM-9R3	Total/NA	Water	3510C	

### Analysis Batch: 119267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	8270C SIM ID	119107
440-276438-2	CM-10R	Total/NA	Water	8270C SIM ID	119107
440-276438-3	CM-11R	Total/NA	Water	8270C SIM ID	119107
440-276438-4	DW-1	Total/NA	Water	8270C SIM ID	119107
440-276438-5	Subdrain N	Total/NA	Water	8270C SIM ID	119107
440-276438-6	Duplicate	Total/NA	Water	8270C SIM ID	119107
MB 570-119107/1-A	Method Blank	Total/NA	Water	8270C SIM ID	119107
LCS 570-119107/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	119107
LCSD 570-119107/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	119107
440-276438-1 MS	CM-9R3	Total/NA	Water	8270C SIM ID	119107
440-276438-1 MSD	CM-9R3	Total/NA	Water	8270C SIM ID	119107

## HPLC/IC

### Analysis Batch: 634457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	300.0	
440-276438-2	CM-10R	Total/NA	Water	300.0	
440-276438-3	CM-11R	Total/NA	Water	300.0	
440-276438-4	DW-1	Total/NA	Water	300.0	
440-276438-5	Subdrain N	Total/NA	Water	300.0	
440-276438-6	Duplicate	Total/NA	Water	300.0	

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# QC Association Summary

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

Job ID: 440-276438-1

## HPLC/IC (Continued)

### Analysis Batch: 634457 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-634457/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634457/5	Lab Control Sample	Total/NA	Water	300.0	
440-276438-1 MS	CM-9R3	Total/NA	Water	300.0	
440-276438-1 MSD	CM-9R3	Total/NA	Water	300.0	

### Analysis Batch: 634458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	300.0	
440-276438-1 - DL	CM-9R3	Total/NA	Water	300.0	
440-276438-2	CM-10R	Total/NA	Water	300.0	
440-276438-2	CM-10R	Total/NA	Water	300.0	
440-276438-3	CM-11R	Total/NA	Water	300.0	
440-276438-3	CM-11R	Total/NA	Water	300.0	
440-276438-4	DW-1	Total/NA	Water	300.0	
440-276438-4	DW-1	Total/NA	Water	300.0	
440-276438-5	Subdrain N	Total/NA	Water	300.0	
440-276438-5	Subdrain N	Total/NA	Water	300.0	
440-276438-6	Duplicate	Total/NA	Water	300.0	
440-276438-6	Duplicate	Total/NA	Water	300.0	
MB 440-634458/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634458/5	Lab Control Sample	Total/NA	Water	300.0	
440-276438-1 MS	CM-9R3	Total/NA	Water	300.0	
440-276438-1 MSD	CM-9R3	Total/NA	Water	300.0	

## Metals

### Prep Batch: 634645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total Recoverable	Water	3005A	
440-276438-2	CM-10R	Total Recoverable	Water	3005A	
440-276438-3	CM-11R	Total Recoverable	Water	3005A	
440-276438-4	DW-1	Total Recoverable	Water	3005A	
440-276438-6	Duplicate	Total Recoverable	Water	3005A	
MB 440-634645/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-634645/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276438-1 MS	CM-9R3	Total Recoverable	Water	3005A	
440-276438-1 MSD	CM-9R3	Total Recoverable	Water	3005A	

### Prep Batch: 634774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-5	Subdrain N	Total Recoverable	Water	3005A	
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276628-I-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-276628-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 634841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-4	DW-1	Total Recoverable	Water	6010B	634645

# QC Association Summary

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

Job ID: 440-276438-1

## Metals

### Analysis Batch: 634857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	6010B	634774
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634774
440-276628-I-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	634774
440-276628-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	634774

### Analysis Batch: 634959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-5	Subdrain N	Total Recoverable	Water	6010B	634774
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	6010B	634774
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634774
440-276628-I-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	634774
440-276628-I-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	634774

### Analysis Batch: 635019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total Recoverable	Water	6010B	634645
440-276438-2	CM-10R	Total Recoverable	Water	6010B	634645
440-276438-3	CM-11R	Total Recoverable	Water	6010B	634645
440-276438-4	DW-1	Total Recoverable	Water	6010B	634645
440-276438-6	Duplicate	Total Recoverable	Water	6010B	634645
MB 440-634645/1-A	Method Blank	Total Recoverable	Water	6010B	634645
LCS 440-634645/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634645
440-276438-1 MS	CM-9R3	Total Recoverable	Water	6010B	634645
440-276438-1 MSD	CM-9R3	Total Recoverable	Water	6010B	634645

## General Chemistry

### Analysis Batch: 634597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 2320B	
440-276438-2	CM-10R	Total/NA	Water	SM 2320B	
440-276438-3	CM-11R	Total/NA	Water	SM 2320B	
440-276438-4	DW-1	Total/NA	Water	SM 2320B	
440-276438-5	Subdrain N	Total/NA	Water	SM 2320B	
440-276438-6	Duplicate	Total/NA	Water	SM 2320B	
MB 440-634597/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-634597/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-276467-E-3 DU	Duplicate	Total/NA	Water	SM 2320B	

### Prep Batch: 634600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 4500 NH3 B	
440-276438-2	CM-10R	Total/NA	Water	SM 4500 NH3 B	
440-276438-3	CM-11R	Total/NA	Water	SM 4500 NH3 B	
440-276438-4	DW-1	Total/NA	Water	SM 4500 NH3 B	
440-276438-5	Subdrain N	Total/NA	Water	SM 4500 NH3 B	
440-276438-6	Duplicate	Total/NA	Water	SM 4500 NH3 B	
MB 440-634600/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-634600/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-276468-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-276468-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	

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# QC Association Summary

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

Job ID: 440-276438-1

## General Chemistry (Continued)

### Prep Batch: 634600 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276468-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 634613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 4500 NH3 D	634600
440-276438-2	CM-10R	Total/NA	Water	SM 4500 NH3 D	634600
440-276438-3	CM-11R	Total/NA	Water	SM 4500 NH3 D	634600
440-276438-4	DW-1	Total/NA	Water	SM 4500 NH3 D	634600
440-276438-5	Subdrain N	Total/NA	Water	SM 4500 NH3 D	634600
440-276438-6	Duplicate	Total/NA	Water	SM 4500 NH3 D	634600
MB 440-634600/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	634600
LCS 440-634600/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	634600
440-276468-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	634600
440-276468-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	634600
440-276468-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	634600

### Analysis Batch: 634684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	410.4	
440-276438-2	CM-10R	Total/NA	Water	410.4	
440-276438-3	CM-11R	Total/NA	Water	410.4	
440-276438-4	DW-1	Total/NA	Water	410.4	
440-276438-5	Subdrain N	Total/NA	Water	410.4	
440-276438-6	Duplicate	Total/NA	Water	410.4	
MB 440-634684/3	Method Blank	Total/NA	Water	410.4	
LCS 440-634684/4	Lab Control Sample	Total/NA	Water	410.4	
440-276438-1 MS	CM-9R3	Total/NA	Water	410.4	
440-276438-1 MSD	CM-9R3	Total/NA	Water	410.4	

### Analysis Batch: 634794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 4500 S2 D	
440-276438-2	CM-10R	Total/NA	Water	SM 4500 S2 D	
440-276438-3	CM-11R	Total/NA	Water	SM 4500 S2 D	
440-276438-4	DW-1	Total/NA	Water	SM 4500 S2 D	
440-276438-5	Subdrain N	Total/NA	Water	SM 4500 S2 D	
440-276438-6	Duplicate	Total/NA	Water	SM 4500 S2 D	
MB 440-634794/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-634794/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-276438-1 MS	CM-9R3	Total/NA	Water	SM 4500 S2 D	
440-276438-1 MSD	CM-9R3	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 634800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 2540C	
440-276438-2	CM-10R	Total/NA	Water	SM 2540C	
440-276438-3	CM-11R	Total/NA	Water	SM 2540C	
440-276438-4	DW-1	Total/NA	Water	SM 2540C	
440-276438-5	Subdrain N	Total/NA	Water	SM 2540C	
440-276438-6	Duplicate	Total/NA	Water	SM 2540C	
MB 440-634800/1	Method Blank	Total/NA	Water	SM 2540C	

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# QC Association Summary

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

Job ID: 440-276438-1

## General Chemistry (Continued)

### Analysis Batch: 634800 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-634800/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-276438-1 DU	CM-9R3	Total/NA	Water	SM 2540C	

### Analysis Batch: 635367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 5310C	
440-276438-3	CM-11R	Total/NA	Water	SM 5310C	
MB 440-635367/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635367/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635367/4	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276205-D-3 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276205-D-3 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 635431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-1	CM-9R3	Total/NA	Water	SM 4500 CO2 C	
440-276438-2	CM-10R	Total/NA	Water	SM 4500 CO2 C	
440-276438-3	CM-11R	Total/NA	Water	SM 4500 CO2 C	
440-276438-4	DW-1	Total/NA	Water	SM 4500 CO2 C	
440-276438-5	Subdrain N	Total/NA	Water	SM 4500 CO2 C	
440-276438-6	Duplicate	Total/NA	Water	SM 4500 CO2 C	
MB 440-635431/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-276639-K-2 DU	Duplicate	Total/NA	Water	SM 4500 CO2 C	

### Analysis Batch: 635469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276438-2	CM-10R	Total/NA	Water	SM 5310C	
440-276438-4	DW-1	Total/NA	Water	SM 5310C	
440-276438-5	Subdrain N	Total/NA	Water	SM 5310C	
440-276438-6	Duplicate	Total/NA	Water	SM 5310C	
MB 440-635469/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635469/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635469/6	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276203-D-4 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276203-D-4 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

# Definitions/Glossary

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

Job ID: 440-276438-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
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.

### 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.
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 exceeds control 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
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

# Definitions/Glossary

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

Job ID: 440-276438-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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# Accreditation/Certification Summary

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

Job ID: 440-276438-1

## Laboratory: Eurofins Calscience Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-21
Arizona	State	AZ0671	10-14-21
California	Los Angeles County Sanitation Districts	10256	06-30-21
California	State	2706	06-30-21
Guam	State	20-004R	01-23-21
Hawaii	State	CA01531	01-29-21
Kansas	NELAP	E-10420	07-31-21
Nevada	State	CA015312021-5	07-31-21
Oregon	NELAP	4028 - 008	01-29-21
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-21

## Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-29-21
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

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

Eurofins Calscience Irvine

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact		Project Manager: <u>Kyle Welch</u>		Site Contact: <u>J. Mills</u>		Date: <u>12-22-20</u>		COC No:													
Company Name: <u>GLA / Republic</u>		Tel/Fax: <u>888-451-1136</u>		Lab Contact: <u>R. Tomanga</u>		Carrier: <u>J/A</u>		1 of 1 COCs													
Address: <u>11415 W. Severnwood Ct</u>		Analysis Turnaround Time		Filtered Sample (Y/N)		Perform MS / MSD (Y/N)		Sampler: <u>BS, MC</u>													
City/State/Zip: <u>S. D., CA 92127</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only:													
Phone: <u>888-451-1136</u>		TAT if different from Below _____						Walk-in Client:													
Fax: <u>888-451-1087</u>		<input type="checkbox"/> 2 weeks						Lab Sampling:													
Project Name: <u>Republic Services, Inc.</u>		<input type="checkbox"/> 1 week		Job / SDG No.:		Sample Specific Notes:		in 12/22/20													
Site: <u>Sunshine Cm. 4F</u>		<input type="checkbox"/> 2 days																			
P O #		<input type="checkbox"/> 1 day																			
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	EPA 8260 B-VOCs	40 CFR 258 Metals	Dichlorodifluoroethane	1,1,1-trichloroethane	1,1,2-trichloroethane	1,2-dichloroethane	1,1,1-trichloroethane	1,1,2-trichloroethane	1,1,1-trichloroethane	1,1,2-trichloroethane	1,1,1-trichloroethane	1,1,2-trichloroethane	1,1,1-trichloroethane	1,1,2-trichloroethane		
CM-9R3	12/22/20	0913	G	GW	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CM-10R		0715	G	GW	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CM-11R		0845	G	GW	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
DW-1		0940	G	GW	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Subdrain N		1040	G	GW	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Duplicate		—	G	GW	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Field Blank		—	G	Lab	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Trip Blank		—	G	"	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____						Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)															
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.						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months															
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown																					
Special Instructions/QC Requirements & Comments: <u>Metals are not field filtered.</u>																					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No.:													
Relinquished by: <u>[Signature]</u>		Company: <u>Pro-Log</u>		Date/Time: <u>12-22-20 11:20</u>		Received by: <u>[Signature]</u>		Company: <u>B-T</u>		Date/Time: <u>12-22-20 11:20</u>											
Relinquished by: <u>[Signature]</u>		Company: <u>BlueTach</u>		Date/Time: <u>12-22-20 12:35</u>		Received by: <u>[Signature]</u>		Company: _____		Date/Time: _____											
Relinquished by: <u>[Signature]</u>		Company: _____		Date/Time: _____		Received in Laboratory by: <u>[Signature]</u>		Company: <u>EC IDV</u>		Date/Time: <u>12/22/20 1235</u>											



**Eurofins Calscience Irvine**

17461 Derian Ave Suite 100  
Irvine, CA 92614-5817  
Phone 949-261-1022 Fax: 949-260-3297

**Chain of Custody Record**



Environment Testing  
America

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM: Tomova, Rossina D	Carrier Tracking No(s)	COC No 440-165202 1						
Client Contact: Shipping/Receiving		Phone:	E-Mail: Rossina Tomova@Eurofinset.com	State of Origin California	Page: Page 1 of 1						
Company: Eurofins Calscience LLC		Accreditations Required (See note).			Job #: 440-276438-1						
Address: 7440 Lincoln Way, City: Garden Grove State, Zip CA, 92841		Due Date Requested: 1/7/2021	<b>Analysis Requested</b>			<b>Preservation Codes*</b> A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S 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)					
Phone: 714-895-5494(Tel) 714-894-7501(Fax)		TAT Requested (days):									
Email:		PO #:									
Project Name: Republic Sunshine Canyon		Project #: 44007851									
Site:		SSOW#:	Other:								
<b>Sample Identification - Client ID (Lab ID)</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/soil, BT=tissue, A=air)</b>	<b>Field Filtered Sample (Yes or No)</b>	<b>Perform MS/MSD (Yes or No)</b>	<b>8260B_LL/6030C (MOD) Appendix II +MTBE+TBA+TICS</b>	<b>8260B_LL/6030C_UP (MOD) A+A</b>	<b>8270C_SIM_MS_ID/3510C 1,4-Dioxane - SIM_MS_ID</b>	<b>Total Number of containers</b>	<b>Special Instructions/Note:</b>
CM-9R3 (440-276438-1)	12/22/20	09 13 Pacific		Water		X	X	X		8	
CM-10R (440-276438-2)	12/22/20	07 15 Pacific		Water		X	X	X		8	
CM-11R (440-276438-3)	12/22/20	08 45 Pacific		Water		X	X	X		8	
DW-1 (440-276438-4)	12/22/20	09 40 Pacific		Water		X	X	X		8	
Subdrain N (440-276438-5)	12/22/20	10 40 Pacific		Water		X	X	X		8	
Duplicate (440-276438-6)	12/22/20	00 01 Pacific		Water		X	X	X		8	
Field Blank (440-276438-7)	12/22/20	00 01 Pacific		Water		X	X			4	
Trip Blank (440-276438-8)	12/22/20	00 01 Pacific		Water		X	X			4	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte &amp; 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/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.</p>											
<b>Possible Hazard Identification</b>						<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested I, II, III, IV, Other (specify)			Primary Deliverable Rank 2			Special Instructions/QC Requirements					
Empty Kit Relinquished by:		Date	Time	Method of Shipment:							
Relinquished by:		Date/Time: 12/23/20	0833	Company: ECI	Received by:	Date/Time: 12/23/20	0833	Company: ECI			
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:					
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:					
Custody Seals Intact. Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks. 3.7/2.7 SC6									

# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276438-1

**Login Number: 276438**

**List Number: 1**

**Creator: Escalante, Maria I**

**List Source: Eurofins 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	

## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276438-1

**Login Number: 276438**

**List Number: 2**

**Creator: Rivera, Isaac**

**List Source: Eurofins Calscience**

**List Creation: 12/23/20 01:39 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	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	

# Isotope Dilution Summary

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

Job ID: 440-276438-1

**Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-150)
440-276438-1	CM-9R3	37
440-276438-1 MS	CM-9R3	37
440-276438-1 MSD	CM-9R3	36
440-276438-2	CM-10R	36
440-276438-3	CM-11R	35
440-276438-4	DW-1	36
440-276438-5	Subdrain N	32
440-276438-6	Duplicate	36
LCS 570-119107/2-A	Lab Control Sample	36
LCSD 570-119107/3-A	Lab Control Sample Dup	36
MB 570-119107/1-A	Method Blank	37

### Surrogate Legend

DXE = 1,4-Dioxane-d8

## ANALYTICAL REPORT

Eurofins Calscience Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-276628-1

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:  
1/11/2021 6:15:05 PM

Rossina Tomova, Project Manager I  
(949)260-3276  
[Rossina.Tomova@Eurofinset.com](mailto:Rossina.Tomova@Eurofinset.com)

### LINKS

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

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

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



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# Sample Summary

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

Job ID: 440-276628-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-276628-1	MW-2A	Water	12/28/20 09:30	12/28/20 17:10	
440-276628-2	MW-2B	Water	12/28/20 10:34	12/28/20 17:10	
440-276628-3	MW-9	Water	12/28/20 12:25	12/28/20 17:10	
440-276628-4	DW-2	Water	12/28/20 10:51	12/28/20 17:10	
440-276628-5	DW-4	Water	12/28/20 11:38	12/28/20 17:10	
440-276628-6	PA-4	Water	12/28/20 09:43	12/28/20 17:10	
440-276628-7	Field Blank	Water	12/28/20 00:01	12/28/20 17:10	
440-276628-8	Trip Blank	Water	12/28/20 00:01	12/28/20 17:10	

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

# Case Narrative

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

Job ID: 440-276628-1

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## Job ID: 440-276628-1

---

### Laboratory: Eurofins Calscience Irvine

#### Narrative

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#### Job Narrative 440-276628-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/28/2020 4:38 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.5° C and 1.2° C.

#### GC/MS VOA

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-119348.

Method 8260B: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-9 (440-276628-3). 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.

#### GC/MS Semi VOA

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

#### HPLC/IC

Method 300.0: The following samples were diluted due to the nature of the sample matrix: MW-2A (440-276628-1) and MW-2B (440-276628-2). Elevated reporting limits (RLs) are provided.

Method 300.0: The following samples were diluted due to the nature of the sample matrix: MW-2A (440-276628-1), MW-2B (440-276628-2) and MW-9 (440-276628-3). 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

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

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-1**

Date Collected: 12/28/20 09:30

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 15:49	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 15:49	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 15:49	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 15:49	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 15:49	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 15:49	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 15:49	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 15:49	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 15:49	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 15:49	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 15:49	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 15:49	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 15:49	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 15:49	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 15:49	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 15:49	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 15:49	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 15:49	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 15:49	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 15:49	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 15:49	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 15:49	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 15:49	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 15:49	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 15:49	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 15:49	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 15:49	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 15:49	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 15:49	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 15:49	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 15:49	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 15:49	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 15:49	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 15:49	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 15:49	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 15:49	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 15:49	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 15:49	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 15:49	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 15:49	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 15:49	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 15:49	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 15:49	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 15:49	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 15:49	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 15:49	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 15:49	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 15:49	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 15:49	1

# Client Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-1**

**Date Collected: 12/28/20 09:30**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 15:49	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 15:49	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 15:49	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 15:49	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 15:49	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 15:49	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 15:49	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 15:49	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 15:49	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 15:49	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 15:49	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 15:49	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 15:49	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 15:49	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 15:49	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 15:49	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 15:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 15:49	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	24	T J	ug/L		1.74			12/30/20 15:49	1
Ethane, 1,1-difluoro-	32	T J N	ug/L		1.80	75-37-6		12/30/20 15:49	1
Methane, chlorodifluoro-	120	T J N	ug/L		1.86	75-45-6		12/30/20 15:49	1
Unknown	34	T J	ug/L		1.98			12/30/20 15:49	1
Unknown	10	T J	ug/L		2.16			12/30/20 15:49	1
Unknown	9.5	T J	ug/L		2.23			12/30/20 15:49	1
Unknown	22	T J	ug/L		2.45			12/30/20 15:49	1
Unknown	21	T J	ug/L		2.77			12/30/20 15:49	1
Unknown	8.6	T J	ug/L		3.02			12/30/20 15:49	1
1-Buten-3-yne, 2-methyl-	20	T J N	ug/L		3.07	78-80-8		12/30/20 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/30/20 15:49	1
4-Bromofluorobenzene (Surr)	95		68 - 120		12/30/20 15:49	1
Dibromofluoromethane (Surr)	93		80 - 127		12/30/20 15:49	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 128		12/30/20 15:49	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>3.5</b>		0.50	0.34	ug/L		12/31/20 07:10	01/05/21 20:57	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	47		15 - 150	12/31/20 07:10	01/05/21 20:57	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	74		46 - 128	12/31/20 07:10	01/05/21 20:57	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.22	0.11	mg/L			12/29/20 11:51	2
Bromide	ND		1.0	0.50	mg/L			12/29/20 11:51	2

Eurofins Calscience Irvine

# Client Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-1**

Date Collected: 12/28/20 09:30

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1		1.0	0.50	mg/L			12/29/20 11:51	2

**Method: 300.0 - Anions, Ion Chromatography - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1800		50	25	mg/L			12/29/20 12:43	100

**Method: 300.0 - Anions, Ion Chromatography - DL2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39		5.0	2.5	mg/L			12/30/20 06:19	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.60		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:42	1
Calcium	220		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:42	1
Iron	10	B	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:42	1
Magnesium	120		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:42	1
Manganese	1.0		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:42	1
Potassium	5.7		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:42	1
Sodium	400		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 13:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:56	1
Total Dissolved Solids	2900		20	10	mg/L			12/30/20 11:56	1
Ammonia (as N)	2.8		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			12/31/20 13:23	1
Total Organic Carbon	4.1		0.10	0.050	mg/L			01/05/21 11:27	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	390		4.0	4.0	mg/L			12/29/20 07:18	1
Bicarbonate Alkalinity as CaCO3	390		4.0	4.0	mg/L			12/29/20 07:18	1
Carbon Dioxide, Free	33		2.0	2.0	mg/L			01/11/21 13:46	1

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

**Lab Sample ID: 440-276628-2**

Date Collected: 12/28/20 10:34

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 16:15	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 16:15	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 16:15	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 16:15	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 16:15	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 16:15	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 16:15	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 16:15	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 16:15	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 16:15	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 16:15	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 16:15	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 16:15	1

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# Client Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-2**

**Date Collected: 12/28/20 10:34**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 16:15	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 16:15	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 16:15	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 16:15	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 16:15	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 16:15	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 16:15	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 16:15	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 16:15	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 16:15	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 16:15	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 16:15	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 16:15	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 16:15	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 16:15	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 16:15	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 16:15	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 16:15	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 16:15	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 16:15	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 16:15	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 16:15	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 16:15	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 16:15	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 16:15	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 16:15	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 16:15	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 16:15	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 16:15	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 16:15	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 16:15	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 16:15	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 16:15	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 16:15	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 16:15	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 16:15	1
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 16:15	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 16:15	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 16:15	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 16:15	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 16:15	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 16:15	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 16:15	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 16:15	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 16:15	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 16:15	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 16:15	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 16:15	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 16:15	1

# Client Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-2**

Date Collected: 12/28/20 10:34

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 16:15	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 16:15	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 16:15	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 16:15	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 16:15	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	45	T J	ug/L		1.79			12/30/20 16:15	1
Unknown	22	T J	ug/L		1.98			12/30/20 16:15	1
Unknown	9.2	T J	ug/L		2.19			12/30/20 16:15	1
Unknown	5.5	T J	ug/L		2.27			12/30/20 16:15	1
Unknown	18	T J	ug/L		2.44			12/30/20 16:15	1
Unknown	19	T J	ug/L		2.52			12/30/20 16:15	1
Unknown	8.7	T J	ug/L		2.62			12/30/20 16:15	1
Unknown	6.0	T J	ug/L		2.81			12/30/20 16:15	1
Unknown	5.0	T J	ug/L		2.84			12/30/20 16:15	1
Unknown	15	T J	ug/L		3.13			12/30/20 16:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		12/30/20 16:15	1
4-Bromofluorobenzene (Surr)	98		68 - 120		12/30/20 16:15	1
Dibromofluoromethane (Surr)	94		80 - 127		12/30/20 16:15	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/30/20 16:15	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/31/20 07:10	01/05/21 21:11	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	47		15 - 150	12/31/20 07:10	01/05/21 21:11	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	85		46 - 128	12/31/20 07:10	01/05/21 21:11	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>15</b>		1.0	0.50	mg/L			12/29/20 13:01	2
Nitrate as N	ND		0.22	0.11	mg/L			12/29/20 13:01	2
Bromide	ND		1.0	0.50	mg/L			12/29/20 13:01	2
<b>Fluoride</b>	<b>0.52</b>	<b>J</b>	1.0	0.50	mg/L			12/29/20 13:01	2
<b>Sulfate</b>	<b>1800</b>		50	25	mg/L			12/29/20 13:18	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>0.58</b>		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:50	1
<b>Calcium</b>	<b>180</b>		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:50	1
<b>Iron</b>	<b>2.1</b>	<b>B</b>	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:50	1
<b>Magnesium</b>	<b>110</b>		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:50	1
<b>Manganese</b>	<b>0.13</b>		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:50	1
<b>Potassium</b>	<b>4.2</b>		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:50	1
<b>Sodium</b>	<b>440</b>		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 13:57	1

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# Client Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-2**

Date Collected: 12/28/20 10:34

Matrix: Water

Date Received: 12/28/20 17:10

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:56	1
<b>Total Dissolved Solids</b>	<b>2700</b>		20	10	mg/L			12/30/20 11:56	1
<b>Ammonia (as N)</b>	<b>3.2</b>		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			12/31/20 13:23	1
<b>Total Organic Carbon</b>	<b>1.9</b>		0.10	0.050	mg/L			01/05/21 11:42	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Alkalinity as CaCO3</b>	<b>340</b>		4.0	4.0	mg/L			12/29/20 07:38	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>340</b>		4.0	4.0	mg/L			12/29/20 07:38	1
<b>Carbon Dioxide, Free</b>	<b>18</b>		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: MW-9**

**Lab Sample ID: 440-276628-3**

Date Collected: 12/28/20 12:25

Matrix: Water

Date Received: 12/28/20 17:10

## 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	0.64	ug/L			12/30/20 16:41	2
1,1,1,2-Tetrachloroethane	ND		1.0	0.51	ug/L			12/30/20 16:41	2
1,1,1-Trichloroethane	ND		1.0	0.53	ug/L			12/30/20 16:41	2
1,1,2,2-Tetrachloroethane	ND		1.0	0.39	ug/L			12/30/20 16:41	2
1,1,2-Trichloroethane	ND		1.0	0.17	ug/L			12/30/20 16:41	2
1,1-Dichloroethane	ND		1.0	0.71	ug/L			12/30/20 16:41	2
1,1-Dichloroethene	ND		1.0	0.78	ug/L			12/30/20 16:41	2
1,1-Dichloropropene	ND		1.0	0.48	ug/L			12/30/20 16:41	2
1,2,4-Trichlorobenzene	ND		1.0	0.75	ug/L			12/30/20 16:41	2
1,2-Dibromo-3-Chloropropane	ND		2.0	1.3	ug/L			12/30/20 16:41	2
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/20 16:41	2
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/30/20 16:41	2
1,2-Dichloropropane	ND		1.0	0.48	ug/L			12/30/20 16:41	2
1,3-Dichlorobenzene	ND		1.0	0.51	ug/L			12/30/20 16:41	2
1,3-Dichloropropane	ND		1.0	0.41	ug/L			12/30/20 16:41	2
1,4-Dichlorobenzene	ND		1.0	0.45	ug/L			12/30/20 16:41	2
2,2-Dichloropropane	ND		1.0	0.79	ug/L			12/30/20 16:41	2
2-Chloro-1,3-butadiene	ND		4.0	3.7	ug/L			12/30/20 16:41	2
2-Hexanone	ND		12	8.6	ug/L			12/30/20 16:41	2
Acetone	ND		16	8.0	ug/L			12/30/20 16:41	2
Acetonitrile	ND		20	7.9	ug/L			12/30/20 16:41	2
Acrolein	ND		8.0	4.4	ug/L			12/30/20 16:41	2
Acrylonitrile	ND		10	1.7	ug/L			12/30/20 16:41	2
Benzene	ND		1.0	0.53	ug/L			12/30/20 16:41	2
Allyl chloride	ND		4.0	0.76	ug/L			12/30/20 16:41	2
Bromoform	ND		1.0	0.78	ug/L			12/30/20 16:41	2
Bromomethane	ND		2.0	1.9	ug/L			12/30/20 16:41	2
Carbon disulfide	ND		2.0	0.49	ug/L			12/30/20 16:41	2
Carbon tetrachloride	ND		1.0	0.54	ug/L			12/30/20 16:41	2
Chlorobenzene	ND		1.0	0.48	ug/L			12/30/20 16:41	2
Bromochloromethane	ND		2.0	0.70	ug/L			12/30/20 16:41	2
Chloroethane	ND		1.0	0.88	ug/L			12/30/20 16:41	2
Chloroform	ND		1.0	0.57	ug/L			12/30/20 16:41	2
Chloromethane	ND		2.0	0.59	ug/L			12/30/20 16:41	2

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: MW-9**

**Lab Sample ID: 440-276628-3**

Date Collected: 12/28/20 12:25

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.60	ug/L			12/30/20 16:41	2
cis-1,3-Dichloropropene	ND		1.0	0.38	ug/L			12/30/20 16:41	2
Dibromochloromethane	ND		1.0	0.54	ug/L			12/30/20 16:41	2
Dibromomethane	ND		1.0	0.46	ug/L			12/30/20 16:41	2
Bromodichloromethane	ND		1.0	0.45	ug/L			12/30/20 16:41	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			12/30/20 16:41	2
Ethyl methacrylate	ND		4.0	2.4	ug/L			12/30/20 16:41	2
Ethylbenzene	ND		1.0	0.71	ug/L			12/30/20 16:41	2
Iodomethane	ND		50	12	ug/L			12/30/20 16:41	2
Isobutyl alcohol	ND		20	11	ug/L			12/30/20 16:41	2
m,p-Xylene	ND		2.0	1.6	ug/L			12/30/20 16:41	2
Methylacrylonitrile	ND		4.0	1.4	ug/L			12/30/20 16:41	2
Methyl methacrylate	ND		4.0	2.2	ug/L			12/30/20 16:41	2
Methylene Chloride	ND		2.0	0.96	ug/L			12/30/20 16:41	2
Methyl tert-butyl ether	ND		1.0	0.41	ug/L			12/30/20 16:41	2
Naphthalene	ND		2.0	0.64	ug/L			12/30/20 16:41	2
o-Xylene	ND		1.0	0.70	ug/L			12/30/20 16:41	2
Propionitrile	ND		10	7.5	ug/L			12/30/20 16:41	2
Styrene	ND		1.0	0.55	ug/L			12/30/20 16:41	2
t-Butanol	ND		10	8.0	ug/L			12/30/20 16:41	2
Tetrachloroethene	ND		1.0	0.58	ug/L			12/30/20 16:41	2
Tetrahydrofuran	ND		4.0	2.1	ug/L			12/30/20 16:41	2
Toluene	ND		1.0	0.66	ug/L			12/30/20 16:41	2
trans-1,2-Dichloroethene	ND		1.0	0.72	ug/L			12/30/20 16:41	2
trans-1,3-Dichloropropene	ND		1.0	0.35	ug/L			12/30/20 16:41	2
trans-1,4-Dichloro-2-butene	ND		4.0	2.6	ug/L			12/30/20 16:41	2
Trichloroethene	ND		1.0	0.58	ug/L			12/30/20 16:41	2
Trichlorofluoromethane	ND		1.0	0.59	ug/L			12/30/20 16:41	2
Vinyl acetate	ND		10	6.3	ug/L			12/30/20 16:41	2
Vinyl chloride	ND		1.0	0.80	ug/L			12/30/20 16:41	2
1,2-Dibromoethane (EDB)	ND		1.0	0.27	ug/L			12/30/20 16:41	2
2-Butanone (MEK)	ND		10	6.1	ug/L			12/30/20 16:41	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.5	ug/L			12/30/20 16:41	2

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	96	T J	ug/L		1.80			12/30/20 16:41	2
Methane, chlorodifluoro-	190	T J N	ug/L		1.85	75-45-6		12/30/20 16:41	2
Unknown	70	T J	ug/L		2.00			12/30/20 16:41	2
Unknown	88	T J	ug/L		2.14			12/30/20 16:41	2
Unknown	130	T J	ug/L		2.17			12/30/20 16:41	2
Unknown	62	T J	ug/L		2.31			12/30/20 16:41	2
Unknown	82	T J	ug/L		2.45			12/30/20 16:41	2
Unknown	56	T J	ug/L		2.52			12/30/20 16:41	2
Unknown	64	T J	ug/L		2.88			12/30/20 16:41	2
Silane, (2-methoxyethyl)trimethyl-	97	T J N	ug/L		4.72	18173-63-2		12/30/20 16:41	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/30/20 16:41	2
4-Bromofluorobenzene (Surr)	99		68 - 120		12/30/20 16:41	2
Dibromofluoromethane (Surr)	96		80 - 127		12/30/20 16:41	2

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: MW-9**

**Lab Sample ID: 440-276628-3**

Date Collected: 12/28/20 12:25

Matrix: Water

Date Received: 12/28/20 17:10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 128		12/30/20 16:41	2

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	49		0.50	0.34	ug/L		12/31/20 07:10	01/05/21 21:26	1
<i>Isotope Dilution</i>									
1,4-Dioxane-d8	37		15 - 150				12/31/20 07:10	01/05/21 21:26	1
<i>Surrogate</i>									
Nitrobenzene-d5 (Surr)	82		46 - 128				12/31/20 07:10	01/05/21 21:26	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	190		50	25	mg/L			12/29/20 15:45	100
Nitrate as N	ND		0.22	0.11	mg/L			12/29/20 13:36	2
Bromide	ND		1.0	0.50	mg/L			12/29/20 13:36	2
Fluoride	1.0		1.0	0.50	mg/L			12/29/20 13:36	2
Sulfate	1800		50	25	mg/L			12/29/20 15:45	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.97		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:53	1
Calcium	390		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:53	1
Iron	32	B	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:53	1
Magnesium	230		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:53	1
Manganese	4.7		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:53	1
Potassium	18		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:53	1
Sodium	320		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 14:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	85		20	10	mg/L			01/06/21 15:56	1
Total Dissolved Solids	3800		20	10	mg/L			12/30/20 11:56	1
Ammonia (as N)	3.2		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			12/31/20 13:23	1
Total Organic Carbon	23		0.50	0.25	mg/L			01/06/21 09:34	5
<i>Analyte</i>									
Alkalinity as CaCO3	640		4.0	4.0	mg/L			12/29/20 07:51	1
Bicarbonate Alkalinity as CaCO3	640		4.0	4.0	mg/L			12/29/20 07:51	1
Carbon Dioxide, Free	160		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: DW-2**

**Lab Sample ID: 440-276628-4**

Date Collected: 12/28/20 10:51

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 17:06	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 17:06	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 17:06	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: DW-2**

**Lab Sample ID: 440-276628-4**

**Date Collected: 12/28/20 10:51**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

**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	0.19	ug/L			12/30/20 17:06	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 17:06	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 17:06	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 17:06	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 17:06	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 17:06	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 17:06	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 17:06	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 17:06	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 17:06	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 17:06	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 17:06	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 17:06	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 17:06	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 17:06	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 17:06	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 17:06	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 17:06	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 17:06	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 17:06	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 17:06	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 17:06	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 17:06	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 17:06	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 17:06	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 17:06	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 17:06	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 17:06	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 17:06	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 17:06	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 17:06	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 17:06	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 17:06	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 17:06	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 17:06	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 17:06	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 17:06	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 17:06	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 17:06	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 17:06	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 17:06	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 17:06	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 17:06	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 17:06	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 17:06	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 17:06	1
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 17:06	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 17:06	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 17:06	1

# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: DW-2**

**Lab Sample ID: 440-276628-4**

Date Collected: 12/28/20 10:51

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		0.50	0.28	ug/L			12/30/20 17:06	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 17:06	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 17:06	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 17:06	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 17:06	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 17:06	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 17:06	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 17:06	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 17:06	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 17:06	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 17:06	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 17:06	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 17:06	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 17:06	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 17:06	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	87	T J	ug/L		1.81			12/30/20 17:06	1
Unknown	55	T J	ug/L		1.98			12/30/20 17:06	1
Unknown	33	T J	ug/L		2.08			12/30/20 17:06	1
Unknown	30	T J	ug/L		2.12			12/30/20 17:06	1
Unknown	50	T J	ug/L		2.24			12/30/20 17:06	1
Unknown	50	T J	ug/L		2.30			12/30/20 17:06	1
Unknown	49	T J	ug/L		2.44			12/30/20 17:06	1
Unknown	48	T J	ug/L		2.52			12/30/20 17:06	1
Unknown	21	T J	ug/L		2.78			12/30/20 17:06	1
Unknown	26	T J	ug/L		2.88			12/30/20 17:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/30/20 17:06	1
4-Bromofluorobenzene (Surr)	95		68 - 120		12/30/20 17:06	1
Dibromofluoromethane (Surr)	96		80 - 127		12/30/20 17:06	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 128		12/30/20 17:06	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/31/20 07:10	01/05/21 21:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	43		15 - 150	12/31/20 07:10	01/05/21 21:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		46 - 128	12/31/20 07:10	01/05/21 21:41	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		0.50	0.25	mg/L			12/29/20 16:03	1
Nitrate as N	ND		0.11	0.055	mg/L			12/29/20 16:03	1
Bromide	ND		0.50	0.25	mg/L			12/29/20 16:03	1
Fluoride	ND		0.50	0.25	mg/L			12/29/20 16:03	1
Sulfate	1200		25	13	mg/L			12/29/20 16:20	50

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: DW-2**

**Lab Sample ID: 440-276628-4**

Date Collected: 12/28/20 10:51

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.55		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:55	1
Calcium	100		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:55	1
Iron	1.6	B	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:55	1
Magnesium	69		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:55	1
Manganese	0.14		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:55	1
Potassium	4.0		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:55	1
Sodium	400		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 14:02	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:56	1
Total Dissolved Solids	2000		20	10	mg/L			12/30/20 11:56	1
Ammonia (as N)	3.1		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			12/31/20 13:23	1
Total Organic Carbon	1.6		0.10	0.050	mg/L			01/05/21 11:56	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	380		4.0	4.0	mg/L			12/29/20 08:01	1
Bicarbonate Alkalinity as CaCO3	380		4.0	4.0	mg/L			12/29/20 08:01	1
Carbon Dioxide, Free	8.8		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: DW-4**

**Lab Sample ID: 440-276628-5**

Date Collected: 12/28/20 11:38

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 17:32	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 17:32	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 17:32	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 17:32	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 17:32	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 17:32	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 17:32	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 17:32	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 17:32	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 17:32	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 17:32	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 17:32	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 17:32	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 17:32	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 17:32	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 17:32	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 17:32	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 17:32	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 17:32	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 17:32	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 17:32	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 17:32	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 17:32	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 17:32	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: DW-4**

**Lab Sample ID: 440-276628-5**

**Date Collected: 12/28/20 11:38**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 17:32	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 17:32	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 17:32	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 17:32	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 17:32	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 17:32	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 17:32	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 17:32	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 17:32	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 17:32	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 17:32	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 17:32	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 17:32	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 17:32	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 17:32	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 17:32	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 17:32	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 17:32	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 17:32	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 17:32	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 17:32	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 17:32	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 17:32	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 17:32	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 17:32	1
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 17:32	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 17:32	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 17:32	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 17:32	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 17:32	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 17:32	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 17:32	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 17:32	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 17:32	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 17:32	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 17:32	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 17:32	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 17:32	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 17:32	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 17:32	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 17:32	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 17:32	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 17:32	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	100	T J	ug/L		1.82			12/30/20 17:32	1
Sulfur dioxide	64	T J N	ug/L		1.98	7446-09-5		12/30/20 17:32	1
Unknown	30	T J	ug/L		2.12			12/30/20 17:32	1
Unknown	26	T J	ug/L		2.15			12/30/20 17:32	1
Unknown	31	T J	ug/L		2.17			12/30/20 17:32	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: DW-4**

**Lab Sample ID: 440-276628-5**

Date Collected: 12/28/20 11:38

Matrix: Water

Date Received: 12/28/20 17:10

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

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	33	T J	ug/L		2.21			12/30/20 17:32	1
Unknown	40	T J	ug/L		2.32			12/30/20 17:32	1
Unknown	50	T J	ug/L		2.46			12/30/20 17:32	1
Unknown	33	T J	ug/L		2.51			12/30/20 17:32	1
1,5-Hexadiyne	30	T J N	ug/L		2.96	628-16-0		12/30/20 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					12/30/20 17:32	1
4-Bromofluorobenzene (Surr)	98		68 - 120					12/30/20 17:32	1
Dibromofluoromethane (Surr)	96		80 - 127					12/30/20 17:32	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 128					12/30/20 17:32	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/31/20 07:10	01/05/21 21:56	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	49		15 - 150				12/31/20 07:10	01/05/21 21:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	84		46 - 128				12/31/20 07:10	01/05/21 21:56	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		1.0	0.50	mg/L			12/29/20 16:38	2
Nitrate as N	ND		0.22	0.11	mg/L			12/29/20 16:38	2
Bromide	ND		1.0	0.50	mg/L			12/29/20 16:38	2
Fluoride	ND		1.0	0.50	mg/L			12/29/20 16:38	2
Sulfate	1900		50	25	mg/L			12/29/20 16:55	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.60		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 20:01	1
Calcium	170		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:01	1
Iron	1.5	B	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:01	1
Magnesium	120		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 20:01	1
Manganese	0.11		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 20:01	1
Potassium	3.9		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 20:01	1
Sodium	490		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 14:05	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:56	1
Total Dissolved Solids	5400		50	25	mg/L			12/30/20 11:56	1
Ammonia (as N)	4.3		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			12/31/20 13:23	1
Total Organic Carbon	1.9		0.10	0.050	mg/L			01/05/21 12:09	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	340		4.0	4.0	mg/L			12/29/20 08:11	1
Bicarbonate Alkalinity as CaCO3	340		4.0	4.0	mg/L			12/29/20 08:11	1
Carbon Dioxide, Free	21		2.0	2.0	mg/L			01/11/21 13:46	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: PA-4**

**Lab Sample ID: 440-276628-6**

Date Collected: 12/28/20 09:43

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 17:57	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 17:57	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 17:57	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 17:57	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 17:57	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 17:57	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 17:57	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 17:57	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 17:57	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 17:57	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 17:57	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 17:57	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 17:57	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 17:57	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 17:57	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 17:57	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 17:57	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 17:57	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 17:57	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 17:57	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 17:57	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 17:57	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 17:57	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 17:57	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 17:57	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 17:57	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 17:57	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 17:57	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 17:57	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 17:57	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 17:57	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 17:57	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 17:57	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 17:57	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 17:57	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 17:57	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 17:57	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 17:57	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 17:57	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 17:57	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 17:57	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 17:57	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 17:57	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 17:57	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 17:57	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 17:57	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 17:57	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 17:57	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 17:57	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: PA-4**

**Lab Sample ID: 440-276628-6**

Date Collected: 12/28/20 09:43

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 17:57	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 17:57	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 17:57	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 17:57	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 17:57	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 17:57	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 17:57	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 17:57	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 17:57	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 17:57	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 17:57	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 17:57	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 17:57	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 17:57	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 17:57	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 17:57	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 17:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 17:57	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	88	T J	ug/L		1.77			12/30/20 17:57	1
Unknown	26	T J	ug/L		1.91			12/30/20 17:57	1
Unknown	54	T J	ug/L		1.98			12/30/20 17:57	1
Unknown	18	T J	ug/L		2.10			12/30/20 17:57	1
Unknown	15	T J	ug/L		2.16			12/30/20 17:57	1
Unknown	25	T J	ug/L		2.22			12/30/20 17:57	1
1,5-Hexadiyne	22	T J N	ug/L		2.30	628-16-0		12/30/20 17:57	1
Unknown	24	T J	ug/L		2.35			12/30/20 17:57	1
Unknown	71	T J	ug/L		2.45			12/30/20 17:57	1
Unknown	23	T J	ug/L		2.62			12/30/20 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/30/20 17:57	1
4-Bromofluorobenzene (Surr)	97		68 - 120		12/30/20 17:57	1
Dibromofluoromethane (Surr)	97		80 - 127		12/30/20 17:57	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/30/20 17:57	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/31/20 07:10	01/05/21 22:11	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	46		15 - 150	12/31/20 07:10	01/05/21 22:11	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	79		46 - 128	12/31/20 07:10	01/05/21 22:11	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.7		0.50	0.25	mg/L			12/29/20 17:13	1
Nitrate as N	ND		0.11	0.055	mg/L			12/29/20 17:13	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: PA-4**

**Lab Sample ID: 440-276628-6**

Date Collected: 12/28/20 09:43

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/29/20 17:13	1
<b>Fluoride</b>	<b>0.97</b>		0.50	0.25	mg/L			12/29/20 17:13	1
<b>Sulfate</b>	<b>610</b>		25	13	mg/L			12/29/20 17:30	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>0.15</b>		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 20:03	1
<b>Calcium</b>	<b>140</b>		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:03	1
<b>Iron</b>	<b>1.6</b>	<b>B</b>	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 20:03	1
<b>Magnesium</b>	<b>81</b>		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 20:03	1
<b>Manganese</b>	<b>0.15</b>		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 20:03	1
<b>Potassium</b>	<b>4.1</b>		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 20:03	1
<b>Sodium</b>	<b>89</b>		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 14:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:56	1
<b>Total Dissolved Solids</b>	<b>1200</b>		10	5.0	mg/L			01/02/21 14:04	1
<b>Ammonia (as N)</b>	<b>2.3</b>		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			12/31/20 13:23	1
<b>Total Organic Carbon</b>	<b>1.2</b>		0.10	0.050	mg/L			01/06/21 14:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Alkalinity as CaCO3</b>	<b>320</b>		4.0	4.0	mg/L			12/29/20 08:20	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>320</b>		4.0	4.0	mg/L			12/29/20 08:20	1
<b>Carbon Dioxide, Free</b>	<b>19</b>		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276628-7**

Date Collected: 12/28/20 00:01

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 11:33	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 11:33	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 11:33	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 11:33	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 11:33	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 11:33	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 11:33	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 11:33	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 11:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 11:33	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 11:33	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 11:33	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 11:33	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 11:33	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 11:33	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 11:33	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 11:33	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 11:33	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276628-7**

**Date Collected: 12/28/20 00:01**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 11:33	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 11:33	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 11:33	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 11:33	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 11:33	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 11:33	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 11:33	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 11:33	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 11:33	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 11:33	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 11:33	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 11:33	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 11:33	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 11:33	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 11:33	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 11:33	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 11:33	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 11:33	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 11:33	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 11:33	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 11:33	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 11:33	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 11:33	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 11:33	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 11:33	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 11:33	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 11:33	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 11:33	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 11:33	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 11:33	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 11:33	1
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 11:33	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 11:33	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 11:33	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 11:33	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 11:33	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 11:33	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 11:33	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 11:33	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 11:33	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 11:33	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 11:33	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 11:33	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 11:33	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 11:33	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 11:33	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 11:33	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 11:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 11:33	1

# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276628-7**

**Date Collected: 12/28/20 00:01**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

<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	100	T J	ug/L		1.76			12/30/20 11:33	1
Sulfur dioxide	110	T J N	ug/L		1.98	7446-09-5		12/30/20 11:33	1
Unknown	19	T J	ug/L		2.14			12/30/20 11:33	1
Unknown	26	T J	ug/L		2.18			12/30/20 11:33	1
Unknown	45	T J	ug/L		2.26			12/30/20 11:33	1
2-Pyridinecarboxylic acid, 3-nitro-, methyl ester	20	T J N	ug/L		2.44	103698-08-4		12/30/20 11:33	1
Unknown	22	T J	ug/L		2.45			12/30/20 11:33	1
Unknown	32	T J	ug/L		2.54			12/30/20 11:33	1
Unknown	20	T J	ug/L		2.70			12/30/20 11:33	1
Unknown	20	T J	ug/L		3.10			12/30/20 11:33	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)	100		80 - 120					12/30/20 11:33	1
4-Bromofluorobenzene (Surr)	97		68 - 120					12/30/20 11:33	1
Dibromofluoromethane (Surr)	94		80 - 127					12/30/20 11:33	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 128					12/30/20 11:33	1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276628-8**

**Date Collected: 12/28/20 00:01**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 11:59	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 11:59	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 11:59	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 11:59	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 11:59	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 11:59	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 11:59	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 11:59	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 11:59	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 11:59	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 11:59	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 11:59	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 11:59	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 11:59	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 11:59	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 11:59	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 11:59	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 11:59	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 11:59	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 11:59	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 11:59	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 11:59	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 11:59	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 11:59	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 11:59	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 11:59	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 11:59	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276628-8**

Date Collected: 12/28/20 00:01

Matrix: Water

Date Received: 12/28/20 17:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 11:59	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 11:59	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 11:59	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 11:59	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 11:59	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 11:59	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 11:59	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 11:59	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 11:59	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 11:59	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 11:59	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 11:59	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 11:59	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 11:59	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 11:59	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 11:59	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 11:59	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 11:59	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 11:59	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 11:59	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 11:59	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/30/20 11:59	1
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 11:59	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 11:59	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 11:59	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 11:59	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 11:59	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 11:59	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 11:59	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 11:59	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 11:59	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 11:59	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 11:59	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 11:59	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 11:59	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 11:59	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 11:59	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 11:59	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 11:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 11:59	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	98	T J	ug/L		1.78			12/30/20 11:59	1
Sulfur dioxide	68	T J N	ug/L		1.98	7446-09-5		12/30/20 11:59	1
Unknown	31	T J	ug/L		2.10			12/30/20 11:59	1
Unknown	14	T J	ug/L		2.16			12/30/20 11:59	1
Unknown	27	T J	ug/L		2.25			12/30/20 11:59	1
Unknown	22	T J	ug/L		2.32			12/30/20 11:59	1
Unknown	67	T J	ug/L		2.45			12/30/20 11:59	1
Unknown	19	T J	ug/L		2.65			12/30/20 11:59	1

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# Client Sample Results

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

Job ID: 440-276628-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276628-8**

Date Collected: 12/28/20 00:01

Matrix: Water

Date Received: 12/28/20 17:10

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

<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	14	TJ	ug/L		2.86			12/30/20 11:59	1
Unknown	20	TJ	ug/L		3.11			12/30/20 11:59	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)	98		80 - 120					12/30/20 11:59	1
4-Bromofluorobenzene (Surr)	94		68 - 120					12/30/20 11:59	1
Dibromofluoromethane (Surr)	94		80 - 127					12/30/20 11:59	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 128					12/30/20 11:59	1

# Method Summary

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

Job ID: 440-276628-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	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 NH3 D	Ammonia	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
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2
SM 4500 NH3 B	Distillation, Ammonia	SM	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:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-1**

**Date Collected: 12/28/20 09:30**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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	20 mL	20 mL	119348	12/30/20 15:49	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119640	12/31/20 07:10	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120284	01/05/21 20:57	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634745	12/29/20 11:51	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634746	12/29/20 11:51	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	100	5 mL	1.0 mL	634746	12/29/20 12:43	NTN	TAL IRV
Total/NA	Analysis	300.0	DL2	10			634746	12/30/20 06:19	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 19:42	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 13:22	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:56	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634761	12/29/20 07:18	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634919	12/30/20 11:56	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635061	12/31/20 13:23	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635367	01/05/21 11:27	YZ	TAL IRV

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

**Lab Sample ID: 440-276628-2**

**Date Collected: 12/28/20 10:34**

**Matrix: Water**

**Date Received: 12/28/20 17:10**

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	20 mL	20 mL	119348	12/30/20 16:15	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119640	12/31/20 07:10	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120284	01/05/21 21:11	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634745	12/29/20 13:01	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	634746	12/29/20 13:01	NTN	TAL IRV
Total/NA	Analysis	300.0		100			634746	12/29/20 13:18	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 19:50	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 13:57	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:56	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634761	12/29/20 07:38	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634919	12/30/20 11:56	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635061	12/31/20 13:23	KMY	TAL IRV

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# Lab Chronicle

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

Job ID: 440-276628-1

## Client Sample ID: MW-2B

Lab Sample ID: 440-276628-2

Date Collected: 12/28/20 10:34

Matrix: Water

Date Received: 12/28/20 17:10

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	635367	01/05/21 11:42	YZ	TAL IRV

## Client Sample ID: MW-9

Lab Sample ID: 440-276628-3

Date Collected: 12/28/20 12:25

Matrix: Water

Date Received: 12/28/20 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	20 mL	20 mL	119348	12/30/20 16:41	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119640	12/31/20 07:10	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120284	01/05/21 21:26	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2			634745	12/29/20 13:36	NTN	TAL IRV
Total/NA	Analysis	300.0		2			634746	12/29/20 13:36	NTN	TAL IRV
Total/NA	Analysis	300.0		100			634746	12/29/20 15:45	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 19:53	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 14:00	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:56	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634761	12/29/20 07:51	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634919	12/30/20 11:56	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635061	12/31/20 13:23	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	635469	01/06/21 09:34	YZ	TAL IRV

## Client Sample ID: DW-2

Lab Sample ID: 440-276628-4

Date Collected: 12/28/20 10:51

Matrix: Water

Date Received: 12/28/20 17:10

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	20 mL	20 mL	119348	12/30/20 17:06	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119640	12/31/20 07:10	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120284	01/05/21 21:41	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634745	12/29/20 16:03	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634746	12/29/20 16:03	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634746	12/29/20 16:20	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 19:55	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 14:02	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:56	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634761	12/29/20 08:01	YZ	TAL IRV

Eurofins Calscience Irvine

# Lab Chronicle

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

Job ID: 440-276628-1

## Client Sample ID: DW-2

## Lab Sample ID: 440-276628-4

Date Collected: 12/28/20 10:51

Matrix: Water

Date Received: 12/28/20 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	634919	12/30/20 11:56	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635061	12/31/20 13:23	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635367	01/05/21 11:56	YZ	TAL IRV

## Client Sample ID: DW-4

## Lab Sample ID: 440-276628-5

Date Collected: 12/28/20 11:38

Matrix: Water

Date Received: 12/28/20 17:10

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	20 mL	20 mL	119348	12/30/20 17:32	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119640	12/31/20 07:10	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120284	01/05/21 21:56	AJ2Q	ECL 1
Total/NA	Analysis	300.0		2			634745	12/29/20 16:38	NTN	TAL IRV
Total/NA	Analysis	300.0		2			634746	12/29/20 16:38	NTN	TAL IRV
Total/NA	Analysis	300.0		100			634746	12/29/20 16:55	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 20:01	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 14:05	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:56	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634761	12/29/20 08:11	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	634919	12/30/20 11:56	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635061	12/31/20 13:23	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635367	01/05/21 12:09	YZ	TAL IRV

## Client Sample ID: PA-4

## Lab Sample ID: 440-276628-6

Date Collected: 12/28/20 09:43

Matrix: Water

Date Received: 12/28/20 17:10

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	20 mL	20 mL	119348	12/30/20 17:57	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119640	12/31/20 07:10	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120284	01/05/21 22:11	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634745	12/29/20 17:13	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634746	12/29/20 17:13	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634746	12/29/20 17:30	NTN	TAL IRV

# Lab Chronicle

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

Job ID: 440-276628-1

## Client Sample ID: PA-4

Date Collected: 12/28/20 09:43

Date Received: 12/28/20 17:10

## Lab Sample ID: 440-276628-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634857	12/29/20 20:03	VS	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634774	12/29/20 10:17	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			634959	12/30/20 14:07	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:56	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634761	12/29/20 08:20	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	635098	01/02/21 14:04	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635061	12/31/20 13:23	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 14:00	YZ	TAL IRV

## Client Sample ID: Field Blank

Date Collected: 12/28/20 00:01

Date Received: 12/28/20 17:10

## Lab Sample ID: 440-276628-7

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	20 mL	20 mL	119348	12/30/20 11:33	UJHB	ECL 2

## Client Sample ID: Trip Blank

Date Collected: 12/28/20 00:01

Date Received: 12/28/20 17:10

## Lab Sample ID: 440-276628-8

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	20 mL	20 mL	119348	12/30/20 11:59	UJHB	ECL 2

### Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-276628-1

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

**Lab Sample ID: MB 570-119348/8**  
**Matrix: Water**  
**Analysis Batch: 119348**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/30/20 10:42	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/30/20 10:42	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/30/20 10:42	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/30/20 10:42	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/30/20 10:42	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/30/20 10:42	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/30/20 10:42	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/30/20 10:42	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/30/20 10:42	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/30/20 10:42	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/30/20 10:42	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/30/20 10:42	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/30/20 10:42	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/30/20 10:42	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/30/20 10:42	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/30/20 10:42	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/30/20 10:42	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/30/20 10:42	1
2-Hexanone	ND		6.0	4.3	ug/L			12/30/20 10:42	1
Acetone	ND		8.0	4.0	ug/L			12/30/20 10:42	1
Acetonitrile	ND		10	3.9	ug/L			12/30/20 10:42	1
Acrolein	ND		4.0	2.2	ug/L			12/30/20 10:42	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/30/20 10:42	1
Benzene	ND		0.50	0.27	ug/L			12/30/20 10:42	1
Allyl chloride	ND		2.0	0.38	ug/L			12/30/20 10:42	1
Bromoform	ND		0.50	0.39	ug/L			12/30/20 10:42	1
Bromomethane	ND		1.0	0.93	ug/L			12/30/20 10:42	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/30/20 10:42	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/30/20 10:42	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/30/20 10:42	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/30/20 10:42	1
Chloroethane	ND		0.50	0.44	ug/L			12/30/20 10:42	1
Chloroform	ND		0.50	0.28	ug/L			12/30/20 10:42	1
Chloromethane	ND		1.0	0.29	ug/L			12/30/20 10:42	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/30/20 10:42	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/30/20 10:42	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/30/20 10:42	1
Dibromomethane	ND		0.50	0.23	ug/L			12/30/20 10:42	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/30/20 10:42	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/30/20 10:42	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/30/20 10:42	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/30/20 10:42	1
Iodomethane	ND		25	5.9	ug/L			12/30/20 10:42	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/30/20 10:42	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/30/20 10:42	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/30/20 10:42	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/30/20 10:42	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/30/20 10:42	1

# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: MB 570-119348/8**  
**Matrix: Water**  
**Analysis Batch: 119348**

**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	0.21	ug/L			12/30/20 10:42	1
Naphthalene	ND		1.0	0.32	ug/L			12/30/20 10:42	1
o-Xylene	ND		0.50	0.35	ug/L			12/30/20 10:42	1
Propionitrile	ND		5.0	3.7	ug/L			12/30/20 10:42	1
Styrene	ND		0.50	0.28	ug/L			12/30/20 10:42	1
t-Butanol	ND		5.0	4.0	ug/L			12/30/20 10:42	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/30/20 10:42	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/30/20 10:42	1
Toluene	ND		0.50	0.33	ug/L			12/30/20 10:42	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/30/20 10:42	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/30/20 10:42	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/30/20 10:42	1
Trichloroethene	ND		0.50	0.29	ug/L			12/30/20 10:42	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/30/20 10:42	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/30/20 10:42	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/30/20 10:42	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/30/20 10:42	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/30/20 10:42	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/30/20 10:42	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/30/20 10:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/30/20 10:42	1
4-Bromofluorobenzene (Surr)	98		68 - 120		12/30/20 10:42	1
Dibromofluoromethane (Surr)	93		80 - 127		12/30/20 10:42	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 128		12/30/20 10:42	1

**Lab Sample ID: LCS 570-119348/4**  
**Matrix: Water**  
**Analysis Batch: 119348**

**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	10.0	9.05		ug/L		91	80 - 120
1,1,1,2-Tetrachloroethane	10.0	10.1		ug/L		101	80 - 126
1,1,1-Trichloroethane	10.0	9.61		ug/L		96	80 - 125
1,1,2,2-Tetrachloroethane	10.0	9.34		ug/L		93	80 - 120
1,1,2-Trichloroethane	10.0	9.02		ug/L		90	80 - 120
1,1-Dichloroethane	10.0	8.79		ug/L		88	77 - 120
1,1-Dichloroethene	10.0	8.78		ug/L		88	74 - 128
1,1-Dichloropropene	10.0	9.10		ug/L		91	79 - 125
1,2,4-Trichlorobenzene	10.0	9.95		ug/L		99	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.40		ug/L		94	67 - 120
1,2-Dichlorobenzene	10.0	9.45		ug/L		95	80 - 120
1,2-Dichloroethane	10.0	10.1		ug/L		101	80 - 123
1,2-Dichloropropane	10.0	9.51		ug/L		95	80 - 120
1,3-Dichlorobenzene	10.0	9.41		ug/L		94	80 - 120

Eurofins Calscience Irvine

# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: LCS 570-119348/4**  
**Matrix: Water**  
**Analysis Batch: 119348**

**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	10.0	9.18		ug/L		92	80 - 120
1,4-Dichlorobenzene	10.0	9.21		ug/L		92	80 - 120
2,2-Dichloropropane	10.0	10.3		ug/L		103	77 - 139
2-Hexanone	10.0	9.56		ug/L		96	66 - 129
Acetone	10.0	8.61		ug/L		86	58 - 131
Acrolein	20.0	16.6		ug/L		83	61 - 144
Acrylonitrile	10.0	8.88		ug/L		89	53 - 130
Benzene	10.0	9.28		ug/L		93	80 - 120
Bromoform	10.0	9.83		ug/L		98	70 - 141
Bromomethane	10.0	9.69		ug/L		97	50 - 150
Carbon disulfide	10.0	8.39		ug/L		84	65 - 136
Carbon tetrachloride	10.0	10.1		ug/L		101	75 - 142
Chlorobenzene	10.0	9.42		ug/L		94	80 - 120
Bromochloromethane	10.0	9.54		ug/L		95	80 - 120
Chloroethane	10.0	9.30		ug/L		93	74 - 123
Chloroform	10.0	9.38		ug/L		94	80 - 120
Chloromethane	10.0	9.87		ug/L		99	54 - 140
cis-1,2-Dichloroethene	10.0	9.11		ug/L		91	80 - 121
cis-1,3-Dichloropropene	10.0	9.66		ug/L		97	80 - 120
Dibromochloromethane	10.0	10.0		ug/L		100	80 - 128
Dibromomethane	10.0	9.59		ug/L		96	80 - 120
Bromodichloromethane	10.0	10.1		ug/L		101	80 - 126
Dichlorodifluoromethane	10.0	11.7		ug/L		117	63 - 135
Ethylbenzene	10.0	9.42		ug/L		94	80 - 120
m,p-Xylene	20.0	19.4		ug/L		97	80 - 120
Methylene Chloride	10.0	8.47		ug/L		85	71 - 125
Methyl tert-butyl ether	10.0	8.59		ug/L		86	70 - 121
Naphthalene	10.0	9.19		ug/L		92	80 - 125
o-Xylene	10.0	9.69		ug/L		97	80 - 120
Styrene	10.0	9.60		ug/L		96	80 - 120
t-Butanol	50.0	53.8		ug/L		108	77 - 124
Tetrachloroethene	10.0	10.1		ug/L		101	80 - 126
Toluene	10.0	9.56		ug/L		96	80 - 120
trans-1,2-Dichloroethene	10.0	8.77		ug/L		88	74 - 121
trans-1,3-Dichloropropene	10.0	9.93		ug/L		99	80 - 123
Trichloroethene	10.0	9.52		ug/L		95	80 - 120
Trichlorofluoromethane	10.0	11.1		ug/L		111	74 - 137
Vinyl acetate	10.0	11.8		ug/L		118	50 - 150
Vinyl chloride	10.0	10.4		ug/L		104	72 - 126
1,2-Dibromoethane (EDB)	10.0	9.61		ug/L		96	80 - 120
2-Butanone (MEK)	10.0	9.66		ug/L		97	50 - 127
4-Methyl-2-pentanone (MIBK)	10.0	9.48		ug/L		95	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	105		68 - 120
Dibromofluoromethane (Surr)	99		80 - 127
1,2-Dichloroethane-d4 (Surr)	100		80 - 128

# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: LCSD 570-119348/5**  
**Matrix: Water**  
**Analysis Batch: 119348**

**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
1,2,3-Trichloropropane	10.0	9.04		ug/L		90	80 - 120	0	20
1,1,1,2-Tetrachloroethane	10.0	9.84		ug/L		98	80 - 126	2	20
1,1,1-Trichloroethane	10.0	9.00		ug/L		90	80 - 125	7	20
1,1,2,2-Tetrachloroethane	10.0	9.32		ug/L		93	80 - 120	0	20
1,1,2-Trichloroethane	10.0	8.99		ug/L		90	80 - 120	0	20
1,1-Dichloroethane	10.0	8.15		ug/L		82	77 - 120	8	20
1,1-Dichloroethene	10.0	8.09		ug/L		81	74 - 128	8	20
1,1-Dichloropropene	10.0	8.41		ug/L		84	79 - 125	8	20
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	80 - 120	1	20
1,2-Dibromo-3-Chloropropane	10.0	9.37		ug/L		94	67 - 120	0	20
1,2-Dichlorobenzene	10.0	9.53		ug/L		95	80 - 120	1	20
1,2-Dichloroethane	10.0	9.92		ug/L		99	80 - 123	2	20
1,2-Dichloropropane	10.0	9.05		ug/L		91	80 - 120	5	20
1,3-Dichlorobenzene	10.0	9.14		ug/L		91	80 - 120	3	20
1,3-Dichloropropane	10.0	8.99		ug/L		90	80 - 120	2	20
1,4-Dichlorobenzene	10.0	9.14		ug/L		91	80 - 120	1	20
2,2-Dichloropropane	10.0	9.39		ug/L		94	77 - 139	9	20
2-Hexanone	10.0	10.0		ug/L		100	66 - 129	4	21
Acetone	10.0	10.4		ug/L		104	58 - 131	19	30
Acrolein	20.0	17.0		ug/L		85	61 - 144	2	30
Acrylonitrile	10.0	8.66		ug/L		87	53 - 130	3	30
Benzene	10.0	8.80		ug/L		88	80 - 120	5	20
Bromoform	10.0	10.2		ug/L		102	70 - 141	4	20
Bromomethane	10.0	9.17		ug/L		92	50 - 150	6	22
Carbon disulfide	10.0	7.70		ug/L		77	65 - 136	9	20
Carbon tetrachloride	10.0	9.34		ug/L		93	75 - 142	7	20
Chlorobenzene	10.0	9.25		ug/L		93	80 - 120	2	20
Bromochloromethane	10.0	9.00		ug/L		90	80 - 120	6	20
Chloroethane	10.0	8.64		ug/L		86	74 - 123	7	20
Chloroform	10.0	8.91		ug/L		89	80 - 120	5	20
Chloromethane	10.0	9.18		ug/L		92	54 - 140	7	20
cis-1,2-Dichloroethene	10.0	8.63		ug/L		86	80 - 121	5	20
cis-1,3-Dichloropropene	10.0	9.24		ug/L		92	80 - 120	5	20
Dibromochloromethane	10.0	9.90		ug/L		99	80 - 128	1	20
Dibromomethane	10.0	9.35		ug/L		93	80 - 120	3	20
Bromodichloromethane	10.0	9.76		ug/L		98	80 - 126	3	20
Dichlorodifluoromethane	10.0	10.8		ug/L		108	63 - 135	8	20
Ethylbenzene	10.0	9.10		ug/L		91	80 - 120	3	20
m,p-Xylene	20.0	18.7		ug/L		93	80 - 120	4	20
Methylene Chloride	10.0	8.02		ug/L		80	71 - 125	5	20
Methyl tert-butyl ether	10.0	8.35		ug/L		83	70 - 121	3	20
Naphthalene	10.0	9.73		ug/L		97	80 - 125	6	20
o-Xylene	10.0	9.39		ug/L		94	80 - 120	3	20
Styrene	10.0	9.24		ug/L		92	80 - 120	4	20
t-Butanol	50.0	51.2		ug/L		102	77 - 124	5	23
Tetrachloroethene	10.0	9.54		ug/L		95	80 - 126	6	20
Toluene	10.0	8.97		ug/L		90	80 - 120	6	20
trans-1,2-Dichloroethene	10.0	8.32		ug/L		83	74 - 121	5	20

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# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: LCSD 570-119348/5**  
**Matrix: Water**  
**Analysis Batch: 119348**

**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
trans-1,3-Dichloropropene	10.0	9.90		ug/L		99	80 - 123	0	20
Trichloroethene	10.0	8.84		ug/L		88	80 - 120	7	20
Trichlorofluoromethane	10.0	10.4		ug/L		104	74 - 137	7	20
Vinyl acetate	10.0	10.8		ug/L		108	50 - 150	8	28
Vinyl chloride	10.0	9.49		ug/L		95	72 - 126	9	20
1,2-Dibromoethane (EDB)	10.0	9.33		ug/L		93	80 - 120	3	20
2-Butanone (MEK)	10.0	10.3		ug/L		103	50 - 127	7	26
4-Methyl-2-pentanone (MIBK)	10.0	9.56		ug/L		96	72 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	104		68 - 120
Dibromofluoromethane (Surr)	96		80 - 127
1,2-Dichloroethane-d4 (Surr)	99		80 - 128

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

**Lab Sample ID: MB 570-119640/1-A**  
**Matrix: Water**  
**Analysis Batch: 119770**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 119640**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		12/31/20 07:10	12/31/20 12:35	1

Isotope Dilution	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	47		15 - 150	12/31/20 07:10	12/31/20 12:35	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	118		46 - 128	12/31/20 07:10	12/31/20 12:35	1

**Lab Sample ID: LCS 570-119640/2-A**  
**Matrix: Water**  
**Analysis Batch: 119770**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 119640**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	17.8		ug/L		89	57 - 136

Isotope Dilution	LCS %Recovery	LCS Qualifier	LCS Limits
1,4-Dioxane-d8	41		15 - 150

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Nitrobenzene-d5 (Surr)	111		46 - 128





# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: LCS 440-634745/5**  
**Matrix: Water**  
**Analysis Batch: 634745**

**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	1.05		mg/L		93	90 - 110

**Lab Sample ID: 440-276628-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634745**

**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
Nitrate as N	ND		2.26	2.20		mg/L		97	80 - 120

**Lab Sample ID: 440-276628-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634745**

**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	Limit
Nitrate as N	ND		2.26	2.20		mg/L		97	80 - 120	0	20

**Lab Sample ID: MB 440-634746/6**  
**Matrix: Water**  
**Analysis Batch: 634746**

**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			12/29/20 10:37	1
Bromide	ND		0.50	0.25	mg/L			12/29/20 10:37	1
Fluoride	ND		0.50	0.25	mg/L			12/29/20 10:37	1
Sulfate	ND		0.50	0.25	mg/L			12/29/20 10:37	1

**Lab Sample ID: LCS 440-634746/5**  
**Matrix: Water**  
**Analysis Batch: 634746**

**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	4.63		mg/L		93	90 - 110
Bromide	5.00	4.70		mg/L		94	90 - 110
Fluoride	5.00	4.61		mg/L		92	90 - 110
Sulfate	5.00	4.74		mg/L		95	90 - 110

**Lab Sample ID: 440-276628-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634746**

**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
Chloride	44	E	10.0	55.7	E 4	mg/L		116	80 - 120
Bromide	ND		10.0	10.3		mg/L		103	80 - 120
Fluoride	1.1		10.0	10.6		mg/L		95	80 - 120
Sulfate	2200	E	10.0	2230	E 4	mg/L		23	80 - 120

# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634746**

**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
Chloride	44	E	10.0	54.9	E 4	mg/L		109	80 - 120	1	20
Bromide	ND		10.0	10.4		mg/L		104	80 - 120	0	20
Fluoride	1.1		10.0	10.6		mg/L		95	80 - 120	0	20
Sulfate	2200	E	10.0	2180	E 4	mg/L		-387	80 - 120	2	20

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-634774/1-A**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/29/20 10:17	12/29/20 19:36	1
Calcium	ND		0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:36	1
Iron	0.0837	J	0.10	0.050	mg/L		12/29/20 10:17	12/29/20 19:36	1
Magnesium	ND		0.020	0.010	mg/L		12/29/20 10:17	12/29/20 19:36	1
Manganese	ND		0.020	0.015	mg/L		12/29/20 10:17	12/29/20 19:36	1
Potassium	ND		0.50	0.25	mg/L		12/29/20 10:17	12/29/20 19:36	1

**Lab Sample ID: MB 440-634774/1-A**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50	0.26	mg/L		12/29/20 10:17	12/30/20 13:13	1

**Lab Sample ID: LCS 440-634774/2-A**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.953		mg/L		95	80 - 120
Calcium	5.00	4.86		mg/L		97	80 - 120
Iron	1.00	1.07		mg/L		107	80 - 120
Magnesium	5.00	4.94		mg/L		99	80 - 120
Manganese	1.00	0.954		mg/L		95	80 - 120
Potassium	10.0	9.73		mg/L		97	80 - 120

**Lab Sample ID: LCS 440-634774/2-A**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	9.78		mg/L		98	80 - 120

# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: MW-2A**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits
Boron	0.60		1.00	1.62		mg/L		102	75 - 125	
Calcium	220		5.00	227	4	mg/L		124	75 - 125	
Iron	10	B	1.00	11.1	4	mg/L		101	75 - 125	
Magnesium	120		5.00	127	4	mg/L		156	75 - 125	
Manganese	1.0		1.00	1.98		mg/L		95	75 - 125	
Potassium	5.7		10.0	15.7		mg/L		100	75 - 125	

**Lab Sample ID: 440-276628-1 MS**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: MW-2A**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	Limits
Sodium	400		10.0	414	4	mg/L		149	75 - 125	

**Lab Sample ID: 440-276628-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634857**

**Client Sample ID: MW-2A**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Boron	0.60		1.00	1.62		mg/L		101	75 - 125	0	20	
Calcium	220		5.00	232	4	mg/L		230	75 - 125	2	20	
Iron	10	B	1.00	11.3	4	mg/L		123	75 - 125	2	20	
Magnesium	120		5.00	130	4	mg/L		204	75 - 125	2	20	
Manganese	1.0		1.00	1.99		mg/L		96	75 - 125	0	20	
Potassium	5.7		10.0	15.7		mg/L		100	75 - 125	0	20	

**Lab Sample ID: 440-276628-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 634959**

**Client Sample ID: MW-2A**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634774**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Sodium	400		10.0	421	4	mg/L		223	75 - 125	2	20	

## Method: 410.4 - COD

**Lab Sample ID: MB 440-635445/4**  
**Matrix: Water**  
**Analysis Batch: 635445**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:55	1

**Lab Sample ID: LCS 440-635445/5**  
**Matrix: Water**  
**Analysis Batch: 635445**

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	Limits
Chemical Oxygen Demand	200	216		mg/L		108	90 - 110	

# QC Sample Results

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

Job ID: 440-276628-1

## Method: 410.4 - COD (Continued)

**Lab Sample ID: 440-276659-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 635445**

**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	26		200	264		mg/L		119	70 - 120

**Lab Sample ID: 440-276659-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 635445**

**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	26		200	236		mg/L		105	70 - 120	11	15

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-634761/3**  
**Matrix: Water**  
**Analysis Batch: 634761**

**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			12/29/20 07:08	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/29/20 07:08	1

**Lab Sample ID: LCS 440-634761/2**  
**Matrix: Water**  
**Analysis Batch: 634761**

**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	86.4	91.0		mg/L		105	80 - 120

**Lab Sample ID: 440-276628-1 DU**  
**Matrix: Water**  
**Analysis Batch: 634761**

**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	390		386		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	390		386		mg/L		0	20

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

**Lab Sample ID: MB 440-634919/1**  
**Matrix: Water**  
**Analysis Batch: 634919**

**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			12/30/20 11:50	1

**Lab Sample ID: LCS 440-634919/2**  
**Matrix: Water**  
**Analysis Batch: 634919**

**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	990		mg/L		99	90 - 110

# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: 440-276628-4 DU**  
**Matrix: Water**  
**Analysis Batch: 634919**

**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	2000		1990		mg/L		0.2	5

**Lab Sample ID: MB 440-635098/1**  
**Matrix: Water**  
**Analysis Batch: 635098**

**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			01/02/21 08:13	1

**Lab Sample ID: LCS 440-635098/2**  
**Matrix: Water**  
**Analysis Batch: 635098**

**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	952		mg/L		95	90 - 110

**Lab Sample ID: 440-276864-A-1 DU**  
**Matrix: Water**  
**Analysis Batch: 635098**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	63		63.0		mg/L		0	5

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

**Lab Sample ID: MB 440-635770/1**  
**Matrix: Water**  
**Analysis Batch: 635770**

**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			01/11/21 13:46	1

**Lab Sample ID: 440-276628-2 DU**  
**Matrix: Water**  
**Analysis Batch: 635770**

**Client Sample ID: MW-2B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Carbon Dioxide, Free	18		19.4		mg/L		10	20

## Method: SM 4500 NH3 D - Ammonia

**Lab Sample ID: MB 440-634870/2-A**  
**Matrix: Water**  
**Analysis Batch: 634895**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 634870**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1

# QC Sample Results

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

Job ID: 440-276628-1

## Method: SM 4500 NH3 D - Ammonia (Continued)

**Lab Sample ID: LCS 440-634870/1-A**  
**Matrix: Water**  
**Analysis Batch: 634895**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 634870**  
 %Rec.

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: 440-276761-A-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 634895**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 634870**  
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	0.41	J	2.50	2.83		mg/L		97	75 - 125

**Lab Sample ID: 440-276761-A-1-B MSD**  
**Matrix: Water**  
**Analysis Batch: 634895**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 634870**  
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	0.41	J	2.50	2.61		mg/L		88	75 - 125	8	15

**Lab Sample ID: 440-276761-B-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 634895**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 634870**  
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ammonia (as N)	0.41	J	2.50	0.430	J	mg/L				4	15

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

**Lab Sample ID: MB 440-635061/3**  
**Matrix: Water**  
**Analysis Batch: 635061**

**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			12/31/20 13:22	1

**Lab Sample ID: LCS 440-635061/4**  
**Matrix: Water**  
**Analysis Batch: 635061**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Sulfide	0.501	0.431		mg/L		86	80 - 120

**Lab Sample ID: 440-276554-E-2 MS**  
**Matrix: Water**  
**Analysis Batch: 635061**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Total Sulfide	ND	F1	0.501	0.348	F1	mg/L		69	70 - 130

# QC Sample Results

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

Job ID: 440-276628-1

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

Lab Sample ID: 440-276554-E-2 MSD  
 Matrix: Water  
 Analysis Batch: 635061

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	0.501	0.289	F1	mg/L		58	70 - 130	19	30

## Method: SM 5310C - TOC

Lab Sample ID: MB 440-635367/8  
 Matrix: Water  
 Analysis Batch: 635367

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			01/05/21 05:46	1

Lab Sample ID: LCS 440-635367/7  
 Matrix: Water  
 Analysis Batch: 635367

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	5.00	4.96		mg/L		99	85 - 115

Lab Sample ID: MRL 440-635367/4  
 Matrix: Water  
 Analysis Batch: 635367

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	0.0897	J	mg/L		90	50 - 150

Lab Sample ID: 440-276205-D-3 MS ^2  
 Matrix: Water  
 Analysis Batch: 635367

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	1.5		10.0	12.4		mg/L		109	85 - 115

Lab Sample ID: 440-276205-D-3 MSD ^2  
 Matrix: Water  
 Analysis Batch: 635367

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	1.5		10.0	12.0		mg/L		105	85 - 115	3	20

Lab Sample ID: MB 440-635469/8  
 Matrix: Water  
 Analysis Batch: 635469

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			01/06/21 06:06	1



# QC Sample Results

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

Job ID: 440-276628-1

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

**Lab Sample ID: LCS 440-635469/7**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	5.00	4.93		mg/L		99	85 - 115

**Lab Sample ID: MRL 440-635469/6**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	0.0529	J	mg/L		53	50 - 150

**Lab Sample ID: 440-276203-D-4 MS ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.6		mg/L		109	85 - 115

**Lab Sample ID: 440-276203-D-4 MSD ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.3		mg/L		106	85 - 115	3	20

# QC Association Summary

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

Job ID: 440-276628-1

## GC/MS VOA

### Analysis Batch: 119348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	8260B	
440-276628-2	MW-2B	Total/NA	Water	8260B	
440-276628-3	MW-9	Total/NA	Water	8260B	
440-276628-4	DW-2	Total/NA	Water	8260B	
440-276628-5	DW-4	Total/NA	Water	8260B	
440-276628-6	PA-4	Total/NA	Water	8260B	
440-276628-7	Field Blank	Total/NA	Water	8260B	
440-276628-8	Trip Blank	Total/NA	Water	8260B	
MB 570-119348/8	Method Blank	Total/NA	Water	8260B	
LCS 570-119348/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-119348/5	Lab Control Sample Dup	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 119640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	3510C	
440-276628-2	MW-2B	Total/NA	Water	3510C	
440-276628-3	MW-9	Total/NA	Water	3510C	
440-276628-4	DW-2	Total/NA	Water	3510C	
440-276628-5	DW-4	Total/NA	Water	3510C	
440-276628-6	PA-4	Total/NA	Water	3510C	
MB 570-119640/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-119640/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-119640/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-47182-I-1-A MS	Matrix Spike	Total/NA	Water	3510C	
570-47182-I-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	

### Analysis Batch: 119770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-119640/1-A	Method Blank	Total/NA	Water	8270C SIM ID	119640
LCS 570-119640/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	119640
LCSD 570-119640/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	119640
570-47182-I-1-A MS	Matrix Spike	Total/NA	Water	8270C SIM ID	119640
570-47182-I-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C SIM ID	119640

### Analysis Batch: 120284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	8270C SIM ID	119640
440-276628-2	MW-2B	Total/NA	Water	8270C SIM ID	119640
440-276628-3	MW-9	Total/NA	Water	8270C SIM ID	119640
440-276628-4	DW-2	Total/NA	Water	8270C SIM ID	119640
440-276628-5	DW-4	Total/NA	Water	8270C SIM ID	119640
440-276628-6	PA-4	Total/NA	Water	8270C SIM ID	119640

## HPLC/IC

### Analysis Batch: 634745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	300.0	
440-276628-2	MW-2B	Total/NA	Water	300.0	
440-276628-3	MW-9	Total/NA	Water	300.0	

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# QC Association Summary

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

Job ID: 440-276628-1

## HPLC/IC (Continued)

### Analysis Batch: 634745 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-4	DW-2	Total/NA	Water	300.0	
440-276628-5	DW-4	Total/NA	Water	300.0	
440-276628-6	PA-4	Total/NA	Water	300.0	
MB 440-634745/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634745/5	Lab Control Sample	Total/NA	Water	300.0	
440-276628-1 MS	MW-2A	Total/NA	Water	300.0	
440-276628-1 MSD	MW-2A	Total/NA	Water	300.0	

### Analysis Batch: 634746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	300.0	
440-276628-1 - DL	MW-2A	Total/NA	Water	300.0	
440-276628-1 - DL2	MW-2A	Total/NA	Water	300.0	
440-276628-2	MW-2B	Total/NA	Water	300.0	
440-276628-2	MW-2B	Total/NA	Water	300.0	
440-276628-3	MW-9	Total/NA	Water	300.0	
440-276628-3	MW-9	Total/NA	Water	300.0	
440-276628-4	DW-2	Total/NA	Water	300.0	
440-276628-4	DW-2	Total/NA	Water	300.0	
440-276628-5	DW-4	Total/NA	Water	300.0	
440-276628-5	DW-4	Total/NA	Water	300.0	
440-276628-6	PA-4	Total/NA	Water	300.0	
440-276628-6	PA-4	Total/NA	Water	300.0	
MB 440-634746/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634746/5	Lab Control Sample	Total/NA	Water	300.0	
440-276628-1 MS	MW-2A	Total/NA	Water	300.0	
440-276628-1 MSD	MW-2A	Total/NA	Water	300.0	

## Metals

### Prep Batch: 634774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total Recoverable	Water	3005A	
440-276628-2	MW-2B	Total Recoverable	Water	3005A	
440-276628-3	MW-9	Total Recoverable	Water	3005A	
440-276628-4	DW-2	Total Recoverable	Water	3005A	
440-276628-5	DW-4	Total Recoverable	Water	3005A	
440-276628-6	PA-4	Total Recoverable	Water	3005A	
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276628-1 MS	MW-2A	Total Recoverable	Water	3005A	
440-276628-1 MSD	MW-2A	Total Recoverable	Water	3005A	

### Analysis Batch: 634857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total Recoverable	Water	6010B	634774
440-276628-2	MW-2B	Total Recoverable	Water	6010B	634774
440-276628-3	MW-9	Total Recoverable	Water	6010B	634774
440-276628-4	DW-2	Total Recoverable	Water	6010B	634774
440-276628-5	DW-4	Total Recoverable	Water	6010B	634774
440-276628-6	PA-4	Total Recoverable	Water	6010B	634774

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# QC Association Summary

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

Job ID: 440-276628-1

## Metals (Continued)

### Analysis Batch: 634857 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	6010B	634774
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634774
440-276628-1 MS	MW-2A	Total Recoverable	Water	6010B	634774
440-276628-1 MSD	MW-2A	Total Recoverable	Water	6010B	634774

### Analysis Batch: 634959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total Recoverable	Water	6010B	634774
440-276628-2	MW-2B	Total Recoverable	Water	6010B	634774
440-276628-3	MW-9	Total Recoverable	Water	6010B	634774
440-276628-4	DW-2	Total Recoverable	Water	6010B	634774
440-276628-5	DW-4	Total Recoverable	Water	6010B	634774
440-276628-6	PA-4	Total Recoverable	Water	6010B	634774
MB 440-634774/1-A	Method Blank	Total Recoverable	Water	6010B	634774
LCS 440-634774/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634774
440-276628-1 MS	MW-2A	Total Recoverable	Water	6010B	634774
440-276628-1 MSD	MW-2A	Total Recoverable	Water	6010B	634774

## General Chemistry

### Analysis Batch: 634761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 2320B	
440-276628-2	MW-2B	Total/NA	Water	SM 2320B	
440-276628-3	MW-9	Total/NA	Water	SM 2320B	
440-276628-4	DW-2	Total/NA	Water	SM 2320B	
440-276628-5	DW-4	Total/NA	Water	SM 2320B	
440-276628-6	PA-4	Total/NA	Water	SM 2320B	
MB 440-634761/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-634761/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-276628-1 DU	MW-2A	Total/NA	Water	SM 2320B	

### Prep Batch: 634870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 4500 NH3 B	
440-276628-2	MW-2B	Total/NA	Water	SM 4500 NH3 B	
440-276628-3	MW-9	Total/NA	Water	SM 4500 NH3 B	
440-276628-4	DW-2	Total/NA	Water	SM 4500 NH3 B	
440-276628-5	DW-4	Total/NA	Water	SM 4500 NH3 B	
440-276628-6	PA-4	Total/NA	Water	SM 4500 NH3 B	
MB 440-634870/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-634870/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-276761-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-276761-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-276761-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 634895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 4500 NH3 D	634870
440-276628-2	MW-2B	Total/NA	Water	SM 4500 NH3 D	634870
440-276628-3	MW-9	Total/NA	Water	SM 4500 NH3 D	634870

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# QC Association Summary

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

Job ID: 440-276628-1

## General Chemistry (Continued)

### Analysis Batch: 634895 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-4	DW-2	Total/NA	Water	SM 4500 NH3 D	634870
440-276628-5	DW-4	Total/NA	Water	SM 4500 NH3 D	634870
440-276628-6	PA-4	Total/NA	Water	SM 4500 NH3 D	634870
MB 440-634870/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	634870
LCS 440-634870/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	634870
440-276761-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	634870
440-276761-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	634870
440-276761-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	634870

### Analysis Batch: 634919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 2540C	
440-276628-2	MW-2B	Total/NA	Water	SM 2540C	
440-276628-3	MW-9	Total/NA	Water	SM 2540C	
440-276628-4	DW-2	Total/NA	Water	SM 2540C	
440-276628-5	DW-4	Total/NA	Water	SM 2540C	
MB 440-634919/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-634919/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-276628-4 DU	DW-2	Total/NA	Water	SM 2540C	

### Analysis Batch: 635061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 4500 S2 D	
440-276628-2	MW-2B	Total/NA	Water	SM 4500 S2 D	
440-276628-3	MW-9	Total/NA	Water	SM 4500 S2 D	
440-276628-4	DW-2	Total/NA	Water	SM 4500 S2 D	
440-276628-5	DW-4	Total/NA	Water	SM 4500 S2 D	
440-276628-6	PA-4	Total/NA	Water	SM 4500 S2 D	
MB 440-635061/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-635061/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-276554-E-2 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
440-276554-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 635098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-6	PA-4	Total/NA	Water	SM 2540C	
MB 440-635098/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-635098/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-276864-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

### Analysis Batch: 635367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 5310C	
440-276628-2	MW-2B	Total/NA	Water	SM 5310C	
440-276628-4	DW-2	Total/NA	Water	SM 5310C	
440-276628-5	DW-4	Total/NA	Water	SM 5310C	
MB 440-635367/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635367/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635367/4	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276205-D-3 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276205-D-3 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

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# QC Association Summary

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

Job ID: 440-276628-1

## General Chemistry

### Analysis Batch: 635445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	410.4	
440-276628-2	MW-2B	Total/NA	Water	410.4	
440-276628-3	MW-9	Total/NA	Water	410.4	
440-276628-4	DW-2	Total/NA	Water	410.4	
440-276628-5	DW-4	Total/NA	Water	410.4	
440-276628-6	PA-4	Total/NA	Water	410.4	
MB 440-635445/4	Method Blank	Total/NA	Water	410.4	
LCS 440-635445/5	Lab Control Sample	Total/NA	Water	410.4	
440-276659-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-276659-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

### Analysis Batch: 635469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-3	MW-9	Total/NA	Water	SM 5310C	
440-276628-6	PA-4	Total/NA	Water	SM 5310C	
MB 440-635469/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635469/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635469/6	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276203-D-4 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276203-D-4 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 635770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276628-1	MW-2A	Total/NA	Water	SM 4500 CO2 C	
440-276628-2	MW-2B	Total/NA	Water	SM 4500 CO2 C	
440-276628-3	MW-9	Total/NA	Water	SM 4500 CO2 C	
440-276628-4	DW-2	Total/NA	Water	SM 4500 CO2 C	
440-276628-5	DW-4	Total/NA	Water	SM 4500 CO2 C	
440-276628-6	PA-4	Total/NA	Water	SM 4500 CO2 C	
MB 440-635770/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-276628-2 DU	MW-2B	Total/NA	Water	SM 4500 CO2 C	

# Definitions/Glossary

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

Job ID: 440-276628-1

## Qualifiers

### 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.

### 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.
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 exceeds control 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
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

# Definitions/Glossary

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

Job ID: 440-276628-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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# Accreditation/Certification Summary

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

Job ID: 440-276628-1

## Laboratory: Eurofins Calscience Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-21
Arizona	State	AZ0671	10-14-21
California	Los Angeles County Sanitation Districts	10256	06-30-21
California	State	2706	06-30-21
Guam	State	20-004R	01-23-21
Hawaii	State	CA01531	01-29-21
Kansas	NELAP	E-10420	07-31-21
Nevada	State	CA015312021-5	07-31-21
Oregon	NELAP	4028 - 008	01-29-21
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-21

## Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-29-21
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

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

TestAmerica Irvine  
 17461 Berian Ave  
 Suite 100  
 Irvine, CA 92614  
 Phone: 949.261.1022 Fax:

Chain of Custody Record 209898

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

Regulatory Program:  DW  NPDES  RCRA  Other:

Company Name: <b>GA/Republic</b> Address: <b>1415 W. Bernardo Ct Suite 200</b> City/State/Zip: <b>San Diego, CA 92127</b> Phone: <b>858-451-1136</b> Fax: <b>858-451-1087</b> Project Name: <b>Republic Services Inc.</b> Site: <b>Sunshine Canyon Landfill</b> P O #		Client Contact Project Manager: <b>Kyle Welchen</b> Tel/Fax: <b>858-451-1136</b> Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: <b>Josh Mills</b> Date: <b>12-28-20</b> Lab Contact: <b>Tommy Carrier</b> Carrier: <b>TJA</b> Filtered Sample (Y/N) <input type="checkbox"/> Perform MS/MSD (Y/N) <input type="checkbox"/>		COC No. <b>1</b> of <b>1</b> COCs Sampler: <b>MC</b> For Lab Use Only: Walk-in Client Lab Sampling Job / SDG No.: <b>5020.1006</b>	
Sample Identification	Sample Date	Sample Time	Sample Type (C-comp, G-Grab)	Matrix	# of Cont.	Sample Specific Notes	
MW-2A	12-28-20	09:30	G	GW	12		
MW-2B		10:34					
MW-9		12:25					
DW-2		10:51					
DW-4		11:38					
PZ-4		0943					
Field Blank				LEAD ZINC MTC	4		
Trip Blank					4		

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:  
 Metals are not field filtered

Custody Seal No.:  
 Relinquished by: **Michael Campbell** Date/Time: **12/28/20**  
 Relinquished by: **William Rivera** Date/Time: **12/28/20 1638**  
 Relinquished by: **William Rivera** Date/Time: **12/28/20 1638**

Received by: **William Rivera** Date/Time: **12/28/20 1305**  
 Received in Laboratory by: **William Rivera** Date/Time: **12/28/20 1638**

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Barcode: 440-276628 Chain of Custody





## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276628-1

**Login Number: 276628**

**List Number: 1**

**Creator: Escalante, Maria I**

**List Source: Eurofins 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	

## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276628-1

**Login Number: 276628**

**List Number: 2**

**Creator: Rivera, Isaac**

**List Source: Eurofins Calscience**

**List Creation: 12/29/20 08:05 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	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	3.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Isotope Dilution Summary

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

Job ID: 440-276628-1

**Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-150)
440-276628-1	MW-2A	47
440-276628-2	MW-2B	47
440-276628-3	MW-9	37
440-276628-4	DW-2	43
440-276628-5	DW-4	49
440-276628-6	PA-4	46
570-47182-I-1-A MS	Matrix Spike	40
570-47182-I-1-B MSD	Matrix Spike Duplicate	39
LCS 570-119640/2-A	Lab Control Sample	41
LCSD 570-119640/3-A	Lab Control Sample Dup	42
MB 570-119640/1-A	Method Blank	47

### Surrogate Legend

DXE = 1,4-Dioxane-d8

## ANALYTICAL REPORT

Eurofins Calscience Irvine  
17461 Derian Ave  
Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

Laboratory Job ID: 440-276734-1

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:  
1/12/2021 11:59:31 AM

Rossina Tomova, Project Manager I  
(949)260-3276  
[Rossina.Tomova@Eurofinset.com](mailto:Rossina.Tomova@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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

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

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



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# Sample Summary

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

Job ID: 440-276734-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-276734-1	MW-1	Water	12/29/20 08:54	12/29/20 17:18	
440-276734-2	MW-5	Water	12/29/20 12:00	12/29/20 17:18	
440-276734-3	DW-3	Water	12/29/20 07:55	12/29/20 17:18	
440-276734-4	DW-5	Water	12/29/20 10:05	12/29/20 17:18	
440-276734-5	Field Blank	Water	12/29/20 00:01	12/29/20 17:18	
440-276734-6	Trip Blank	Water	12/29/20 00:01	12/29/20 17:18	

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# Case Narrative

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

Job ID: 440-276734-1

**Job ID: 440-276734-1**

**Laboratory: Eurofins Calscience Irvine**

## Narrative

### Job Narrative 440-276734-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/29/2020 5:18 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.6° C.

#### GC/MS VOA

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-119667.

No additional analytical or quality issues were noted, other than those described above or 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

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

#### Metals

Method 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: DW-5 (440-276734-4). The sample was preserved to the appropriate pH in the laboratory. Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

Method 6010B: The method blank for preparation batch 440-634918 and analytical batch 440-635020 contained Iron 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

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

#### Organic Prep

Method 3510C: The following sample formed emulsions during the extraction procedure: DW-5 (440-276734-4). The emulsions were broken up using sodium sulfate. The sample had emulsion. Possible low surrogate recovery.

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

Job ID: 440-276734-1

**Client Sample ID: MW-1**

**Lab Sample ID: 440-276734-1**

Date Collected: 12/29/20 08:54

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/31/20 12:25	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 12:25	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 12:25	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 12:25	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 12:25	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 12:25	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 12:25	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 12:25	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 12:25	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 12:25	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 12:25	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 12:25	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 12:25	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 12:25	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 12:25	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 12:25	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 12:25	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 12:25	1
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 12:25	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 12:25	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 12:25	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 12:25	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 12:25	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 12:25	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 12:25	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 12:25	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 12:25	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 12:25	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 12:25	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 12:25	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 12:25	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 12:25	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 12:25	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 12:25	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 12:25	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 12:25	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 12:25	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 12:25	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 12:25	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 12:25	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 12:25	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 12:25	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 12:25	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 12:25	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 12:25	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 12:25	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 12:25	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 12:25	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/31/20 12:25	1

Eurofins Calscience Irvine

# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: MW-1**

**Lab Sample ID: 440-276734-1**

Date Collected: 12/29/20 08:54

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 12:25	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 12:25	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 12:25	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 12:25	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 12:25	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 12:25	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 12:25	1
Toluene	ND		0.50	0.33	ug/L			12/31/20 12:25	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 12:25	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 12:25	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 12:25	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 12:25	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 12:25	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 12:25	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 12:25	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 12:25	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 12:25	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 12:25	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	59	T J	ug/L		1.80			12/31/20 12:25	1
Unknown	61	T J	ug/L		1.86			12/31/20 12:25	1
1,5-Hexadiyne	39	T J N	ug/L		2.10	628-16-0		12/31/20 12:25	1
Unknown	59	T J	ug/L		2.24			12/31/20 12:25	1
Unknown	42	T J	ug/L		2.29			12/31/20 12:25	1
1-Penten-3-yne, 2-methyl-	32	T J N	ug/L		2.40	926-55-6		12/31/20 12:25	1
Unknown	78	T J	ug/L		2.46			12/31/20 12:25	1
Unknown	55	T J	ug/L		2.60			12/31/20 12:25	1
Unknown	45	T J	ug/L		2.74			12/31/20 12:25	1
Unknown	37	T J	ug/L		2.97			12/31/20 12:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/31/20 12:25	1
4-Bromofluorobenzene (Surr)	96		68 - 120		12/31/20 12:25	1
Dibromofluoromethane (Surr)	98		80 - 127		12/31/20 12:25	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 128		12/31/20 12:25	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>7.0</b>		0.50	0.34	ug/L		01/02/21 10:52	01/06/21 15:26	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	47		15 - 150	01/02/21 10:52	01/06/21 15:26	1			
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	76		46 - 128	01/02/21 10:52	01/06/21 15:26	1			

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>140</b>		25	13	mg/L			12/31/20 01:30	50
Nitrate as N	ND		0.11	0.055	mg/L			12/30/20 19:55	1

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: MW-1**

**Lab Sample ID: 440-276734-1**

Date Collected: 12/29/20 08:54

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	1.8		0.50	0.25	mg/L			12/30/20 19:55	1
Fluoride	2.6		0.50	0.25	mg/L			12/30/20 19:55	1
Sulfate	1100		25	13	mg/L			12/31/20 01:30	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.67		0.050	0.025	mg/L		12/30/20 11:44	12/30/20 23:10	1
Calcium	290		0.10	0.050	mg/L		12/30/20 11:44	12/30/20 23:10	1
Iron	33	B	0.10	0.050	mg/L		12/30/20 11:44	12/30/20 23:10	1
Magnesium	130		0.020	0.010	mg/L		12/30/20 11:44	12/30/20 23:10	1
Manganese	1.6		0.020	0.015	mg/L		12/30/20 11:44	12/30/20 23:10	1
Potassium	30		0.50	0.25	mg/L		12/30/20 11:44	12/30/20 23:10	1
Sodium	140		0.50	0.26	mg/L		12/30/20 11:44	12/30/20 23:10	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	60		20	10	mg/L			01/06/21 15:57	1
Total Dissolved Solids	2200		20	10	mg/L			12/31/20 06:37	1
Ammonia (as N)	4.6		1.0	0.20	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			01/04/21 12:58	1
Total Organic Carbon	18		0.50	0.25	mg/L			01/05/21 12:24	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	380		4.0	4.0	mg/L			12/30/20 09:26	1
Bicarbonate Alkalinity as CaCO3	380		4.0	4.0	mg/L			12/30/20 09:26	1
Carbon Dioxide, Free	46		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: MW-5**

**Lab Sample ID: 440-276734-2**

Date Collected: 12/29/20 12:00

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/31/20 12:51	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 12:51	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 12:51	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 12:51	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 12:51	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 12:51	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 12:51	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 12:51	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 12:51	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 12:51	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 12:51	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 12:51	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 12:51	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 12:51	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 12:51	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 12:51	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 12:51	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 12:51	1

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: MW-5**

**Lab Sample ID: 440-276734-2**

Date Collected: 12/29/20 12:00

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 12:51	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 12:51	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 12:51	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 12:51	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 12:51	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 12:51	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 12:51	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 12:51	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 12:51	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 12:51	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 12:51	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 12:51	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 12:51	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 12:51	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 12:51	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 12:51	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 12:51	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 12:51	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 12:51	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 12:51	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 12:51	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 12:51	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 12:51	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 12:51	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 12:51	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 12:51	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 12:51	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 12:51	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 12:51	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 12:51	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/31/20 12:51	1
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 12:51	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 12:51	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 12:51	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 12:51	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 12:51	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 12:51	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 12:51	1
Toluene	ND		0.50	0.33	ug/L			12/31/20 12:51	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 12:51	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 12:51	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 12:51	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 12:51	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 12:51	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 12:51	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 12:51	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 12:51	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 12:51	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 12:51	1

# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: MW-5**  
**Date Collected: 12/29/20 12:00**  
**Date Received: 12/29/20 17:18**

**Lab Sample ID: 440-276734-2**  
**Matrix: Water**

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	250	T J	ug/L		1.73			12/31/20 12:51	1
Unknown	29	T J	ug/L		2.08			12/31/20 12:51	1
Unknown	20	T J	ug/L		2.15			12/31/20 12:51	1
Unknown	39	T J	ug/L		2.23			12/31/20 12:51	1
Unknown	35	T J	ug/L		2.25			12/31/20 12:51	1
Unknown	56	T J	ug/L		2.31			12/31/20 12:51	1
Unknown	57	T J	ug/L		2.44			12/31/20 12:51	1
Unknown	34	T J	ug/L		2.71			12/31/20 12:51	1
Unknown	23	T J	ug/L		3.04			12/31/20 12:51	1
Silane, methoxytrimethyl-	25	T J N	ug/L		4.71	1825-61-2		12/31/20 12:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		12/31/20 12:51	1
4-Bromofluorobenzene (Surr)	99		68 - 120		12/31/20 12:51	1
Dibromofluoromethane (Surr)	99		80 - 127		12/31/20 12:51	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/31/20 12:51	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.5		0.50	0.34	ug/L		01/02/21 10:52	01/06/21 16:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	54		15 - 150	01/02/21 10:52	01/06/21 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	70		46 - 128	01/02/21 10:52	01/06/21 16:10	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	280		25	13	mg/L			12/31/20 01:47	50
Nitrate as N	ND		0.11	0.055	mg/L			12/30/20 20:13	1
Bromide	3.3		0.50	0.25	mg/L			12/30/20 20:13	1
Fluoride	2.6		0.50	0.25	mg/L			12/30/20 20:13	1
Sulfate	1500		25	13	mg/L			12/31/20 01:47	50

## 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		12/30/20 11:44	12/30/20 23:07	1
Calcium	370		0.10	0.050	mg/L		12/30/20 11:44	12/30/20 23:07	1
Iron	30	B	0.10	0.050	mg/L		12/30/20 11:44	12/30/20 23:07	1
Magnesium	150		0.020	0.010	mg/L		12/30/20 11:44	12/30/20 23:07	1
Manganese	3.9		0.020	0.015	mg/L		12/30/20 11:44	12/30/20 23:07	1
Potassium	22		0.50	0.25	mg/L		12/30/20 11:44	12/30/20 23:07	1
Sodium	300		0.50	0.26	mg/L		12/30/20 11:44	12/30/20 23:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	62		20	10	mg/L			01/06/21 15:57	1
Total Dissolved Solids	2900		50	25	mg/L			12/31/20 06:37	1
Ammonia (as N)	3.4		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			01/04/21 12:58	1
Total Organic Carbon	17		0.50	0.25	mg/L			01/05/21 12:41	5

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: MW-5**  
**Date Collected: 12/29/20 12:00**  
**Date Received: 12/29/20 17:18**

**Lab Sample ID: 440-276734-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	470		4.0	4.0	mg/L			12/30/20 09:36	1
Bicarbonate Alkalinity as CaCO3	470		4.0	4.0	mg/L			12/30/20 09:36	1
Carbon Dioxide, Free	51		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: DW-3**  
**Date Collected: 12/29/20 07:55**  
**Date Received: 12/29/20 17:18**

**Lab Sample ID: 440-276734-3**  
**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		0.50	0.32	ug/L			12/31/20 13:16	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 13:16	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 13:16	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 13:16	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 13:16	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 13:16	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 13:16	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 13:16	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 13:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 13:16	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 13:16	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 13:16	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 13:16	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 13:16	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 13:16	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 13:16	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 13:16	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 13:16	1
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 13:16	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 13:16	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 13:16	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 13:16	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 13:16	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 13:16	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 13:16	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 13:16	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 13:16	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 13:16	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 13:16	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 13:16	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 13:16	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 13:16	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 13:16	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 13:16	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 13:16	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 13:16	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 13:16	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 13:16	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 13:16	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 13:16	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 13:16	1

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: DW-3**

**Lab Sample ID: 440-276734-3**

Date Collected: 12/29/20 07:55

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 13:16	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 13:16	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 13:16	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 13:16	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 13:16	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 13:16	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 13:16	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/31/20 13:16	1
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 13:16	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 13:16	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 13:16	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 13:16	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 13:16	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 13:16	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 13:16	1
Toluene	ND		0.50	0.33	ug/L			12/31/20 13:16	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 13:16	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 13:16	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 13:16	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 13:16	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 13:16	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 13:16	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 13:16	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 13:16	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 13:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 13:16	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	170	T J	ug/L		1.75			12/31/20 13:16	1
Unknown	14	T J	ug/L		2.00			12/31/20 13:16	1
Unknown	36	T J	ug/L		2.10			12/31/20 13:16	1
Unknown	32	T J	ug/L		2.13			12/31/20 13:16	1
Unknown	16	T J	ug/L		2.20			12/31/20 13:16	1
Unknown	15	T J	ug/L		2.26			12/31/20 13:16	1
Unknown	24	T J	ug/L		2.33			12/31/20 13:16	1
Unknown	43	T J	ug/L		2.44			12/31/20 13:16	1
1,5-Heptadien-3-yne	13	T J N	ug/L		3.11	3511-27-1		12/31/20 13:16	1
1-Hexen-3-yne, 2-methyl-	53	T J N	ug/L		3.18	23056-94-2		12/31/20 13:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/31/20 13:16	1
4-Bromofluorobenzene (Surr)	98		68 - 120		12/31/20 13:16	1
Dibromofluoromethane (Surr)	96		80 - 127		12/31/20 13:16	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 128		12/31/20 13:16	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		01/02/21 10:52	01/08/21 15:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	53		15 - 150	01/02/21 10:52	01/08/21 15:40	1

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: DW-3**  
**Date Collected: 12/29/20 07:55**  
**Date Received: 12/29/20 17:18**

**Lab Sample ID: 440-276734-3**  
**Matrix: Water**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		46 - 128	01/02/21 10:52	01/08/21 15:40	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		0.50	0.25	mg/L			12/30/20 20:30	1
Nitrate as N	ND		0.11	0.055	mg/L			12/30/20 20:30	1
Bromide	ND		0.50	0.25	mg/L			12/30/20 20:30	1
Fluoride	ND		0.50	0.25	mg/L			12/30/20 20:30	1
Sulfate	1200		25	13	mg/L			12/31/20 02:05	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.047	J	0.050	0.025	mg/L		12/30/20 11:44	12/30/20 22:57	1
Calcium	290		0.10	0.050	mg/L		12/30/20 11:44	12/30/20 22:57	1
Iron	0.57	B	0.10	0.050	mg/L		12/30/20 11:44	12/30/20 22:57	1
Magnesium	98		0.020	0.010	mg/L		12/30/20 11:44	12/30/20 22:57	1
Manganese	0.058		0.020	0.015	mg/L		12/30/20 11:44	12/30/20 22:57	1
Potassium	7.9		0.50	0.25	mg/L		12/30/20 11:44	12/30/20 22:57	1
Sodium	63		0.50	0.26	mg/L		12/30/20 11:44	12/30/20 22:57	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:57	1
Total Dissolved Solids	1900		10	5.0	mg/L			12/31/20 06:37	1
Ammonia (as N)	0.58		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			01/04/21 12:58	1
Total Organic Carbon	0.51		0.10	0.050	mg/L			01/06/21 15:07	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		4.0	4.0	mg/L			12/30/20 09:44	1
Bicarbonate Alkalinity as CaCO3	150		4.0	4.0	mg/L			12/30/20 09:44	1
Carbon Dioxide, Free	11		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: DW-5**  
**Date Collected: 12/29/20 10:05**  
**Date Received: 12/29/20 17:18**

**Lab Sample ID: 440-276734-4**  
**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		0.50	0.32	ug/L			12/31/20 13:42	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 13:42	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 13:42	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 13:42	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 13:42	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 13:42	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 13:42	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 13:42	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 13:42	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 13:42	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 13:42	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 13:42	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 13:42	1

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: DW-5**

**Lab Sample ID: 440-276734-4**

Date Collected: 12/29/20 10:05

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 13:42	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 13:42	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 13:42	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 13:42	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 13:42	1
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 13:42	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 13:42	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 13:42	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 13:42	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 13:42	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 13:42	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 13:42	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 13:42	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 13:42	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 13:42	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 13:42	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 13:42	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 13:42	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 13:42	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 13:42	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 13:42	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 13:42	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 13:42	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 13:42	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 13:42	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 13:42	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 13:42	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 13:42	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 13:42	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 13:42	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 13:42	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 13:42	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 13:42	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 13:42	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 13:42	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/31/20 13:42	1
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 13:42	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 13:42	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 13:42	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 13:42	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 13:42	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 13:42	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 13:42	1
<b>Toluene</b>	<b>0.57</b>		0.50	0.33	ug/L			12/31/20 13:42	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 13:42	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 13:42	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 13:42	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 13:42	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 13:42	1

# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: DW-5**

**Lab Sample ID: 440-276734-4**

Date Collected: 12/29/20 10:05

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 13:42	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 13:42	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 13:42	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 13:42	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 13:42	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Propane, 2,2-dimethyl-	9.6	T J N	ug/L		2.25	463-82-1		12/31/20 13:42	1
Butane, 2,2-dimethyl-	7.9	T J N	ug/L		3.78	75-83-2		12/31/20 13:42	1
Pentane, 2,3-dimethyl-	6.2	T J N	ug/L		7.15	565-59-3		12/31/20 13:42	1
1H-Indene, 2,3-dihydro-1,1-dimethyl-	8.6	T J N	ug/L		15.74	4912-92-9		12/31/20 13:42	1
Benzene, 1,2,3,5-tetramethyl-	31	T J N	ug/L		15.88	527-53-7		12/31/20 13:42	1
Benzene, pentamethyl-	9.9	T J N	ug/L		16.94	700-12-9		12/31/20 13:42	1
Benzene, pentamethyl-	7.4	T J N	ug/L		17.11	700-12-9		12/31/20 13:42	1
1H-Indene, 2,3-dihydro-1,1,6-trimethyl-	7.2	T J N	ug/L		17.23	14276-95-0		12/31/20 13:42	1
1H-Indene, 2,3-dihydro-4,6-dimethyl-	10	T J N	ug/L		17.92	1685-82-1		12/31/20 13:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		12/31/20 13:42	1
4-Bromofluorobenzene (Surr)	103		68 - 120		12/31/20 13:42	1
Dibromofluoromethane (Surr)	98		80 - 127		12/31/20 13:42	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 128		12/31/20 13:42	1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		01/02/21 10:52	01/08/21 15:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	44		15 - 150	01/02/21 10:52	01/08/21 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	103		46 - 128	01/02/21 10:52	01/08/21 15:54	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.055	mg/L			12/30/20 20:48	1
Bromide	0.25	J	0.50	0.25	mg/L			12/30/20 20:48	1
Fluoride	3.1		0.50	0.25	mg/L			12/30/20 20:48	1
Sulfate	0.56		0.50	0.25	mg/L			12/30/20 20:48	1

## Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21		2.5	1.3	mg/L			12/31/20 02:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.7		0.050	0.025	mg/L		01/04/21 10:14	01/06/21 11:48	1
Calcium	5.4		0.10	0.050	mg/L		01/04/21 10:14	01/06/21 11:48	1
Iron	0.11		0.10	0.050	mg/L		01/04/21 10:14	01/06/21 11:48	1
Magnesium	0.92		0.020	0.010	mg/L		01/04/21 10:14	01/06/21 11:48	1
Manganese	0.10		0.020	0.015	mg/L		01/04/21 10:14	01/06/21 11:48	1

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# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: DW-5**

**Lab Sample ID: 440-276734-4**

Date Collected: 12/29/20 10:05

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	0.63		0.50	0.25	mg/L		01/04/21 10:14	01/06/21 11:48	1
Sodium	430		0.50	0.26	mg/L		01/04/21 10:14	01/06/21 11:48	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	13	J	20	10	mg/L			01/06/21 15:57	1
Total Dissolved Solids	1100		20	10	mg/L			12/31/20 06:37	1
Ammonia (as N)	0.28	J	0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1
Total Sulfide	ND		0.050	0.027	mg/L			01/04/21 12:58	1
Total Organic Carbon	7.0		0.50	0.25	mg/L			01/06/21 15:20	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	960		4.0	4.0	mg/L			12/30/20 10:01	1
Bicarbonate Alkalinity as CaCO3	960		4.0	4.0	mg/L			12/30/20 10:01	1
Carbon Dioxide, Free	11		2.0	2.0	mg/L			01/11/21 13:46	1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276734-5**

Date Collected: 12/29/20 00:01

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/31/20 11:34	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 11:34	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 11:34	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 11:34	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 11:34	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 11:34	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 11:34	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 11:34	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 11:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 11:34	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 11:34	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 11:34	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 11:34	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 11:34	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 11:34	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 11:34	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 11:34	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 11:34	1
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 11:34	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 11:34	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 11:34	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 11:34	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 11:34	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 11:34	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 11:34	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 11:34	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 11:34	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 11:34	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 11:34	1

Eurofins Calscience Irvine

# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 440-276734-5**

Date Collected: 12/29/20 00:01

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 11:34	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 11:34	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 11:34	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 11:34	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 11:34	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 11:34	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 11:34	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 11:34	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 11:34	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 11:34	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 11:34	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 11:34	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 11:34	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 11:34	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 11:34	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 11:34	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 11:34	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 11:34	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 11:34	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/31/20 11:34	1
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 11:34	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 11:34	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 11:34	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 11:34	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 11:34	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 11:34	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 11:34	1
Toluene	ND		0.50	0.33	ug/L			12/31/20 11:34	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 11:34	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 11:34	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 11:34	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 11:34	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 11:34	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 11:34	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 11:34	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 11:34	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 11:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 11:34	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	88	T J	ug/L		1.79			12/31/20 11:34	1
Unknown	33	T J	ug/L		1.97			12/31/20 11:34	1
1,5-Hexadiyne	29	T J N	ug/L		2.11	628-16-0		12/31/20 11:34	1
Unknown	92	T J	ug/L		2.24			12/31/20 11:34	1
Unknown	36	T J	ug/L		2.45			12/31/20 11:34	1
Unknown	44	T J	ug/L		2.48			12/31/20 11:34	1
Unknown	31	T J	ug/L		2.56			12/31/20 11:34	1
Unknown	58	T J	ug/L		2.79			12/31/20 11:34	1
Unknown	32	T J	ug/L		2.89			12/31/20 11:34	1
Unknown	22	T J	ug/L		3.08			12/31/20 11:34	1

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# Client Sample Results

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

Job ID: 440-276734-1

## Client Sample ID: Field Blank

Date Collected: 12/29/20 00:01

Date Received: 12/29/20 17:18

## Lab Sample ID: 440-276734-5

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/31/20 11:34	1
4-Bromofluorobenzene (Surr)	93		68 - 120		12/31/20 11:34	1
Dibromofluoromethane (Surr)	97		80 - 127		12/31/20 11:34	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 128		12/31/20 11:34	1

## Client Sample ID: Trip Blank

Date Collected: 12/29/20 00:01

Date Received: 12/29/20 17:18

## Lab Sample ID: 440-276734-6

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		0.50	0.32	ug/L			12/31/20 11:59	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 11:59	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 11:59	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 11:59	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 11:59	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 11:59	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 11:59	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 11:59	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 11:59	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 11:59	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 11:59	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 11:59	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 11:59	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 11:59	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 11:59	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 11:59	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 11:59	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 11:59	1
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 11:59	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 11:59	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 11:59	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 11:59	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 11:59	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 11:59	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 11:59	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 11:59	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 11:59	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 11:59	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 11:59	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 11:59	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 11:59	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 11:59	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 11:59	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 11:59	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 11:59	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 11:59	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 11:59	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 11:59	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 11:59	1

# Client Sample Results

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

Job ID: 440-276734-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-276734-6**

Date Collected: 12/29/20 00:01

Matrix: Water

Date Received: 12/29/20 17:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 11:59	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 11:59	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 11:59	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 11:59	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 11:59	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 11:59	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 11:59	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 11:59	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 11:59	1
Methyl tert-butyl ether	ND		0.50	0.21	ug/L			12/31/20 11:59	1
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 11:59	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 11:59	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 11:59	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 11:59	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 11:59	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 11:59	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 11:59	1
Toluene	ND		0.50	0.33	ug/L			12/31/20 11:59	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 11:59	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 11:59	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 11:59	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 11:59	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 11:59	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 11:59	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 11:59	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 11:59	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 11:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 11:59	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	79	T J	ug/L		1.74			12/31/20 11:59	1
Unknown	49	T J	ug/L		1.87			12/31/20 11:59	1
Isoquinolin-6-ol-1-carboxylic acid, 7-methoxy-1-methyl-1,2,3	27	T J N	ug/L		2.09	1000127-81-3		12/31/20 11:59	1
Unknown	24	T J	ug/L		2.22			12/31/20 11:59	1
Unknown	33	T J	ug/L		2.31			12/31/20 11:59	1
Unknown	52	T J	ug/L		2.45			12/31/20 11:59	1
Pyridine, 3-ethoxy-2-nitro-	15	T J N	ug/L		2.63	74037-50-6		12/31/20 11:59	1
Unknown	13	T J	ug/L		2.70			12/31/20 11:59	1
1,5-Hexadiyne	19	T J N	ug/L		2.96	628-16-0		12/31/20 11:59	1
Unknown	23	T J	ug/L		3.06			12/31/20 11:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/31/20 11:59	1
4-Bromofluorobenzene (Surr)	100		68 - 120		12/31/20 11:59	1
Dibromofluoromethane (Surr)	100		80 - 127		12/31/20 11:59	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 128		12/31/20 11:59	1



# Method Summary

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

Job ID: 440-276734-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	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 NH3 D	Ammonia	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
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2
SM 4500 NH3 B	Distillation, Ammonia	SM	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:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494  
ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494  
TAL IRV = Eurofins Calscience 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

Job ID: 440-276734-1

**Client Sample ID: MW-1**

**Lab Sample ID: 440-276734-1**

**Date Collected: 12/29/20 08:54**

**Matrix: Water**

**Date Received: 12/29/20 17:18**

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	20 mL	20 mL	119667	12/31/20 12:25	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119885	01/02/21 10:52	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120393	01/06/21 15:26	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634875	12/30/20 19:55	NTN	TAL IRV
Total/NA	Analysis	300.0		1			634876	12/30/20 19:55	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634876	12/31/20 01:30	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634918	12/30/20 11:44	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635020	12/30/20 23:10	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:57	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634894	12/30/20 09:26	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	635000	12/31/20 06:37	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			25 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635198	01/04/21 12:58	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	635367	01/05/21 12:24	YZ	TAL IRV

**Client Sample ID: MW-5**

**Lab Sample ID: 440-276734-2**

**Date Collected: 12/29/20 12:00**

**Matrix: Water**

**Date Received: 12/29/20 17:18**

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	20 mL	20 mL	119667	12/31/20 12:51	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119885	01/02/21 10:52	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			120393	01/06/21 16:10	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634875	12/30/20 20:13	NTN	TAL IRV
Total/NA	Analysis	300.0		1			634876	12/30/20 20:13	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634876	12/31/20 01:47	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634918	12/30/20 11:44	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635020	12/30/20 23:07	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:57	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634894	12/30/20 09:36	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	635000	12/31/20 06:37	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635198	01/04/21 12:58	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	635367	01/05/21 12:41	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276734-1

**Client Sample ID: DW-3**

**Lab Sample ID: 440-276734-3**

**Date Collected: 12/29/20 07:55**

**Matrix: Water**

**Date Received: 12/29/20 17:18**

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	20 mL	20 mL	119667	12/31/20 13:16	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119885	01/02/21 10:52	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			121107	01/08/21 15:40	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	634875	12/30/20 20:30	NTN	TAL IRV
Total/NA	Analysis	300.0		1			634876	12/30/20 20:30	NTN	TAL IRV
Total/NA	Analysis	300.0		50			634876	12/31/20 02:05	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	634918	12/30/20 11:44	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635020	12/30/20 22:57	VS	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:57	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634894	12/30/20 09:44	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	635000	12/31/20 06:37	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635198	01/04/21 12:58	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	635469	01/06/21 15:07	YZ	TAL IRV

**Client Sample ID: DW-5**

**Lab Sample ID: 440-276734-4**

**Date Collected: 12/29/20 10:05**

**Matrix: Water**

**Date Received: 12/29/20 17:18**

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	20 mL	20 mL	119667	12/31/20 13:42	UJHB	ECL 2
Total/NA	Prep	3510C			100.0 mL	10 mL	119885	01/02/21 10:52	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			121107	01/08/21 15:54	AJ2Q	ECL 1
Total/NA	Analysis	300.0		1			634875	12/30/20 20:48	NTN	TAL IRV
Total/NA	Analysis	300.0		1			634876	12/30/20 20:48	NTN	TAL IRV
Total/NA	Analysis	300.0	DL	5			634876	12/31/20 02:23	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	635170	01/04/21 10:14	M1G	TAL IRV
Total Recoverable	Analysis	6010B		1			635418	01/06/21 11:48	KE	TAL IRV
Total/NA	Analysis	410.4		1	2 mL	2 mL	635445	01/06/21 15:57	KMY	TAL IRV
Total/NA	Analysis	SM 2320B		1			634894	12/30/20 10:01	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	635000	12/31/20 06:37	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	635770	01/11/21 13:46	KYP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	634870	12/30/20 07:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			634895	12/30/20 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	635198	01/04/21 12:58	KMY	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	635469	01/06/21 15:20	YZ	TAL IRV

# Lab Chronicle

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

Job ID: 440-276734-1

## Client Sample ID: Field Blank

Date Collected: 12/29/20 00:01

Date Received: 12/29/20 17:18

Lab Sample ID: 440-276734-5

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	20 mL	20 mL	119667	12/31/20 11:34	UJHB	ECL 2

## Client Sample ID: Trip Blank

Date Collected: 12/29/20 00:01

Date Received: 12/29/20 17:18

Lab Sample ID: 440-276734-6

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	20 mL	20 mL	119667	12/31/20 11:59	UJHB	ECL 2

### Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

TAL IRV = Eurofins Calscience 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

Job ID: 440-276734-1

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

**Lab Sample ID: MB 570-119667/8**  
**Matrix: Water**  
**Analysis Batch: 119667**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			12/31/20 11:04	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			12/31/20 11:04	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			12/31/20 11:04	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			12/31/20 11:04	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			12/31/20 11:04	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			12/31/20 11:04	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			12/31/20 11:04	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			12/31/20 11:04	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			12/31/20 11:04	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			12/31/20 11:04	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			12/31/20 11:04	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			12/31/20 11:04	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			12/31/20 11:04	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			12/31/20 11:04	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			12/31/20 11:04	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			12/31/20 11:04	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			12/31/20 11:04	1
2-Chloro-1,3-butadiene	ND		2.0	1.8	ug/L			12/31/20 11:04	1
2-Hexanone	ND		6.0	4.3	ug/L			12/31/20 11:04	1
Acetone	ND		8.0	4.0	ug/L			12/31/20 11:04	1
Acetonitrile	ND		10	3.9	ug/L			12/31/20 11:04	1
Acrolein	ND		4.0	2.2	ug/L			12/31/20 11:04	1
Acrylonitrile	ND		5.0	0.87	ug/L			12/31/20 11:04	1
Benzene	ND		0.50	0.27	ug/L			12/31/20 11:04	1
Allyl chloride	ND		2.0	0.38	ug/L			12/31/20 11:04	1
Bromoform	ND		0.50	0.39	ug/L			12/31/20 11:04	1
Bromomethane	ND		1.0	0.93	ug/L			12/31/20 11:04	1
Carbon disulfide	ND		1.0	0.24	ug/L			12/31/20 11:04	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			12/31/20 11:04	1
Chlorobenzene	ND		0.50	0.24	ug/L			12/31/20 11:04	1
Bromochloromethane	ND		1.0	0.35	ug/L			12/31/20 11:04	1
Chloroethane	ND		0.50	0.44	ug/L			12/31/20 11:04	1
Chloroform	ND		0.50	0.28	ug/L			12/31/20 11:04	1
Chloromethane	ND		1.0	0.29	ug/L			12/31/20 11:04	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			12/31/20 11:04	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			12/31/20 11:04	1
Dibromochloromethane	ND		0.50	0.27	ug/L			12/31/20 11:04	1
Dibromomethane	ND		0.50	0.23	ug/L			12/31/20 11:04	1
Bromodichloromethane	ND		0.50	0.22	ug/L			12/31/20 11:04	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			12/31/20 11:04	1
Ethyl methacrylate	ND		2.0	1.2	ug/L			12/31/20 11:04	1
Ethylbenzene	ND		0.50	0.36	ug/L			12/31/20 11:04	1
Iodomethane	ND		25	5.9	ug/L			12/31/20 11:04	1
Isobutyl alcohol	ND		10	5.7	ug/L			12/31/20 11:04	1
m,p-Xylene	ND		1.0	0.78	ug/L			12/31/20 11:04	1
Methylacrylonitrile	ND		2.0	0.71	ug/L			12/31/20 11:04	1
Methyl methacrylate	ND		2.0	1.1	ug/L			12/31/20 11:04	1
Methylene Chloride	ND		1.0	0.48	ug/L			12/31/20 11:04	1

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: MB 570-119667/8**  
**Matrix: Water**  
**Analysis Batch: 119667**

**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	0.21	ug/L			12/31/20 11:04	1
Naphthalene	ND		1.0	0.32	ug/L			12/31/20 11:04	1
o-Xylene	ND		0.50	0.35	ug/L			12/31/20 11:04	1
Propionitrile	ND		5.0	3.7	ug/L			12/31/20 11:04	1
Styrene	ND		0.50	0.28	ug/L			12/31/20 11:04	1
t-Butanol	ND		5.0	4.0	ug/L			12/31/20 11:04	1
Tetrachloroethene	ND		0.50	0.29	ug/L			12/31/20 11:04	1
Tetrahydrofuran	ND		2.0	1.1	ug/L			12/31/20 11:04	1
Toluene	ND		0.50	0.33	ug/L			12/31/20 11:04	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			12/31/20 11:04	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			12/31/20 11:04	1
trans-1,4-Dichloro-2-butene	ND		2.0	1.3	ug/L			12/31/20 11:04	1
Trichloroethene	ND		0.50	0.29	ug/L			12/31/20 11:04	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			12/31/20 11:04	1
Vinyl acetate	ND		5.0	3.1	ug/L			12/31/20 11:04	1
Vinyl chloride	ND		0.50	0.40	ug/L			12/31/20 11:04	1
1,2-Dibromoethane (EDB)	ND		0.50	0.14	ug/L			12/31/20 11:04	1
2-Butanone (MEK)	ND		5.0	3.0	ug/L			12/31/20 11:04	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.2	ug/L			12/31/20 11:04	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/31/20 11:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/31/20 11:04	1
4-Bromofluorobenzene (Surr)	96		68 - 120		12/31/20 11:04	1
Dibromofluoromethane (Surr)	95		80 - 127		12/31/20 11:04	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 128		12/31/20 11:04	1

**Lab Sample ID: LCS 570-119667/4**  
**Matrix: Water**  
**Analysis Batch: 119667**

**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	10.0	10.1		ug/L		101	80 - 120
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	80 - 126
1,1,1-Trichloroethane	10.0	9.90		ug/L		99	80 - 125
1,1,2,2-Tetrachloroethane	10.0	9.93		ug/L		99	80 - 120
1,1,2-Trichloroethane	10.0	9.60		ug/L		96	80 - 120
1,1-Dichloroethane	10.0	9.27		ug/L		93	77 - 120
1,1-Dichloroethene	10.0	9.09		ug/L		91	74 - 128
1,1-Dichloropropene	10.0	9.43		ug/L		94	79 - 125
1,2,4-Trichlorobenzene	10.0	10.6		ug/L		106	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	10.1		ug/L		101	67 - 120
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120
1,2-Dichloroethane	10.0	10.5		ug/L		105	80 - 123
1,2-Dichloropropane	10.0	9.94		ug/L		99	80 - 120
1,3-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120

Eurofins Calscience Irvine

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: LCS 570-119667/4**  
**Matrix: Water**  
**Analysis Batch: 119667**

**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	10.0	9.80		ug/L		98	80 - 120
1,4-Dichlorobenzene	10.0	9.95		ug/L		100	80 - 120
2,2-Dichloropropane	10.0	10.7		ug/L		107	77 - 139
2-Hexanone	10.0	10.4		ug/L		104	66 - 129
Acetone	10.0	8.45		ug/L		84	58 - 131
Acrolein	20.0	22.0		ug/L		110	61 - 144
Acrylonitrile	10.0	10.1		ug/L		101	53 - 130
Benzene	10.0	9.90		ug/L		99	80 - 120
Bromoform	10.0	10.7		ug/L		107	70 - 141
Bromomethane	10.0	11.1		ug/L		111	50 - 150
Carbon disulfide	10.0	8.76		ug/L		88	65 - 136
Carbon tetrachloride	10.0	10.7		ug/L		107	75 - 142
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120
Bromochloromethane	10.0	9.87		ug/L		99	80 - 120
Chloroethane	10.0	9.79		ug/L		98	74 - 123
Chloroform	10.0	9.91		ug/L		99	80 - 120
Chloromethane	10.0	11.1		ug/L		111	54 - 140
cis-1,2-Dichloroethene	10.0	9.79		ug/L		98	80 - 121
cis-1,3-Dichloropropene	10.0	10.2		ug/L		102	80 - 120
Dibromochloromethane	10.0	10.8		ug/L		108	80 - 128
Dibromomethane	10.0	10.1		ug/L		101	80 - 120
Bromodichloromethane	10.0	10.7		ug/L		107	80 - 126
Dichlorodifluoromethane	10.0	12.4		ug/L		124	63 - 135
Ethylbenzene	10.0	9.93		ug/L		99	80 - 120
m,p-Xylene	20.0	20.5		ug/L		102	80 - 120
Methylene Chloride	10.0	9.11		ug/L		91	71 - 125
Methyl tert-butyl ether	10.0	9.11		ug/L		91	70 - 121
Naphthalene	10.0	10.0		ug/L		100	80 - 125
o-Xylene	10.0	10.3		ug/L		103	80 - 120
Styrene	10.0	10.2		ug/L		102	80 - 120
t-Butanol	50.0	60.9		ug/L		122	77 - 124
Tetrachloroethene	10.0	10.3		ug/L		103	80 - 126
Toluene	10.0	9.92		ug/L		99	80 - 120
trans-1,2-Dichloroethene	10.0	9.27		ug/L		93	74 - 121
trans-1,3-Dichloropropene	10.0	10.8		ug/L		108	80 - 123
Trichloroethene	10.0	9.73		ug/L		97	80 - 120
Trichlorofluoromethane	10.0	12.1		ug/L		121	74 - 137
Vinyl acetate	10.0	11.7		ug/L		117	50 - 150
Vinyl chloride	10.0	11.1		ug/L		111	72 - 126
1,2-Dibromoethane (EDB)	10.0	10.0		ug/L		100	80 - 120
2-Butanone (MEK)	10.0	9.46		ug/L		95	50 - 127
4-Methyl-2-pentanone (MIBK)	10.0	10.2		ug/L		102	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	106		68 - 120
Dibromofluoromethane (Surr)	102		80 - 127
1,2-Dichloroethane-d4 (Surr)	102		80 - 128

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: LCSD 570-119667/5**  
**Matrix: Water**  
**Analysis Batch: 119667**

**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
1,2,3-Trichloropropane	10.0	9.66		ug/L		97	80 - 120	5	20
1,1,1,2-Tetrachloroethane	10.0	9.89		ug/L		99	80 - 126	7	20
1,1,1-Trichloroethane	10.0	8.97		ug/L		90	80 - 125	10	20
1,1,2,2-Tetrachloroethane	10.0	9.24		ug/L		92	80 - 120	7	20
1,1,2-Trichloroethane	10.0	9.03		ug/L		90	80 - 120	6	20
1,1-Dichloroethane	10.0	8.56		ug/L		86	77 - 120	8	20
1,1-Dichloroethene	10.0	8.18		ug/L		82	74 - 128	11	20
1,1-Dichloropropene	10.0	8.47		ug/L		85	79 - 125	11	20
1,2,4-Trichlorobenzene	10.0	9.63		ug/L		96	80 - 120	10	20
1,2-Dibromo-3-Chloropropane	10.0	9.50		ug/L		95	67 - 120	6	20
1,2-Dichlorobenzene	10.0	9.20		ug/L		92	80 - 120	9	20
1,2-Dichloroethane	10.0	9.83		ug/L		98	80 - 123	7	20
1,2-Dichloropropane	10.0	9.20		ug/L		92	80 - 120	8	20
1,3-Dichlorobenzene	10.0	8.93		ug/L		89	80 - 120	12	20
1,3-Dichloropropane	10.0	9.22		ug/L		92	80 - 120	6	20
1,4-Dichlorobenzene	10.0	9.01		ug/L		90	80 - 120	10	20
2,2-Dichloropropane	10.0	9.53		ug/L		95	77 - 139	12	20
2-Hexanone	10.0	10.3		ug/L		103	66 - 129	2	21
Acetone	10.0	9.73		ug/L		97	58 - 131	14	30
Acrolein	20.0	18.8		ug/L		94	61 - 144	16	30
Acrylonitrile	10.0	8.80		ug/L		88	53 - 130	14	30
Benzene	10.0	8.90		ug/L		89	80 - 120	11	20
Bromoform	10.0	9.90		ug/L		99	70 - 141	8	20
Bromomethane	10.0	10.0		ug/L		100	50 - 150	10	22
Carbon disulfide	10.0	7.88		ug/L		79	65 - 136	11	20
Carbon tetrachloride	10.0	9.61		ug/L		96	75 - 142	11	20
Chlorobenzene	10.0	9.28		ug/L		93	80 - 120	8	20
Bromochloromethane	10.0	9.22		ug/L		92	80 - 120	7	20
Chloroethane	10.0	8.72		ug/L		87	74 - 123	12	20
Chloroform	10.0	9.08		ug/L		91	80 - 120	9	20
Chloromethane	10.0	10.1		ug/L		101	54 - 140	9	20
cis-1,2-Dichloroethene	10.0	8.99		ug/L		90	80 - 121	8	20
cis-1,3-Dichloropropene	10.0	9.41		ug/L		94	80 - 120	8	20
Dibromochloromethane	10.0	10.2		ug/L		102	80 - 128	6	20
Dibromomethane	10.0	9.50		ug/L		95	80 - 120	6	20
Bromodichloromethane	10.0	9.95		ug/L		100	80 - 126	7	20
Dichlorodifluoromethane	10.0	11.3		ug/L		113	63 - 135	9	20
Ethylbenzene	10.0	9.08		ug/L		91	80 - 120	9	20
m,p-Xylene	20.0	18.8		ug/L		94	80 - 120	9	20
Methylene Chloride	10.0	8.28		ug/L		83	71 - 125	9	20
Methyl tert-butyl ether	10.0	8.42		ug/L		84	70 - 121	8	20
Naphthalene	10.0	9.45		ug/L		95	80 - 125	6	20
o-Xylene	10.0	9.45		ug/L		95	80 - 120	8	20
Styrene	10.0	9.34		ug/L		93	80 - 120	9	20
t-Butanol	50.0	48.5		ug/L		97	77 - 124	23	23
Tetrachloroethene	10.0	9.52		ug/L		95	80 - 126	8	20
Toluene	10.0	9.17		ug/L		92	80 - 120	8	20
trans-1,2-Dichloroethene	10.0	8.44		ug/L		84	74 - 121	9	20

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# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: LCSD 570-119667/5**  
**Matrix: Water**  
**Analysis Batch: 119667**

**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
trans-1,3-Dichloropropene	10.0	9.92		ug/L		99	80 - 123	8	20
Trichloroethene	10.0	8.98		ug/L		90	80 - 120	8	20
Trichlorofluoromethane	10.0	11.0		ug/L		110	74 - 137	9	20
Vinyl acetate	10.0	10.9		ug/L		109	50 - 150	7	28
Vinyl chloride	10.0	10.0		ug/L		100	72 - 126	11	20
1,2-Dibromoethane (EDB)	10.0	9.37		ug/L		94	80 - 120	7	20
2-Butanone (MEK)	10.0	9.59		ug/L		96	50 - 127	1	26
4-Methyl-2-pentanone (MIBK)	10.0	9.91		ug/L		99	72 - 120	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	108		68 - 120
Dibromofluoromethane (Surr)	101		80 - 127
1,2-Dichloroethane-d4 (Surr)	101		80 - 128

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

**Lab Sample ID: MB 570-119885/1-A**  
**Matrix: Water**  
**Analysis Batch: 120393**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 119885**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		01/02/21 10:52	01/06/21 06:34	1
Isotope Dilution	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac			
1,4-Dioxane-d8	53		15 - 150	01/02/21 10:52	01/06/21 06:34	1			
Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	93		46 - 128	01/02/21 10:52	01/06/21 06:34	1			

**Lab Sample ID: LCS 570-119885/2-A**  
**Matrix: Water**  
**Analysis Batch: 120393**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 119885**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	13.7		ug/L		68	57 - 136
Isotope Dilution	LCS %Recovery	LCS Qualifier	LCS Limits				
1,4-Dioxane-d8	53		15 - 150				
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits				
Nitrobenzene-d5 (Surr)	90		46 - 128				

# QC Sample Results

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

Job ID: 440-276734-1

## Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) (Continued)

**Lab Sample ID: LCSD 570-119885/3-A**  
**Matrix: Water**  
**Analysis Batch: 120393**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 119885**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	20.0	15.9		ug/L		79	57 - 136	15	20
	<b>LCSD</b>	<b>LCSD</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,4-Dioxane-d8	57		15 - 150						
	<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Nitrobenzene-d5 (Surr)	76		46 - 128						

**Lab Sample ID: 440-276774-D-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 120393**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 119885**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	18.3		ug/L		91	45 - 139		
	<b>MS</b>	<b>MS</b>									
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8	52		15 - 150								
	<b>MS</b>	<b>MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
Nitrobenzene-d5 (Surr)	88		46 - 128								

**Lab Sample ID: 440-276774-D-4-B MSD**  
**Matrix: Water**  
**Analysis Batch: 120393**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 119885**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	17.3		ug/L		86	45 - 139	6	17
	<b>MSD</b>	<b>MSD</b>									
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,4-Dioxane-d8	51		15 - 150								
	<b>MSD</b>	<b>MSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
Nitrobenzene-d5 (Surr)	83		46 - 128								

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 440-634875/6**  
**Matrix: Water**  
**Analysis Batch: 634875**

**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			12/30/20 12:47	1

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: LCS 440-634875/5**  
**Matrix: Water**  
**Analysis Batch: 634875**

**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	1.13		mg/L		100	90 - 110

**Lab Sample ID: 440-276734-4 MS**  
**Matrix: Water**  
**Analysis Batch: 634875**

**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
Nitrate as N	ND		1.13	1.09		mg/L		97	80 - 120

**Lab Sample ID: 440-276734-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 634875**

**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	Limit
Nitrate as N	ND		1.13	1.09		mg/L		97	80 - 120	0	20

**Lab Sample ID: MB 440-634876/6**  
**Matrix: Water**  
**Analysis Batch: 634876**

**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			12/30/20 12:47	1
Bromide	ND		0.50	0.25	mg/L			12/30/20 12:47	1
Fluoride	ND		0.50	0.25	mg/L			12/30/20 12:47	1
Sulfate	ND		0.50	0.25	mg/L			12/30/20 12:47	1

**Lab Sample ID: LCS 440-634876/5**  
**Matrix: Water**  
**Analysis Batch: 634876**

**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	4.93		mg/L		99	90 - 110
Bromide	5.00	4.97		mg/L		99	90 - 110
Fluoride	5.00	5.05		mg/L		101	90 - 110
Sulfate	5.00	5.11		mg/L		102	90 - 110

**Lab Sample ID: 440-276734-4 MS**  
**Matrix: Water**  
**Analysis Batch: 634876**

**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
Chloride	24	E	5.00	29.7	E 4	mg/L		119	80 - 120
Bromide	0.25	J	5.00	5.06		mg/L		101	80 - 120
Fluoride	3.1		5.00	8.19		mg/L		101	80 - 120
Sulfate	0.56		5.00	4.94		mg/L		88	80 - 120

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: 440-276734-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 634876**

**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
Chloride	24	E	5.00	29.9	E 4	mg/L		123	80 - 120	1	20
Bromide	0.25	J	5.00	5.08		mg/L		102	80 - 120	0	20
Fluoride	3.1		5.00	8.23		mg/L		102	80 - 120	1	20
Sulfate	0.56		5.00	5.02		mg/L		89	80 - 120	2	20

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-634918/1-A**  
**Matrix: Water**  
**Analysis Batch: 635020**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634918**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	0.025	mg/L		12/30/20 11:44	12/30/20 22:50	1
Calcium	ND		0.10	0.050	mg/L		12/30/20 11:44	12/30/20 22:50	1
Iron	0.0920	J	0.10	0.050	mg/L		12/30/20 11:44	12/30/20 22:50	1
Magnesium	ND		0.020	0.010	mg/L		12/30/20 11:44	12/30/20 22:50	1
Manganese	ND		0.020	0.015	mg/L		12/30/20 11:44	12/30/20 22:50	1
Potassium	ND		0.50	0.25	mg/L		12/30/20 11:44	12/30/20 22:50	1
Sodium	ND		0.50	0.26	mg/L		12/30/20 11:44	12/30/20 22:50	1

**Lab Sample ID: LCS 440-634918/2-A**  
**Matrix: Water**  
**Analysis Batch: 635020**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634918**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.925		mg/L		93	80 - 120
Calcium	5.00	4.90		mg/L		98	80 - 120
Iron	1.00	1.05		mg/L		105	80 - 120
Magnesium	5.00	4.79		mg/L		96	80 - 120
Manganese	1.00	0.945		mg/L		95	80 - 120
Potassium	10.0	9.68		mg/L		97	80 - 120
Sodium	10.0	9.35		mg/L		93	80 - 120

**Lab Sample ID: 440-276734-3 MS**  
**Matrix: Water**  
**Analysis Batch: 635020**

**Client Sample ID: DW-3**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634918**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.047	J	1.00	0.985		mg/L		94	75 - 125
Calcium	290		5.00	297	4	mg/L		152	75 - 125
Iron	0.57	B	1.00	1.49		mg/L		92	75 - 125
Magnesium	98		5.00	104	4	mg/L		120	75 - 125
Manganese	0.058		1.00	0.966		mg/L		91	75 - 125
Potassium	7.9		10.0	17.7		mg/L		98	75 - 125
Sodium	63		10.0	72.4	4	mg/L		91	75 - 125

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: 440-276734-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 635020**

**Client Sample ID: DW-3**  
**Prep Type: Total Recoverable**  
**Prep Batch: 634918**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Boron	0.047	J	1.00	0.998		mg/L		95	75 - 125	1	20
Calcium	290		5.00	299	4	mg/L		186	75 - 125	1	20
Iron	0.57	B	1.00	1.51		mg/L		93	75 - 125	1	20
Magnesium	98		5.00	104	4	mg/L		114	75 - 125	0	20
Manganese	0.058		1.00	0.977		mg/L		92	75 - 125	1	20
Potassium	7.9		10.0	17.8		mg/L		98	75 - 125	0	20
Sodium	63		10.0	72.9	4	mg/L		96	75 - 125	1	20

**Lab Sample ID: MB 440-635170/1-A**  
**Matrix: Water**  
**Analysis Batch: 635375**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 635170**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Boron	ND		0.050	0.025	mg/L		01/04/21 10:14	01/05/21 23:57		1
Calcium	ND		0.10	0.050	mg/L		01/04/21 10:14	01/05/21 23:57		1
Iron	ND		0.10	0.050	mg/L		01/04/21 10:14	01/05/21 23:57		1
Magnesium	ND		0.020	0.010	mg/L		01/04/21 10:14	01/05/21 23:57		1
Manganese	ND		0.020	0.015	mg/L		01/04/21 10:14	01/05/21 23:57		1
Potassium	ND		0.50	0.25	mg/L		01/04/21 10:14	01/05/21 23:57		1
Sodium	ND		0.50	0.26	mg/L		01/04/21 10:14	01/05/21 23:57		1

**Lab Sample ID: LCS 440-635170/2-A**  
**Matrix: Water**  
**Analysis Batch: 635375**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 635170**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
							Added
Boron	1.00	0.946		mg/L		95	80 - 120
Calcium	5.00	4.89		mg/L		98	80 - 120
Iron	1.00	0.968		mg/L		97	80 - 120
Magnesium	5.00	4.59		mg/L		92	80 - 120
Manganese	1.00	0.950		mg/L		95	80 - 120
Potassium	10.0	9.58		mg/L		96	80 - 120
Sodium	10.0	9.50		mg/L		95	80 - 120

**Lab Sample ID: 440-276828-B-2-D MS**  
**Matrix: Water**  
**Analysis Batch: 635375**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 635170**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Boron	0.11		1.00	1.07		mg/L		96	75 - 125
Calcium	100		5.00	105	4	mg/L		68	75 - 125
Iron	0.053	J	1.00	1.00		mg/L		95	75 - 125
Magnesium	27		5.00	31.7	4	mg/L		85	75 - 125
Manganese	ND		1.00	0.929		mg/L		93	75 - 125
Potassium	5.3		10.0	14.8		mg/L		96	75 - 125
Sodium	80		10.0	87.4	4	mg/L		78	75 - 125

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: 440-276828-B-2-E MSD**  
**Matrix: Water**  
**Analysis Batch: 635375**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 635170**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Boron	0.11		1.00	1.07		mg/L		96	75 - 125	0	20
Calcium	100		5.00	105	4	mg/L		66	75 - 125	0	20
Iron	0.053	J	1.00	0.996		mg/L		94	75 - 125	1	20
Magnesium	27		5.00	31.4	4	mg/L		78	75 - 125	1	20
Manganese	ND		1.00	0.925		mg/L		93	75 - 125	0	20
Potassium	5.3		10.0	14.7		mg/L		94	75 - 125	1	20
Sodium	80		10.0	87.2	4	mg/L		75	75 - 125	0	20

## Method: 410.4 - COD

**Lab Sample ID: MB 440-635445/4**  
**Matrix: Water**  
**Analysis Batch: 635445**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chemical Oxygen Demand	ND		20	10	mg/L			01/06/21 15:55	1

**Lab Sample ID: LCS 440-635445/5**  
**Matrix: Water**  
**Analysis Batch: 635445**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Chemical Oxygen Demand	200	216		mg/L		108	90 - 110

**Lab Sample ID: 440-276659-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 635445**

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Chemical Oxygen Demand	26		200	264		mg/L		119	70 - 120

**Lab Sample ID: 440-276659-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 635445**

**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		
Chemical Oxygen Demand	26		200	236		mg/L		105	70 - 120	11	15

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 440-634894/3**  
**Matrix: Water**  
**Analysis Batch: 634894**

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

Analyte	MB	MB	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/30/20 08:47	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/30/20 08:47	1

# QC Sample Results

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

Job ID: 440-276734-1

## Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 440-634894/2  
 Matrix: Water  
 Analysis Batch: 634894

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	86.4	85.4		mg/L		99	80 - 120

Lab Sample ID: 440-276755-D-1 DU  
 Matrix: Water  
 Analysis Batch: 634894

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	79		79.1		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	79		79.1		mg/L		0	20

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

Lab Sample ID: MB 440-635000/1  
 Matrix: Water  
 Analysis Batch: 635000

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			12/31/20 06:37	1

Lab Sample ID: LCS 440-635000/2  
 Matrix: Water  
 Analysis Batch: 635000

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	1030		mg/L		103	90 - 110

Lab Sample ID: 440-276734-1 DU  
 Matrix: Water  
 Analysis Batch: 635000

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	2200		2160		mg/L		0.09	5

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

Lab Sample ID: MB 440-635770/1  
 Matrix: Water  
 Analysis Batch: 635770

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			01/11/21 13:46	1

Lab Sample ID: 440-276628-G-2 DU  
 Matrix: Water  
 Analysis Batch: 635770

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	18		19.4		mg/L		10	20

# QC Sample Results

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

Job ID: 440-276734-1

## Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-634870/2-A  
Matrix: Water  
Analysis Batch: 634895

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 634870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.50	0.10	mg/L		12/30/20 07:00	12/30/20 09:30	1

Lab Sample ID: LCS 440-634870/1-A  
Matrix: Water  
Analysis Batch: 634895

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 634870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	2.50	2.20		mg/L		88	85 - 115

Lab Sample ID: 440-276761-A-1-A MS  
Matrix: Water  
Analysis Batch: 634895

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 634870

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.41	J	2.50	2.83		mg/L		97	75 - 125

Lab Sample ID: 440-276761-A-1-B MSD  
Matrix: Water  
Analysis Batch: 634895

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 634870

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.41	J	2.50	2.61		mg/L		88	75 - 125	8	15

Lab Sample ID: 440-276761-B-1-A DU  
Matrix: Water  
Analysis Batch: 634895

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 634870

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia (as N)	0.41	J	0.430	J	mg/L		4	15

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

Lab Sample ID: MB 440-635198/3  
Matrix: Water  
Analysis Batch: 635198

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			01/04/21 12:58	1

Lab Sample ID: LCS 440-635198/4  
Matrix: Water  
Analysis Batch: 635198

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Sulfide	0.499	0.410		mg/L		82	80 - 120



# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: 440-276755-R-1 MS**  
**Matrix: Water**  
**Analysis Batch: 635198**

**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	0.499	0.273	F1	mg/L		55	70 - 130

**Lab Sample ID: 440-276755-R-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 635198**

**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	0.499	0.249	F1	mg/L		50	70 - 130	9	30

## Method: SM 5310C - TOC

**Lab Sample ID: MB 440-635367/8**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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			01/05/21 05:46	1

**Lab Sample ID: LCS 440-635367/7**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	5.00	4.96		mg/L		99	85 - 115

**Lab Sample ID: MRL 440-635367/4**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	0.0897	J	mg/L		90	50 - 150

**Lab Sample ID: 440-276205-D-3 MS ^2**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	1.5		10.0	12.4		mg/L		109	85 - 115

**Lab Sample ID: 440-276205-D-3 MSD ^2**  
**Matrix: Water**  
**Analysis Batch: 635367**

**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	1.5		10.0	12.0		mg/L		105	85 - 115	3	20

# QC Sample Results

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

Job ID: 440-276734-1

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

**Lab Sample ID: MB 440-635469/8**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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			01/06/21 06:06	1

**Lab Sample ID: LCS 440-635469/7**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	5.00	4.93		mg/L		99	85 - 115

**Lab Sample ID: MRL 440-635469/6**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	0.0529	J	mg/L		53	50 - 150

**Lab Sample ID: 440-276203-D-4 MS ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.6		mg/L		109	85 - 115

**Lab Sample ID: 440-276203-D-4 MSD ^2**  
**Matrix: Water**  
**Analysis Batch: 635469**

**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	1.7		10.0	12.3		mg/L		106	85 - 115	3	20

# QC Association Summary

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

Job ID: 440-276734-1

## GC/MS VOA

### Analysis Batch: 119667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	8260B	
440-276734-2	MW-5	Total/NA	Water	8260B	
440-276734-3	DW-3	Total/NA	Water	8260B	
440-276734-4	DW-5	Total/NA	Water	8260B	
440-276734-5	Field Blank	Total/NA	Water	8260B	
440-276734-6	Trip Blank	Total/NA	Water	8260B	
MB 570-119667/8	Method Blank	Total/NA	Water	8260B	
LCS 570-119667/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-119667/5	Lab Control Sample Dup	Total/NA	Water	8260B	

## GC/MS Semi VOA

### Prep Batch: 119885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	3510C	
440-276734-2	MW-5	Total/NA	Water	3510C	
440-276734-3	DW-3	Total/NA	Water	3510C	
440-276734-4	DW-5	Total/NA	Water	3510C	
MB 570-119885/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-119885/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-119885/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
440-276774-D-4-A MS	Matrix Spike	Total/NA	Water	3510C	
440-276774-D-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	

### Analysis Batch: 120393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	8270C SIM ID	119885
440-276734-2	MW-5	Total/NA	Water	8270C SIM ID	119885
MB 570-119885/1-A	Method Blank	Total/NA	Water	8270C SIM ID	119885
LCS 570-119885/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	119885
LCSD 570-119885/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	119885
440-276774-D-4-A MS	Matrix Spike	Total/NA	Water	8270C SIM ID	119885
440-276774-D-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C SIM ID	119885

### Analysis Batch: 121107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-3	DW-3	Total/NA	Water	8270C SIM ID	119885
440-276734-4	DW-5	Total/NA	Water	8270C SIM ID	119885

## HPLC/IC

### Analysis Batch: 634875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	300.0	
440-276734-2	MW-5	Total/NA	Water	300.0	
440-276734-3	DW-3	Total/NA	Water	300.0	
440-276734-4	DW-5	Total/NA	Water	300.0	
MB 440-634875/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634875/5	Lab Control Sample	Total/NA	Water	300.0	
440-276734-4 MS	DW-5	Total/NA	Water	300.0	
440-276734-4 MSD	DW-5	Total/NA	Water	300.0	

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# QC Association Summary

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

Job ID: 440-276734-1

## HPLC/IC

### Analysis Batch: 634876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	300.0	
440-276734-1	MW-1	Total/NA	Water	300.0	
440-276734-2	MW-5	Total/NA	Water	300.0	
440-276734-2	MW-5	Total/NA	Water	300.0	
440-276734-3	DW-3	Total/NA	Water	300.0	
440-276734-3	DW-3	Total/NA	Water	300.0	
440-276734-4	DW-5	Total/NA	Water	300.0	
440-276734-4 - DL	DW-5	Total/NA	Water	300.0	
MB 440-634876/6	Method Blank	Total/NA	Water	300.0	
LCS 440-634876/5	Lab Control Sample	Total/NA	Water	300.0	
440-276734-4 MS	DW-5	Total/NA	Water	300.0	
440-276734-4 MSD	DW-5	Total/NA	Water	300.0	

## Metals

### Prep Batch: 634918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total Recoverable	Water	3005A	
440-276734-2	MW-5	Total Recoverable	Water	3005A	
440-276734-3	DW-3	Total Recoverable	Water	3005A	
MB 440-634918/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-634918/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276734-3 MS	DW-3	Total Recoverable	Water	3005A	
440-276734-3 MSD	DW-3	Total Recoverable	Water	3005A	

### Analysis Batch: 635020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total Recoverable	Water	6010B	634918
440-276734-2	MW-5	Total Recoverable	Water	6010B	634918
440-276734-3	DW-3	Total Recoverable	Water	6010B	634918
MB 440-634918/1-A	Method Blank	Total Recoverable	Water	6010B	634918
LCS 440-634918/2-A	Lab Control Sample	Total Recoverable	Water	6010B	634918
440-276734-3 MS	DW-3	Total Recoverable	Water	6010B	634918
440-276734-3 MSD	DW-3	Total Recoverable	Water	6010B	634918

### Prep Batch: 635170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-4	DW-5	Total Recoverable	Water	3005A	
MB 440-635170/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-635170/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-276828-B-2-D MS	Matrix Spike	Total Recoverable	Water	3005A	
440-276828-B-2-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### Analysis Batch: 635375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-635170/1-A	Method Blank	Total Recoverable	Water	6010B	635170
LCS 440-635170/2-A	Lab Control Sample	Total Recoverable	Water	6010B	635170
440-276828-B-2-D MS	Matrix Spike	Total Recoverable	Water	6010B	635170
440-276828-B-2-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	635170

# QC Association Summary

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

Job ID: 440-276734-1

## Metals

### Analysis Batch: 635418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-4	DW-5	Total Recoverable	Water	6010B	635170

## General Chemistry

### Prep Batch: 634870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 4500 NH3 B	
440-276734-2	MW-5	Total/NA	Water	SM 4500 NH3 B	
440-276734-3	DW-3	Total/NA	Water	SM 4500 NH3 B	
440-276734-4	DW-5	Total/NA	Water	SM 4500 NH3 B	
MB 440-634870/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-634870/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-276761-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-276761-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-276761-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

### Analysis Batch: 634894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 2320B	
440-276734-2	MW-5	Total/NA	Water	SM 2320B	
440-276734-3	DW-3	Total/NA	Water	SM 2320B	
440-276734-4	DW-5	Total/NA	Water	SM 2320B	
MB 440-634894/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-634894/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-276755-D-1 DU	Duplicate	Total/NA	Water	SM 2320B	

### Analysis Batch: 634895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 4500 NH3 D	634870
440-276734-2	MW-5	Total/NA	Water	SM 4500 NH3 D	634870
440-276734-3	DW-3	Total/NA	Water	SM 4500 NH3 D	634870
440-276734-4	DW-5	Total/NA	Water	SM 4500 NH3 D	634870
MB 440-634870/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	634870
LCS 440-634870/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	634870
440-276761-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	634870
440-276761-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	634870
440-276761-B-1-A DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	634870

### Analysis Batch: 635000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 2540C	
440-276734-2	MW-5	Total/NA	Water	SM 2540C	
440-276734-3	DW-3	Total/NA	Water	SM 2540C	
440-276734-4	DW-5	Total/NA	Water	SM 2540C	
MB 440-635000/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-635000/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-276734-1 DU	MW-1	Total/NA	Water	SM 2540C	

### Analysis Batch: 635198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 4500 S2 D	

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# QC Association Summary

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

Job ID: 440-276734-1

## General Chemistry (Continued)

### Analysis Batch: 635198 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-2	MW-5	Total/NA	Water	SM 4500 S2 D	
440-276734-3	DW-3	Total/NA	Water	SM 4500 S2 D	
440-276734-4	DW-5	Total/NA	Water	SM 4500 S2 D	
MB 440-635198/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-635198/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-276755-R-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
440-276755-R-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 635367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 5310C	
440-276734-2	MW-5	Total/NA	Water	SM 5310C	
MB 440-635367/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635367/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635367/4	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276205-D-3 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276205-D-3 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 635445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	410.4	
440-276734-2	MW-5	Total/NA	Water	410.4	
440-276734-3	DW-3	Total/NA	Water	410.4	
440-276734-4	DW-5	Total/NA	Water	410.4	
MB 440-635445/4	Method Blank	Total/NA	Water	410.4	
LCS 440-635445/5	Lab Control Sample	Total/NA	Water	410.4	
440-276659-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-276659-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

### Analysis Batch: 635469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-3	DW-3	Total/NA	Water	SM 5310C	
440-276734-4	DW-5	Total/NA	Water	SM 5310C	
MB 440-635469/8	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-635469/7	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-635469/6	Lab Control Sample	Total/NA	Water	SM 5310C	
440-276203-D-4 MS ^2	Matrix Spike	Total/NA	Water	SM 5310C	
440-276203-D-4 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 635770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-276734-1	MW-1	Total/NA	Water	SM 4500 CO2 C	
440-276734-2	MW-5	Total/NA	Water	SM 4500 CO2 C	
440-276734-3	DW-3	Total/NA	Water	SM 4500 CO2 C	
440-276734-4	DW-5	Total/NA	Water	SM 4500 CO2 C	
MB 440-635770/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-276628-G-2 DU	Duplicate	Total/NA	Water	SM 4500 CO2 C	

# Definitions/Glossary

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

Job ID: 440-276734-1

## Qualifiers

### 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.

### 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.
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 exceeds control 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.
$\alpha$	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

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# Definitions/Glossary

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

Job ID: 440-276734-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

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# Accreditation/Certification Summary

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

Job ID: 440-276734-1

## Laboratory: Eurofins Calscience Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-21
Arizona	State	AZ0671	10-14-21
California	Los Angeles County Sanitation Districts	10256	06-30-21
California	State	2706	06-30-21
Guam	State	20-004R	01-23-21
Hawaii	State	CA01531	01-29-21
Kansas	NELAP	E-10420	07-31-21
Nevada	State	CA015312021-5	07-31-21
Oregon	NELAP	4028 - 008	01-29-21
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-21

## Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-29-21
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

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





# Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276734-1

**Login Number: 276734**

**List Number: 1**

**Creator: Escalante, Maria I**

**List Source: Eurofins 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	

## Login Sample Receipt Checklist

Client: Geo-Logic Associates

Job Number: 440-276734-1

**Login Number: 276734**

**List Number: 2**

**Creator: Cortez Diaz, Antonio**

**List Source: Eurofins Calscience**

**List Creation: 12/30/20 09:05 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	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	1.8
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?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Isotope Dilution Summary

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

Job ID: 440-276734-1

**Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-150)
440-276734-1	MW-1	47
440-276734-2	MW-5	54
440-276734-3	DW-3	53
440-276734-4	DW-5	44
440-276774-D-4-A MS	Matrix Spike	52
440-276774-D-4-B MSD	Matrix Spike Duplicate	51
LCS 570-119885/2-A	Lab Control Sample	53
LCSD 570-119885/3-A	Lab Control Sample Dup	57
MB 570-119885/1-A	Method Blank	53

### Surrogate Legend

DXE = 1,4-Dioxane-d8

## **APPENDIX C**

### **MONTHLY VADOSE ZONE GAS MONITORING REPORTS**

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

AMONDO MARCINSE - TYLER BURT

TECHNICIAN: ARAND		TEMPERATURE: 65		BARO. PRESSURE: 29.91					
GEM SERIAL #: 6500485		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	7-23-20	1010	+32	0	3.6	17.1	79.3	2	
B-25	7-23-20	1015	+35	0	5.0	15.1	80.0	2	
C-40	7-23-20	1020	+32	0	4.0	15.8	80.2	3	
206									
A-10	7-23-20	1108	+12	0	11.8	9.7	78.5	2	
B-25	7-23-20	1110	-0.9	0	1.1	19.8	79.1	2	
C-40	7-23-20	1112	+11	0	21.1	4.1	74.8	3	
207									
A-10	7-23-20	1055	+05	0	10.1	10.0	79.9	2	
B-25	7-23-20	1057	+12	0	12.7	8.3	77.0	2	
C-40	7-23-20	1059	+12	0	19.5	5.3	75.2	3	
208									
A-9.1	7-23-20	1005	+11	0	.5	19.8	79.7	2	
B-25	7-23-20	1007	+12	0	9.0	12.2	78.8	2	
C-40	7-23-20	1009	+19	0	1.5	19.2	79.3	3	
210									
A-10	7-23-20	856	-0.01	0	.2	20.6	79.2	2	
B-25	7-23-20	858	-0.02	0	.2	20.6	79.2	2	
C-39	7-23-20	900	-0.02	0	.1	20.7	79.2	3	
242									
C-42	7-23-20	920	+03	0	4.2	14.4	81.4	3	
D-60	7-23-20	923	+05	0	7.4	6.2	86.4	4	
E-78	7-23-20	927	+05	0	7.2	8.9	83.9	4	
243									
A-11	7-23-20	820	+50	.7	14.1	.2	85.0	2	
B-20	7-23-20	825	-71	0	5.3	12.9	81.7	2	
C-33	7-23-20	829	+28	0	5.3	13.1	81.5	3	

SCS SIGNATURE

  
 AMONDO MARCINSE  
 TYLER BURT

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	7-23-20	950	+1.8	0	14.0	4.3	81.7	2	
B-21	7-23-20	952	+0.7	0	9.0	11.2	79.8	2	
C-36	7-23-20	954	-1.3	0	7.7	12.6	79.7	3	
245									
A-11	7-23-20	840	+3.4	0	15.1	7.4	79.4	2	
B-20	7-23-20	844	+2.7	.3	22.3	1.4	76.0	2	
C-35	7-23-20	848	+3.1	0	21.6	1.5	76.9	3	
D-50	7-23-20	854	+3.3	0	17.9	.6	81.5	4	
E-64	7-23-20	900	+3.3	0	6.8	9.7	83.5	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	7-23-20	746	+2.5	0	6.8	15.1	78.1	2	
B-20	7-23-20	751	+0.6	0	16.8	5.6	79.6	2	
C-33	7-23-20	755	-1.7	1.6	44.6	.2	53.6	3	
D-48	7-23-20	801	-3.7	2.7	47.9	0	49.5	4	
E-62	7-23-20	807	-6.1	0	23.5	.9	75.7	4	
239									
A-11	7-23-20	822	+0.7	0	6.7	17.0	76.3	2	
B-20	7-23-20	824	-0.7	0	.7	20.7	78.6	2	
C-35	7-23-20	826	+2.7	0	.2	20.9	78.9	3	
D-50	7-23-20	829	+3.2	0	.2	20.7	79.1	4	
E-64	7-23-20	833	+0.5	0	.1	20.7	79.2	4	
240									
A-11	7-23-20	753	-5.9	0	4.7	16.4	78.9	2	
B-20	7-23-20	755	+6.3	0	1.3	20.3	78.4	2	
C-33	7-23-20	757	-1.2	0	.2	21.0	78.8	3	
D-49	7-23-20	800	-0.4	0	.3	20.9	78.8	4	
E-61	7-23-20	804	-0.9	0	.2	20.9	78.9	4	

SCS SIGNATURE:

*[Signature]*  
 AMANDO MONTANO  
 TYLER BUNT

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>AMANDO MARTINEZ / TYLER</u>		TEMPERATURE: <u>64°f</u>		BARO. PRESSURE: <u>29.91"</u>					
SEM SERIAL #: <u>6502765</u>		WEATHER CONDITIONS: <u>CLEAR/SUNNY</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202R									
A	<u>7/23/20</u>	<u>9:47</u>	<u>+0.23</u>	<u>0.0</u>	<u>15.6</u>	<u>0.0</u>	<u>84.4</u>	<u>2</u>	
B	<u>7/23/20</u>	<u>9:50</u>	<u>-0.22</u>	<u>0.0</u>	<u>0.5</u>	<u>19.5</u>	<u>80.0</u>	<u>2</u>	
C	<u>7/23/20</u>	<u>9:55</u>	<u>-1.73</u>	<u>0.0</u>	<u>0.0</u>	<u>20.6</u>	<u>79.4</u>	<u>3</u>	
								<u>3</u>	

SCS SIGNATURE: AMANDO MARTINEZ

LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: A Rano		TEMPERATURE: 75		BARO. PRESSURE: 28.24					
GEM SERIAL #: GS004PS		WEATHER CONDITIONS: SUNNY							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	7-21-20	753	-0.67	0	.9	20.4	78.7	2	
B-29	7-21-20	755	-0.05	0	.4	20.8	78.8	2	
C-45	7-21-20	757	-0.44	0	.2	20.9	78.9	3	
D-61	7-21-20	800	-0.68	0	.2	20.8	79.0	4	
E-77	7-21-20	804	-0.64	0	.2	20.7	79.1	4	
214									
A-13	7-21-20	825	-0.50	0	5.1	14.2	80.7	2	
B-30	7-21-20	827	-0.80	0	.5	20.4	79.1	2	
C-48	7-21-20	829	-0.29	0	1.2	19.0	79.8	3	
215									
A-13	7-21-20	840	+0.07	0	6.9	5.6	87.5	2	
B-30	7-21-20	842	-0.02	0	1.0	19.1	79.9	2	
C-47	7-21-20	844	+0.07	0	.2	20.5	79.3	3	
D-64	7-21-20	847	+0.01	0	.3	20.2	79.5	4	
E-81	7-21-20	851	-0.08	0	5.1	10.3	84.6	4	
216									
A-14	7-21-20	905	+0.03	0	6.4	6.5	87.1	2	
B-43	7-21-20	907	+0.05	0	.8	20.1	79.1	2	
C-62	7-21-20	909	+0.04	0	.2	20.8	79.0	3	
D-86	7-21-20	912	+0.02	0	.4	20.3	79.3	4	
E-110	7-21-20	916	+0.10	0	4.9	11.0	84.2	4	
217									
A-13	7-21-20	942	-0.23	.1	3.9	16.5	79.5	2	
B-30	7-21-20	944	+0.06	0	3.0	17.8	79.2	2	
218R									
A-11	7-23-20	1129	+0.14	0	2.1	2.0	75.9	2	
B-26.5	7-23-20	1131	+0.11	0	4.2	8.1	77.7	2	
B-30	7-23-20	1133	+0.79	0	52.6	6.6	40.8	2	
219									
A-13	7-21-20	1025	+0.12	0	.5	19.6	79.9	2	
B-64	7-21-20	1028	+0.10	0	.3	19.2	80.5	2	
C-115	7-21-20	1030	+0.15	0	1.7	16.1	82.2	3	
D-166	7-21-20	1033	+0.20	0	.5	18.4	81.1	4	
E-217	7-21-20	1037	+0.12	0	3.1	14.1	82.8	4	

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	7/21/20	11:00	0.54	0.0	1.3	18.8	79.9	2	
B-72	7/21/20	11:03	-2.50	0.0	0.7	19.5	79.8	2	
C-1131	7/21/20	11:06	-6.5	0.0	1.8	18.4	79.9	3	
D-190	7/21/20	11:10	-7.28	0.0	0.0	20.2	79.8	4	
E-244	7/21/20	11:16	-7.58	0.0	0.0	20.2	79.8	4	
226									
A-13	7/21/20	1:46	0.19	0.1	0.0	20.1	79.8	2	
B-64	7/21/20	1:49	-9.08	0.1	0.1	20.2	79.7	2	
C-114	7/21/20	1:52	-8.92	0.0	0.1	20.1	79.8	3	
D-164	7/21/20	1:56	-9.33	0.0	0.0	20.0	80.0	4	
E-208	7/21/20	2:01	-9.77	0.0	0.1	19.7	80.1	4	
227									
A-13	7/21/20	2:29	0.52	0.1	1.3	14.8	83.8	2	
B-48.7	7/21/20	2:32	1.48	0.4	6.2	0.1	93.3	2	
C-84.4	7/21/20	2:35	0.89	0.1	3.8	4.3	91.9	3	
D-114	7/21/20	2:39	1.13	0.1	2.8	1.4	95.7	4	
E-115.7	7/21/20	2:44	1.04	0.0	3.0	2.3	94.7	4	
228									
A-13	7/21/20	3:10	0.60	0.1	1.1	19.3	79.5	2	
B-63	7/21/20	3:13	1.41	0.1	1.4	16.9	81.6	2	
C-113	7/21/20	3:15	1.15	0.4	6.1	0.0	93.5	3	
D-163	7/21/20	3:18	1.18	0.0	3.0	7.3	89.7	4	
E-213	7/21/20	3:23	1.24	0.0	4.0	1.5	94.5	4	
229									
A-13	7/21/20	10:57	0.09	0.0	1.3	15.6	83.1	2	
B-48.7	7/21/20	10:59	-0.08	0.0	0.03	19.1	80.6	2	
C-84.4	7/21/20	11:01	-3.56	0.0	0.7	17.4	81.9	3	
D-114	7/21/20	11:04	-12.90	0.0	1.6	16.5	81.9	4	
E-155.7	7/21/20	11:08	-15.85	0.0	0.2	19.8	80.0	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
220									
A-14	7/21/20	7:49	0.22	0.0	1.8	19.5	78.7	2	
B-40	7/21/20	7:53	0.19	0.0	0.4	20.8	78.7	2	
C-87	7/21/20	7:57	0.15	0.0	0.6	20.9	78.5	3	
D-124	7/21/20	8:02	0.24	0.0	0.1	20.9	79.0	4	
E-158	7/21/20	8:07	0.21	0.0	0.1	20.9	79.0	4	
220B									
A-14	7/21/20	8:24	0.33	0.0	3.1	17.1	79.8	2	
B-38	7/21/20	8:27	0.22	0.0	8.8	3.6	87.5	2	
C-62	7/21/20	8:30	0.30	0.0	6.3	9.6	84.1	3	
D-86	7/21/20	8:34	0.21	0.0	6.8	9.0	84.2	4	
E-110	7/21/20	8:39	0.47	0.0	4.6	13.5	81.9	4	
221									
A-13	7/21/20	9:07	0.25	0.0	1.5	17.2	81.3	2	
B-56	7/21/20	9:11	0.16	0.0	6.8	3.5	89.7	2	
C-99	7/21/20	9:15	0.26	0.0	10.1	1.2	88.7	3	
D-142	7/21/20	9:19	0.37	0.0	0.1	19.6	80.3	4	
E-185	7/21/20	9:24	0.11	0.0	3.7	9.4	86.8	4	
222									
A-13	7/21/20	9:33	0.36	0.0	1.5	17.8	80.7	2	
B-54.8	7/21/20	9:36	0.42	0.0	0.1	19.5	80.4	2	
C-96.5	7/21/20	9:39	0.45	0.0	0.3	19.4	80.4	3	
D-138.3	7/21/20	9:44	0.47	0.0	2.3	17.0	80.8	4	
E-180	7/21/20	9:50	0.92	0.0	5.2	4.9	89.9	4	
223									
A-13	7/21/20	10:05	0.54	0.0	6.7	10.7	82.6	2	
B-37.5	7/21/20	10:08	0.81	0.0	8.0	9.5	82.6	2	
C-62	7/21/20	10:11	0.56	0.0	6.2	9.6	84.1	3	
D-86.5	7/21/20	10:15	0.57	0.0	2.1	17.3	80.3	4	
E-111	7/21/20	10:20	0.43	0.0	3.1	16.3	80.6	4	
224									
A-13	7/21/20	10:33	0.53	0.0	0.8	19.7	79.5	2	
B-67.5	7/21/20	10:37	0.39	0.0	0.1	20.5	79.4	2	
C-122	7/21/20	10:40	0.57	0.0	0.0	20.6	79.4	3	
D-177.5	7/21/20	10:44	12.27	0.0	0.0	20.5	79.5	4	
E-232	7/21/20	10:48	8.25	0.0	0.0	20.5	79.5	4	

O.a

SCS SINGATURE:


LEA SINGATURE: \_\_\_\_\_



SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>A. Romo</u>		TEMPERATURE: <u>90</u>		BARO. PRESSURE: <u>29.10</u>					
SEM 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	8-20-20	1004	+1.58	0	3.1	17.7	79.2	2	
B-25	8-20-20	1006	+1.56	0	4.5	15.5	80.0	2	
C-40	8-20-20	1152	+1.58	0	5.9	13.9	80.1	3	
207									
A-10	8-20-20	1035	+1.45	0	1.0	17.4	81.6	2	
B-25	8-20-20	1037	+1.02	0	.2	17.9	81.9	2	
C-40	8-20-20	1040	-4.76	0	1.1	15.1	83.8	3	
206									
A-10	8-20-20	1019	+1.35	0	12.4	7.9	79.7	2	
B-25	8-20-20	1021	+1.33	0	13.1	7.6	79.3	2	
C-40	8-20-20	1023	+1.35	0	19.7	4.6	75.7	3	
208									
A-9.1	8-20-20	1002	+1.32	0	7.7	13.2	79.1	2	
B-25	8-20-20	1004	+1.31	0	7.0	13.6	79.4	2	
C-40	8-20-20	1006	+1.38	0	.6	18.4	81.0	3	
210									
A-10	8-20-20	854	+1.19	0	.2	19.6	80.2	2	
B-25	8-20-20	856	+1.20	0	.1	19.7	80.2	2	
C-39	8-20-20	858	+1.12	0	0	19.9	80.1	3	
242									
C-42	8-20-20	908	+1.14	0	3.4	15.1	81.5	3	
D-60	8-20-20	911	+1.61	0	7.0	6.4	86.6	4	
E-78	8-20-20	915	+1.13	0	5.8	11.2	83.0	4	
243									
A-11	8-20-20	830	+1.45	.1	12.2	1.1	86.6	2	
B-20	8-20-20	833	+1.49	0	6.2	7.6	86.3	2	
C-33	8-20-20	837	+1.50	0	6.5	7.3	86.1	3	

SCS SIGNATURE

  
 AMANDA MARTINEZ  
 Tylon But

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	8-20-20	9:42	+1.14	0	16.5	1.7	81.8	2	
B-21	8-20-20	9:45	+1.56	0	8.6	11.1	80.3	2	
C-36	8-20-20	9:47	+2.26	0	9.1	11.3	79.6	3	
245									
A-11	8/20/20	8:48	+0.46	0	16.6	3.2	80.2	2	
B-20	8/20/20	8:51	+0.19	0.3	23.3	0.5	75.8	2	
C-35	8/20/20	8:56	-0.12	0	22.5	0.1	77.4	3	
D-50	8/20/20	9:02	+0.15	0	17.4	0.4	82.1	4	
E-64	8/20/20	9:07	-0.78	0	5.3	11.7	83.0	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	8/20/20	7:47	+0.27	0	6.2	14.8	79.0	2	
B-20	8/20/20	7:51	-0.31	0	23.4	0.4	76.9	2	
C-33	8/20/20	7:54	-0.42	1.6	44.6	0	53.8	3	
D-48	8/20/20	8:07	+0.42	2.4	46.8	0	50.9	4	
E-62	8/20/20	8:12	-1.99	0	24.5	1.6	73.9	4	
239									
A-11	8-20-20	8:28	+1.12	0	9.5	15.0	75.5	2	
B-20	8-20-20	8:30	+1.16	0	1	20.0	79.9	2	
C-35	8-20-20	8:32	+1.21	0	0	20.1	79.9	3	
D-50	8-20-20	8:35	+1.12	0	1	19.9	80.0	4	
E-64	8-20-20	8:39	+1.22	0	1	19.8	80.1	4	
240									
A-11	8-20-20	7:52	+1.15	0	9.6	11.8	78.4	2	
B-20	8-20-20	7:54	+1.08	0	1.1	19.4	79.5	2	
C-33	8-20-20	7:56	+1.02	0	1	20.2	79.7	3	
D-49	8-20-20	7:59	+1.02	0	2	20.0	79.8	4	
E-61	8-20-20	8:03	+1.18	0	1	20.0	79.9	4	

SCS SIGNATURE: *ALBERT ROMO*  
*AMANDA MARTINEZ*  
*Tyler Gust*

LEA SIGNATURE: \_\_\_\_\_





SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>A. DAMO</u>		TEMPERATURE: <u>106</u>		BARO. PRESSURE: <u>28.21</u>					
SERIAL #: <u>G500485</u>				WEATHER CONDITIONS: <u>SUNNY</u>					
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	8-18-20	739	-0.20	0	1.6	19.3	79.1	2	
B-29	8-18-20	741	-0.51	0	.1	20.6	79.3	2	
C-45	8-18-20	743	-0.81	0	.1	20.5	79.4	3	
D-61	8-18-20	747	-0.87	0	.1	20.3	79.6	4	
E-77	8-18-20	751	-4.72	0	.1	20.2	79.7	4	
214									
A-13	8-18-20	802	-0.03	0	5.1	15.1	79.8	2	
B-30	8-18-20	804	-9.70	0	.1	20.1	79.8	2	
C-48	8-18-20	806	-16.77	0	1.7	18.5	79.8	3	
215									
A-13	8-18-20	826	+0.09	0	6.3	8.0	85.7	2	
B-30	8-18-20	828	+0.11	0	.1	20.1	79.8	2	
C-47	8-18-20	830	+0.12	0	0	20.3	79.7	3	
D-64	8-18-20	834	+0.06	0	.2	20.0	79.8	4	
E-81	8-18-20	838	+0.07	0	5.0	10.8	84.2	4	
216									
A-14	8-18-20	853	+0.09	0	0	20.2	79.8	2	
B-43	8-18-20	855	+0.13	0	0	20.3	79.7	2	
C-62	8-18-20	857	+0.08	0	0	20.4	79.6	3	
D-86	8-18-20	900	+0.14	0	0	20.4	79.6	4	
E-110	8-18-20	906	+0.19	0	0	20.4	79.6	4	
217									
A-13	8-18-20	921	+0.23	0	4.5	16.0	79.5	2	
B-30	8-18-20	923	+0.22	0	3.0	17.7	79.3	2	
218R									
A-11	8-18-20	934	+0.13	0	24.0	1.8	74.2	2	
B-26.5	8-18-20	936	+0.19	0	14.2	8.6	77.2	2	
B-30	8-18-20	938	+0.19	0	55.6	6.4	38.0	2	
219									
A-13	8-18-20	1016	+0.14	0	1.6	18.2	80.2	2	
B-64	8-18-20	1018	+0.26	0	4.0	12.1	83.9	2	
C-115	8-18-20	1020	+0.29	0	1.0	18.2	80.8	3	
D-166	8-18-20	1023	+0.22	0	.4	19.2	80.4	4	
E-217	8-18-20	1027	+0.26	0	3.5	14.4	82.1	4	

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
220									
A-14	8/18/20	7:51	0.26	0.1	0.1	20.0	79.9	2	
B-40	8/18/20	7:53	0.25	0.0	0.1	20.2	79.7	2	
C-87	8/18/20	7:55	0.26	0.0	0.0	20.4	79.6	3	
D-124	8/18/20	7:59	0.30	0.0	0.0	20.5	79.5	4	
E-158	8/18/20	8:04	0.33	0.0	0.0	20.5	79.5	4	
220B									
A-14	8/18/20	8:23	0.31	0.0	0.0	20.9	79.0	2	
B-38	8/18/20	8:25	0.32	0.0	0.0	20.9	79.1	2	
C-62	8/18/20	8:28	0.34	0.0	0.0	20.9	79.1	3	
D-86	8/18/20	8:32	0.37	0.0	0.0	20.9	79.1	4	
E-110	8/18/20	8:37	0.37	0.0	0.0	20.8	79.1	4	
221									
A-13	8/18/20	9:10	0.30	0.0	0.0	20.9	79.1	2	
B-56	8/18/20	9:15	0.34	0.0	0.0	20.8	79.1	2	
C-99	8/18/20	9:17	0.36	0.0	0.0	20.7	79.3	3	
D-142	8/18/20	9:20	0.36	0.0	0.0	20.5	79.4	4	
E-185	8/18/20	9:24	0.43	0.0	0.0	20.3	79.6	4	
222									
A-13	8/18/20	9:41	0.40	0.0	0.0	20.3	79.7	2	
B-54.8	8/18/20	9:43	0.41	0.0	0.0	20.3	79.7	2	
C-96.5	8/18/20	9:45	0.41	0.0	0.0	20.3	79.7	3	
D-138.3	8/18/20	9:48	0.45	0.0	0.0	20.2	79.8	4	
E-180	8/18/20	9:53	0.50	0.0	0.0	20.0	80.0	4	
223									
A-13	8/18/20	10:23	0.42	0.0	0.0	20.8	79.2	2	
B-37.5	8/18/20	10:24	0.45	0.0	0.0	20.8	79.2	2	
C-62	8/18/20	10:26	0.47	0.0	0.0	20.7	79.3	3	
D-86.5	8/18/20	10:29	0.49	0.0	0.0	20.4	79.5	4	
E-111	8/18/20	10:34	0.56	0.0	0.0	20.2	79.8	4	
224									
A-13	8/18/20	10:55	0.52	0.0	0.0	20.4	79.6	2	
B-67.5	8/18/20	10:57	0.54	0.0	0.0	20.4	79.6	2	
C-122	8/18/20	10:59	0.56	0.0	0.0	20.4	79.6	3	
D-177.5	8/18/20	11:02	0.59	0.0	0.0	20.2	79.8	4	
E-232	8/18/20	11:07	0.58	0.0	0.0	20.0	80.0	4	

SCS SINGNATURE:



LEA SIGNATURE:

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SUNSHINE CANYON - CITY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
225	8-18-20								
A-13	8-18-20	10:54AM	-0.01	0.0	1.0	19.4	79.6	2	
B-72	8-18-20	10:59AM	-3.39	0.0	0.9	20.0	79.6	2	
C-1131	8-18-20	11:04AM	-8.20	0.0	1.2	19.1	79.7	3	
D-190	8-18-20	11:10AM	-8.04	0.0	0.0	20.9	79.1	4	
E-244	8-18-20	11:17AM	-9.62	0.0	0.0	20.9	79.1	4	
226									
A-13	8-18-20	10:09AM	-0.02	0.0	0.0	20.4	79.6	2	
B-64	8-18-20	10:04AM	-10.08	0.0	0.0	20.4	79.6	2	
C-114	8-18-20	10:13AM	-10.63	0.0	0.0	20.4	79.6	3	
D-164	8-18-20	10:19AM	-10.83	0.0	0.0	20.5	79.5	4	
E-208	8-18-20	10:24AM	-11.74	0.0	0.1	20.3	79.7	4	
227									
A-13	8-18-20	8:50AM	-0.58	0.0	0.0	21.0	79.0	2	
B-48.7	8-18-20	8:53AM	-1.02	0.0	0.3	20.4	79.4	2	
C-84.4	8-18-20	8:57AM	-0.75	0.0	0.6	19.7	79.6	3	
D-114	8-18-20	9:03AM	-0.98	0.0	0.4	20.0	79.7	4	
E-115.7	8-18-20	9:50AM	-0.41	0.0	0.2	20.1	79.7	4	
228									
A-13	8-18-20	9:19AM	-0.04	0.0	0.0	20.4	79.6	2	
B-63	8-18-20	9:23AM	-0.40	0.0	2.3	14.1	83.7	2	
C-113	8-18-20	9:27AM	-0.73	0.0	0.1	20.3	79.6	3	
D-163	8-18-20	9:32AM	-1.23	0.0	0.9	19.8	79.7	4	
E-213	8-18-20	9:38AM	-0.94	0.0	1.3	17.4	81.3	4	
229									
A-13	8-18-20	7:50AM	-1.13	0.0	2.4	16.4	81.2	2	
B-48.7	8-18-20	7:55AM	-0.49	0.0	0.2	20.1	79.7	2	
C-84.4	8-18-20	8:00AM	-5.49	0.0	1.2	18.2	80.6	3	
D-114	8-18-20	8:06AM	-15.50	0.0	1.8	17.0	81.2	4	
E-155.7	8-18-20	10:36AM	-23.13	0.0	0.1	20.2	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: \_\_\_\_\_



SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: **A BOND** TEMPERATURE: **83** BARO. PRESSURE: **28.07/29.94**  
 GEM SERIAL: **6500785** WEATHER CONDITIONS: **SUNNY**

PROBE NUMBER	DATE	TIME	PRESSURE (psi)	% 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	9-24-20	1023	+5.0	0	2.8	17.2	79.6	2	
B-25	9-24-20	1037	+6.1	0	4.6	15.2	80.3	2	
C-40	9-24-20	1041	+5.9	0	4.0	15.4	80.6	3	
206									
A-10	9-24-20	1030	+3.1	0	10.7	10.8	78.5	2	
B-25	9-24-20	1032	+3.3	0	6.0	14.6	79.4	2	
C-40	9-24-20	1034	+3.4	0	9.2	12.9	77.9	3	
207									
A-10	9-24-20	1046	-1.5	0	.5	19.4	80.1	2	
B-25	9-24-20	1048	-1.8	0	0	20.2	79.8	2	
C-40	9-24-20	1050	+0.6	0	0	20.3	79.7	3	
208									
A-9.1	9-24-20	1006	+2.0	0	.1	19.4	80.5	2	
B-25	9-24-20	1008	+2.6	0	5.0	15.4	79.6	2	
C-40	9-24-20	1010	+2.6	0	.2	19.1	80.7	3	
210									
A-10	9-24-20	850	+1.2	0	.1	20.3	79.6	2	
B-25	9-24-20	852	+1.2	0	0	20.5	79.5	2	
C-39	9-24-20	854	+1.3	0	0	20.6	79.4	3	
242									
C-42	9-24-20	915	+1.4	0	3.2	15.9	80.9	3	
D-60	9-24-20	918	+1.3	0	6.5	8.2	85.3	4	
E-78	9-24-20	922	+2.2	0	6.1	11.4	82.5	4	
243									
A-11	9-24-20	956	+4.0	.2	13.0	.2	86.5	2	
B-20	9-24-20	959	+5.7	0	4.6	8.9	86.5	2	
C-33	9-24-20	1003	+4.3	0	4.4	8.6	87.0	3	

SCS SIGNATURE   
 AMANDO MONTANO

LEA SIGNATURE \_\_\_\_\_



SUNSHINE CANYON - COUNTY PERIMETER PROBE MONITORING DATA

PROBE NUMBER	DATE	TIME	PRESSURE (PSI)	% VOL CH4	% VOL CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
244									
A-11	9-24-20	944	+21	0	8.5	11.0	80.5	2	
B-21	9-24-20	946	+16	0	5.8	14.4	79.8	2	
C-36	9-24-20	948	+22	0	2.1	18.3	79.6	3	
245									
A-11	9-24-20	825	+32	0	16.7	3.8	79.6	2	
B-20	9-24-20	829	+40	.3	22.3	1.8	75.6	2	
C-35	9-24-20	834	+35	0	20.1	2.5	77.4	3	
D-50	9-24-20	839	+42	0	17.0	1.5	81.5	4	
E-64	9-24-20	844	+41	0	1.0	18.8	80.2	4	
246									
A-9								2	REMOVED DUE TO CONSTRUCTION
B-16								2	REMOVED DUE TO CONSTRUCTION
205R									
A-11	9-24-20	749	+21	0	5.9	15.1	79.0	2	
B-20	9-24-20	752	+24	0	20.6	2.7	76.7	2	
C-33	9-24-20	757	-0.9	1.5	43.1	1.0	54.4	3	
D-48	9-24-20	803	+0.3	2.1	46.8	0	51.1	4	
E-62	9-24-20	808	-2.7	0	23.8	.6	75.6	4	
239									
A-11	9-24-20	820	+0.5	0	9.2	16.2	74.6	2	
B-20	9-24-20	822	+0.7	0	.1	20.6	79.3	2	
C-35	9-24-20	824	+0.8	0	.1	20.7	79.2	3	
D-50	9-24-20	827	+1.4	0	.1	20.6	79.3	4	
E-64	9-24-20	831	+0.8	0	.1	20.5	79.4	4	
240									
A-11	9-24-20	743	+0.1	0	4.3	17.2	78.5	2	
B-20	9-24-20	745	+0.6	0	.3	20.6	79.1	2	
C-33	9-24-20	747	+0.9	0	.1	20.8	79.1	3	
D-49	9-24-20	750	+0.5	0	.1	20.8	79.1	4	
E-61	9-24-20	754	+0.6	0	.1	20.7	79.2	4	

SCS SIGNATURE

  
 AMANDA MARTINEZ

LEA SIGNATURE: \_\_\_\_\_

SUNSHINE CANYON COUNTY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <b>AMANDO MARTINEZ</b>		TEMPERATURE: <b>79°F</b>		BARO. PRESSURE: <b>29.94"</b>					
SERIAL #: <b>G502765</b>		WEATHER CONDITIONS: <b>Sunny</b>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
202R									
A	9/24/20	9:32	+0.42	0	14.7	0.1	85.2	2	
B	9/24/20	9:35	-0.61	0	0.4	19.3	80.2	2	
C	9/24/20	9:39	+0.97	0	0	20.9	79.1	3	
								3	

SCS SIGNATURE: AMANDO MARTINEZ

LEA SIGNATURE: \_\_\_\_\_



SUNSHINE CANYON CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: <u>A. Rando</u>		TEMPERATURE: <u>FI</u>		BARO. PRESSURE: <u>29.89</u>					
GEM SERIAL: <u>6500485</u>		WEATHER CONDITIONS: <u>SUNNY</u>							
PROBE NUMBER	DATE	TIME	PRESSURE (+/-)	% CH4	% CO2	% O2	% BAL	PURGE TIME (MIN)	COMMENTS
213									
A-13	9-22-20	750	+0.05	0	2.0	17.8	80.2	2	
B-29	9-22-20	752	+0.01	0	.1	19.4	80.5	2	
C-45	9-22-20	756	-1.11	0	.1	19.5	80.4	3	
D-61	9-22-20	805	+0.01	0	.1	19.3	80.6	4	
E-77	9-22-20	822	-3.93	0	.1	19.4	80.5	4	
214									
A-13	9-22-20	830	+1.10	0	8.0	17.4	74.6	2	
B-30	9-22-20	832	-13.20	0	.1	19.3	80.6	2	
C-48	9-22-20	834	-16.21	0	1.6	17.9	80.5	3	
215									
A-13	9-22-20	851	+0.06	0	6.3	17.2	76.5	2	
B-30	9-22-20	853	+0.06	0	.4	18.6	81.0	2	
C-47	9-22-20	855	+0.07	0	.1	19.3	80.6	3	
D-64	9-22-20	858	+1.10	0	.4	18.9	80.7	4	
E-81	9-22-20	902	+0.09	0	5.1	15.4	79.5	4	
216									
A-14	9-22-20	913	+1.10	0	.1	19.3	80.6	2	
B-43	9-22-20	915	+0.05	0	0	19.4	80.6	2	
C-62	9-22-20	917	+1.12	0	0	19.4	80.6	3	
D-86	9-22-20	920	-1.14	0	0	19.4	80.6	4	
E-110	9-22-20	924	-8.13	0	.1	19.2	80.7	4	
217									
A-13	9-22-20	945	+1.15	0	4.3	15.5	80.2	2	
B-30	9-22-20	947	+2.20	0	2.7	17.0	80.3	2	
218R									
A-11	9-22-20	959	+1.15	0	26.2	1.6	72.2	2	
B-26.5	9-22-20	1001	+1.17	0	18.0	9.7	72.3	2	
B-30	9-22-20	1003	+1.12	0	73.1	4.8	22.1	2	
219									
A-13	9-22-20	1033	+1.10	0	1.2	17.8	81.0	2	
B-64	9-22-20	1035	+1.14	0	1.0	17.5	81.5	2	
C-115	9-22-20	1037	+3.32	0	1.3	17.3	81.4	3	
D-166	9-22-20	1040	+1.19	0	.4	18.4	81.2	4	
E-217	9-22-20	1044	+2.26	0	3.9	12.9	83.2	4	

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
220									
A-14	9/22/20	8:16	+0.10	0.1	1.3	20.1	78.5	2	
B-40	9/22/20	8:18	+0.05	-0.0	0.3	20.8	78.9	2	
C-87	9/22/20	8:22	+0.10	0.0	0.2	20.8	79.0	3	
D-124	9/22/20	8:26	+0.12	0.0	0.1	20.8	79.1	4	
E-158	9/22/20	8:32	+0.20	0.0	0.1	20.8	79.1	4	
220B									
A-14	9/22/20	8:53	+0.16	0.0	2.4	18.4	79.2	2	
B-38	9/22/20	8:56	+0.18	-0.0	3.9	20.8	75.3	2	
C-62	9/22/20	9:00	+0.12	0.0	4.6	20.4	75.1	3	
D-86	9/22/20	9:04	+0.13	0.0	4.8	20.9	74.3	4	
E-110	9/22/20	9:04	+0.39	0.0	2.6	18.1	79.3	4	
221	9/22/20	9:39	+0.14	0.0	0.7	20.4	78.9		
A-13								2	
B-56	9/22/20	9:41	+0.20	0.0	0.1	20.9	79.0	2	
C-99	9/22/20	9:43	-0.02	0.0	0.5	20.2	79.3	3	
D-142	9/22/20	9:46	+0.18	0.0	0.0	20.2	79.7	4	
E-185	9/22/20	9:51	-0.02	0.0	0.4	19.4	80.2	4	
222									
A-13	9/22/20	10:22	+0.28	0.0	1.4	18.9	79.6	2	
B-54.8	9/22/20	10:25	+0.29	0.0	0.0	20.6	79.4	2	
C-96.5	9/22/20	10:28	+0.32	0.0	0.2	20.3	79.5	3	
D-138.3	9/22/20	10:31	+0.37	0.0	1.8	18.0	80.2	4	
E-180	9/22/20	10:37	-0.87	0.0	1.7	17.4	80.9	4	
223									
A-13	9/22/20	11:22	+0.28	0.0	7.2	10.0	82.7	2	
B-37.5	9/22/20	11:25	+0.29	0.0	10.1	7.0	82.9	2	
C-62	9/22/20	11:28	+0.42	0.0	0.0	20.7	79.3	3	
D-86.5	9/22/20	11:32	+0.40	0.0	2.1	16.9	81.0	4	
E-111	9/22/20	11:36	+0.49	0.0	2.7	15.9	81.4	4	
224									
A-13	9/22/20	1:36	+0.33	0.1	0.5	20.5	78.9	2	
B-67.5	9/22/20	1:39	+0.33	0.0	0.1	20.8	79.1	2	
C-122	9/22/20	1:42	+0.41	0.0	0.0	20.3	79.7	3	
D-177.5	9/22/20	1:46	-14.10	0.0	0.0	19.8	80.2	4	
E-232	9/22/20	1:51	-10.28	0.0	0.0	19.5	80.5	4	

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	9-22-20	1039 AM	0.25	0.0	0.8	19.6	79.6	2	
B-72	9-22-20	1043 AM	-4.21	0.0	0.4	20.0	79.6	2	
C-1131	9-22-20	1047 AM	-8.68	0.0	1.0	19.0	80.0	3	
D-190	9-22-20	1053 AM	-10.64	0.0	0.0	20.0	80.0	4	
E-244	9-22-20	1058 AM	-10.52	0.0	0.0	19.9	80.1	4	
226									
A-13	9-22-20	1006 AM	-0.01	0.0	0.0	20.6	79.4	2	
B-64	9-22-20	1010 AM	-10.55	0.0	0.0	20.7	79.3	2	
C-114	9-22-20	1014 AM	-11.64	0.0	0.0	20.7	79.3	3	
D-164	9-22-20	1019 AM	-11.89	0.0	0.0	20.7	79.3	4	
E-208	9-22-20	1025 AM	-12.94	0.0	0.2	20.5	79.3	4	
227									
A-13	9-22-20	934 AM	-0.30	0.0	0.0	20.3	79.7	2	
B-48.7	9-22-20	937 AM	-1.48	0.0	0.1	20.1	79.8	2	
C-84.4	9-22-20	941 AM	-0.93	0.0	0.4	19.5	80.1	3	
D-114	9-22-20	947 AM	-1.54	0.0	0.4	19.4	80.1	4	
E-115.7	9-22-20	952 AM	-0.96	0.0	0.2	20.2	79.7	4	
228									
A-13	9-22-20	902 AM	-0.28	0.0	0.9	19.6	79.5	2	
B-63	9-22-20	906 AM	-1.79	0.0	0.8	17.8	81.4	2	
C-113	9-22-20	911 AM	-0.96	0.0	0.1	20.1	79.8	3	
D-163	9-22-20	917 AM	-1.05	0.0	0.4	19.6	80.0	4	
E-213	9-22-20	922 AM	-0.36	0.0	0.2	20.0	79.8	4	
229	9-22-20								
A-13	9-22-20	820 AM	-1.08	0.0	2.2	16.7	81.1	2	
B-48.7	9-22-20	828 AM	-0.83	0.0	0.1	20.6	79.3	2	
C-84.4	9-22-20	832 AM	-6.02	0.0	0.3	20.1	79.5	3	
D-114	9-22-20	837 AM	-16.00	0.0	1.7	17.5	80.8	4	
E-155.7	9-22-20	847 AM	-24.71	0.0	0.1	20.6	79.3	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: \_\_\_\_\_