Dr. Wen Yang
Information Technology Unit
California Regional Water Quality Control Board – Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, California 90013

## SECOND SEMIANNUAL2016 MONITORING REPORT SUNSHINE CANYON CITY/COUNTY LANDFILL, SYLMAR, CALIFORNIA

Please find enclosed the second semiannual 2016 monitoring report for the Sunshine Canyon City/County Landfill to comply with the California Regional Water Quality Control Board – Los Angeles Region (RWQCB) Waste Discharge Requirements Order Number R4-2008-0088 and Monitoring and Reporting Program Cl-2043.

This report has been prepared by Geo-Logic Associates on behalf of Browning Ferris Industries (BFI) of California. It summarizes the results of groundwater, surface water, leachate, vadose zone, liquid management, and waste disposal monitoring activities completed during the July 1, 2016, to December 31, 2016, semiannual monitoring period and presents an annual summary of environmental monitoring results.

I certify that all wastes placed at the Sunshine Canyon City/County Landfill were deposited in accordance with the RWQCB's requirements, and that no wastes were deposited outside of the limits permitted for waste disposal at this facility.

I, under penalty of perjury, do hereby state that I have personally examined and am familiar with the information submitted in this document, and to the best of my knowledge, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information contained in the attached report is true, complete, and correct.

If you have any questions regarding this report, please do not hesitate to call Mr. Matthew Eaton at (818) 362-2096 or email him at MEaton2@RepublicServices.com.

Sincerely,

Rob Sherman General Manager

Sunshine Canyon Landfill

# SEMI-ANNUAL MONITORING REPORT SECOND SEMI-ANNUAL & ANNUAL 2016

# SUNSHINE CANYON LANDFILL FACILITY WDID #L10006014618

FEBRUARY 2017 PROJECT NO. 2016.0030



#### PREPARED FOR:

Republic Services, Inc. Sunshine Canyon Landfill 14747 San Fernando Road Sylmar, California 91342

### **PREPARED BY:**



Geo-Logic Associates 11415 West Bernardo Court, Suite 200 San Diego, California 92127 (858) 451-1136

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#### **EXECUTIVE SUMMARY**

This document presents the results of environmental monitoring activities conducted at the Sunshine Canyon City/County Landfill (SCLF) during the second semiannual 2016 monitoring period, and also presents an annual summary for the site. This report was prepared to address the site-specific reporting requirements contained in Monitoring and Reporting Program CI-2043 issued by the Los Angeles Regional Water Quality Control Board (RWQCB). A summary of principal findings of the current monitoring period are presented below.

During the second semiannual 2016 monitoring period, routine environmental monitoring was conducted on a quarterly basis in September (third quarter) and December (fourth quarter). Monitoring activities included: depth to water measurements; sampling and analysis of groundwater, surface water, vadose zone liquid, leachate, and treated liquids; and field monitoring of vadose zone gas, waste tonnage, water reuse, and drainage structures.

The Water Quality Protection Standard (WQPS) for this site is based on intrawell prediction limits for inorganic constituents. For organic constituents the WQPS is the analyte-specific Practical Quantitation Limit. The following table summarizes WQPS exceedances during the third and fourth quarter 2016 monitoring events:

WELL	ANALYTE	QUARTER(S) OF	RETEST RESULTS
		WQPS EXCEEDANCE	
MW-1	1,4-Dioxane	3 <sup>rd</sup> and 4 <sup>th</sup>	Not Applicable
	t-Butanol	3 <sup>rd</sup> and 4 <sup>th</sup>	Not Applicable
MW-5	1,4-Dioxane	3 <sup>rd</sup> and 4 <sup>th</sup>	Not Applicable
	Ammonia-Nitrogen	4 <sup>th</sup>	Results Pending
MW-6	Ammonia-Nitrogen	4 <sup>th</sup>	Results Pending
MW-13R	1,4-Dioxane	3 <sup>rd</sup> and 4 <sup>th</sup>	Not Applicable
DW-3	Chloride	2 <sup>nd</sup>	Exceeded WQPS
	Alkalinity	3 <sup>rd</sup> and 4 <sup>th</sup>	Exceeded WQPS/Not Applicable
	Ammonia-Nitrogen	4 <sup>th</sup>	Not Applicable
	Chemical Oxygen Demand	4 <sup>th</sup>	Results Pending
DW-5	Total Organic Carbon	3 <sup>rd</sup>	Below WQPS
	Allyl Chloride	4 <sup>th</sup>	Not Applicable
	t-Butanol	4 <sup>th</sup>	Results Pending
	Naphthalene	4 <sup>th</sup>	Results Pending
PZ-4	Alkalinity	4 <sup>th</sup>	Not Applicable

Notes: Not Applicable – Retesting is not required for analyte/well pairs in "tracking mode".

These results are generally similar to past monitoring event results, as most analyte/well pairs were previously in tracking mode. Retest results collected during the monitoring period indicate that chloride and alkalinity at well DW-3 were confirmed at concentrations that exceed the respective WQPS. Results are currently pending for the fourth quarter WQPS exceedance of the following: ammonia-nitrogen at wells MW-5 and MW-6; chemical oxygen demand at well

DW-3; and t-butanol and naphthalene at well DW-5. Retest results will be presented in the first semiannual 2017 Water Quality Monitoring Report.

During the second semiannual 2016 monitoring period, several volatile organic compounds (VOCs) were detected in the first and second quarter samples collected from Subdrain N and Combined Subdrains. These findings are consistent with historical results, and as a result, the liquids collected at the subdrains are conveyed to the water treatment system prior to reuse.

Lysimeter LY-6 was dry during both sampling events and the pump in lysimeter LY-7 was inoperable during the fourth quarter 2016 monitoring period and could not be sampled. The third quarter 2016 sample from lysimeter LY-7 contained at seven VOCs at quantifiable concentrations. The types and concentrations of detected VOCs were similar to historical results for this monitoring point.

Leachate sampling was performed in October 2016. Based on the results obtained, no resampling is scheduled for April 2017.

During the second semiannual 2016 monitoring period, methane concentrations at all perimeter gas probes were below five percent by volume.

In response to identified impacts to groundwater, a groundwater extraction trench has been constructed across the toe of the canyon to intercept and remove shallow groundwater. Extracted groundwater is conveyed to the water treatment system to remove VOCs prior to onsite reuse for dust suppression. Combined with other liquids managed by the site, 17,073,218 gallons of liquid were collected and treated at the site during the second semiannual 2016 monitoring period.

#### 1.0 INTRODUCTION

On behalf of Browning-Ferris Industries of California, Inc (BFI) and Sunshine Canyon Landfill, Geo-Logic Associates (GLA) presents this report summarizing water quality and waste intake monitoring and reporting activities for the active Sunshine Canyon Landfill (SCLF) in the city of Sylmar, California (Figure 1), that were completed during the second semiannual 2016 monitoring period. Included in this report are the field observations and measurements and laboratory results for samples collected from site monitoring wells, lysimeters, extraction wells, piezometers, and other monitoring stations during the third and fourth quarter monitoring events. The report also includes an annual summary for the SCLF. This report was prepared to comply with the requirements of California Regional Water Quality Control Board – Los Angeles Region (RWQCB) Waste Discharge Requirements Order No. R4-2008-0088 (WDR) and Monitoring and Reporting Program (MRP) No. CI-2043. The information required by MRP CI-2043 to be included in this report with the appropriate report section is summarized in Table 1.

#### 2.0 GENERAL SITE INFORMATION

The following provides a summary of the site conditions and includes: site description, climate and surface water hydrology, hydrogeologic setting, and groundwater geochemistry.

### 2.1 Site Description

The SCLF is an active Class III municipal solid waste (MSW) disposal facility located at 14747 San Fernando Road in Sylmar, California. The site property includes approximately 1,030 acres within the City of Los Angeles and an unincorporated area of Los Angeles County. The "County Landfill" Disposal Phases I through V are located north of the City-County boundary, and are equipped with a composite liner and leachate collection and removal system (LCRS). The "City Landfill" includes two waste disposal areas (Unit 1 and Unit 2) that are south of the City-County boundary. City Landfill Unit 1 is a closed, unlined Class III MSW disposal unit that operated between 1958 and 1993. City Landfill Unit 2 is an active, Class III MSW disposal unit that is equipped with a composite liner system and is located generally between City Landfill Unit 1 and the County disposal phases. Cell A of City Landfill Unit 2 began operations during the third quarter of 2005, with subsequent disposal operations expanding into Cells CC-1 and CC-2. Refuse is currently being disposed of in Cells CC-3A and Cell CC-3B Part 1A. Cell CC-4 is currently in under construction.

### 2.2 Climate and Surface Water Hydrology

SCLF is located north of the San Fernando Valley, near the junction of the Santa Susana Mountains to the west and the San Gabriel Mountains to the east. Climatic conditions in the area are semi-arid and characterized by mild winters, when most of the precipitation occurs, and warm dry summers. The average annual precipitation in the area of Sunshine Canyon is approximately 22 inches. During the period from 1941 to 1995 the maximum annual

precipitation was 55.8 inches; the minimum was 10.2 inches. The maximum expected 100-year, 24-hour storm is approximately 12 inches.

The facility is located within the 900-square-mile Los Angeles River Watershed Basin. Surface water runoff originating in Sunshine Canyon exits through the mouth of the canyon, where it is conveyed in a southerly direction.

#### 2.3 Hydrogeologic Setting

The SCLF is underlain predominantly by marine sedimentary rocks of the late Miocene to early Pliocene Towsley Formation, which is siltstone and fine-grained sandstone interbedded with lenses of coarse-grained sandstone and conglomerate. This unit is locally overlain by younger sedimentary deposits consisting of alluvium, colluvium, and/or landslide debris that consist of varying mixtures of unconsolidated sand, gravel, silt, and clay derived from the Towsley Formation. These unconsolidated materials were originally present in many of the canyon thalwegs that cross the site, but, in most instances, these materials have been removed as part of site development. Where alluvium remains, it may be up to 30 feet thick.

Groundwater beneath the site occurs in two main zones: 1) a shallow, unconfined water-bearing zone consisting of alluvial deposits and/or upper weathered portions of the bedrock, and 2) a deeper, locally confined water-bearing zone in the Towsley Formation. The hydraulic conductivity of the bedrock (including both weathered and unweathered portions) ranges from  $10^{-3}$  to  $10^{-9}$  centimeters per second with values generally increasing with increasing weathering and fracture density. The hydraulic conductivity of the alluvial deposits is expected to be on the order of 100 to 200 feet per day.

#### 2.4 Groundwater Geochemistry

Previous hydrogeologic investigations conducted for the SCLF have identified significant spatial variability in groundwater chemistry beneath the site. The surrounding Santa Susana Mountains are an area of ongoing, extensive oil exploration and production, as indicated by the oil production facilities surrounding the site. The region is characterized by several east-west trending fault systems that locally serve as large-scale crude oil traps. Upward seepage of crude oil and related brines along these faults, and their subsequent contact with site groundwater, have been documented at numerous locations at the SCLF. The presence of shallow crude oil deposits coupled with the low permeability of bedrock materials has resulted in extensive areas of reduced (poorly oxygenated) groundwater beneath the facility with locally elevated concentrations of alkalinity, ammonia-nitrogen, and, in some cases, sulfide. In addition, pre-landfill monitoring has confirmed the presence of naturally occurring groundwater with locally elevated concentrations of chloride, total organic carbon (TOC), chemical oxygen demand (COD), and potassium. These constituents have also been measured at high concentrations in samples of landfill leachate.

Beneficial uses of groundwater beneath the site are limited as a result of naturally-occurring, elevated concentrations of total dissolved solids (TDS) and the low groundwater production capability for wells screened in the bedrock.

#### 3.0 GROUNDWATER MONITORING

This section provides a summary of the water quality monitoring program for the site, as well as the monitoring activities, results, and conclusions based on data obtained during the second semiannual 2016 monitoring period.

#### 3.1 Water Quality Monitoring Network

The Monitoring and Reporting Program CI-2043 establishes the following groundwater monitoring network for the SCLF:

MONITORING POINTS	MONITORING POINT ID	MONITORING FREQUENCY	
Upgradient Monitoring Wells - Bedrock	CM-9R3, CM-10R, CM-11R		
Downgradient Monitoring Wells – Alluvium	MW-1, MW-5, MW-6, MW-13R, MW-14	Quarterly	
Downgradient Monitoring Wells – Bedrock	DW-1, DW-2, DW-3, DW-5, PZ-2, PZ-4		
Corrective Action Evaluation Wells	MW-2A, MW-2B, MW-9, DW-4	,	
Piezometers	PZ-1, PZ-3, CM-5, MW-8		
Subdrains	Subdrain N, Combined Subdrains		
Lysimeters	LY-6, LY-7		
Leachate Monitoring Points	CA-L, LR-2R, Leachate	Annual	

During the second semiannual 2016 monitoring period, groundwater monitoring was conducted between September 19 and 22, 2016 (third quarter) and between December 20 and 22, 2016 (fourth quarter). The locations of groundwater monitoring wells, piezometers, and other environmental monitoring points are shown on Figure 2.

#### 3.2 Sampling and Laboratory Analyses

Groundwater samples were collected by GLA during the third and fourth quarter 2016 monitoring events, and submitted to TestAmerica Laboratories, Inc. (TA) of Irvine, California, a state certified laboratory under contract to BFI/Republic. During the third quarter 2016 monitoring period, samples were analyzed for the indicator parameters. During the fourth quarter 2016 monitoring period, groundwater samples were analyzed for the indicator parameters and supplemental parameters. Table 2 summarizes site monitoring parameters,

analytical methods, and monitoring frequency. The groundwater monitoring wells and leachate monitoring points were sampled in accordance with the sampling and analysis procedures detailed in Appendix A.

#### 3.3 QA/QC Results

The quality assurance/quality control (QA/QC) program completed for the second semiannual 2016 water quality monitoring event included analyses of field blanks (QCAB), trip blanks (QCTB), laboratory method blanks, and duplicate samples. Field and trip blanks were analyzed for volatile organic compounds (VOCs) by EPA Method 8260. Laboratory method blanks were analyzed for all monitoring parameters, and duplicate samples were analyzed for the same list of parameters required for its corresponding primary sample. Blank sample results are summarized in Tables 3A and 3B. Duplicate sample results are presented in Tables 4A and 4B. The results of the QA/QC sampling program are as follows:

#### Third Quarter 2016 Monitoring Event

- All analyses were completed within the holding times prescribed by the respective analytical method.
- As indicated on Table 3A, methylene chloride (a common laboratory contaminant) was measured in the field blank submitted with samples on September 19, 2016. Due to similar concentrations of methylene chloride at all background monitoring wells (CM-9R3, CM-10R, CM-11R, and the duplicate sample) and in the combined subdrains sample, methylene chloride has been flagged as a laboratory contaminant in these samples. No other VOCs were detected in QCAB and QCTB samples, and no analytes were detected in method blanks.
- The relative percent difference (RPD) between primary and duplicate samples was 10 percent or less for quantifiable results, which indicates good agreement.

#### Fourth Quarter 2016 Monitoring Event

- All analyses were completed within the holding times prescribed by the respective analytical method.
- As indicated on Table 3B, with the exception of a trace concentration of iron measured in a method blank analyzed with samples collected on December 20, 2016, no constituents were measured in QCTB, QCAB, or method blank samples. As a result of similar concentrations in samples from DW-1 and PZ-2, iron is flagged as a suspected laboratory contaminant in these samples
- With the exception total organic carbon, which had a RPD of 25 percent, the RPD between primary and duplicate samples was 12 percent or less for quantifiable results, which indicates good agreement.

 Testing for 1,4-dioxane in the December 2016 sample collected at well DW-4 was canceled following notification of exceedance of quality control parameters. The well was resampled and submitted for 1,4-dioxane testing on January 10, 2017. The results are included herein.

The results of the QA/QC program completed during the second semiannual 2016 monitoring period are considered acceptable.

#### 3.4 Groundwater Elevations and Flow Conditions

During the second semiannual 2016 monitoring period, quarterly depth to groundwater measurements were measured on September 19 and December 19, 2016. Between March 28 and September 19, 2016, the following changes in the groundwater elevation were measured:

WELL/PIEZOMETER	CHANGE IN GROUNDWATER ELEVATION (FEET)
MW-1	-0.88
MW-2A	+2.06
MW-2B	+9.06
MW-5	-0.68
MW-6	-0.37
MW-8	+2.07
MW-9	+5.01
MW-13R	-0.67
MW-14	-0.26
PZ-1	-0.41
PZ-2	+0.04
PZ-3	-0.96
PZ-4	-0.49

WELL/PIEZOMETER	CHANGE IN GROUNDWATER ELEVATION (FEET)
DW-1	No Change
DW-2	-1.54
DW-3	-1.39
DW-4	+0.10
DW-5	-0.63
CM-9R3	-5.74
CM-10R	-1.47
CM-11R	-6.82
CM-5R	-3.65

Between June 20 and December 19, 2016, the following changes in the groundwater elevation were measured:

WELL/PIEZOMETER	CHANGE IN GROUNDWATER ELEVATION (FEET)	
MW-1	-0.23	
MW-2A	+1.11	
MW-2B	+8.73	
MW-5	-0.04	
MW-6	-0.66	
MW-8	+2.01	
MW-9	+1.49	
MW-13R	-0.65	
MW-14	+0.24	
PZ-1	-0.42	
PZ-2	-0.17	
PZ-3	-0.93	
PZ-4	-0.45	

WELL/PIEZOMETER	CHANGE IN GROUNDWATER ELEVATION (FEET)		
DW-1	No Change		
DW-2	-0.62		
DW-3	-1.05		
DW-4	+2.26		
DW-5	-0.70		
CM-9R3	-4.50		
CM-10R	-0.13		
CM-11R	-6.15		
CM-5R	-3.21		

Groundwater equipotential surface contours were developed using the third and fourth quarter 2016 groundwater elevation data for wells screened in the bedrock are depicted on Figures 3A and 3B, respectively. As shown in these figures, groundwater flow generally mimics the canyon topography, flowing to the southeast, east, and northeast at horizontal gradients ranging from 0.11 foot per foot (ft/ft) to 0.21 ft/ft. The estimated horizontal groundwater velocity within the unweathered bedrock is approximately 1 to 10 feet per year (Geo-Logic Associates, 2009).

Comparison of groundwater elevations in nearby wells screened in alluvium and bedrock suggests the possibility of vertical gradients near the mouth of the canyon. If communication between these water-bearing zones exists, then the vertical gradient near the mouth of the canyon could range from 0.1 ft/ft near wells MW-1 and DW-5 to 0.2 near wells MW-2A and DW-4.

#### 3.5 Groundwater Chemistry Results

Groundwater samples collected from site monitoring wells were analyzed for indicator parameters during the third quarter 2016 monitoring period and for indicator and supplemental parameters during the fourth quarter 2016 monitoring period. Results are summarized on Tables 6A and 6B, and are discussed below. The field sample collection logs, laboratory data, certificates of analyses, and chain-of-custody records for the sampling program are included in Appendix B.

#### 3.5.1 Second Quarter 2016 Retest Groundwater Chemistry Results

During the previous monitoring period (second quarter 2016), chloride results from well DW-3 were measured above the water quality protection standard (WQPS). Accordingly, retest samples were collected on July 20, 2016. Retest samples analyzed for chloride were measured at 14 mg/L, which is below the WQPS (17.534 mg/L). Accordingly, chloride at well DW-3 will remain in detection mode.

### 3.5.2 Third Quarter 2016 Groundwater Chemistry Results

During the third quarter 2016 monitoring event, samples from all monitoring wells were analyzed for the indicator parameters identified in Section II.B.3(a) of the MRP. These results are presented on Table 6A. Table 7A compares third quarter 2016 monitoring results with water quality protection standards (WQPS). The following table summarizes WQPS exceedances and verification retesting results (when applicable).

WELL	ANALYTE	UNITS	WQPS	3 <sup>RD</sup> QUARTER 2016 RESULT	RETEST RESULT (1)	RETEST RESULT (2)
MW-1	1,4-Dioxane	μg/L	0.99 (PQL)	19	TM	TM
	t-Butanol	μg/L	10 (PQL)	22	TM	TM
MW-5	1,4-Dioxane	μg/L	0.99 (PQL)	13	TM	TM
MW-13R	1,4-Dioxane	μg/L	0.94 (PQL)	8.1	TM	TM
DW-3	Alkalinity	mg/L	162.81	170	170	170
DW-5	Total Organic Carbon	mg/L	11.745	12	7.5	7.8

Notes: Retesting only performed on analytes not currently in Tracking Mode.

TM – Tracking Mode. No retesting required for analytes in Tracking Mode.

PQL - Practical Quantitation Limit.

ND - Not Detected.

Retest samples were collected on November 15, 2016 for analyses of alkalinity at well DW-3 and for total organic carbon at well DW-5. Retest results confirm elevated alkalinity at well DW-3. Accordingly, this well/constituent pair has been placed in tracking mode. Retest results for total organic carbon at well DW-5 were measured at concentrations below respective WQPS. Accordingly, total organic carbon at well DW-5 will remain in detection monitoring mode. All other constituents exceeding the respective WQPS listed in the previous table have historically been detected and confirmed in retest samples. Accordingly, these well/constituent pairs are currently in "tracking mode" and retesting is not required.

In addition to quantifiable VOCs measured in samples from the detection monitoring wells shown in the table above, a trace concentration of tetrahydrofuran was measured in the sample from well MW-1. With respect to corrective action evaluation monitoring wells, four VOCs were detected in the sample from well MW-9 (Table 6A).

With the exception of the total dissolved solids concentrations in samples from all monitoring wells, none of the analyte concentrations measured in samples collected during the third quarter 2016 monitoring period exceeded a State of California drinking water standard or Federal Maximum Contaminant Level (Table 6A).

#### 3.5.3 Fourth Quarter 2016 Groundwater Chemistry Results

During the fourth quarter 2016 monitoring event, samples from all monitoring wells were analyzed for the indicator and supplemental parameters. These results are presented on Table 6B. As shown on Table 7B and summarized below, the following wells/constituents exceeded a WQPS.

WELL	ANALYTE	UNITS	WQPS	4 <sup>TH</sup> QUARTER 2016 RESULT
MW-1	1,4-Dioxane	μg/L	0.94 (PQL)	19
	t-Butanol	μg/L	10	20
MW-5	1,4-Dioxane	μg/L	0.94(PQL)	11
	Ammonia-Nitrogen	mg/L	5.714	6.6
MW-6	Ammonia-Nitrogen	mg/L	1.337	1.4
MW-13R	1,4-Dioxane	μg/L	0.95 (PQL)	6.2
DW-3	Alkalinity	mg/L	162.81	170
	Ammonia-Nitrogen	mg/L	0.7564	0.76
	Chemical Oxygen Demand	mg/L	15.206	<b>1</b> 7j
DW-5	DW-5 Allyl Chloride		1.0 (PQL)	2.3
	t-Butanol		5.0 (MDL)	5.0j
	Naphthalene	μg/L	0.40 (MDL)	0.86j
PZ-4	Alkalinity	mg/L	341.13	350

Note: j - Trace concentration (measured between the MDL and PQL).

Many of the well/constituent pairs listed above are currently in "tracking mode". Retesting is currently scheduled for the following: Total organic carbon at well MW-1; Ammonia-nitrogen at wells MW-5 and MW-6; chemical oxygen demand at well DW-3; and for t-butanol and naphthalene at well DW-5. Retest results will be presented in the first semiannual 2017 Monitoring Report.

In addition to quantifiable VOCs measured in samples from the detection monitoring wells shown in the table above, a trace concentration of t-butanol was measured in the sample from

well MW-13R. With respect to corrective action evaluation monitoring wells, four VOCs were detected in the sample from well MW-9 (Table 6B).

As shown on Table 6B, with respect to the routine indicator and supplemental monitoring parameters, concentrations of total dissolved solids, sulfate, fluoride, iron, and manganese exceed State of California primary (fluoride) or secondary drinking water standards in samples from many site monitoring wells, including upgradient (background) monitoring wells. Comparison of upgradient and downgradient water quality data suggest significant natural spatial variability exists at the site.

#### 3.5.4 Tracking Mode Evaluation

Verification retest results obtained during the current monitoring period confirm the presence of alkalinity that exceed the WQPS at well DW-3. Accordingly, this constituent/well pair has been placed in "tracking mode". The following table summarizes the status of well/constituent pairs in "tracking mode":

WELL	PARAMETERS IN TRACKING MODE	IN TRACKING EXCEEDING WQPS DURING THE		PLANNED ACTION
MW-1	1,4-Dioxane, t-Butanol	1,4-Dioxane, t-Butanol	Total Organic Carbon	Retest for Total Organic Carbon; Continue Quarterly Monitoring
MW-5	1,4-Dioxane, t-Butanol	1,4-Dioxane	Ammonia-N	Retest for Ammonia-N; Continue Quarterly Monitoring
MW-6	Chemical Oxygen Demand	None	Ammonia-N	Retest for Ammonia-N; Continue Quarterly Monitoring
MW-13R	1,4-Dioxane	1,4-Dioxane	None	Continue Quarterly Monitoring
MW-14	Vinyl Chloride	None	None	Continue Quarterly Monitoring
DW-1	Chloride	None	None	Continue Quarterly Monitoring
DW-3	Alkalinity, Ammonia-N	Alkalinity, Ammonia-N	Chemical Oxygen Demand	Retest for Chemical Oxygen Demand; Continue Quarterly Monitoring
DW-5	DW-5 Ammonia-N, Allyl Chloride		t-butanol, Naphthalene	Retest for t-butanol and naphthalene; Continue Quarterly Monitoring
PZ-4	Alkalinity	Alkalinity	None	Continue Quarterly Monitoring

Time-series charts depicting well-analyte pairs in tracking mode are presented in Appendix G. The following table summarizes trends in the data.

WELL/ANALYTE PAIR	CONCENTRATION LIMIT	3 <sup>RD</sup> QUARTER RESULTS	4 <sup>TH</sup> QUARTER RESULTS	HISTORICAL TRENDS AND OBSERVATIONS
MW-1: 1,4-Dioxane	PQL	19	19	Variable concentrations; increasing overall since 2014.
MW-1: t-Butanol	PQL	22	20	Variable concentrations.
MW-5: 1,4-Dioxane	PQL	13	11	Variable concentrations (long-term); decreasing trend during the past year.
MW-5: t-Butanol	PQL	ND	ND	Only one observation exceeding the WQPS. Not detected during past three monitoring events.
MW-6: Chemical Oxygen Demand	75.338 mg/L	ND	<b>17</b> j	One result significantly over concentration limit. Results are suspect.
MW-13R: 1,4-Dioxane	PQL	8.1	6.3	Variable concentrations.
MW-14: Vinyl Chloride	PQL	ND	ND	Intermittent detections, generally below the WQPS. Non-detect during the monitoring period.
DW-1: Chloride	17.737 mg/L	14	13	One anomalous result over the concentration limit.
DW-3: Alkalinity	162.81 mg/L	170	170	Slight increasing trend over past two years.
DW-3: Ammonia as N	0.7564 mg/L	0.52	0.76	Slight increasing long-term trend, concentrations are generally near the WQPS.
DW-5: Ammonia as N	0.3918 mg/L	0.35j	0.27j	Variable concentrations.
DW-5: Allyl Chloride	PQL	ND	2.3	Intermittent Detections.
PZ-4: Alkalinity, total	341.13 mg/L	340	350	Concentrations are generally below the WQPS.

Note: **Bolded Red** = Concentration Limit Exceeded.

ND = Not Detected.

j = Estimated-trace concentration.

As shown on the charts in Appendix G, VOCs in tracking mode are often detected sporadically and at variable concentrations, though, concentrations of some VOCs at wells MW-1 and MW-5 are variable to slightly increasing. Constituents in tracking mode that have not exceeded a respective concentration limit in more than three years are removed from tracking mode and re-verified if detected in the future.

#### 4.0 VADOSE ZONE MONITORING

Monitoring of the vadose zone at the SCLF is accomplished by collecting samples of the subdrains beneath composite liner systems at the site as well as the pan lysimeters constructed beneath the leachate collection sumps for the lined portions of the landfill.

#### 4.1 Subdrain Monitoring

Order No. R4-2008-0088 requires quarterly monitoring of landfill subdrain systems. As with groundwater samples, samples from each subdrain collection point are analyzed for indicator parameters on a quarterly basis and for supplemental parameters on a semiannual basis.

#### 4.1.1 Subdrain Liquid Monitoring Points

Currently, the SCLF is equipped with four subdrain sampling points: Subdrain N, CC2-PER, CC2-5AC, and CC2-3A. Samples for CC2-PER, CC2-5AC, and CC2-3A are composited as one sample called "Combined Subdrains". Accordingly, samples are submitted for analysis for Subdrain N and Combined Subdrains.

Subdrain N liquid samples are collected from a port on the influent line to the facility's water treatment system, located near San Fernando Road. This sample represents the combined flow from subdrain collection systems installed beneath County Landfill disposal Phases I through V, and Cells A and CC-1 of City Landfill Unit 2.

Subdrain CC2-5AC liquid samples are pumped from a temporary vertical riser located southeast of disposal Cell CC-3A, Part 1. The CC2-5AC liquid samples represent groundwater seepage to a subdrain liquid collection system that underlies the southwest corner of Cell CC-2, at a depth of approximately 10 to 30 feet below the CC-2/CC-3A, Part 1 liner system.

Samples from Subdrain CC2-PER are collected from a temporary outlet pipe located southeast of disposal cell CC-3A, Part 1. These samples represent groundwater seepage collected beneath the western margin of disposal cell CC-2. The subdrain CC2-PER collection system is approximately 10 feet below the CC-2/CC-3A Part 1 liner system and is perforated only along the western edge of CC-2 liner system. The CC2-PER subdrain system is hydraulically separated from adjacent (and partially overlapping) portions of subdrain liquid collection system CC2-5AC.

Subdrain CC2-3A likely collects liquids from the area of unlined City Landfill Unit 1. Because of the likelihood of landfill impacts to subdrain CC2-3A liquids, this subdrain outlet was established with an angled riser and dedicated pumping system, so that liquids are collected and discharged to the SCLF water treatment system. Subdrain CC2-3A liquid samples are collected from pumped discharge from this angled riser.

#### 4.1.2 Third Quarter 2016 Subdrain Monitoring Results

During the third quarter 2016 monitoring event, samples from each subdrain monitoring point were collected on September 19, 2016. Samples were delivered to TestAmerica Labs for the indicator parameters.

As shown on Table 8A, the sample from Subdrain N contained six VOCs with a total concentration of 28.18  $\mu$ g/L. The sample from Combined Subdrains contained one VOC (and one VOC flagged as a laboratory contaminant [methylene chloride]) with a concentration of 1.4  $\mu$ g/L. These results are generally similar to those measured during the previous monitoring period. All VOC concentrations were measured below State and federal drinking water standards, or have no established ARAR. TDS concentrations in both Subdrain samples and the field-measured pH value from Subdrain N exceeded the state secondary drinking water standard.

#### 4.1.3 Fourth Quarter 2016 Subdrain Monitoring Results

During the fourth quarter 2016 monitoring event, samples from subdrain monitoring points were collected on December 20, 2016. Samples were delivered to TestAmerica Labs for the analysis of indicator and supplemental parameters.

As shown on Table 8B, five VOCs were detected in the sample from Subdrain N, and six VOCs were detected in the sample from Combined Subdrains, with total VOC concentrations of 35.61  $\mu$ g/L and 66.60  $\mu$ g/L (respectively). Samples from Combined Subdrains have historically contained numerous VOCs at concentrations similar to those measured during the fourth quarter 2016. All other VOC concentrations were measured below State and federal drinking water standards.

Except as noted, concentrations of sulfate, total dissolved solids (TDS), iron, manganese, fluoride (Combined Subdrains only), and pH value (Subdrain N only) exceeded State of California secondary drinking water standards in both fourth quarter 2016 subdrain samples.

Due to the historical presence of VOCs in the samples from Subdrain N and Combined Subdrains, the liquids discharged from these subdrains are collected by the SCLF and routed to the site's water treatment system.

#### 4.2 Lysimeter Monitoring

Order No. R4-2008-0088 requires construction and monitoring of lysimeters beneath landfill liner systems. On a quarterly basis, the lysimeters are monitored for the presence of liquids, and sampled if the liquid volume is sufficient. Liquids are pumped through a discharge line from the riser pipes and grab samples are collected, and analyzed for the Order-specific list of indicator parameters (quarterly) and supplemental parameters (semiannually).

#### 4.2.1 Lysimeter Monitoring Points

The SCLF is currently equipped with two lysimeters: LY-6 and LY-7. LY-6 monitors conditions beneath the County Landfill leachate sump, and is accessed through a 600-foot-long inclined riser at the east side of the Phase V disposal area. Lysimeter LY-7 monitors the conditions

between the primary and secondary liners of City Landfill Unit 2, and is reached through a 360-foot-long inclined riser at the east side of Cell A. Lysimeter locations are shown on Figure 2.

#### 4.2.2 Third Quarter 2016 Lysimeter Monitoring Results

During the third quarter 2016 monitoring event, sufficient liquid for sampling was present in lysimeter LY-7, and a sample was collected on September 20, 2016. Lysimeter LY-6 was dry at this time. Samples were delivered to TestAmerica Labs for the required analysis.

As shown on Table 8A, 10 VOCs were detected in the sample from LY-7. The total concentration of VOCs was 1392.75  $\mu$ g/L, which is mostly composed of t-butanol (1200  $\mu$ g/L). The concentrations of benzene (3.1  $\mu$ g/L) and 1,2-dichloroethane (0.86  $\mu$ g/L) exceeded State drinking water standards (1.0  $\mu$ g/L and 0.5  $\mu$ g/L, respectively). No other VOC concentrations exceeded a State or federal drinking water standard, though the concentrations of chloride and TDS exceeded State of California secondary drinking water standards. These results are generally consistent with those from the previous monitoring period.

#### 4.2.3 Fourth Quarter 2016 Lysimeter Monitoring Results

As has been the case in recent monitoring events, lysimeter LY-6 was dry during the second quarter 2016 monitoring event. Sampling of lysimeter LY-7 was attempted on December 20, 2016, though the lysimeter pump was not operational. As a result, no lysimeter samples could be collected during the fourth quarter 2016. Republic Services is currently in the process of making repairs to the lysimeter pump for LY-7.

#### 5.0 VADOSE ZONE GAS MONITORING

Gas monitoring of the vadose zone is conducted on a monthly basis to comply with Order No. R4-2008-0088 and South Coast Air Quality Management District Rule 1150.1. All other vadose zone gas monitoring is conducted by RES Environmental, Inc. and includes field screening for methane, carbon dioxide, oxygen, balance gases, and pressure at perimeter probes and upper subdrain termination points. The locations of vadose zone gas monitoring points are shown on Figure 4. Field reports prepared by RES Environmental, Inc. are provided in Appendix C.

During the second semiannual 2016 monitoring period, screening of the permanent vadose zone monitoring locations (monthly) was conducted during the following dates: July 19-21, August 16-18, September 20-22, October 18-20, November 15-17, and December 13-15. Monitoring results are presented on Table 9. As shown therein, the highest methane concentration in a perimeter gas probe was measured at 2.2 %V in probe P-205R during the September monitoring event. Methane was detected monthly at probe P-205R, monthly during the last four months of 2016 in probe P-240, and once in September at probe P-228. Methane was not detected at any of the other probes during the second semiannual 2016 monitoring

period. During July through December 2016 monitoring, methane was not detected in subdrains.

#### 6.0 SURFACE WATER MONITORING

This section of the report presents the results of the storm water, stream diversion, and seeps and spring monitoring activities conducted during the second semiannual 2016 monitoring period. Locations of surface water sampling points are shown on Figure 2.

#### 6.1 NPDES Storm Water Quality Monitoring

Landfill personnel periodically monitor the quality of storm water as part of the general NPDES Permit adopted for the facility, and additional storm water monitoring is conducted as part of the SCLF waste acceptance monitoring program. Storm water sampling was performed on October 17 and December 16, 2016. The results of storm water analyses are presented in Table 10.

#### 6.2 Stream Diversion Monitoring

During the second semiannual 2016 monitoring period, construction activities at the facility were subject to requirements of Stream Bed Alteration Agreement #R5-2003-0005, adopted by the California Department of Fish and Game (CDF&G), though no monitoring of stream water quality was required during the current monitoring period.

#### 6.3 Other Surface Water Monitoring

No new seeps or springs were identified during the current monitoring period.

### 7.0 LEACHATE MONITORING

In accordance with Order No. R4-2008-0088, leachate is to be monitored on an annual basis during the month of October. Grab samples are collected from each leachate sump and are analyzed for 40 CFR Appendix II analytes that are not already a COC for the landfill. Retesting of newly-identified 40 CFR Appendix II constituents (constituents measured at or above respective PQLs) is conducted in April. Those analytes that are present in both the primary and retest samples at concentrations equal to above respective PQLs are added to the site-specific list of COCs.

The SCLF is currently equipped with three discrete leachate monitoring points (Figure 2):

 A vertical riser located north of the City/County line receives leachate from County Landfill Phases I through V. This location is referred to as "Leachate". Samples are collected by baling from the County leachate riser.

- Leachate sample location "CA-L" monitors leachate from City Landfill Unit 2. Grab samples are collected at a sample port at the site water treatment facility.
- Leachate sample location "LR-2R" monitors leachate accumulation near the base of unlined City Landfill Unit 1. Samples are collected from a vertical riser.

Annual leachate sampling was conducted at leachate monitoring locations "CA-L", "Leachate", and "LR-2R" on October 26, 2016. Based on the results obtained, no conformation retesting is scheduled for 2017.

#### 8.0 LIQUID GENERATION AND MANAGEMENT

Ongoing waste disposal operations at the SCLF result in the generation of significant volumes of liquids, including leachate, landfill gas condensate, subdrain liquids, groundwater collected at the extraction trench, groundwater sampling purge water, and seepage water. In accordance with Order No. R4-2008-0088, the volume of water collected, treated, used onsite, and discharged offsite from each source are required to be recorded on a monthly basis (Table 12).

#### 8.1 Liquid Management

During the second semiannual 2016 monitoring period, approximately 17,073,218 gallons of liquid were collected from the SCLF and transferred to the SCLF water treatment systems prior to being utilized on site for dust control (Table 12). In order to supplement the needs for dust suppression, the site purchased approximately 22,526,020 gallons of water from the City of Los Angeles Department of Water and Power (LADWP). The monthly volumes of water purchased from the LACDWP are also summarized on Table 12.

#### 8.2 Monitoring Results For Reuse Water

Liquids used for dust control (other than potable water) are required to be monitored on a quarterly basis for pH, nitrate, select heavy metals, and VOCs to demonstrate that concentrations of these parameters are below the Primary MCLs established by the State of California for drinking water. During the second semiannual 2016 monitoring period, samples of treated liquids were collected by Invirotreat, Inc. and provided to Western Analytical Laboratories for the requisite analyses. Water quality monitoring results for these samples for the second semiannual 2016 monitoring period are presented on Tables 13A and 13B.

#### 9.0 DRAINAGE STRUCTURE MONITORING

Order No. R4-2008-0088 requires periodic site inspections as part of the site's current NPDES storm water permit. Between October and April of each year, inspections are to be conducted following each storm that produces significant runoff or on a monthly basis if no storm event produces significant runoff during this period. Between May and September, inspections are to

be made on a quarterly basis. Each inspection is to include the following "standard observations":

- Evidence of surface water leaving or entering the site, including an estimate of the size of the affected area and the estimated flow rate;
- Presence or absence of odors, including characterization, source, and distance of travel from the source;
- Evidence of erosion and/or exposed refuse;
- Inspection of all storm water discharge locations for evidence of non-storm water discharges (during dry season) and integrity (during wet season);
- Evidence of ponded water at any point on the waste management facility (show affected areas on a map); and
- Assessment of compliance with the facility's Storm Water Pollution Prevention Plan, including proper implementation of the terms of the General NPDES Storm Water Permit.

During the second semiannual 2016 monitoring period, the required standard observations were made by site personnel. The site's NPDES certification of completion for the second semiannual 2016 monitoring period is included in Appendix D.

#### 10.0 WASTE DISPOSAL MONITORING

During the second semiannual 2016 monitoring period, the quantity of municipal solid waste deposited at the SCLF was monitored daily. The monthly tonnages of waste deposited at the site are summarized in the following table.

MONTH	WASTE DISPOSAL TONNAGE	ESTIMATED VOLUME (CYDS)
July	197,972.93	267,530.99
August	220,208.94	297,579.65
September	199,715.19	269,885.39
October	194,083.15	262,274.53
November	181,748.66	245,606.30
December	154,723.35	209,085.61
July-December 2016 Totals:	1,148,452.22	1,551,962.46
January – June 2016 Totals:	1,190,320.52	1,608,541.24
2016 Totals	2,338,772.74	3,160,503.70

Note: Waste volumes were calculated using an assumed 1480 pounds per cubic yard of waste.

As summarized in the preceding table, during the second semiannual 2016 monitoring period, approximately 1,148,452.22 tons of waste were disposed at the SCLF (2,338,772.74 tons of waste over the entire 2016 year). As of December 31, 2016, the remaining capacity at the SCL is estimated at approximately 77,743,423 cubic yards. Based on the currently approved maximum tonnage acceptance rate, the site has a remaining life of approximately 24 years.

Waste placement during the second semiannual 2016 monitoring period was surveyed by Pinnacle Land Surveying, Inc. The location of waste placement during the monitoring period is presented on a map in Appendix E.

During the second semiannual 2016 monitoring period, all waste loads accepted at the site were subjected to checking at the scalehouse. As certified in the transmittal letter for this report, the site allowed no unauthorized waste disposal during the current monitoring period. No wastes were deposited outside of the areas permitted to receive waste.

#### 11.0 WASTE ACCEPTANCE

As outlined in the Amended WDRs (March 11, 2011), generators delivering contaminated soils to the SCLF are required to demonstrate that the soil chemistry meets specific requirements through a specific sampling and analysis program. All non-designated, non-hazardous contaminated soils that are brought to the site are disposed of as wastes in the lined sections of the landfill. Accordingly, these soils are required to meet the following requirements as outlined in Section 2.2 of the Waste Acceptance Plan, Revision 1 (WAP; RMC Geosciences, Inc., 2014):

"Soils contaminated with TPH, VOCs, SVOCs, organochlorine pesticides, PCBs, or CAM metals may be disposed in lined cells provided the following threshold concentrations are not exceeded:

- For petroleum hydrocarbon contaminated soils, the threshold concentrations are 1,000 mg/kg in the C4-C12 carbon chain range, 10,000 mg/kg in the C13-C22 carbon chain range, or an average TPH concentration of 50,000 mg/kg.
- Threshold concentration levels for constituents other than petroleum hydrocarbons include:
  - Soils with an average, contaminant-specific concentration that does not exceed a Preliminary Remediation Goal (PRG) for industrial sites established by the USEPA.
  - Soils with an average, contaminant-specific concentration that does not exceed a California Human Health Screening Level (CHHSL) for industrial sites established by the Cal-EPA.

Soils with for which a PRG or CHHSL has not been established with an average, contaminant-specific concentration that does not exceed, on a per weight basis, 100 times the MCL established by the USEPA or the State of California Department of Public Health.

Soils with VOC, SVOCs, organochlorine pesticide, PCB, or CAM metal contaminant concentrations higher than these limits may be disposed of in lined portions of the landfill based on the results of an evaluation that shows the contaminated soils are not classified as a Designated Waste in accordance with the Central Valley Regional Water Quality Control Board <u>Designated Level Methodology for Waste Classification</u> and Cleanup Level Determination or alternative methodology approved by the Executive Officer."

As required by the Amended WDRs and WAP, prior to delivery to the SCLF, generators are required to collect and analyze representative samples at the following frequency:

- Up to 1000 cubic yards: At least one sample for each 250 cubic yards.
- Between 1000 and 5000 cubic yards: At least 4 samples for the first 1000 cubic yards, and 1 sample for each additional 500 cubic yards.
- More than 5000 cubic yards: At least 12 samples for the first 5000 cubic yards, and 1 sample for each additional 1000 cubic yards.

Samples are required to be analyzed for potential site-specific contaminants by a certified analytical laboratory, and the results are provided to Republic for review, profile development, and determination of acceptability. Republic may request additional sampling or analyses to ensure compliance with the Amended WDRs and WAP.

Analytical results are provided in Table 15.

#### 11.1 Second Semiannual 2016 Waste Acceptance Results

The contaminated soil generators, analyses performed, type of special waste, and quantity of special waste disposed of during the monitoring period are summarized in Table 14.

Constituents measured at or above the Method Detection Limit (MDL) were then compared to calculated threshold limit concentrations as detailed in the site-specific Waste Acceptance Plan, Revision 1 (RMC Geosciences, Inc., 2014), and determined to be acceptable for disposal in lined cells if the measured concentrations were below these levels. As stipulated in the Amended WDRs, wastes containing analytes that exceed PRG or CHHSL levels may be accepted if the analyte concentrations do not exceed the respective State of California Hazardous Waste levels (as listed in Title 22 of the California Code of Regulations Section 66261.24) and Total Designated Levels (as calculated following the guidelines in Section C.3 of the Amended WDRs), whichever is lower. When comparing analyte concentrations to California hazardous waste

levels, the total analyte concentration must be below its respective Total Threshold Limit Concentration (TTLC) and it must be below ten times the Soluble Threshold Limit Concentration (STLC). If a total analyte concentration is more than ten times the STLC value, then the sample must be submitted for a Waste Extraction Test to determine its soluble analyte concentration. To be considered acceptable, the soluble analyte concentration must also be below its respective STLC value.

Table 15 summarizes the sample location, sample date, sampler, and analytical results for each generator. This table also compares the analytical data for the sample to the respective TTLCs, lined cell disposal threshold limits, and unrestricted use threshold limits to illustrate that acceptance criteria were met. Certified analytical reports and waste profiling forms are provided in Appendix F.

Based on the frequency of sampling and the comparison of analytical results to the waste acceptance criteria, all special that were disposed of at the SCL during the second semiannual 2016 monitoring period met the waste acceptance requirements of the Amended WDRs and the site-specific WAP.

#### 12.0 ANNUAL SUMMARY

During the 2016 monitoring year, groundwater elevations and chemistries were generally similar to past monitoring events. No evidence of a new release or changes in existing release conditions were identified. Concentration limits were exceeded during the 2016 monitoring year for VOCs at four of the five shallow, alluvial monitoring wells and at two of the six deep, bedrock wells. Additionally, concentration limits were exceeded for inorganic constituents at three deep, bedrock monitoring wells and three of the shallow, alluvial monitoring wells. With the exception of vinyl chloride at well MW-14 and alkalinity at well DW-3, which were added to tracking mode, all other concentration limit exceedances were for well/analyte pairs already in tracking mode (no retesting required) or retest samples did not confirm original results.

During the 2016 monitoring year, methane concentrations did not exceed 5%V at any landfill gas monitoring probe.

No new seeps were identified during the 2016 monitoring year.

Leachate, landfill gas condensate, groundwater extracted near the cut-off wall, and groundwater collected from subdrains at the SCLF are treated at the site and are subsequently used for dust control. Alternatively, the treated liquids are discharged to the Los Angeles City sanitary sewer system. Total volumes from each water source that were treated during 2016 are shown in Table 12.

During 2016 the following construction projects at the site were completed:

- Cell CC-3B Part 1A construction was completed and disposal operations began within the cell.
- Construction of cell CC-4 Part 1 commenced and is ongoing.
- High voltage power lines running through the center of the landfill were relocated to the perimeter.
- Grading of the pad for future flare 11 was completed.
- The above ground leachate collection system was upgraded.

Regular maintenance and adjustments to the gas collection system was performed by the facility throughout 2016. During 2016, the following modifications and upgrades to the facility's landfill gas collection were made:

- Continued operation of a Gas to Energy Plant: Landfill gas is now being converted into
  electricity; approximately 8,000 scfm of gas is converted into about 22 MW of electricity
  of which 18.5 MW is placed on the grid.
- 33 vertical gas wells were constructed and placed into service.
- 54 liquid extraction pumps were installed in vertical gas wells.
- 18 horizontal and slope collector gas extractions wells were installed.
- 15,150 linear feet of horizontal collector piping were installed.
- 3,250 linear feet of 12-inch header and 1,600 feet of 18-inch header were installed.

During March through July 2016, high voltage power lines running through the center of the landfill were relocated to the perimeter.

#### 12.1 Graphical Presentation of Analytical Data

Graphs depicting constituent concentrations in site monitoring wells are presented in Appendix H.

#### 12.2 2016 Analytical Data

Historical data is presented in tabular form in Appendix I. Complete data history for each monitoring well is submitted electronically to the Geotracker database.

#### 13.0 REFERENCES

California Regional Water Quality Control Board, Los Angeles Region, 2008, "Order No. R4-2008-0088 – Corrective Action Program Waste Discharge Requirements for Browning-Ferris Industries of California, Inc. (Sunshine Canyon City/County Landfill), File No. 58-076," October 2, 2008.

California Regional Water Quality Control Board, Los Angeles Region, 2009, "Revised Monitoring and Reporting Program (No. CI-2043) for Browning-Ferris Industries of California, Inc. (Sunshine Canyon City/County Landfill), File No. 58-076," July 21, 2009.

RMC Geoscience, Inc., 2014 "Waste Acceptance Plan, Revision 1, Sunshine Canyon Landfill, Los Angeles County, California." December.

#### **CERTIFICATION**

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a Geo-Logic Associates' California Registered Professional Geologist and Certified Engineering Geologist.

February 10, 2017

William B. Lopez

Date

California Certified Engineering Geologist #2143



## **TABLES**



## TABLE 1 REGULATORY COMPLIANCE CHECKLIST - MONITORING AND REPORTING PROGRAM CI-2043 SUNSHINE CANYON LANDFILL

MRP SECTION	REPORTING REQUIREMENT	REPORT SECTION
	Fransmittal Letter	Republic Transmittal Letter
-	Discussion of Violations	Executive Summary
L	Planned Corrective Actions	Executive Summary
	Signature of Owner/Operator Principal	Republic Transmittal Letter
-	Statement of validity, accuracy, and completeness	Republic Transmittal Letter
	Summary of Non-Compliance	Executive Summary
	ite Conditions	Section 2
	Narrative Description	Section 2
	Monitoring Parameters	Section 3.2, Table 2
	Groundawter Monitoring	Section 3
	Water Quality Protection Standards	Section 3.5, Tables 7A, 7B
	Statistical and Non-Statistical Data Analysis	Section 3.5, Tables 7A, 7B
-	Groundwater Flow Monitoring	Section 3.4
I.A.4	Leachate Monitoring	Section 7.0
	Vadose Zone Liquid Monitoring	Section 4.0
	Vadose Zone Gas Monitoring	Section 5.0
	Surface Water Monitoring	Section 6.0
<u> </u>	On-Site Water Use Monitoring	Section 8.0
<u> </u>	Seep and Trench Liquid Monitoring	Section 8.0
	aboratory Results	geometri did
	Groundwater	Appendix B, Tables 6A and 6B
	Subdrain and Lysimeter Liquid	Appendix B, Tables 8A and 8B
	NPDES Monitoring	Table 11
	Stream Diversion	Section 6.2
I.A.5	Spring Water	Section 6.3, Appendix D
	Leachate	Appendix B2; Table 12
	Trench Liquid	Tables 14A and 14B
	Non-Target Volatile Organic Compounds	Appendix B
	QA/QC Sample Results	Section 3.3, Tables 3A, 3B, 4A, and 4B, Appendix B
I.A.6	Summary and Certification of Standard Observation in accordance with NPDES requirements	Appendix E
	Summary of total volumes of liquids, on a monthly basis, of landfill leachate, condensate, and subdrain water.	Table 13
	Method of managing landfill-generated liquids.	Section 8.0
	Fable of estimated average monthly quantities of deposited waste (tons and cubic yards)	Section 10.0; Appendix F
I.A.8.b	An estimate of the remaining capacity (in tons and cubic yards) and the remaining life of the site in years and months.	Section 10.0
	Certification that all wastes comply with RWQCB requirements and were placed within the permittied boundary.	Republic Transmittal Letter
	Description and estimated flow rate of seeps and springs.	Appendix D
	Estimated amount of water used for landscape irrigation, dust suppression, and operations.	Table 13
	Date, source, quantity, description, and management of unacceptable wastes received at the facility.	Section 10.0
	Map showing waste disposal locations	Appendix D
I.A.9	Map showing monitoring locations	Figure 2; Figure 4
-	Map showing groundwater contours	Figures 3A and 3B
I.B.1	Discussion of compliance record, monitoring system changes, construction plans, corrective action milestones, etc.	Section 12.0
	Graphical Presentation of Analytical Data	Appendix H
I.B.3	Analytical data presented in tabular form	Appendix I



## TABLE 2 ANALYTICAL PARAMETERS AND METHODS SUNSHINE CANYON LANDFILL

Parameter	Typical USEPA	Frequency
	Method	
Indicator Parameters		
Liquid Level	Field	Quarterly
Alkalinity, total	310.1	Quarterly
Ammonia as Nitrogen	350.2	Quarterly
Chemical oxygen demand (COD)	410.2	Quarterly
Chloride	300.0	Quarterly
Potassium, total	6010B	Quarterly
Total Organic Carbon (TOC)	415.1	Quarterly
Total Dissolved Solids (TDS)	160.1	Quarterly
Volatile Organic Compounds (Appendix I, MTBE, TBA,	100.1	Quarterly
dichlorodifluoromethane, tetrahydrofuran, and carbon disulfide)	8260B	Quarterly
1.4-Dioxane	8270 or 8260SIM	Quarterly
Supplemental Parameters		Zan tony
pH	Field	Semiannual
Electrical Conductivity (EC)	Field	Semiannual
Temperature	Field	Semiannual
Turbidity	Field	Semiannual
Bicarbonate as CaCO3	310.1	Semiannual
Boron, total	6010B	Semiannual
Bromide	300.0	Semiannual
Calcium, total	6010b	Semiannual
Carbon dioxide	SM4500-CO2	Semiannual
Fluoride	340.2	Semiannual
Iron, total	6010B	Semiannual
Magnesium, total	6010B	Semiannual
Manganese, total	6010B	Semiannual
Nitrate-N	300.0	Semiannual
Sodium, total	6010B	Semiannual
Sulfate	300.0	Semiannual
Sulfide	376.2	Semiannual
Constituents of Concern (COCs)		(Last conducted June 2016)
Antimony (dissolved)	6010B	Every Five Years
Arsenic (dissolved)	200.8	Every Five Years
Barium (dissolved)	6010B	Every Five Years
Beryllium (dissolved)	6010B	Every Five Years
Chromium (dissolved)	6010B	Every Five Years
Cobalt (dissolved)	6010B	Every Five Years
Copper (dissolved)	6010B	•
	6010B	Every Five Years
Lead (dissolved)		Every Five Years
Mercury (dissolved)	7470 6010B	Every Five Years
Nickel (dissolved)	6010B	Every Five Years
Selenium (dissolved)	6010B	Every Five Years
Silver (dissolved)	6010B	Every Five Years
Thallium (dissolved)	6010B	Every Five Years
Tin (dissolved)	6010B	Every Five Years
Vanadium (dissolved)	6010B	Every Five Years
Zinc (dissolved)	6010B	Every Five Years
Semivolatile Organic Compounds	8270	Every Five Years
Any other pollutants that are detected in leachate	Various	Every Five Years
		(Next COC Sampling: Dec 2021)



## TABLE 3A SUMMARY OF BLANK SAMPLE RESULTS - THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

Primary Sampling Date	Blank Sampling Date	Blank Sample Collection Type	Reported Analytes
	9/19/16	QCAB	Methylene Chloride - 0.88j μg/L
9/19/16	9/19/16	QCTB	None Detected
	9/19/16	Method Blanks	None Detected
	9/20/16 QCAB		None Detected
9/20/16	9/20/16	QCTB	None Detected
	9/20/16	Method Blanks	None Detected
	9/21/16	QCAB	None Detected
9/21/16 9/21/16		QCTB	None Detected
	9/21/16		None Detected
	9/22/16	QCAB	None Detected
9/22/16	9/22/16	QCTB	None Detected
	9/22/16	Method Blanks	None Detected

# TABLE 3B SUMMARY OF BLANK SAMPLE RESULTS - FOURTH QUARTER 2016 SUNSHINE CANYON LANDFILL

Primary Sampling Date	Blank Sampling Date	Blank Sample Collection Type	Reported Analytes
	12/20/16	QCAB	None Detected
12/20/16	12/20/16	QCTB	None Detected
	12/20/16 Method Bla		Iron 0.0177j mg/L
	12/21/16	QCAB	None Detected
12/21/16	12/21/16	QCTB	None Detected
	12/21/16	Method Blanks	None Detected
	12/22/16 QCAB		None Detected
12/22/16	12/22/16	QCTB	None Detected
	12/22/16	Method Blanks	None Detected

#### Notes:

j: Indicates a trace concentration (between the Method Detection Limit and Practical Quantitation Limit.



# TABLE 4A SUMMARY OF DUPLICATE SAMPLE RESULTS - THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

ANALYTE	CM-10R 9/19/2016	Duplicate 9/19/2016	RELATIVE PERCENT DIFFERENCE						
GENERAL CHEMISTRY CONSTITUENTS (mg/L):									
Alkalinity, total	880	870	1						
Ammonia (as N)	7.5	7.5	0						
Chemical Oxygen Demand	66	70	6						
Chloride	11	11	0						
Total Dissolved Solids	1700	1800	6						
Total Organic Compound	5.7	5.6	2						
METALS (mg/L):									
Potassium	10	11	10						
VOLATILE ORGANIC COMPOU	NDS (μg/L):								
Methylene Chloride	1.2j	1.2j	NC						

TABLE 4B

SUMMARY OF DUPLICATE SAMPLE RESULTS - FOURTH QUARTER 2016

SUNSHINE CANYON LANDFILL

ANALYTE	DW-3 12-21-16	DUPLICATE 12-21-16	RELATIVE PERCENT DIFFERENCE						
GENERAL CHEMISTRY CONSTITUENTS (mg/L):									
Alkalinity, total	170	170	0						
Ammonia (as N)	0.76	0.76	0						
Bicarbonate alkalinity	170	170	0						
Carbon Dioxide	16	18	12						
Chemical Oxygen Demand	17j	10	NC						
Chloride	14	14	0						
Fluoride	0.73	0.72	1						
Sulfate	1200	1200	0						
Total Dissolved Solids	1900	1900	0						
Total Organic Carbon	0.67	0.52	25						
METALS (mg/L):									
Boron	0.066	0.1	2						
Calcium	320	310	3						
Iron	0.81	0.91	12						
Magnesium	110	110	0						
Manganese	0.088	0.089	1						
Potassium	9.7	9.3	4						
Sodium	71	69	3						
VOLATILE AND SEMIVOLATILE	ORGANIC COMPO	UNDS (μg/L): Not	Detected						

#### Notes:

Right-justified value, non-shaded box indicates a quantified concentration (above the Practica Quanitation Limit).

Right-justified, bolded value with a shaded box indicates an estimated-trace concentration Left-justified value, shaded box indicates not detected (method detection limit shown)

NC = Not calculated (relative percent difference only calculated for quantifiable concentrations) Only detected constituents shown.



<sup>\*\* -</sup> Sampled on 7/19/16 or 7/20/16.

## TABLE 5 GROUNDWATER ELEVATIONS AND SITE MONITORING WELL INFORMATION SUNSHINE CANYON LANDFILL

Well Number	MW-1	MW-2A	MW-2B	MW-5	MW-6	MW-9	MW-13R	MW-14	DW-1	DW-2	DW-3	DW-4
Well Casing Elevation (ft, MSL)	1344.48	1381.71	1381.98	1341.42	1347.32	1363.32	1345.78	1354.19	1351.93	1521.92	1682.54	1382.02
Approximate Well Casing Elevation (ft, MSL)*	-	1397.01	1398.68	-	-	-	-	-	_	-	-	1400.82
Total Depth of Well (ft)	29.60	26.00	54.40	26.20	23.50	26.70	27.80	28.10	205.80	72.30	256.60	116.00
Pump Depth (ft)	27.30	24.70	52.20	25.00	19.70	24.90	26.40	25.00	199.00	70.00	247.00	
Well Diameter (in)	4	4	4	2	2	4	4	4	4	4	4	4
Type of Pump (ft)	Bladder	Drop Tube	Bladder	Bladder	Bladder							
Depth to Water (ft below TOC)												
3/9/12	17.08	21.38	5.58	19.03	16.97	20.96	17.59	14.83	0.00	25.74	151.46	5.54
3/28/12	16.85	21.37	5.44	NM	16.72	20.28	16.89	14.79	0.00	NM	NM	5.52
6/22/12	17.31	21.42	5.57	19.37	17.13	15.26	17.83	15.47	0.00	26.64	151.69	5.63
9/18/12	17.56	21.74	5.81	19.70	17.09	13.36	18.10	15.08	0.00	28.38	151.68	5.79
12/17/12	17.94	21.96	5.90	19.24	16.62	12.56	17.51	14.98	0.00	27.33	151.98	5.90
3/11/13	15.88	21.60	5.73	18.84	16.34	14.81	16.57	14.48	0.00	26.88	150.31	5.94
6/25/13	16.13	21.74	5.89	19.36	16.57	16.57	17.36	14.75	0.00	27.68	151.13	6.28
9/16/13	16.95	21.88	6.04	19.71	16.85	16.95	17.71	14.92	0.00	28.78	151.82	6.35
12/16/13	16.58	21.81	5.84	19.44	16.62	17.01	17.62	14.68	0.00	29.48	152.19	6.28
3/24/14	15.92	21.89	5.70	19.82	17.16	13.05	18.00	15.42	0.00	29.42	152.53	6.21
6/9/14	16.41	21.96	7.04	19.14	16.54	12.63	17.74	14.80	0.00	30.47	152.54	6.65
9/15/14	17.16	22.38	6.76	19.67	16.82	12.01	18.04	14.79	0.00	31.82	152.72	6.87
12/15 & 23/2014	16.39	20.60	4.98	19.05	16.17	11.65	18.24	14.35	0.00	32.33	152.89	5.24
3/23/15	16.58	21.65	5.77	19.28	16.59	20.04	18.16	14.65	0.00	31.57	152.88	5.92
6/15/15	16.86	22.10	5.57	19.41	16.72	22.02	18.34	14.73	0.00	32.74	151.25	5.75
9/28/15	17.27	21.91	5.59	19.91	16.69	19.49	18.75	14.80	0.00	33.88	151.11	5.86
12/1/15	17.04	16.08	1.46	19.72	16.70	20.20	18.83	14.92	0.00	34.33	151.56	2.21
3/28/16	16.61	19.05	12.41	19.33	16.46	20.47	18.53	14.61	0.00	33.56	151.71	14.12
6/20/16	16.89	17.14	11.52	19.81	16.67	16.64	18.61	14.85	0.00	34.66	152.51	18.11
9/19/16	17.49	32.29	20.05	20.01	16.83	15.46	19.20	14.87	0.00	35.10	153.10	32.82
12/19/16	17.12	31.33	19.49	19.85	17.33	15.15	19.26	14.61	0.00	35.28	153.56	34.65
Liquid Elevation (ft, MSL)												
3/9/12	1327.40	1360.33	1376.40	1322.39	1330.35	1342.36	1328.19	1339.36	1351.93	1496.18	1531.08	1376.48
3/28/12	1327.63	1360.34	1376.54	NM	1330.60	1343.04	1328.89	1339.40	1351.93	NM	NM	1376.50
6/22/12	1327.17	1360.29	1376.41	1322.05	1330.19	1348.06	1327.95	1338.72	1351.93	1495.28	1530.85	1376.39
9/18/12	1326.92	1359.97	1376.17	1321.72	1330.23	1349.96	1327.68	1339.11	1351.93	1493.54	1530.86	1376.23
12/17/12	1326.54	1359.75	1376.08	1322.18	1330.70	1350.76	1328.27	1339.21	1351.93	1494.59	1530.56	1376.12
3/11/13	1328.60	1360.11	1376.25	1322.58	1330.98	1348.51	1329.21	1339.71	1351.93	1495.04	1532.23	1376.08
6/25/13	1328.35	1359.97	1376.09	1322.06	1330.75	1346.75	1328.42	1339.44	1351.93	1494.24	1531.41	1375.74
9/16/13	1327.53	1359.83	1375.94	1321.71	1330.47	1346.37	1328.07	1339.27	1351.93	1493.14	1530.72	1375.67
12/16/13	1327.90	1359.90	1376.14	1321.98	1330.70	1346.31	1328.16	1339.51	1351.93	1492.44	1530.35	1375.74
3/24/14	1328.56	1359.82	1376.28	1321.60	1330.16	1350.27	1327.78	1338.77	1351.93	1492.50	1530.01	1375.81
6/9/14	1328.07	1359.75	1374.94	1322.28	1330.78	1350.69	1328.04	1339.39	1351.93	1491.45	1530.00	1375.37
9/15/14	1327.32	1359.33	1375.22	1321.75	1330.50	1351.31	1327.74	1339.40	1351.93	1490.10	1529.82	1375.15
12/15 & 23/2014	1328.09	1361.11	1377.00	1322.37	1331.15	1351.67	1327.54	1339.84	1351.93	1489.59	1529.65	1376.78
3/23/2015	1327.90	1360.06	1376.21	1322.14	1330.73	1343.28	1327.62	1339.54	1351.93	1490.35	1529.66	1376.10
6/15/2015	1327.62	1359.61	1376.41	1322.01	1330.60	1341.30	1327.44	1339.46	1351.93	1489.18	1531.29	1376.27
9/28/2015	1327.21	1359.80	1376.39	1321.51	1330.63	1343.83	1327.03	1339.39	1351.93	1488.04	1531.43	1376.16
12/1/2015	1327.44	1365.63	1380.52	1321.70	1330.62	1343.12	1326.95	1339.27	1351.93	1487.59	1530.98	1379.81
3/28/2016	1327.87	1362.66	1369.57	1322.09	1330.86	1342.85	1327.25	1339.58	1351.93	1488.36	1530.83	1367.90
6/20/2016	1327.59	1364.57	1370.46	1321.61	1330.65	1346.68	1327.17	1339.34	1351.93	1487.26	1530.03	1363.91
9/19/2016	1326.99	1364.72	1378.63	1321.41	1330.49	1347.86	1326.58	1339.32	1351.93	1486.82	1529.44	1368.00
12/19/2016	1327.36	1365.68	1379.19	1321.57	1329.99	1348.17	1326.52	1339.58	1351.93	1486.64	1528.98	1366.17
Note:												

Note:

MSL = Mean Sea Level TOC = Top of Casing BOC = Bottom of Casing NA = Not Available

NM = Not Measured

All wells resurveyed in 2014, except for the following: PZ-1, PZ-3, & MW-8. Well CM-5R resurveyed in 201!

\* - Top of casing elevations are approximate. Wells MW-2A, MW-2B, and DW-4 were raised - survey pending



## TABLE 5, CONTINUED GROUNDWATER ELEVATIONS AND SITE MONITORING WELL INFORMATION SUNSHINE CANYON LANDFILL

Well Number	DW-5	PZ-1	PZ-2	PZ-3	PZ-4	CM-9R3	CM-10R	CM-11R	MW-8	CM-5	CM-5R
well Nulliber	DVV-3	PZ-1	PL-Z	FZ-3	FZ-4	CIVI-3N3	CIVI-10K	CIVI-11K	IVIVV-0	CIVI-3	CIVI-3N
Well Casing Elevation (ft. MSL)	1347.54	1643.76	1566.52	2029.19	1795.85	1902.40	1901.20	2010.41	1362.37	1892.84	2032.00
Total Depth of Well (ft)	101.00	103.30	160.90	230.00	125.50	29.00	110.90	31.00	1302.37	60.00	60
Depth of Pump (ft)	101.00	103.30	160.90	230.00	123.50	27.40	100.00	29.80		60.00	60
Well Diameter (in)	4	2	2	2	2	4	4	4		2	2
			Bladder		Bladder	Bladder	Bladder	Bladder	Dladdau	2	
Type of Pump	Bladder	l	Blauder	l	Biadder	Bladder	Biadder	Blauder	Bladder		
Depth to Water (ft below TOC)			•						•		
3/9/12	NM	89.25	NM	215.42	110.79	12.15	NM	22.44	17.89	20.46	NM
3/28/12	14.96	NM	123.22	NM	NM	10.01	NM	23.45	NM	NM	NM
6/22/12	14.73	89.33	123.14	215.69	110.73	10.81	46.85	18.26	15.68	21.60	NM
9/18/12	15.03	NM	123.18	215.78	110.92	13.82	48.31	NM	13.80	22.03	NM
12/17/12	14.90	83.27	123.27	215.90	110.80	11.42	47.37	23.11	13.62	19.86	NM
3/11/13	14.26	89.81	123.02	NM	110.11	9.89	47.57	21.02	15.32	17.39	NM
6/25/13	14.04	90.10	122.92	NM	110.23	13.29	48.70	22.62	16.41	19.16	NM
9/16/13	13.99	89.97	122.82	NM	110.10	15.30	49.13	24.31	16.46	19.50	NM
12/16/13	14.23	90.52	122.94	NM	110.18	17.09	49.36	25.56	16.44	18.62	NM
3/24/14	14.88	90.63	122.81	NM	110.38	12.58	49.81	20.88	14.41	18.08	NM
6/9/14	19.14	90.62	122.57	NM	110.37	15.41	50.26	21.90	15.23	19.34	NM
9/15/14	14.47	90.81	122.54	NM	110.46	17.95	50.69	23.54	13.39	20.61	NM
12/15 & 23/2014	14.43	90.81	122.68	NM	110.70	9.59	50.14	23.32	13.74	NM	NM
3/23/15	14.61	91.45	122.71	216.12	110.88	12.92	51.37	19.71	18.03	ABANDONED	198.53
6/15/15	14.44	91.48	122.52	216.42	110.93	16.14	51.55	22.10	18.61	ABANDONED	201.10
9/28/15	14.53	91.82	122.50	217.06	111.14	17.56	51.98	24.40	17.68	ABANDONED	202.46
12/1/15	14.78	92.05	122.67	217.53	111.30	18.87	52.38	26.09	18.18	ABANDONED	204.25
3/28/16	14.39	91.84	122.38	217.74	111.23	12.06	52.41	20.47	18.20	ABANDONED	206.39
6/20/16	14.36	91.97	122.44	218.20	111.56	15.41	52.81	22.39	18.04	ABANDONED	208.15
9/19/16	15.02	92.25	122.34	218.70	111.72	17.80	53.88	27.29	16.13	ABANDONED	210.04
12/19/16	15.06	92.39	122.61	219.13	112.01	19.91	52.94	28.54	16.03	ABANDONED	211.36
Liquid Elevation (ft, MSL)											
3/9/12	NM	1554.51	NM	1813.77	1685.06	1890.25	NM	1987.97	1344.48	1872.38	NM
3/28/12	1332.58	NM	1443.30	NM	NM	1892.39	NM	1986.96	NM	NM	NM
6/22/12	1332.81	1554.43	1443.38	1813.50	1685.12	1891.59	1854.35	1992.15	1346.69	1871.24	NM
9/18/12	1332.51	NM	1443.34	1813.41	1684.93	1888.58	1852.89	NM	1348.57	1870.81	NM
12/17/12	1332.64	1560.49	1443.25	1813.29	1685.05	1890.98	1853.83	1987.30	1348.75	1872.98	NM
3/11/13	1333.28	1553.95	1443.50	NM	1685.74	1892.51	1853.63	1989.39	1347.05	1875.45	NM
6/25/13	1333.50	1553.66	1443.60	NM	1685.62	1889.11	1852.50	1987.79	1345.96	1873.68	NM
9/16/13	1333.55	1553.79	1443.70	NM	1685.75	1887.10	1852.07	1986.10	1345.91	1873.34	NM
12/16/13	1333.31	1553.24	1443.58	NM	1685.67	1885.31	1851.84	1984.85	1345.93	1874.22	NM
3/24/14	1332.66	1553.13	1443.71	NM	1685.47	1889.82	1851.39	1989.53	1347.96	1874.76	NM
6/9/14	1328.40	1553.14	1443.95	NM	1685.48	1886.99	1850.94	1988.51	1347.14	1873.50	NM
9/15/14	1333.07	1552.95	1443.98	NM	1685.39	1884.45	1850.51	1986.87	1348.98	1872.23	NM
12/15 & 23/2014	1333.11	1552.95	1443.84	NM	1685.15	1892.81	1851.06	1987.09	1348.63	NM	NM
3/23/2015	1332.93	1552.31	1443.81	1813.07	1684.97	1889.48	1849.83	1990.70	1344.34	ABANDONED	1833.47
6/15/2015	1333.10	1552.28	1444.00	1812.77	1684.92	1886.26	1849.65	1988.31	1343.76	ABANDONED	1830.90
9/28/2015	1333.01	1551.94	1444.02	1812.13	1684.71	1884.84	1849.22	1986.01	1344.69	ABANDONED	1829.54
12/1/2015	1332.76	1551.71	1443.85	1811.66	1684.55	1883.53	1848.82	1984.32	1344.19	ABANDONED	1827.75
3/28/2016	1333.15	1551.92	1444.14	1811.45	1684.62	1890.34	1848.79	1989.94	1344.17	ABANDONED	1825.61
6/20/2016	1333.18	1551.79	1444.08	1810.99	1684.29	1886.99	1848.39	1988.02	1344.33	ABANDONED	1823.85
9/19/2016	1332.52	1551.75	1444.18	1810.49	1684.13	1884.60	1847.32	1983.12	1346.24	ABANDONED	1821.96
12/19/2016	1332.48	1551.37	1443.91	1810.06	1683.84	1882.49	1848.26	1981.87	1346.34	ABANDONED	1820.64

#### Note:

MSL = Mean Sea Level

TOC = Top of Casing BOC = Bottom of Casing

NA = Not Available

NM = Not Measured

All wells resurveyed in 2014, except for the following: PZ-1, PZ-3, & MW-8. Well CM-5R resurveyed in 2015



## TABLE 6A SUMMARY OF ANALYTICAL RESULTS - THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

		BACK	GROUND V	VELLS			SHALLOW	MONITOR	NG WELLS	;				DE	EP MONIT	ORING WE	LLS			
Analyte	Units	CM-9R3	CM-11R	CM-10R	MW-1	MW-2A	MW-5	MW-6	MW-9	MW-13R	MW-14	DW-1	DW-2	DW-3	DW-4	DW-5	MW-2B	PZ-2	PZ-4	ARAR
		9/19/2016	9/19/2016	9/19/2016	9/22/2016	9/21/2016	9/21/2016	9/20/2016	9/20/2016	9/20/2016	9/20/2016	9/20/2016	9/21/2016	9/20/2016	9/21/2016	9/22/2016	9/21/2016	9/20/2016	9/20/2016	,
Alkalinity	mg/L	140	66	880	680	380	630	480	660	700	410	550	370	170	350	980	350	380	340	NV
Ammonia-Nitrogen	mg/L	3.9	1.7	7.5	3.8	2.9	4.9	1.3	4.8	6.0	0.16j	1.8	3.0	0.52	3.9	0.35j	3.2	2.9	2.0	NV
Chemical Oxygen Demand	mg/L	36	30	66	150	37	98	10	93	240	10j	22	28	10j	26	45	34	10	10	NV
Chloride	mg/L	14	12	11	290	17	160	29	200	110	24	14	11	14	14	35	14	12	8.3	500(2)
Potassium, total	mg/L	14	9.2	10	27	5.0	28	5.8	23	24	6.9	1.6	4.9	9.1	4.2	0.82	4.0	3.1	4.7	NV
Total Dissolved Solids	mg/L	4300	3500	1700	3700	2600	3200	2800	3500	2100	2600	3300	2000	1900	2800	1100	2600	4300	1100	1000(2)
Total Organic Carbon	mg/L	5.8	4.1	5.7	47	3.5	32	5.1	39	24	3.3	3.3	1.4	0.32	1.7	12.0	1.8	2.5	1.0	NV
t-Butanol	μg/L	5.0	5.0	5.0	22	5.0	5.0	5.0	20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	NV
cis-1,2-Dichloroethene	μg/L	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	6(1)-70(3)
1,4-Dioxane	μg/L	0.24	0.28	0.26	19	0.24	13	0.24	19	8.1	0.25	0.24	0.26	0.25	0.24	0.24	0.24	0.27	0.24	NV
Methylene Chloride	μg/L	1.1j*	1.2j*	1.2j*	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	5(1,3)
Methyl tert-butyl ether	μg/L	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.36j	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	13(1)/5(2)
Tetrahydrofuran	μg/L	5.0	5.0	5.0	5.2j	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	NV

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.
- \* Analyte also detected in a blank sample at a similar concentration

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

0.25

Analyte was not detected. Value listed is the Method Detection Limit.

2500



### TABLE 6B SUMMARY OF ANALYTICAL RESULTS - FOURTH QUARTER 2016 SUNSHINE CANYON LANDFILL

		BACK	GROUND W	/ELLS			SHALLOV	/ MONITORII	NG WELLS						DEEP MONI	TORING WEI	LS			1
Analyte	Units	CM-9R3	CM-11R	CM-10R	MW-1	MW-2A	MW-5	MW-6	MW-9	MW-13R	MW-14	DW-1	DW-2	DW-3	DW-4	DW-5	MW-2B	PZ-2	PZ-4	ARAR
		12/20/16	12/20/16	12/20/16	12/22/2016	12/21/16	12/21/2016	12/20/2016	12/21/2016	12/22/2016	12/20/2016	12/20/2016	12/20/2016	12/21/2016	12/21/2016	12/22/2016	12/21/2016	12/20/2016	6/23/2016	
Inorganic Monitoring Parameters:																				
Alkalinity, total	mg/L	180	100	420	700	360	640	400	740	720	380	560	370	170	350	970	350	370	350	NV
Alkalinity, bicarbonate	mg/L	180	100	420	700	360	640	400	740	720	380	450	370	170	350	930	350	350	350	NV
Ammonia-Nitrogen	mg/L	7.3	2.2	15	3.7	3.2	6.6	1.4	4.7	6.3	0.24j	2.1	3.3	0.76	4.5	0.27j	3.5	3.3	2.5	NV
Bromide	mg/L	1.3	1.3	0.50	3.7	).50	2.4	0.81j	4.8	1.7	0.73j	1.3	0.36j	0.25	0.50	0.67	0.50	2.5	0.25	NV
Carbon Dioxide, free	mg/L	88	48	110	300	72	190	97	270	72	62	2.0	28	16	32	2.0	35	2.0	44	NV
Chemical Oxygen Demand	mg/L	<b>11</b> j	10	<b>1</b> 8J	140	<b>1</b> 6j	66	17j	160	250	10	10	10	17	10	51	10	10	10	NV
Chloride	mg/L	14	11	11	220	15	130	28	260	210	25	13	11	14	11	. 21	12	11	9.1	500(2)
Fluoride	mg/L	3.7	2.3J	1.8	2.5	1.8	3.2	1.9	2.9	0.59	2.2	3.5	0.25	0.73	0.50	3.7	1.6	2.5	1.3	2(1)-4(3)
Nitrate-Nitrogen	mg/L	0.28	0.79	0.11	0.11	).11	0.11	0.11	0.28	0.055	0.11	0.28	0.055	0.055	0.11	0.055	0.11	0.55	0.055	10(1,3)
Sulfate	mg/L	3200	2400	1800	1600	1600	1500	1700	1600	680	1500	1800	1100	1200	1800	0.25	1600	2700	510	500(2)
Sulfide, total	mg/L	0.020j	0.020	4.1	0.025j C	0.020	0.020	1.2	0.020	100	0.020	0.82	0.020	0.020	0.020	0.073	0.022j	0.037j	0.020	NV
Total Dissolved Solids	mg/L	4700	3600	3000	3400	2500	3100	2700	3600	2000	2600	3200	1900	1900	2800	1100	2600	4000	1100	1000(2)
Total Organic Carbon	mg/L	5.8	4.3	3.6	44	3.8	26	4.8	53	22	4.0	3.0	1.6	0.67	1.9	6.8	1.9	2.7	1.2	NV
Metals:																				
Boron	mg/L	2.2	1.8	1.1	1.3	0.60	1.0	0.69	1.3	0.88	0.43	2.0	0.61	0.066	0.59	2.8	0.58	1.4	0.18	NV
Calcium	mg/L	390	160	320	460	230	430	340	440	170	350	3.0	110	320	200	5.9	190	13	130	NV
Iron	mg/L	19	1.2	0.53	63	23	19	8.3	51	0.23	0.60	0.062*	1.3	0.81	2.5	0.14	3.0	0.050*	0.95	0.3(2)
Magnesium	mg/L	260	99	210	210	120	190	170	220	160	140	1.7	72	110	130	0.95	110	11	76	NV
Manganese	mg/L	3.9	1.1	0.56	3.6	1.2	4.8	0.86	5.6	0.010	3.0	0.010	0.16	0.088	0.14	0.11	0.130	0.026	0.12	0.05(2)
Potassium, total	mg/L	15	9.1	13	33	5.9	30	6.6	26	23	7.9	1.3	4.4	9.7	4.7	0.86	4.6	2.7	4.5	NV
Sodium	mg/L	600	840	270	370	420	270	280	420	210	280	1000	460	71	480	480	450	1300	110	NV
Volatile and Semivolatile Organic Compound	ds:																			
Allyl Chloride	μg/L	0.50	0.50	0.50	0.50	).50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	2.3	0.50	0.50	0.50	NV
t-Butanol	μg/L	5.0	5.0	5.0	20 5	5.0	5.0	5.0	33	6.3j	5.0	5.0	5.0	5.0	5.0	5.0j	5.0	5.0	5.0	NV
cis-1,2-Dichloroethene	μg/L	0.25	0.25	0.25	0.25 C	).25	0.25	0.25	0.54	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	6(1)-70(3)
1,4-Dioxane	μg/L	0.24	0.28	0.24	19 0	).24	11	0.25	23	6.2	0.25	0.24	0.24	0.24	0.25	0.26	0.24	0.26	0.24	NV
Naphthalene	μg/L	0.40	0.40	0.40	0.40	.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.86j	0.40	0.40	0.40	NV
Tetrahydrofuran	μg/L	5.0	5.0	5.0	5.0 5	5.0	5.0	5.0	6.2j	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	NV

#### Notes

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.
- NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

- \* Analyte also detected in a blank sample at a similar concentration.
- $^{\rm H}$  Analyte prepped or analyzed past hold time.

Analyte was not detected. Value listed is the Method Detection Limit.

2500

0.25



## TABLE 7A COMPARISON OF INTRAWELL WATER QUALITY PROTECTION STANDARDS TO ANALYTICAL RESULTS - THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

												WE	LL										
Analyte	Units	MV	V-1	M\	N-5	M	W-6	MW	/-13R	MV	V-14	DV	V-1	D۱	N-2	DV	V-3	D۱	V-5	P	Z-2	PZ	Z-4
		Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS	Result	WQPS
Alkalinity	mg/L	680	844.76	630	727.34	480	571.59	700	972.24	410	587.83	550	658.76	370	410.47	170	162.81	980	1009.98	380	411.93	340	341.13
Ammonia-Nitrogen	mg/L	3.8	10.634	4.9	5.714	1.3	1.337	6.0	7.732	0.16j	0.5703	1.8	2.4	3.0	4.308	0.52	0.7564	0.35j	0.3918	2.9	3.598	2.0	2.976
Chemical Oxygen Demand	mg/L	150	202.056	98	135.7	10	75.338	240	407.58	10j	54.674	22	49.801	28	52.743	10j	15.206	45	76.47	10	26.386	10	24.85
Chloride	mg/L	290	408.469	160	469.603	29	70.829	110	213.802	24	88.987	14	17.737	11	15.462	14	17.534	35	101.838	12	16.398	8.3	11.706
Potassium, total	mg/L	27	54.763	28	34.393	5.8	10.679	24	27.224	6.9	12.508	1.6	3.838	4.9	6.183	9.1	12.357	0.82	5.262	3.1	4.693	4.7	5.643
Total Dissolved Solids	mg/L	3700	4495	3200	4614.2	2800	4486.5	2100	3450.9	2600	5128.5	3300	3600.2	2000	2178.3	1900	2313.1	1100	1417.3	4300	4403.2	1100	1529.5
Total Organic Carbon	mg/L	47	75.928	32	50.696	5.1	15.408	24	54.233	3.3	13.006	3.3	9.947	1.4	3.499	0.32	2.115	12	11.745	2.5	2.887	1.0	2.085
Volatile Organic Compounds:	(The WQPS is	the PQL for an	y single VOC	detected.)				-						-		-		-					
t-Butanol	μg/L	22	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10
1,4-Dioxane	μg/L	19	0.99	13	0.99	0.24	1.0	8.1	0.94	0.25	0.95	0.24	10	0.26	0.99	0.25	0.94	0.24	0.95	0.27	1.1	0.24	0.97
Tetrahydrofuran	μg/L	5.2j	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0	10

#### Notes:

(j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

ND: Analyte was not detected. Detection limit is unknown.

Analyte was not detected. Value listed is the Method Detection Limit.

Analyte concentration exceeds intrawell WQPS.



TABLE 7B

COMPARISON OF INTRAWELL WATER QUALITY PROTECTION STANDARDS TO ANALYTICAL RESULTS - FOURTH QUARTER 2016

SUNSHINE CANYON LANDFILL

												WEL	.L										
Analyte	Units	MW-	-1	MW	-5	MW	-6	MW-1	L3R	MW-	14	DW-	-1	DW-	2	DW-	3	DW-	5	PZ-	2	PZ-4	1
		12/22/2016	WQPS	12/21/2016	WQPS	12/20/2016	WQPS	12/22/2016	WQPS	12/20/2016	WQPS	12/20/2016	WQPS	12/20/2016	WQPS	12/21/2016	WQPS	12/22/2016	WQPS	12/20/2016	WQPS	12/20/2016	WQPS
Alkalinity	mg/L	700	844.76	640	727.34	400	571.59	720	972.24	380	587.83	560	658.76	370	410.47	170	162.81	970	1009.98	370	411.93	350	341.13
Ammonia-Nitrogen	mg/L	3.7	10.634	6.6	5.714	1.4	1.337	6.3	7.732	0.24j	0.5703	2.1	2.4	3.3	4.308	0.76	0.7564	0.27j	0.3918	3.3	3.598	2.5	2.976
Chemical Oxygen Demand	mg/L	140	202.056	66	135.7	<b>1</b> 7j	75.338	250	407.58	10	54.674	10	49.801	10	52.743	<b>17</b> j	15.206	51	76.47	10	26.386	10	24.85
Chloride	mg/L	220	408.469	130	469.603	28	70.829	210	213.802	25	88.987	13	17.737	11	15.462	14	17.534	21	101.838	11	16.398	9.1	11.706
Potassium, total	mg/L	33	54.763	30	34.393	6.6	10.679	23	27.224	7.9	12.508	1.3	3.838	4.4	6.183	9.7	12.357	0.86	5.262	2.7	4.693	4.5	5.643
Total Dissolved Solids	mg/L	3400	4495	3100	4614.2	2700	4486.5	2000	3450.9	2600	5128.5	3200	3600.2	1900	2178.3	1900	2313.1	1100	1417.3	4000	4403.2	1100	1529.5
Total Organic Carbon	mg/L	44	75.928	26	50.696	4.8	15.408	22	54.233	4.0	13.006	3.0	9.947	1.6	3.499	0.67	2.115	6.8	11.745	2.7	2.887	1.2	2.085
Volatile Organic Compounds:	(The WQPS i	s the PQL for any	single VOC	detected.)																			
Allyl Chloride	μg/L	0.50	1.0	0.50	1.0	0.50	1.0	0.50	1.0	0.50	1.0	0.50	1.0	0.50	1.0	0.50	1.0	2.3	1.0	0.50	1.0	0.50	1.0
t-Butanol	μg/L	20	10	5.0	10	5.0	10	6.3j	10	5.0	10	5.0	10	5.0	10	5.0	10	5.0j	10	5.0	10	5.0	10
1,4-Dioxane	μg/L	19	0.94	11	0.94	0.25	0.99	6.2	0.95	0.25	1.0	0.24	0.94	0.24	0.94	0.24	1.0	0.25	0.98	0.26	1.0	0.25	0.96
Naphthalene	μg/L	0.40	1.0	0.40	1.0	0.40	1.0	0.40	1.0	0.40	1.0	0.40	1.0	0.40	1.0	0.40	1.0	0.86j	1.0	0.40	1.0	0.40	1.0

#### Notes:

0.25

(j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

ND: Analyte was not detected. Detection limit is unknown.

Analyte was not detected. Value listed is the Method Detection Limit.

2500 Analyte concentration exceeds intrawell WQPS.



<sup>\*</sup> Field/Laboratory containment (detected in blank samples, see Table 3B)

# TABLE 8A SUMMARY OF ANALYTICAL RESULTS FOR VADOSE ZONE LIQUID MONITORING POINTS THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

		SUBDRAIN IV	ONITORING			
		POII	NTS	LYSIN	1ETERS	
Analyte	Units		Combined			ARAR
		Subdrain N	Subdrains	LY-6	LY-7	
		9/19/2016	9/19/2016	9/21/2016	9/20/2016	
Field Parameters:						
Electrical Conductivity	mS/cm	3200	2330	Dry	1140	NV
Oxidation Reduction Potential	mV	-23	170	Dry	-60	NV
Oxygen, dissolved	mg/L	2.56	2.52	Dry	2.03	NV
рН	Units	6.22	6.84	Dry	6.74	6.5-8.5(2)
Temperature	°C	29.98	34.83	Dry	25.29	NV
Turbidity	NTU	0.0	11.9	Dry	55.2	5(2)
General Chemistry Parameters:	•					
Alkalinity, total	mg/L	520	340	Dry	2300	NV
Ammonia-Nitrogen	mg/L	3.1	0.52	Dry	190	NV
Chemical Oxygen Demand	mg/L	75	27	Dry	960	NV
Chloride	mg/L	110	29	Dry	2200	500(2)
Total Dissolved Solids	mg/L	2600	1900	Dry	9300	1000(2)
Total Organic Carbon	mg/L	24	3.9	Dry	310	NV
Metals:						
Potassium	mg/L	7.9	5.2	Dry	130	NV
Volatile and Semivolatile Organic (	Compounds:					
Benzene	μg/L	0.44j	0.25	Dry	3.1	1(1)-5(3)
Acetone	μg/L	10	10	Dry	13j	NV
t-Butanol	μg/L	16	5.0	Dry	1200	NV
1,2-Dichloroethane	μg/L	0.25	0.25	Dry	0.86	0.5(1)-5(3)
1,2-Dichloropropane	μg/L	0.25	0.25	Dry	0.31j	5(1,3)
cis-1,2-Dichloroethene	μg/L	0.69	0.25	Dry	1.6	6(1)-70(3)
1,4-Dichlorobenzene	μg/L	0.70	0.25	Dry	3.3	5(1)-75(3)
1,4-Dioxane	μg/L	9.6	1.4	Dry	160	NV
Methylene Chloride	μg/L	0.88	1.1j*	Dry	0.88	5(1,3)
Methyl tert-butyl ether	μg/L	0.75	0.25	Dry	0.98	13(1)/5(2)
Tetrahydrofuran	μg/L	5.0	5.0	Dry	9.6j	NV

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

Analyte was detected.

 $f{*}$  - Analyte also detected in a blank sample at a similar concentration.

0.25 173 **2500**  Analyte was not detected. Value listed is the Method Detection Limit.



# TABLE 8B SUMMARY OF ANALYTICAL RESULTS FOR VADOSE ZONE LIQUID MONITORING POINTS FOURTH QUARTER 2016 SUNSHINE CANYON LANDFILL

		SUBDRAIN M	ONITORING			
		POI	NTS	LYSIM	ETERS	
Analyte	Units		Combined			ARAR
		Subdrain N	Subdrains	LY-6	LY-7	
		12/20/2016	12/20/2016	12/20/2016	12/20/2016	
Field Parameters:						
Electrical Conductivity	mS/cm	2550	3330	Dry	NS	NV
Oxidation Reduction Potential	m۷	36	-28	Dry	NS	NV
Oxygen, dissolved	mg/L	3.41	2.81	Dry	NS	NV
pH	Units	6.23	6.56	Dry	NS	6.5-8.5(2)
Temperature	°C	18.10	19.93	Dry	NS	NV
Turbidity	NTU	0.6	32.4	Dry	NS	5(2)
General Chemistry Parameters:	•	•	•	·		, ,
Alkalinity, total	mg/L	920	830	Dry	NS	NV
Alkalinity, bicarbonate	mg/L	4.0	830	Dry	NS	NV
Ammonia-Nitrogen	mg/L	3.9	4.6	Dry	NS	NV
Bromide	mg/L	1.6J	2.5	Dry	NS	NV
Carbon dioxide	mg/L	250	380	Dry	NS	NV
Chemical Oxygen Demand	mg/L	59	81	Dry	NS	NV
Chloride	mg/L	120	130	Dry	NS	500(2)
Fluoride	mg/L	1.3	2.5	Dry	NS	2(1)-4(3)
Nitrate as Nitrogen	mg/L	0.28	0.11	Dry	NS	10(1,3)
Sulfate	mg/L	1300	1700	Dry	NS	500(2)
Total Dissolved Solids	mg/L	3000	3500	Dry	NS	1000(2)
Total Organic Carbon	mg/L	24	29	Dry	NS	NV
Metals						
Boron	mg/L	0.51	1.0	Dry	NS	NV
Calcium	mg/L	260	390	Dry	NS	NV
Iron	mg/L	13	53	Dry	NS	0.3(2)
Magnesium	mg/L	180	210	Dry	NS	NV
Manganese	mg/L	3.1	4.7	Dry	NS	0.05(2)
Potassium	mg/L	7.6	17	Dry	NS	NV
Sodium	mg/L	250	360	Dry	NS	NV
Volatile and Semivolatile Organic Com	pounds:					
t-Butanol	μg/L	19	36	Dry	NS	NV
cis-1,2-Dichloroethene	μg/L	0.48J	2.3	Dry	NS	6(1)-70(3)
1,4-Dichlorobenzene	μg/L	0.68	0.80	Dry	NS	5(1)-75(3)
1,4-Dioxane	μg/L	15.0	19	Dry	NS	NV
Methyl tert-butyl ether	μg/L	0.45J	1.3	Dry	NS	13(1)/5(2)
Tetrahydrofuran	μg/L	5.0	7.2J	Dry	NS	NV

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

<u>\* - Analyte al</u>so detected in a blank sample at a similar concentration.

0.25

2500

Analyte was not detected. Value listed is the Method Detection Limit.

Analyte was detected.



TABLE 9
SUMMARY OF VADOSE ZONE GAS MONITORING - SECOND SEMIANNUAL 2016 MONITORING PERIOD
SUNSHINE CANYON LANDFILL

D b - 1D	1	Depth						
Probe ID	Interval	(ft bgs)	7/19-21/16	8/16-18/16	9/20-22/16	10/18-20/2016	11/15-17/2016	12/13-15/16
	Α	10-15				•		
P-202	В	25-30			DECOMM	ISSIONED		
	С	40-45						
	Α	10-15	0.0	0.0	0.0	0.0	0.0	0.0
P-203	В	25-30	0.0	0.0	0.0	0.0	0.0	0.0
	С	40-45	0.0	0.0	0.0	0.0	0.0	0.0
	Α	6-11	0.0	0.0	0.0	0.0	0.0	0.0
	В	20-25	0.2	0.3	0.4	0.2	0.2	0.2
P-205R	С	33-38	1.2	1.2	1.2	1.3	1.1	1.2
	D	48-53	1.9	2.1	2.2	2.1	2.0	2.1
	Е	62-67	1.9	1.9	1.8	1.6	1.8	1.2
	Α	10-15	0.0	0.0	0.0	0.0	0.0	0.0
P-206	В	25-30	0.0	0.0	0.0	0.0	0.0	0.0
	С	40-45	0.0	0.0	0.0	0.0	0.0	0.0
	Α	10-15	0.0	0.0	0.0	0.0	0.0	0.0
P-207	В	25-30	0.0	0.0	0.0	0.0	0.0	0.0
	С	40-45	0.0	0.0	0.0	0.0	0.0	0.0
	Α	10-15	0.0	0.0	0.0	0.0	0.0	0.0
P-208	В	25-30	0.0	0.0	0.0	0.0	0.0	0.0
	С	40-45	0.0	0.0	0.0	0.0	0.0	0.0
	Α	10-15	0.0	0.0	0.0	0.0	0.0	0.0
P-210	В	25-30	0.0	0.0	0.0	0.0	0.0	0.0
	С	40-45	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	23-31	0.0	0.0	0.0	0.0	0.0	0.0
P-213	С	39-47	0.0	0.0	0.0	0.0	0.0	0.0
	D	55-62	0.0	0.0	0.0	0.0	0.0	0.0
	Ε	71-80	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-16	0.0	0.0	0.0	0.0	0.0	0.0
P-214	В	23-32	0.0	0.0	0.0	0.0	0.0	0.0
	С	42-51	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	24-31	0.0	0.0	0.0	0.0	0.0	0.0
P-215	С	41-48	0.0	0.0	0.0	0.0	0.0	0.0
	D	58-65	0.0	0.0	0.0	0.0	0.0	0.0
	Е	75-82	0.0	0.0	0.0	0.0	0.0	0.0
	Α	8-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	32-37	0.0	0.0	0.0	0.0	0.0	0.0
P-216	С	56-63	0.0	0.0	0.0	0.0	0.0	0.0
	D	80-87	0.0	0.0	0.0	0.0	0.0	0.0
	Е	104-111	0.0	0.0	0.0	0.0	0.0	0.0
D 2470	Α	6-11	0.0	0.0	0.0	0.0	0.0	0.0
P-217R	В	16-21	0.0	0.0	0.0	0.0	0.0	0.0



### TABLE 9, CONTINUED SUMMARY OF VADOSE ZONE GAS MONITORING - SECOND SEMIANNUAL 2016 MONITORING PERIOD SUNSHINE CANYON LANDFILL

		Depth						
Probe ID	Interval	(ft bgs)	7/19-21/16	8/16-18/16	9/20-22/16	10/18-20/2016	11/15-17/2016	12/13-15/16
P-218	Α	5-8		REM	OVED DUE TO			· ·
	Α	7-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	57-66	0.0	0.0	0.0	0.0	0.0	0.0
P-219	С	109-117	0.0	0.0	0.0	0.0	0.0	0.0
	D	158-167	0.0	0.0	0.0	0.0	0.0	0.0
	E	209-218	0.0	0.0	0.0	0.0	0.0	0.0
	Α	6.9-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	44-51	0.0	0.0	0.0	0.0	0.0	0.0
P-220A	С	79-88	0.0	0.0	0.0	0.0	0.0	0.0
	D	117-127	0.0	0.0	0.0	0.0	0.0	0.0
	E	150-159	0.0	0.0	0.0	0.0	0.0	0.0
	Α	8-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	32-39	0.0	0.0	0.0	0.0	0.0	0.0
P-220B	С	56-61	0.0	0.0	0.0	0.0	0.0	0.0
	D	80-87	0.0	0.0	0.0	0.0	0.0	0.0
	E	104-111	0.0	0.0	0.0	0.0	0.0	0.0
	Α	5-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	49-58	0.0	0.0	0.0	0.0	0.0	0.0
P-221	С	91-101	0.0	0.0	0.0	0.0	0.0	0.0
	D	134-143	0.0	0.0	0.0	0.0	0.0	0.0
	E	176-186	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	48-57	0.0	0.0	0.0	0.0	0.0	0.0
P-222	С	88-98	0.0	0.0	0.0	0.0	0.0	0.0
	D	132-141	0.0	0.0	0.0	0.0	0.0	0.0
	E	173-181	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	32-41	0.0	0.0	0.0	0.0	0.0	0.0
P-223	С	51-64	0.0	0.0	0.0	0.0	0.0	0.0
	D	78-88	0.0	0.0	0.0	0.0	0.0	0.0
	E	100-113	0.0	0.0	0.0	0.0	0.0	0.0
	Α	5-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	60-70	0.0	0.0	0.0	0.0	0.0	0.0
P-224	С	115-125	0.0	0.0	0.0	0.0	0.0	0.0
	D	168-180	0.0	0.0	0.0	0.0	0.0	0.0
	E	223-236	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	65-73	0.0	0.0	0.0	0.0	0.0	0.0
P-225	С	124-133	0.0	0.0	0.0	0.0	0.0	0.0
	D	184-192	0.0	0.0	0.0	0.0	0.0	0.0
	E	243-250	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	58-68	0.0	0.0	0.0	0.0	0.0	0.0
P-226	С	108-117	0.0	0.0	0.0	0.0	0.0	0.0
	D	158-168	0.0	0.0	0.0	0.0	0.0	0.0
	E	202-209	0.0	0.0	0.0	0.0	0.0	0.0



### TABLE 9, CONTINUED SUMMARY OF VADOSE ZONE GAS MONITORING - SECOND SEMIANNUAL 2016 MONITORING PERIOD SUNSHINE CANYON LANDFILL

		Depth						
Probe ID	Interval	(ft bgs)	7/19-21/16	8/16-18/16	9/20-22/16	10/18-20/2016	11/15-17/2016	12/13-15/16
	Α	6-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	46-55	0.0	0.0	0.0	0.0	0.0	0.0
P-227	С	85-95	0.0	0.0	0.0	0.0	0.0	0.0
	D	126-134	0.0	0.0	0.0	0.0	0.0	0.0
	E	164-172	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-14	0.0	0.0	0.0	0.0	0.0	0.0
	В	56-65	0.0	0.0	0.0	0.0	0.0	0.0
P-228	С	107-115	0.0	0.0	0.0	0.3	0.0	0.0
	D	156-165	0.0	0.0	0.0	0.0	0.0	0.0
	E	203-214	0.0	0.0	0.0	0.0	0.0	0.0
	Α	4-15	0.0	0.0	0.0	0.0	0.0	0.0
	В	42-50	0.0	0.0	0.0	0.0	0.0	0.0
P-229	С	77-86	0.0	0.0	0.0	0.0	0.0	0.0
	D	106-115	0.0	0.0	0.0	0.0	0.0	0.0
	E	150-159	0.0	0.0	0.0	0.0	0.0	0.0
	Α	7-14						
P-230R	В	35			DECOM	MISSIONED		
	С	50						
	Α	4-14						
	В	20-27						
P-231	C	33-40			DECOM	MISSIONED		
	D	45-53			2200			
	F							
	E A	58-67	0.0	0.0	0.0	0.0	0.0	0.0
	Α	58-67 10-15	0.0	0.0	0.0	0.0	0.0	0.0
P-239	A B	58-67 10-15 47-52	0.0	0.0	0.0	0.0	0.0	0.0
P-239	A B C	58-67 10-15 47-52 78-83	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
P-239	A B C D	58-67 10-15 47-52 78-83 109-114	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0
P-239	A B C D E	58-67 10-15 47-52 78-83 109-114 140-145	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0
P-239	A B C D E	58-67 10-15 47-52 78-83 109-114 140-145 10-15	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0
	A B C D E A B	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
P-239	A B C D E A B C	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0
	A B C D E A B C D D	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	A B C D E A B C D E E A B C D E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	A B C D E A B C D E A B C D A A A A A	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C D E A B C D B C D B B B C D B B	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	A B C D E A B C D E A B C D E A C D C C C C C C C C C C C C C C C C C	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C D E A C D C D C D C D C D C D D C D D D D D	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C C D E C D E E A B B C C D E E A B B C C D E E A B B C C D D E E C D D E E C D D E E C D D E E C D E E E C D E E E C D E E E C D E E E E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C C D E E A B C C D E E A C C D E E C C C C C C C C C C C C C C C	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-47	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C C D E C D C C D C C D C C D C C D C C D C C D C C D C C D D C C C C D D C C C C D D C C C C D D C C C C D D C C C C D D C	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-47 60-65	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C C D E C D E C D E E C D E E C D E E C D E E C D E E C C D E E C C D E E E C C D E E E E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-147 60-65 78-83	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-241 P-242	A B C D E A B C C D E E A B C C D E E A B C C D E E C D E E C D D E E C C D D E E C C D D E E C C D E E A A B C C D D E E C C D D E E C C D E E A A B C C D E E A A B C C D D E E C D D E E C D D E E C D E E A A B C C D D E E C D E E C D E E E C D E E E C D E E E E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-47 60-65 78-83 6-11	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240	A B C D E A B C C D E E E C D E E E C D E E E C D E E E E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-47 60-65 78-83 6-11 20-29	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240 P-241 P-242	A B C D E A B B C C D E E E C D E E E C D E E E E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-47 60-65 78-83 6-11 20-29 33-38	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
P-240 P-241	A B C D E A B C C D E E E C D E E E C D E E E C D E E E E	58-67 10-15 47-52 78-83 109-114 140-145 10-15 69-74 133-138 206-211 268-273 10-15 37-42 61-66 85-90 109-114 42-47 60-65 78-83 6-11 20-29	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0



### TABLE 9, CONTINUED SUMMARY OF VADOSE ZONE GAS MONITORING - SECOND SEMIANNUAL 2016 MONITORING PERIOD SUNSHINE CANYON LANDFILL

Probe ID	Interval	Depth						
FIODEID	ilitervai	(ft bgs)	7/19-21/16	8/16-18/16	9/20-22/16	10/18-20/2016	11/15-17/2016	12/13-15/16
	Α	6-11	0.0	0.0	0.0	0.0	0.0	0.0
	В	20-25	0.0	0.0	0.0	0.0	0.0	0.0
P-245	С	35-40	0.0	0.0	0.0	0.0	0.0	0.0
	D	50-55	0.0	0.0	0.0	0.0	0.0	0.0
	E	64-69	0.0	0.0	0.0	0.0	0.0	0.0
P-246	Α	6-9			DECOM	IMISSIONED		
P-240	В	12-19			DECOM	IMITSSIONED		
	P-	203D	0.0	0.0	0.0	0.0	0.0	0.0
Subdrains	P:	204D	0.0	0.0	0.0	0.0	0.0	0.0
	P-	211D	0.0	0.0	0.0	0.0	0.0	0.0



#### **TABLE 10**

# SUMMARY OF ANALYTICAL RESULTS FOR STORMWATER SAMPLES SECOND SEMIANNUAL 2016 MONITORING PERIOD SUNSHINE CANYON LANDFILL

		STORMWAT	ER SAMPLES
Analyte	Units	SW-1	SW-2
		10/17/2016	12/16/2016
General Chemistry Parameters:	-		
Ammonia-Nitrogen	mg/L	2.1	1.5
Biochemical Oxygen Demand	mg/L	40	8.2
Chemical Oxygen Demand	mg/L	240	73
Chloride	mg/L	78	29
Fluoride	mg/L	1.1	1.2
Nitrate as N	mg/L	1.9	1.1
Nitrite as N	mg/L	0.24	0.07
Nitrate+Nitrite as N	mg/L	2.1	1.1
Oil & Grease (HEM)	mg/L	1.3	1.3
Total Suspended Solids	mg/L	600	110
Metals:			
Aluminum	mg/L	16	3.9
Antimony	mg/L	0.0020	0.00052j
Arsenic	mg/L	0.0092	0.0020
Beryllium	mg/L	0.00052	0.00025
Cadmium	mg/L	0.0019	0.0010
Copper	mg/L	0.043	0.0096
Iron	mg/L	30	6.4
Lead	mg/L	0.011	0.0020
Manganese	mg/L	0.92	2.1
Mercury	mg/L	0.00010	0.00010
Nickel	mg/L	0.067	0.064
Phosphorus	mg/L	0.16	0.17
Selenium	mg/L	0.0045	0.0038
Silver	mg/L	0.0005	0.0025
Zinc	mg/L	0.19	0.039
Volatile Organic Compounds (8260):			
Acrylonitrile	μg/L	1.0	1.0
Alpha-Terpineol	μg/L	3.1	3.1
Benzene	μg/L	2.5	2.5
Ethylbenzene	μg/L	2.5	2.5
Toluene	μg/L	2.5	2.5
Trichloroethene	μg/L	2.5	2.5
Semivolatile Organic Compounds (8270C):	A		
Benzoic Acid	μg/L	55	10)
Polychlorinated Biphenyls (8082): None detected.			

#### Notes:

(j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit. ND: Analyte was not detected. Detection limit is unknown.



Analyte was not detected. Value listed is the Method Detection Limit.

Analyte was not analyzed.

Analyte was detected. Value reported by laboratory.



### TABLE 11 SUMMARY OF ANALYTICAL RESULTS FOR LEACHATE MONITORING POINTS - OCTOBER 2016 SUNSHINE CANYON LANDFILL

		LEACH	ATE MONITORING	POINTS	
Analyte	Units	LR-2R	CA-L	LEACHATE	ARAR
l '		10/26/2016	10/26/2016	10/26/2016	
General Chemistry Parameters:		•			
Cyanide	mg/L	0.013	NA	NA	0.15(1)-0.2(3)
Metals:			1		(-)(-)
Antiomny	mg/L	0.0060	0.0060	0.0060	0.006(1,3)
Arsenic	mg/L		0.0050	0.0052i	0.01(1,3)
Beryllium	mg/L	0.0010	0.0020	0.0010	0.004(1,3)
Cadmium	mg/L	0.0050	0.0050	0.0020	0.005(1,3)
Copper	mg/L	0.0050	NA	NA	1.3(1,3)-1.0(2)
Lead	mg/L	0.0025	NA	0.0025	0.015(1,3)
Mercury	mg/L	0.00010	0.00010	0.0010	0.002(1,3)
Thallium	mg/L	0.0050	0.005	0.0050	0.002(1,3)
Tin	mg/L	0.012	0.012	0.012	NV
Volatile Organic Compounds (8260B):					
Acetone	μg/L	15J	44	250	NV
Benzene	μg/L	4.0	2.9	6.3	1(1)-5(3)
t-Butanol	μg/L	490	1400	980	NV
2-Butanone (MEK)	μg/L	2.5	24	2600	NV
Chlorobenzene	μg/L	37	0.38j	6.3	70(1)-100(3)
1,1-Dichloroethene	μg/L	0.25	0.42j		6(1)-7(3)
1,2-Dichlorobenzene	μg/L	2.3	0.25	6.3	600(1,3)
1,3-Dichlorobenzene	μg/L	0.47J	0.25	6.3	NV
1,4-Dichlorobenzene	μg/L	6.5	6.7	6.3	5(1)-75(3)
1,2-Dichloroethane	μg/L	0.25	0.70	6.3	0.5(1)-5(3)
1,2-Dichloropropane	μg/L	0.25	0.26j	6.3	5(1,3)
cis-1,2-Dichloroethene	μg/L	0.25	1.6	6.3	6(1)-70(3)
Ethylbenzene	μg/L	0.28J	0.25	6.3	300(1)-700(3)
4-Methyl-2-pentanone (MIBK)	μg/L	2.5	2.5	66j	NV
Isobutyl alcohol	μg/L	13	13	24000	NV
Methyl tert-butyl ether	μg/L	0.25	0.76	6.3	5(2)-13(1)
Naphthalene	μg/L	7.7	0.40	10	NV
Tetrahydrofuran	μg/L	160	10	520	NV
Toluene	μg/L	0.49J	0.25	21	150(1)-1000(3)
Xylenes, o	μg/L	0.64	0.25	6.3	1750(1)-10000(3)
Semivolatile Organic Compounds (8270):					
Benzoic acid	μg/L	24	250	14000	NV
1,4-Dioxane	μg/L	120	97	59	NV
3-Methylphenol + 4-Methylphenol	μg/L	24		4500	NV
Phenol	μg/L	5.9	17	8000	NV
Organophosphorus Compounds (8141): N	one Detec	ted			
Chlorinated Herbicides (8151A):					
Pentachlorophenol	μg/L	0.078	1.077	2.4	1(1,3)
Silvex (2,4,5-TP)	μg/L	0.11	0.77j	0.11	50 (1,3)
Organochlorine Pesticides (8081): None D					
Polychlorinated Biphenyls (8082): None D	etected				

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.
- NV: No ARAR value.
- ND: Analyte was not detected. Detection limit is unknown.
- $\ensuremath{^*}$  Analyte also detected in a blank sample at a similar concentration.

0.25

2500

Analyte was not detected. Value listed is the Method Detection Limit.

Analyte was detected.



TABLE 12
SUMMARY OF COLLECTED WATER SOURCES - SECOND SEMIANNUAL 2016 MONITORING PERIOD
SUNSHINE CANYON LANDFILL

Month	Total Purchase Water	Subdrains	Landfill Leachate	Landfill Gas Condensate	Extraction Trench & Seep Collectors	MONTHLY TOTALS
July	3,378,716	478,584	885,364	218,158	616,558	5,577,380
August	5,301,824	643,401	1,456,112	207,409	619,136	8,227,882
September	4,826,844	541,942	1,231,233	156,105	1,034,041	7,790,165
October	4,929,320	582,660	1,098,260	199,026	887,065	7,696,331
November	2,767,600	452,448	1,197,509	116,564	1,043,248	5,577,369
December	1,321,716	239,933	1,899,129	123,146	1,146,187	4,730,111
July-December 2016 Totals	22,526,020	2,938,968	7,767,607	1,020,408	5,346,235	39,599,238
January-June 2016 Totals:	10,671,716	5,999,797	2,405,831	825,976	2,995,191	22,898,511
2016 Annual Totals:	33,197,736	8,938,765	10,173,438	1,846,384	8,341,426	62,497,749



### TABLE 13A SUMMARY OF ANALYTICAL RESULTS FOR TREATED WATER SAMPLES - THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

Analyte	Units	T-402	T-101	T-102	PW-DWP	Treated Leachate	ARAR	
			Samples c	ollected on Ju	ıly 7, 2016			
Volatile Organic Compounds (8260):								
1,1-Dichloropropene	μg/L	5.0	5.0	5.0	-	0.7	NV	
Acetone	μg/L	12.0	24.0	5.0	-	8.0	NV	
Bromochloromethane	μg/L	5.0	5.0	3.1	-	5.0	80 (1,3)	
Bromodichloromethane	μg/L	0.5	0.8	0.5	-	0.5	80 (1,3)	
Bromoform	μg/L	0.5	1.1	3.3	-	0.5	80 (1,3)	
Chloroform	μg/L	2.6	1.3	2.5	-	1.3	80 (1,3)	
Chloromethane	μ <b>g/L</b>	0.6	0.5	1.0	-	0.5	NV	
Dibromochloromethane	μg/L	0.5	1.8	5.0	-	0.5	80 (1,3)	
Tetrachloroethene	μg/L	0.5	0.5	0.5	-	0.6	5 (1,3)	

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

2500

ND: Analyte was not detected. Detection limit is unknown.

0.25 Analyte was not detected. Value listed is the Method Detection Limit.

Analyte was detected.



## TABLE 13A SUMMARY OF ANALYTICAL RESULTS FOR TREATED WATER SAMPLES - FOURTH QUARTER 2016 SUNSHINE CANYON LANDFILL

Analyte	Units	T-402	T-101	T-102	PW-DWP	Treated Leachate	ARAR
			Samples co	llected on Au	gust 4, 2016		
General Chemistry Parameters:							
Nitrate (as N)	mg/L	6	0.63	0.6	0.07	0.28	10(1,3)
Nitrite (as N)	mg/L	0.14	0.33	0.07	0.007	0.35	1(1,3)
pH	Units	7.40	8.20	8.00	8.20	7.60	6.0-9.0(2)
Metals:							
Aluminum	mg/L	0.026	0.02	0.005	0.007	0.016	1(1)
Antimony	mg/L	0.001	0.0012	0.0006	0.0005	0.001	0.006(1,3)
Arsenic	mg/L	0.002	0.003	0.004	0.0005	0.011	0.01(1)
Barium	mg/L	0.024	0.022	0.020	0.043	0.056	1(1)-2(3)
Boron	mg/L	0.71	0.5	0.4	0.4	1.70	NV
Calcium	mg/L	280	110	25	18	400	NV
Chromium, total	mg/L	0.0005	0.001	0.0005	0.0003	0.001	0.05(1)-0.1(3)
Cobalt	mg/L	0.007	0.002	0.0005	0.0005	0.009	NV
Copper	mg/L	0.0007	0.004	0.100	0.052	0.0007	1.3(1)
Iron	mg/L	10	1	0.12	1.3	37	0.3(2)
Lead	mg/L	0.0005	0.0005	0.0026	0.022	0.0005	0.015(1,3)
Magnesium	mg/L	180	65	9	7	220	NV
Manganese	mg/L	2.2	0.7	0.007	0.05	2.9	0.05(2)
Nickel	mg/L	0.02	0.007	0.001	0.0026	0.025	0.1(1)
Potassium	mg/L	14	6.2	4	4	43	NV
Silica	mg/L	40	23	14	2.6	39	NV
Sodium	mg/L	230	110	56	57	450	NV
Vanadium	mg/L	0.001	0.001	0.002	0.001	0.001	NV
Zinc	mg/L	0.005	0.01	0.490	0.066	0.003	5(2)
Volatile Organic Compounds (8260	):						
Acetone	μg/L	7.0	5.0	5.0	5.0	5.0	NV
Bromodichloromethane	μg/L	0.5	2.1	4.2	0.5	0.5	80 (1,3)
Bromoform	μg/L	0.5	3.6	5.0	0.5	0.5	80 (1,3)
Chloroform	μg/L	2.9	1.6	3.7	4.3	3.0	80 (1,3)
Tetrachloroethene	μg/L	0.5	0.5	4.6	9.4	0.5	5 (1,3)
Trichlorofluoromethane	μg/L	1.3	0.5	0.5		0.5	150 (1)
Methylene Chloride	μg/L	0.5	0.5	0.5	0.7	0.5	5 (1,3)

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

0.25 Analyte was not detected. Value listed is the Method Detection Limit.
 173 Analyte was detected.
 2500 Analyte concentration exceeds ARAR value.



## TABLE 13A SUMMARY OF ANALYTICAL RESULTS FOR TREATED WATER SAMPLES - THIRD QUARTER 2016 SUNSHINE CANYON LANDFILL

Analyte	Units	T-402	T-101	T-102	PW-DWP	Treated Leachate	ARAR		
		;	Samples colle	cted on Septe	mer 15, 2010	5			
Volatile Organic Compounds (8260):	Volatile Organic Compounds (8260):								
1,1-Dichloropropene	μg/L	0.5	0.5	0.5	-	0.7	NV		
Acetone	μg/L	5.0	7.0	5.0	-	5.0	NV		
Bromochloromethane	μg/L	0.5	0.5	5.0	-	0.5	80 (1,3)		
Bromodichloromethane	μg/L	0.5	29.0	0.5	-	0.5	80 (1,3)		
Bromoform	μg/L	0.5	2.2	3.3	-	0.5	80 (1,3)		
Chloroform	μg/L	0.7	1.9	1.8	-	0.5	80 (1,3)		
Dibromochloromethane	μg/L	0.5	5.6	8.3	_	0.5	80 (1,3)		
Tetrachloroethene	μg/L	0.5	0.5	0.5	-	0.6	5 (1,3)		

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

Analyte was not detected. Value listed is the Method Detection Limit.
 Analyte was detected.
 Analyte concentration exceeds ARAR value.



## TABLE 13B SUMMARY OF ANALYTICAL RESULTS FOR TREATED WATER SAMPLES - FOURTH QUARTER 2016 SUNSHINE CANYON LANDFILL

Analyte	Units	T-402	T-101	T-102	PW-DWP	Treated Leachate	ARAR	
			Samples col	lected on Oct	ober 6, 2016			
Volatile Organic Compounds (8260):								
1,1-Dichloropropene	μg/L	0.5	0.5	0.5	-	0.7	NV	
cis-1,2-Dichloroethene	μg/L	0.7	0.5	0.5	-	0.6	6 (1) / 70 (3)	
Acetone	μg/L	5.0	7.0	5.0	-	13.0	NV	
Bromochloromethane	μ <b>g/L</b>	0.5	0.5	4.4	-	0.5	80 (1,3)	
Bromodichloromethane	μg/L	0.5	2.6	0.5	-	0.5	80 (1,3)	
Bromoform	μ <b>g/L</b>	0.5	4.1	3.9	-	0.5	80 (1,3)	
Chloroform	μg/L	0.5	1.8	2.5	•	1.1	80 (1,3)	
Dibromochloromethane	μg/L	0.5	6.3	7.8	ı	0.5	80 (1,3)	
Dibromomethane	μg/L	0.5	0.5	0.5	-	0.5	80 (1,3)	

#### Notes

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

0.25	Analyte was not detected. Value listed is the Method Detection Limit.
173	Analyte was detected.
2500	Analyte concentration exceeds ARAR value.



#### **TABLE 13B** SUMMARY OF ANALYTICAL RESULTS FOR TREATED WATER SAMPLES - FOURTH QUARTER 2016 **SUNSHINE CANYON LANDFILL**

Analyte	Units	T-402	T-101	T-102	PW-DWP	Treated Leachate	ARAR
		<u> </u>	amples colle	cted on Nove	mber 10, 201	6	
General Chemistry Parameters:							
Nitrate (as N)	mg/L	0.18	0.46	0.5	0.055	2.1	10(1,3)
Nitrite (as N)	mg/L	0.14		0.07	0.007	1.4	1(1,3)
рН	Units	7.40	7.50	7.90	8.00	7.60	6.0-9.0(2)
Silica	mg/L	49	42	48	12	53	NV
Metals:							
Aluminum	mg/L	0.061	0.01	0.008	0.006	0.025	1(1)
Arsenic	mg/L	0.005	0.002	0.002	0.0005	0.012	0.01(1)
Barium	mg/L	0.085	0.031	0.033	0.053	0.140	1(1)-2(3)
Boron	mg/L	2.5	0.4	0.23	0.2	5.30	NV
Calcium	mg/L	350	120	28	23	360	NV
Chromium, total	mg/L	0.0092	0.001	0.0005	0.0003	0.019	0.05(1)-0.1(3)
Cobalt	mg/L	0.013	0.005	0.0005	0.0005	0.008	NV
Copper	mg/L	0.025	0.003	0.014	0.005	0.025	1.3(1)
Iron	mg/L	20	2.8	0.32	2.3	8	0.3(2)
Lead	mg/L	0.025	0.025	0.0074	0.0005	0.0005	0.015(1,3)
Magnesium	mg/L	350	78	13	10	630	NV
Manganese	mg/L	3.8	1	0.013	0.13	4.1	0.05(2)
Nickel	mg/L	0.052	0.013	0.001	0.0018	0.063	0.1(1)
Potassium	mg/L	68	8.9	4	3	150	NV
Silica	mg/L	56	24	15	3.3	70	NV
Sodium	mg/L	830	150	70	61	1700	NV
Thallium	mg/L	0.0025	0.0005	0.0005	0.0005	0.0025	0.002(1,3)
Vanadium	mg/L	0.018	0.002	0.003	0.001	0.037	NV
Zinc	mg/L		0.008	0.040	0.025	0.013	5(2)
Volatile Organic Compounds (8260):							
cis-1,2-Dichloroethene	μg/L	0.7	0.5	0.5	0.5	0.6	6 (1) / 70 (3)
Acetone	μg/L	21.0	7.0	6.0	9.0	30.0	NV
Bromodichloromethane	μg/L	0.5	2.4	6.2	0.5	0.5	80 (1,3)
Bromoform	μg/L	0.5	5.4	10.4	0.5	0.5	80 (1,3)
Chloroform	μg/L	1.4	1.4	3.3	3.7	1.7	80 (1,3)
Dibromochloromethane	μg/L	0.5	6.8	15.1	0.5	0.5	80 (1,3)
Dibromomethane	μg/L	0.5	0.5	0.5	1.3	0.5	80 (1,3)
Methyl ethyl ketone	μg/L	9.0	5.0	5.0	5.0	5.0	NV
Methylene Chloride	μg/L	5.0	5.0	5.0	1.0	5.0	5 (1,3)
Tetrahydrofuran	μg/L	5.0	5.0	5.0	5.0	7.0	NV

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

2500

ND: Analyte was not detected. Detection limit is unknown.

Analyte was not detected. Value listed is the Method Detection Limit. Analyte was detected. 173 Analyte concentration exceeds ARAR value.



## TABLE 13B SUMMARY OF ANALYTICAL RESULTS FOR TREATED WATER SAMPLES - FOURTH QUARTER 2016 SUNSHINE CANYON LANDFILL

Analyte	Units	T-402	T-101	T-102	PW-DWP	Treated Leachate	ARAR
		9	Samples colle	cted on Decei	mber 22, 201	6	
Volatile Organic Compounds (8260):							
cis-1,2-Dichloroethene	μg/L	5.0	0.5	0.5	-	0.6	6 (1) / 70 (3)
Acetone	μg/L	5.0	7.0	5.0	-	5.0	NV
Bromodichloromethane	μ <b>g/L</b>	0.5	0.5	4.5	-	0.5	80 (1,3)
Bromoform	μ <b>g/L</b>	0.5	0.5	9.8	-	0.5	80 (1,3)
Chloroform	μg/L	1.9	2.3	5.2	-	0.9	80 (1,3)
Dibromochloromethane	μg/L	0.5	0.5	11.6	-	0.5	80 (1,3)
Dibromomethane	μg/L	0.5	0.5	0.6	-	0.5	80 (1,3)
Tetrahydrofuran	μg/L	5.0	5.0	5.0	-	5	NV

#### Notes:

- (1) State of California Primary Drinking Water Standard
- (2) State of California Secondary Drinking Water Standard
- (3) Federal Maximum Contaminant Level
- (j) Indicates a trace concentration between the Method Detection Limit and the Practical Quantitation Limit.

NV: No ARAR value.

ND: Analyte was not detected. Detection limit is unknown.

0.25 Analyte was not detected. Value listed is the Method Detection Limit.
 173 Analyte was detected.
 2500 Analyte concentration exceeds ARAR value.



### TABLE 14 SUNSHINE CANYON LANDFILL IMPORTED SOIL SAMPLING SUMMARY - SECOND SEMIANNUAL 2016 MONITORING PERIOD

GENERATOR	SAMPLER	WASTE TYPE	QUANTITY	CONSTITUENTS ANALYZED
Stericycle, Inc.	No Samples Taken	Treated & Sterilized Medical Waste	20,000 Tons	No Samples Taken
Charles Drew University	No Samples Taken	Treated Medical Waste	2.5 Tons	No Samples Taken
City of Long Beach - Marine Maintenance	No Samples Taken	Weathered Wood	300 Cubic Yards	No Samples Taken
Roofmaster Producst Inc.	No Samples Taken	Waste Roofing Asphalt	70 Drums	No Samples Taken
Providence Saint Joseph Medical Center	No Samples Taken	Autoclave Medical Waste and Solid Waste	1130 Tons	No Samples Taken
Micro Solutions Enterprises	No Samples Taken	Spent Laser Toner and Plastic Components	840 Tons	No Samples Taken
S&S Paving Inc	No Samples Taken	Cured Asphalt	4000 Tons	No Samples Taken
Irwin Naturals	No Samples Taken	Outdated Nutritional Raw Materials And Finished Good Products	160 Cubic Yards	No Samples Taken
Precision Pavement Striping Inc	No Samples Taken	Cured Asphalt	100 Tons	No Samples Taken
Saint John's Health Center	No Samples Taken	Medical / Autoclave	570 Cubic Yards	No Samples Taken
Custom Food Inc	No Samples Taken	Food Products	6593 Pounds	No Samples Taken
Walsh Shea Corridor Constructors	No Samples Taken	Treated Wood Waste for New Construction	70 Tons	No Samples Taken
Bravo Sports	No Samples Taken	Helmest and Protective Gear	100 Tons	No Samples Taken
Puratos Corporation	No Samples Taken	Food Products	31,336 Pounds	No Samples Taken
Alphacomm Enterprises	No Samples Taken	Oudated Cell Phone Accessories	15 Tons	No Samples Taken
Justin Burbridge	No Samples Taken	Weathered Wood	400 Pounds	No Samples Taken
Optimus Construction Inc	No Samples Taken	Pressure Treated Wood Cut offs	16 Cubic Yards	No Samples Taken
Mobil Station 11 GOG c/o Palisades Village Co LLC	No Samples Taken	Cut up Fiber Gass Tanks	40 Tons	No Samples Taken
The Aleco Corporation	No Samples Taken	Weathered Wood	15 Tons	No Samples Taken
Pavement Recycling Systems	No Samples Taken	Cured Asphalt	4500 Tons	No Samples Taken
Shai and Nicole Ameil	No Samples Taken	Weather Wood	3 Cubic Yards	No Samples Taken
AR Pipeline Inc	No Samples Taken	Cured Asphalt	150 Tons	No Samples Taken
United States Coast Guard	No Samples Taken	Weather Wood	150 Tons	No Samples Taken
FS Contractors	No Samples Taken	Cured Asphalt	500 Tons	No Samples Taken
California Water Service Company	Tom Cobos	Soil with Diesel Fuel	100 Cubic Yards	Metals, VOCs, and TPH
Ready Pac Foods Inc.	No Samples Taken	Food Products	300 Pounds	No Samples Taken
Contreras Produce Fresh Fruit	No Samples Taken	Food Products	2450 Pounds	No Samples Taken
LAUSD East Los Angeles Skill Center	No Samples Taken	Weathered Wood	200 Tons	No Samples Taken
Best Oriental Produce Inc	No Samples Taken	Food Products	270 Pounds	No Samples Taken
Dai Tan Tropical Fruit Wholesale	No Samples Taken	Food Products	810 Pounds	No Samples Taken
Hammer-Down Inc	No Samples Taken	Cured Asphalt	1000 Cubic Yards	No Samples Taken
Del Rey Yacht Club	No Samples Taken	Weathered Wood	3000 Pounds	No Samples Taken
YW International Inc	No Samples Taken	Food Products	5000 Pounds	No Samples Taken
Hengshi Fiberglass USA Inc	No Samples Taken	Fiberglass Fabric Materials	243 Tons	No Samples Taken
Notes:	· · · · · · · · · · · · · · · · · · ·	_		•

Notes:
VOC: Volatile Organic Compound
TPH: Total Petroleum Hydrocarbons
SVOC: Semivolatile Organic Compound
PNA: Polynuclear Aromatic Hydrocarbons
NSDS: Material Safety Data Sheet
\*No Samples Taken: Waste previously characterized, or no characterization required (e.g. cured alphalt, treated wood, etc). Special waste decision changed/recertified to exact the decision of the compound of the compou

Assumptions:
Cubic Yard of Cured Asphalt = 3780 Pounds
Cubic Yard of Weathered Wood = 1134 Pounds



#### TABLE 15

#### **SUNSHINE CANYON LANDFILL**

#### **GENERATOR: CALIFORNIA WATER SERVICE COMPANY**

### WASTE DISCHARGE SAMPLING ESTIMATED ANNUAL QUANTITY: 40 TONS

SAMPLE	Soil with Diesel	Hazardous	Lined Cell	Unrestricted
DATE SAMPLED	09/30/16	Level	Limit	Limit
TIME SAMPLED	-	TTLC	(mg/kg)	(mg/kg)
SAMPLED BY	Tom Cobos	(mg/kg)		
DATE ANALYZED	10/03/16			
GENERAL CHEMISTRY (mg/kg): NA				
METALS (mg/kg) METHOD 6010B/74	71A:			
Antimony	0.5	500	380	30
Arsenic	5.23	500	500	12
Barium	211	10,000	10,000	5,200
Beryllium	0.5	75	75	16
Cadmium	0.5	100	100	1.7
Chromium	37.8	2,500	2,500	45
Cobalt	9.97	8,000	350	23
Copper	22.8	2,500	2,500	2,500
Lead	3.42	1,000	350	80
Lead	4.98	1,000	350	80
Lead	216	1,000	350	80
Mercury	0.049	20	20	9.4
Molybdenum	6.26	3,500	3,500	380
Nickel	17.2	2,000	2,000	1,500
Selenium	0.5	100	100	100
Silver	0.5	500	500	380
Thallium	0.5	700	111	0.78
Vanadium	58.4	2,400	2,400	390
Zinc	59.4	5,000	5,000	5,000
VOLATILE ORGANIC COMPOUNDS (r	ng/Kg) METHOD 8260B: N			
1,3,4-Trimethylbenzene	3.66	NS	210	49
PETROLEUM HYDROCARBONS (mg/k	g) METHOD 8015B:			
*TPH DROs (C11 to C22)	6090	NS	10,000	10
*TPH OROs (C23 to C35)	10	NS	NS	500
*TPH GROs (C4 to C10)	623	NS	1,000	10

Notes:

ND: Not Detected TTLC: Total Threshold Limit Concentration.

NA: Not Analyzed NS: Not Specified

\*Threshold for average TPH for Disposal in a lined cell = 50,000 mg/kg

## Left justified and shaded: Not detected. Value shown is Practical Quantitation Limit.

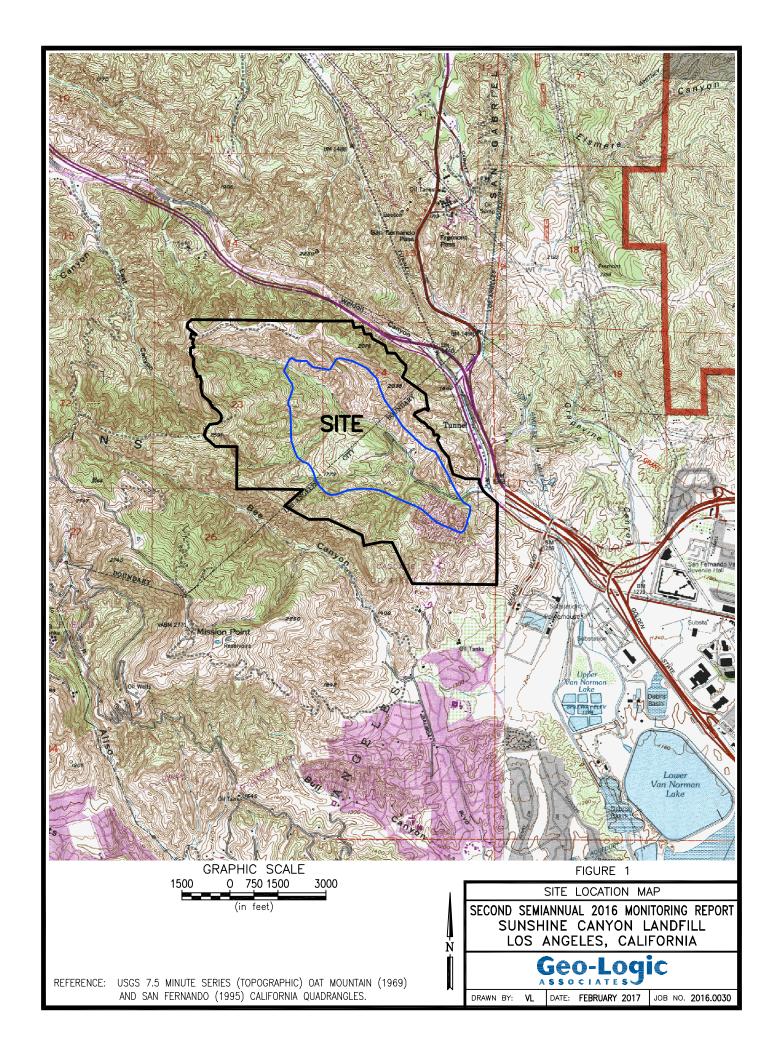
## Right-Justified and no shading: Qualtifiable result shown.

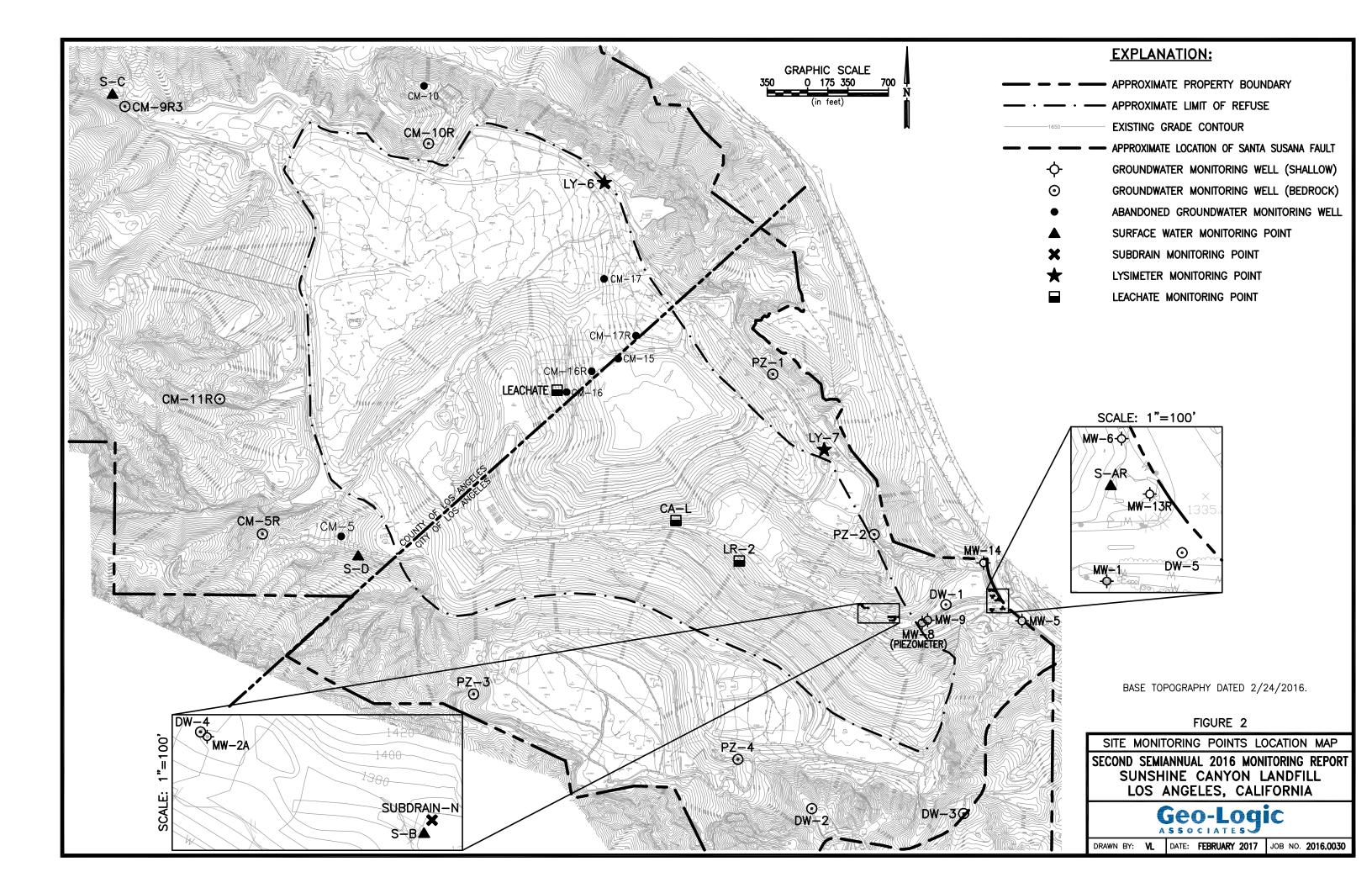
\*\*Treated wood acceptable Only detected VOCs listed.

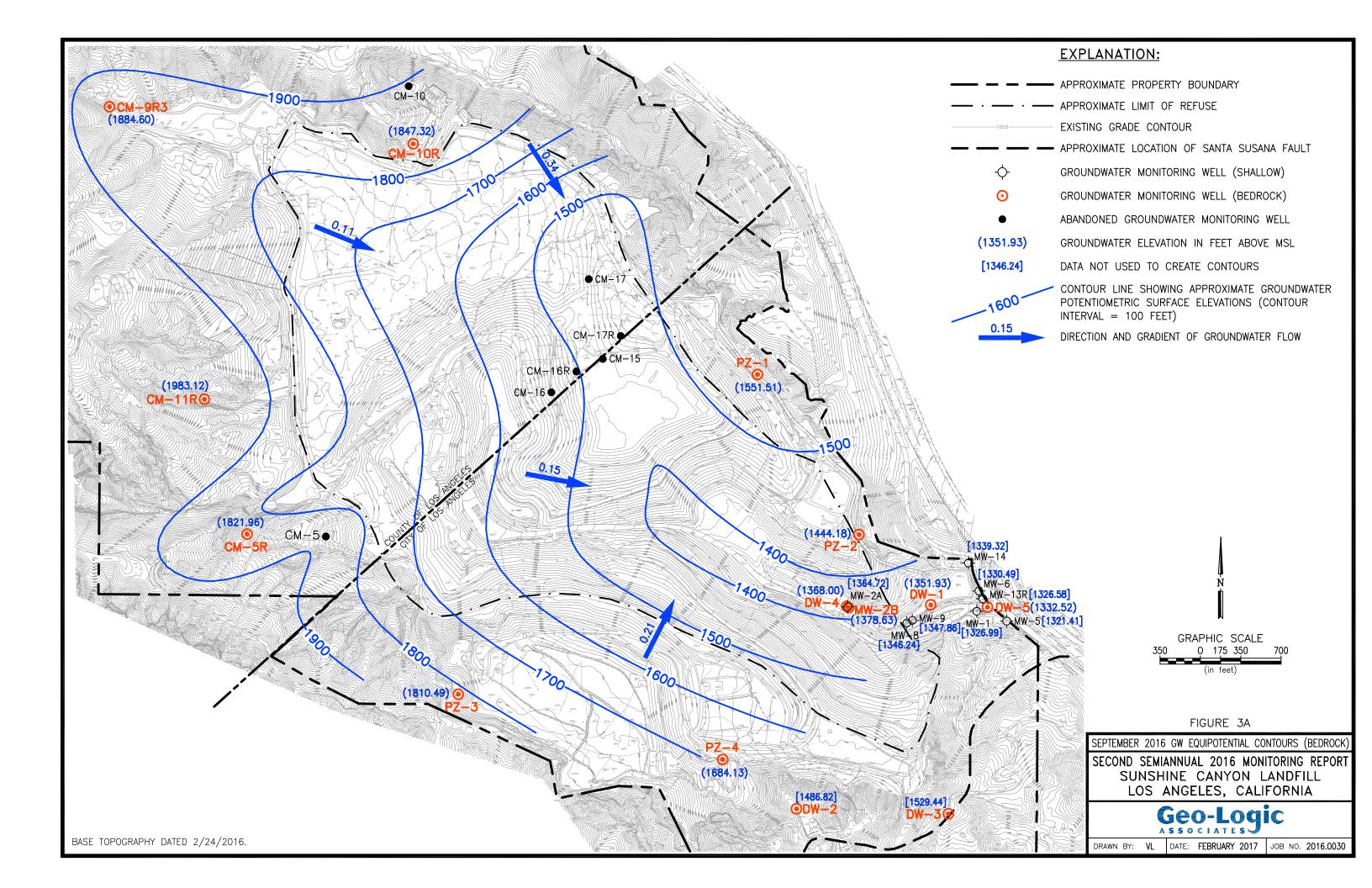


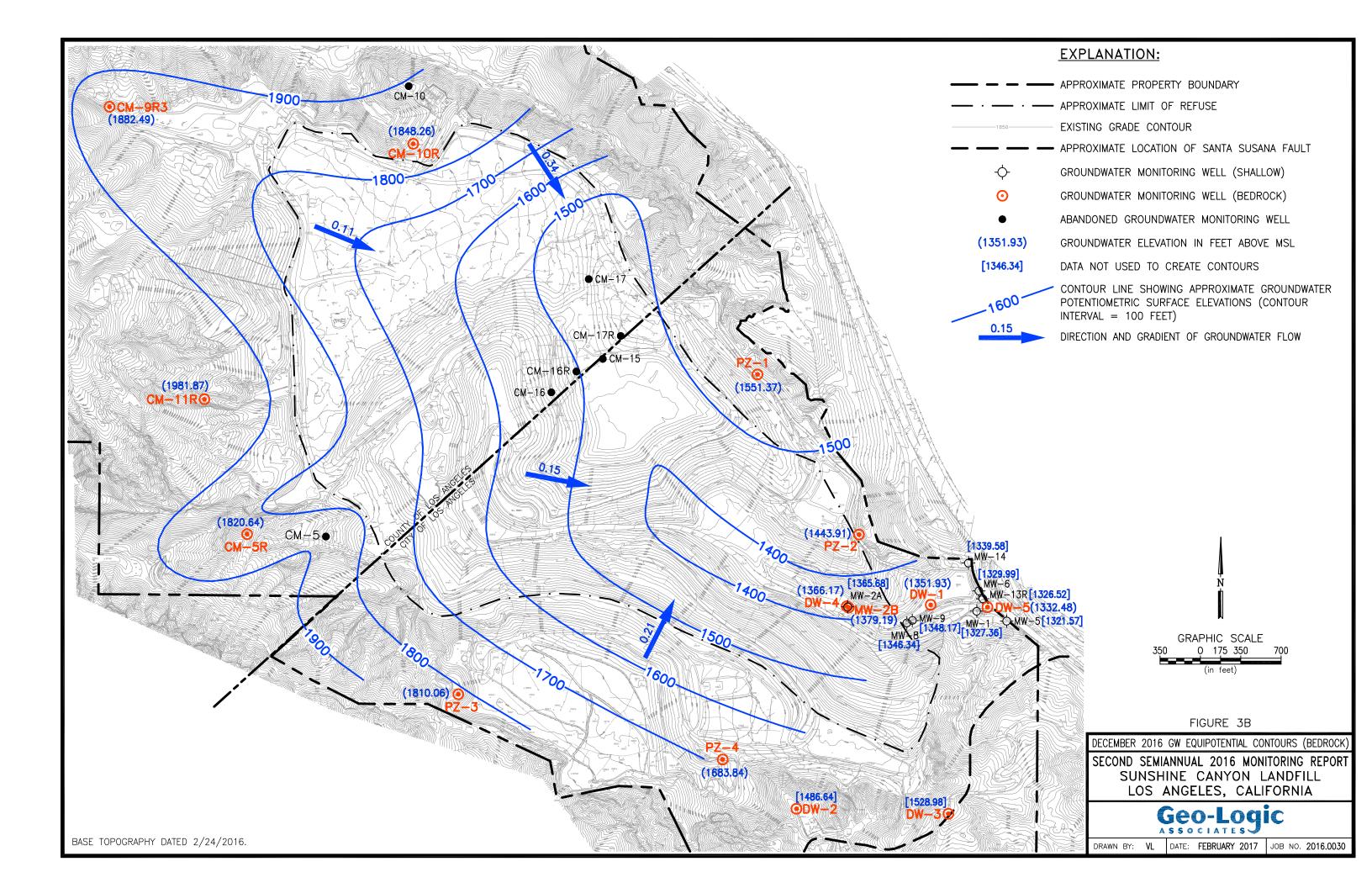
#### **FIGURES**

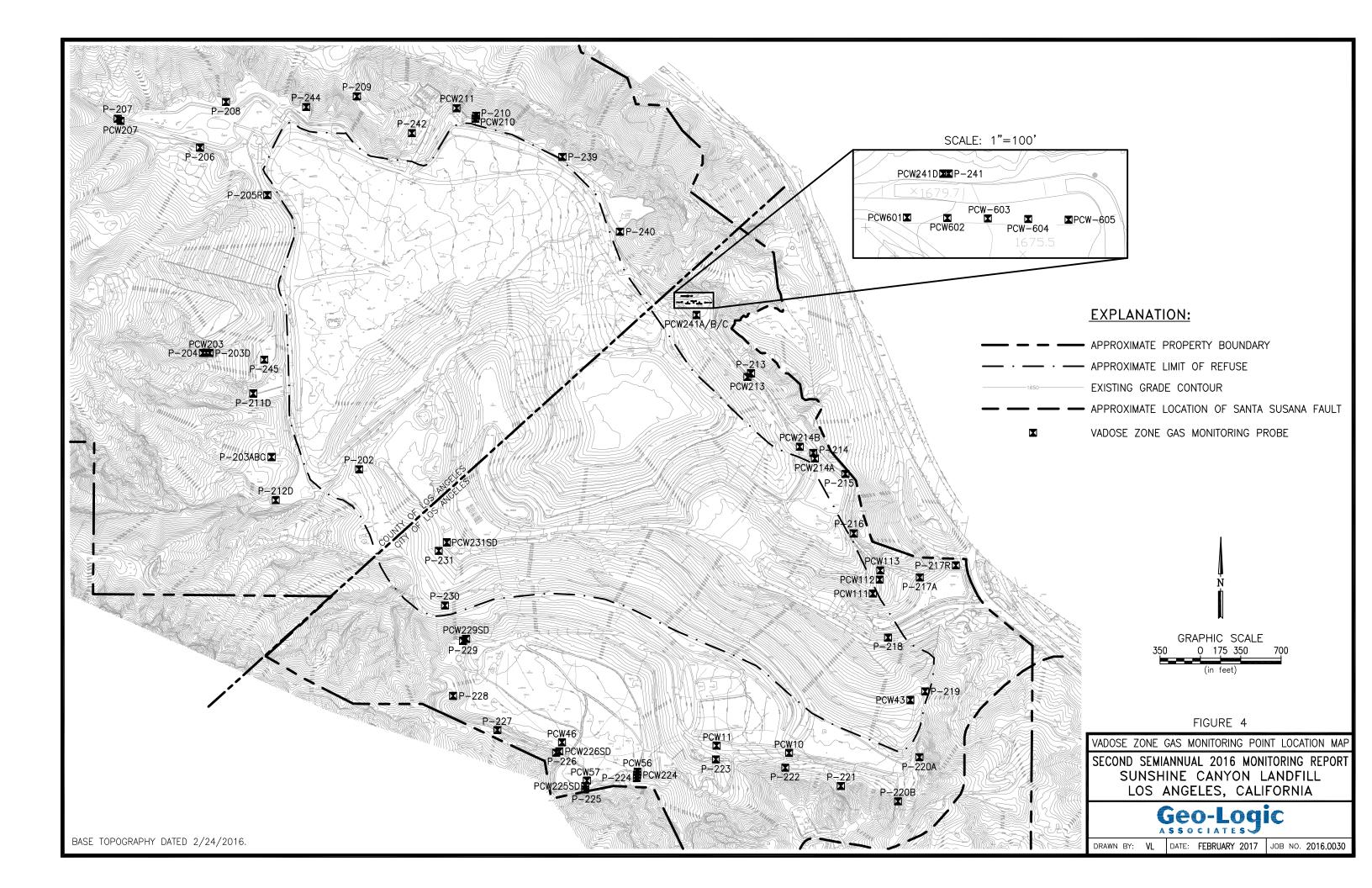












# APPENDIX A SAMPLING AND ANALYSIS PLAN



#### APPENDIX A

#### SAMPLING AND ANALYSIS PLAN FOR THE SUNSHINE CANYON LANDFILL

Water quality monitoring and sampling for the Sunshine Canyon Landfill (SCLF) located within the jurisdiction of the Los Angeles RWQCB Region was conducted by Geo-Logic Associates (GLA). Sampling and analyses were performed in general accordance with Monitoring and Report Program No. CI-2043 of Order R4-2008-0088 issued specifically for the SCLF. A brief summary of the protocols for sample collection is presented below.

Chemical analyses were performed by TestAmerica Laboratories Inc., a state-certified laboratory. Groundwater, underdrain, leachate, and stormwater samples were analyzed for the list of parameters summarized in Table 1, which also present the laboratory analytical methods used and the sample frequency. Copies of the certificates of analyses and Chain-of-Custody records for the samples collected the current monitoring period are included in Appendix B.

#### **GROUNDWATER SAMPLING**

The sampling protocols listed below were generally followed during groundwater sampling operations:

- Upon arrival at the wellhead, each monitoring point was inspected for evidence of tampering and/or vandalism, and the well identification (I.D.) was recorded.
- With the exception of well DW-1, all of the groundwater monitoring wells at the SCLF that
  are currently sampled are equipped with dedicated bladder pumps. Well construction
  details including: well depth, depth of pump, well diameter, and top of casing elevation are
  summarized in Table 5.
- Well DW-1 is under artesian conditions. A drop tube has been installed in the well that allows water to discharge into sample containers under the pressure of water in the well.
- The water level was measured directly using a weighted water-level indicator (sounder) to an accuracy of 0.01 foot. Prior to measuring the water level, the sounder was decontaminated using a non-phosphate soap solution, followed by two rinses with deionized water. The wells were then sounded and the initial water level and the total depth of the well (if obtainable) were recorded on a Well Data Sheet.

#### **Groundwater Sampling Using Low Flow Sampling Methods**

- All wells at the SCLF that are equipped with bladder pumps were sampled using low flow purge and sample methods.
- A water level meter was used during low-flow purging to measure changes in water level to



permit operation of submersible pumps at discharge rates that minimized water level decline.

- Discharged water was routed through a sampling chamber equipped with probes for measuring dissolved oxygen, electrical conductivity, pH, temperature, ORP, and turbidity. When three consecutive readings of these field parameters had stabilized to within 10% of each other, with no discernible upward or downward trend, the water quality was determined to be stable and samples were collected.
- Samples were collected into approved pre-labeled containers provided by the laboratory, and each container was filled completely and immediately capped. Samples for VOC analysis were filled by pouring the sample down the sides of the container to minimize aeration, and these sample vials were capped with no airspace.
- Upon collection, samples were placed immediately in an ice-filled cooler for transport to a state-certified testing laboratory. Samples were kept chilled (at about 4°C) until delivery.
- A completed Chain-of-Custody form, detailing sample identification numbers, date and time
  of collection, requested analyses, and other project information accompanied each sample
  to the laboratory. The Chain-of-Custody and Sample Container/Analysis Request forms are
  provided in Appendix B.

#### LYSIMETER SAMPLING

The SCLF is equipped with two pan lysimeters, LY-6 and LY-7, that are located beneath leachate sumps in the lined portions of the landfill. Lysimeters are equipped with dedicated electric submersible pumps that are activated based on liquid levels in the pan. Water is pumped to a discharge line that conveys lysimeter liquids to an onsite water treatment facility. Sampling protocols are as follows:

- Upon arrival at each lysimeter, GLA inspected the discharge line to determine if water was actively being extracted.
- The lysimeter pumps are not equipped with flow controls, so water is transferred from the discharge line to a clean 5-gallon bucket. Field parameters are recorded from the bucket.
- Lysimeter liquids are transferred from the bucket into approved pre-labeled containers provided by the laboratory, and each container was filled completely and immediately capped. Samples for VOC analysis were filled by pouring the sample down the sides of the container to minimize aeration, and these sample vials were capped with no airspace.
- As with groundwater samples, lysimeter liquid samples were placed immediately in an icefilled cooler for transport to a state-certified testing laboratory. Samples were kept chilled (at about 4°C) until delivery.



A completed Chain-of-Custody form, detailing sample identification numbers, date and time
of collection, requested analyses, and other project information accompanied each sample
to the laboratory. The Chain-of-Custody and Sample Container/Analysis Request forms are
provided in Appendix B.

#### SUBDRAIN AND EXTRACTION TRENCH SAMPLING

The SCLF is equipped with four subdrain sampling locations: Subdrain N, CC2-PER, CC2-3A, and CC2-5C and a groundwater extraction trench Samples from CC2-PER, CC2-3A, and CC2-5C are composited in the field as one sample "Combined Subdrains". Sample methods are as follows:

- Samples from Subdrain N and the groundwater extraction trench are collected at sampling ports near the inlet to the water treatment facility. Samples are collected by opening the port and directly filling each laboratory-supplied container.
- Subdrains CC2-3A and CC2-5C are equipped with electric submersible pumps that operate
  automatically based on liquid levels in the subdrain sumps. Water is discharged to a oneinch poly hose that connects to a two-inch HDPE pipeline that conveys liquids to the water
  treatment facility. Samples are collected by disconnecting the one-inch poly hose from the
  two-inch HDPE pipe and filling a clean five gallon bucket. Subdrain liquids are transferred
  from the bucket into laboratory-supplied containers.
- Subdrain CC2-PER is also equipped with electric submersible pumps that operates automatically based on liquid levels in the subdrain sump. Water is discharged to a twoinch camflex hose that transfers liquid into a 55-gallon carbon treatment unit, which then discharges to the water treatment facility. Samples are collected by disconnecting the camflex hose and filling a decontaminated five-gallong bucket. Field parameters are measured in the bucket, and then the subdrain liquid is transferred to laboratory-supplied containers.
- As with groundwater samples, all containers are completely filled, capped, labeled, and kept chilled at approximately 4°C in a laboratory-supplied cooler. All sampling is conducted under the same chain-of-custody protocol describe above.

#### **LEACHATE SAMPLING**

Leachate at the SCLF is monitored at CA-L, Leachate, and LR-2R. During the April retest event, samples were collected at CA-L and Leachate.

• CA-L is equipped with a dedicated submersible pump that operates automatically based on liquid levels in the leachate sump. Liquids are discharge to the water treatment facility. Samples are collected at a sampling port located prior to the inlet of the water treatment facility. The port is opened to allow liquids to fill laboratory-supplied sample containers.



- Location Leachate is also equipped with a dedicated submersible pump, but the pump is not operational. Samples were collected using a new, disposable three-inch bailer lowered into the leachate sump. Liquids were transferred from the bailer into laboratory-supplied containers.
- A representative sample was collected and analyzed in the field for EC, odor, ORP, pH, temperature, turbidity, and sheen and recorded on a Well Data Sheet.
- Sample collection, preservation, and Chain-of-Custody procedures described above for groundwater were also adhered to for leachate sample collection.

#### QUALITY ASSURANCE/QUALITY CONTROL SAMPLING

Quality assurance/quality control (QA/QC) sampling is performed using trip blanks, field blanks, equipment blanks (for non-dedicated equipment), and duplicate samples. For field blanks and equipment blanks, laboratory supplied water is used to collect the sample. In addition, to these field samples, the QA/QC program also included laboratory method blank analyses. Field QA/QC samples were analyzed only for volatile organic compounds EPA Test Method 8260. Laboratory method blanks were conducted for all constituents that were monitored during the monitoring period.

#### FIELD EQUIPMENT CALIBRATION

Proper maintenance, calibration, and operation of each field instrument will be the responsibility of the field personnel and the instrument technicians assigned to the project. All instruments and equipment used during the program will be maintained, calibrated, and operated according to the manufacturers' guidelines and recommendations.

Field equipment will be calibrated prior to use in the field as appropriate. The calibration procedures will follow standard manufacturers' instructions to ensure that the equipment is functioning within established tolerances and as required by the project. A record of field calibration of analytical instruments will be maintained in the calibration logbook by field personnel. Copies of the instrument manuals and other equipment calibration records (e.g., thermometers, sounders) will be maintained. Any notes on unusual results, changing of standards, battery charging, and operation and maintenance of the field equipment will be included in the calibration logbook.

All instruments are to be stored, transported, and handled with care to preserve equipment accuracy. Damaged instruments will be taken out of service immediately and not used again until a qualified technician repairs and recalibrates the instruments.



#### **Calibration Procedures**

Equipment calibration is performed in accordance with the manufacturer's instructions, and calibration checks will be performed each day prior to the start of work. Calibration of rental equipment will be performed by a qualified technician prior to shipment of the equipment.

Calibration standards will be used once. Spent calibration liquids will be placed in plastic bottles and transported off-site for disposal. A brief summary of the calibration procedures for field measurement equipment is provided below:

- <u>pH:</u> Calibration for pH is performed prior to commencement of sampling activities, using standard buffer solutions having pH values of 4, 7, and 10. Calibration checks for pH values using buffer solutions of 4, 7, and 10 will be performed daily. If the reading varies more than 0.10 of a unit between calibration checks, the meter will be recalibrated.
- <u>Conductivity</u>: Calibration for conductivity is performed prior to commencement of sampling activities, using potassium chloride standard solutions with conductivity values of 1,000 and 10,000 microsiemens/cm. The meter must read within one percent of full-scale to be considered calibrated. Calibration checks for conductivity will be performed daily.
- <u>Turbidity Meter</u>: Turbidity range calibration is performed prior to initiation of sampling activities, using turbidity gel standards of 0, 4.4, 45, and 483 NTUs. The meter is also checked daily during the sampling period with the standard most representative of the anticipated turbidity of the purged groundwater (typically 0 NTUs to 10 NTUs). If the reading varies by more than one unit between calibration checks, the meter will be recalibrated. Multiple physical conditions can cause variations in readings, including bubbles in the sampled water, wet or dirty sample containers, a wet or dirty optical sensor, or leakage of incidental light into the sample chamber.
- Multiple Sensor Meter (pH, Dissolved Oxygen, Conductivity, Temperature, Turbidity): A
  multiple sensor meter may be used for multiple parameter measurements during sampling.
  Calibration is performed prior to initiation of sampling activities, using manufacturer autocalibration solution. If any of the readings are outside of the manufacturers specifications,
  the meter will be recalibrated for the parameter outside of the calibration range.
  Calibration checks will be performed daily.

Equipment not listed herein will be calibrated according to manufacturers' recommendations and/or generally accepted practice. Calibration procedures will be documented for the project file. Instruments for which calibration cannot be easily checked will be either tested against another instrument of a similar type, or will be returned to the manufacturer for appropriate calibration. If tested against another instrument capable of making the same measurements, variation between instruments must not exceed five percent. If readings vary more than five percent, the instrument will be returned to the manufacturer for calibration.



Scheduled periodic calibration of testing equipment will not relieve field personnel of the responsibility of employing properly functioning equipment. If equipment malfunction is suspected, the device will be removed from service, tagged so that it is not inadvertently used, and the appropriate personnel notified so that re-calibration can be performed or a substitute piece of equipment can be obtained.

#### **Equipment Maintenance**

Maintenance responsibilities for field equipment are coordinated through an instrument technician who is responsible for ensuring that available equipment and instrumentation are ready for use, and that returned equipment is inspected, serviced, and returned to available inventory in a timely manner. Maintenance during use is the responsibility of the field team using the equipment. Calibration logbooks contain information on instrument maintenance, calibration, and repair. A separate logbook is maintained for each instrument. The paperwork will include a detailed listing of the item that was cleaned/replaced, and the make/model/serial number for the particular piece of equipment.



#### **APPENDIX B**

### FIELD SAMPLE COLLECTION LOGS AND LABORATORY ANALYTICAL DATA REPORTS



#### FIELD SAMPLE COLLECTION LOGS



TestAmerica Irvine

Iruine X Refest X

Chain of Custody Record

140423 TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TESTAMERICA Laboratories, Inc.

TAL-8210 (0713) Sample Specific Notes: COCs Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) For Lab Use Only: Months Walk-in Client: Job / SDG No. ab Sampling: Therm ID No. Date/Time: Date/Time: Date/Time Sampler: COC No: Archive for 41:07 Company: Company: Company: Disposal by Lab Carrier: CA Date: Cooler Temp. (°C): Obs'd Received in Laboratory by: Return to Client Other Site Contact: MC Received by: Received by: Lab Contact: RCRA Filtered Sample (Y/N)
Perform MS/MSD (Y/N) Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the ☐ DW ☐ NPDES # of Cont. SHOUSIAN 1-20-16 Date/Time: Date/Time: Date/Time: WORKING DAYS Matrix SIL GAL Analysis Turnaround Time Onknown Type (C=Comp, G=Grab) Sample Regulatory Program: TAT if different from Below 5 5 Project Manager: KyV 2 weeks 2 days 1 week 1 day Sample 1000 Time Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other CALENDAR DAYS 1000 Custody Seal No. Poison B Tel/Fax: 8 Company: 080-Company: 7/20/16 Company: Sample Date 1021 Skin Irritant 32 Special Instructions/QC Requirements & Comments: Comments Section if the lab is to dispose of the sample. Sample Identification Irvine, CA 92614 Phone: 949.261.1822 Fax: Flammable Client Contact Possible Hazard Identification: Company Name: GLA Site: Sandarine Custody Seals Intact: Relinquished by: elinquished by: Relinquished by Address: 11111 Project Name: Non-Hazard City/State/Zip: Phone: # O d

300

## Geo-Logic

Geologists • Hydrogeologists • Engineers

			WELL DA	TA SHEET				
Site Name:		Such	ine	Project	Nout		2016.003	0
Well I <sub>2</sub> D.:			3	Samplin	ng Date:		7-20-1	6
Collected By:		P35		Purge s	Sampling Date:  Purge start Time:  Purge Stop time:  Sampling (Well Recovery) Time: AB 2 1000  Ending Water Level (feet):  Total Furged (gallons):  Duplicate Sample:  YES  NO			
Casing Diamete	r (inches):	4	78.1	Purge S	itop time:			
Starting Water Level:		152.6	34	Samplin	ng (Weil Reco	very) Time: A		
Total Depth (feet):		256.	60	Ending	Water Level (	feet):	155.90	8
Water column (f	feet):	103,	96	Total F	urged (gailon:	s):	3	
Screen Length (feet):			<b>-</b>	Duplica	ite Sample:		YES C	NO
Sample Method	:		Low Flow					
Horiba Model S	/N:	R873	SUGULT			,	<u> </u>	
TIME	GALLONS PURGED	WATER LEVEL	pH	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0933	3/4	153,82	7.19	1.96	0,3	4.01	21,62	34
0936	- 1	154,28	7,16	2,01	0,4	1,97	21.53	-35
0940	11/2	154.53	7113	2,02	0,3	1,49	21,54	-32
0943	2	154.84	7,12	2,02	0,2	1,20	21,57	-34
0947	21/2	155.20	7,11	2,02	013	1.18	21,53	-35
0951	3	155.51	7,10	2102	0,3	1.14	21,56	-35
					1			
	<del></del>			W. 0				
		-				<u> </u>		
Purge Sampling	Rates: 850	100, 1	2 2< /	D: 20				
Clear	/ water	with	w (	retur				
<del>5</del>	dv							
Well condition:	UP						e e e e e e e e e e e e e e e e e e e	
Additional Info	Comments:	Car, Su	nny. Wa	190				
* Refe	st X fu	r Chloria	de al	A A 3 [	3			
						1 7	1	
Name: Dev	T Salin	as		Signatu	rei S.W	) //	lu.	

Facility:	Sundine Can. Well ID: DW-3	Date: 7-20-16
Access:	Accessibility: Good: Fair:  Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks:	Poor: Yes:  No:  No:
	Integrity: Good: Inadequate: Presence of depressions or standing water around well: Remarks:	Yes: No:
rotective	Outer Casing: Material: Meral  Condition of Protective Casing: Good: Condition of Locking Cap: Good: Condition of Lock: Good: Condition of Weepholes: Condition of Weepholes: Good: Condition of Weepholes: Condition of	Damaged: Damaged: Damaged: Damaged:
Weil Riser:	Material:  Condition of Riser:  Condition of Riser Cap:  Good:  Weasurment reference point:  Remarks:	Damaged: Damaged: No:
	Condition: Good: Damaged:	Missing:

Title

# **TestAmerico**

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY FORM 17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297

211010 Special Instructions ō 72 hours 5 days normal Page\_ Turnaround Time: (Check) Sample Integrity: (Check) Analysis Required same day 24 hours 48 hours ٨ SHO Ca1211110 Date / Time: Date / Time: Date/Time: # of Sampling Sampling Preservatives Cont. Date Time Received in Lab By: 7 1 ーナー Fax Number: CALL 1787 Phone Number: Received By: Received By: 8 CLY 250 3016.0020 9 Project/PO Number: のいいでいい 7 41216 3 Date / Time: Date / Time: Date/Time Sample Container Matrix Type しフン Client Name/Address: 100000 10 1000 B ういいしている こっつう Sample Description - TYC Project Manager: Relinquished By: Relinquished By: Relinquished By TAL-0013 (0513) Sampler:

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

# **FestAmerico**

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY FORM 17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297

Special Instructions ₹ 72 hours 5 days normal Turnaround Time: (Check) Sample Integrity: (Check) Analysis Required same day 24 hours 48 hours intact Y Date / Time: Date / Time: Date/Time: × > Sampling Sampling Preservatives Date Received in Lab By: Hel Received By: Received By: Fax Number: 126 Train Dink Project/PO Number: Phone Number: # of Cont. Date / Time: Date/Time: Date / Time: Sample Container Matrix Type SAVINCE? いかべし Sample Description PS5. A5 Client Name / Address: Project Manager: Relinquished By: Relinquished By: Relinquished By: TAL-0013 (0513) Sampler:

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

# *<u>FestAmerica</u>*

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY FORM 17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297

Special Instructions ō 72 hours 5 days Turnaround Time: (Check) Page\_ Sample Integrity: (Check) Analysis Required same day 24 hours 48 hours intact. Date / Time: Date / Time: Date / Time: 8/02/8 X Sampling Preservatives Received in Lab By: Received By: Received By: COOL 2016.020 人にいいいい Project/PO Number: Sampling Date SING Phone Number: Fax Number: # of Cont. (4 -1 Date/Time: Date/Time: Date / Time Sample Container Matrix Type Por Unicher 1000- (000 (80/10)10 20 し」といういりょうってし Sample Description Mar. 12 Client Name / Address 1 Project Manager: Relinquished By: Relinquished By: Relinquished By: Sampler

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

TestAmerica Irvine

Truine, CA 92614 Phone: 949.261.1022 Fax: 12461 Derian Ave Suite 100

ax:

Site:

Chain of Custody Record

**TestAmerica** 140908

THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.

TAL-8210 (0713) Sample Specific Notes: COCs Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) For Lab Use Only Walk-in Client: .ab Sampling: Job / SDG No. o Therm ID No Date/Time: Date/Time: Date/Time COC No Archive for Corr'd: Company: Company: Company: Disposal by Lab Date: Carrier Cooler Temp. (°C): Obs'd Received in Laboratory by: Other: Return to Client Received by: Received by: Lab Contact: Site Contact RCRA Perform MS/MSD (Y/N) Filtered Sample ( Y / N ) GARAMA 10415 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the NPDES # of Cont. Date/Time: Date/Time: Date/Time: WORKING DAYS Matrix MO **Analysis Turnaround Time** Unknown Type (C=Comp, G=Grab) Sample TAT if different from Below Regulatory Program: 2 weeks 1 week 2 days 1 day Project Manager: Sample Time CALENDAR DAYS Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Custody Seal No. Poison B Company: ompany Sample Tel/Fax: Date Skin Irritant Special Instructions/QC Requirements & Comments: Comments Section if the lab is to dispose of the sample. Sample Identification Flammable Client Contact Possible Hazard Identification: Custody Seals Intact: Phone: AND Relinquished by: Company Name; Relinquished by Non-Hazard City/State/Zip.~ Project Name: Relinquisped Address: # O d

Geo-Logic
ASSOCIATES
Geologists, Hydrogeologists, and Engineers

## GROUNDWATER MONITORING PROGRAM WATER LEVEL SURVEY RECORD SHEET

Site Stunding Cyu,

Project No: 2016, 0030

Date 9-19-16

Field Personnel B. Salinas, A. Shaw Page 1082 WELL I.D. CONSTRUCTED TOTAL ACTUAL TOTAL DEPTH TO WATER DEPTH (TD) DEPTH (TD) (DTW) 1-WM 17,49 MW-2A 32,29 MW-2B 20.05 MW-S 20.01 MW-6 16.83 MW-8 16.13 MW-9 15:46 MW-13R 19.20 MN-M 14,87 Dent-1 TOC DW-2 35,10 DIN-3 153.10 DW-4 32,82 DW-S 15,02 CM-5R 210.04 CM-IOR 53,RF CM-112 27.29 CM-983 17,80 PZ-1 92.25 R-2 REMARKS



## GROUNDWATER MONITORING PROGRAM WATER LEVEL SURVEY RECORD SHEET

Site	eninerus?	CVV	ED)		
Project No :	2016.003c 9-19-16	)	<b>-</b> '		
Date	21-19-16		<del>-</del>		
Field Personnel	MS. K			000	2082
WELL I.D.	CONSTRUCTED TOTAL DEPTH (TD)	ACTUAL TOTAL DEPTH (TD)	DEPTH TO WATER (DTW)	host	COMMENTS
PZ-3			218.70		
12-4 Ew-2			111,72		
Ewa			14.68		
EW-3			18.39		
EW-4			17.64		
OM-3			18.68		
•					
		S. 7-12			
		#			
		***************************************			
25.44.24.6					
REMARKS	Dut Sel	ing			3



Site Name:	<	Zustin	e Cun	Project	· No ·		201 01	NO N	
Well I.D.:	,	Can-			ng Date:	8	9-19-16		
Collected By:		AS		-	start Time:	0	125-1	<u>-6</u>	
Casing Diamete	r (inches):	il.			Stop time:		1312	·	
Starting Water L	1 1	17-	30	Sampling (Well Recovery) Time: 1375					
Total Depth (fee		79.	00	5.0					
Water column (f		11.	20	Total Purged (gallons):					
Screen Length (feet):			_		ate Sample:	-,-	YES	RE O.R.P. mv  1 -73 1 -66 8 -38 1 -84 2 -50	
Sample Method:		Micro Purge	Low Flow		•				
Horiba Model S/	'N:	52/066	PERST						
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	1/2	
1300	050	18.44	6.41	6.85	43.8	5.49	20.31	-73	
1304	1.00	18.61	6.26	6.71	10.5	4.87	19.71	-66	
1307	1.25	18.69	6.20	6.62	3.8	4.36	19.88	-28	
1309	1.50	18.87	6.17	6.35	4.2	4.04	17.51	-54	
1312	1.75	18.89	6.15	6.51	3.8	3.99	19.49	-50	
1315	2.00	19.08	6.14	6.50	4.0	3.98	19.49	- 49	
								*	
								1.0	
Purge Sampling I	Rates: 25 T	SI Pe	1	of Di	scharge	10.2	ud od	01.	
Well condition	3 x				× Pu	mp Dep	th: 77	.4 Gt.	
Additional Info/C	comments: Oct-	the Claus	eq ildo	Boss	3				
						0	0		
Name:	1 Sther			Signature		CA			

		0 00-		
Facility:	Suishine Cyn Well ID:	CM-923	Date: <u>9.19</u>	16
Access:	Accessibility: Good:	Fair:	Poor:	(
	Vicinity of well clear of weeds and/or de		Yes:	No:
	Presence of depressions or standing wat	er around well:	Yes:	No:
	Remarks:			110.
Concrete	Pad: Integrity: Good:	Inadequate:	/	
	Presence of depressions or standing wat	_	Yes:	No:
	Remarks: No pad obse			NO.
Protective	e Outer Casing: Material:	Metal		1000
	Condition of Protective Casing:	Good:	Damaged:	
	Condition of Locking Cap:	Good:	Damaged:	<u> </u>
	Condition of Lock:	Good:	Damaged:	S -
	Condition of Weepholes:	Good:	Damaged:	
	Remarks: Locking cap/ring Lid can be lifte	2 is cracked	and ons	ecure -
Mall D:	Lid can be lifte	ed off w/o	of unlockin	8
Well Riser	. Material:	PAG		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged: _	
	Measurment reference point:  Remarks:	Yes:	No:	
	nemarks:			
Dedicated	Pump: Type:	Bladdes		
	Condition: Good:	Damaged:		
			N	fissing:
	Pumping Rate (gpm): NA Remarks:	Current (Hz):		
	, correct No.			
	To At	Manuscript Control of the Control of		
ield Certif		Field Tech	9.1	9.16
	Signed	Title		ata



Site Name:		Linsh	ine Cqu	Project	Project No.: Toth. 003h				
Well I.D.:		Sampli	ng Date:	9.19	·Va				
Collected By:		A	5	Purge	Purge start Time:			>	
Casing Diamete	sing Diameter (inches):			Purge	Stop time:		1215		
Starting Water L	_evel:	53.	88	Sampli	ng (Well Reco	very) Time:	V229	5	
Total Depth (feet):		12D	Ending	Ending Water Level (feet):					
Water column (f	feet):			Total P	urged (gallon	s):	54.05		
Screen Length (feet):		-		Duplica	ate Sample:		YES	NO	
Sample Method:		Micro Purge	Low Flow	, \					
Horiba Model S	'N: G	32 CVC	CP8CP5	1 4	Soplice	te co	lecte	<b>L</b> .	
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
1159	1.00	54.05	7.10	3.11	Ø	11.2/	22.68	-334	
1204	1.50	C <sub>r</sub>	7.09	3.12	Ø	11.79	22.60	-343	
1207	1.75	**	7.08	3.13	Ø	11.80	22.60	-346	
1210	2.00	<u>*</u>	7.08	3.12	Ø	11.81	22.58	-348	
1212	7.25	**	7.07	3.14	\$	11.79	72.60	-349	
1215	7.50	75	7.07	3-13	Ø	11.72	22.59	-350	
								2 1 8	
						, ,		*	
Purge Sampling F	Rates: 50 T	51 . P	ful 45	5.0 0.0	scharge	115.0			
Licole 1	sample 1	setes"	is clos	الله عد	Though	odor	- Chal	es 10(1)	
Well condition:	X 15310	se ou	pockot	oxill.	*P	A gmu	oth: L	205	
Additional Info/C	omments: Doz	the Clos	da U	H Ries	223				
	,		CC	0 9	7				
Name: Name:	01			<b>6</b> !			8 1		
ADA	m Stite	3	**	Signature		( /	1		

Facility:	Bushine Cyn Well ID: CM	-IOR Date	9.19.16	
Access:				
	Vicinity of well clear of weeds and/or debris:			
	Presence of depressions or standing water aroun		s:	No:
	Remarks:	id well: Ye.	S!	No:
	The state of the s			
Concrete I		-		
	N	nadequate:	_	
	Presence of depressions or standing water arour	d well: Ye	s:	No:
	Remarks:			
Protective	Outer Casing: Material:	netal	***************************************	****
, orealive	C. Pal	~		
		d:	Damaged:	
		d:	Damaged:	<del></del>
		d:	Damaged:	
		d:	Damaged:	
	Remarks:			
Well Riser:	· Material:	Dale	<del>7</del>	
	Condition of Div			
	Condition of Riser Cap: Good		Damaged:	
	Mazatirmant		Damaged:	
	Remarks:	5:	No:	
Dedicated	Pump: Type: Rlac	lde 5		
	Condition: Good:	Damaged:	 _ Missin	<u>a:</u>
	Pumping Rate (gpm):	Current (Hz)		
	Remarks: Pump depth: 100	$\sum_{\ell}$	- (pt	
	0 1			
Field Certifi	cation: OCA	al de T	0.0	
	Signed	ritle	9.19.1	6



Other blance	<	Similar	- 1							
Site Name:		Susun	egn	Project	Project No.: 2016-003.D					
Well I.D.:		CM-	TIK	Sampli	Sampling Date:			9.19.16		
Collected By:		A	2	Purge s	urge start Time:		140	9		
Casing Diameter	r (inches):			Purge S	Stop time:		144.	7		
Starting Water L	evel:	2.62	a	Sampli	Sampling (Well Recovery) Time:					
Total Depth (feet):		31.	00_	Ending	Ending Water Level (feet):  Total Purged (gallons):  Duplicate Sample:  VES  NO  DIPLICATION TOTAL PURBIDITY D.O. TEMPERATURE O.R.I my  S.34 1.3 2.47 23.01 10  5.35 1.3 2.14 22.82 10  5.36 1.3 1.83 22.40 115  5.36 1.3 1.89 21.55 116					
Water column (feet):			71	Total P	urged (gallon:	s):	1.5.	+		
Screen Length (feet):				Duplica	ite Sample:		YES C	NO		
Sample Method:		Micro Purge	Low Flow				1/1			
Horiba Model S/	/N:	52 6560	198GRS							
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm			1	O.R.P. mV		
1416	0.25	27.5-1	6.11	5.34	1.3	2.47	23.01	106		
1423	0.50	27.60	6.07	5,35	1-3	2.14	22.82	109		
1429	0.35	27-68	6.02	5.36	1.3	1.93	22.00	115		
1435	1-00	77.79	5.99	5-36	1.3	1,89	21.55	116		
1441	1.25	77-88	5.98	5.39	1.3		21.49	117		
1447	1.50	28.00	5,97	5.38	1.3	1,79	21.46	117		
							<u> </u>			
								Ž.		
								7.		
				1	-		1			
Purge Sampling	Rates: 30	PSI ; Re	till /39	10	Jischa	sce S	1/6.			
Purge	Sample	Wester	is ck	255 L	LNO	odo				
Well condition:	D.K.				* Pinne	North	: 29.	8 6		
					1004	- cap				
Additional Info/0	Comments: M	Stly Clou	da, Ho	A, Brea	655					
						0	1			
Name:	un SHA	w		Signatur	e: 🕜	C.				

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:  Concrete Pad: Integrity: Good: Inadequate: Presence of depressions or standing water around well: Yes: No:  Remarks:  Protective Outer Casing: Material: Oondition of Protective Casing: Good: Damaged: Candition of Lock: Good: Damaged: Damaged: Candition of Lock: Good: Damaged: Damaged: Candition of Riser: Good: Damaged: Damaged: Candition of Riser: Good: Damaged: No:  Remarks:  Well Riser: Material: Damaged: Measurment reference point: Yes: No: Remarks:  Dedicated Pump: Type: Radde: Damaged: Missing: Pumping Rate (gpm): Damaged: Candition: Good: Damaged: Missing: Current (Hz): Pumping Rate (gpm): Current (Hz): Page Rate (gpm): Current (Hz): Pumping Rate (gpm): Current (Hz): Pumping Rate (gpm): Current (Hz): Page Rate (gpm): Current (Hz): Pumping Rat	Facility:	Surshine Cyn Well ID: CM-IIR Date: 9.10	9.16
Integrity: Good: Inadequate: Presence of depressions or standing water around well: Yes: No:  Remarks:  Protective Outer Casing: Material: Condition of Protective Casing: Good: Damaged: Condition of Lock: Good: Damaged: Damaged: Condition of Weepholes: Good: Damaged: Damaged: Remarks:  Well Riser: Material: Damaged: Damaged: Condition of Riser Cap: Good: Damaged: No: Remarks:  Well Riser: Material: Damaged: Damaged: Damaged: Damaged: Condition of Riser Cap: Good: Damaged: Measurment reference point: Yes: No: Remarks:  Dedicated Pump: Type: Dadaged: Missing: Current (Hz): Damaged: Missing: Current (Hz): Damaged: Damaged: Damaged: Missing: Current (Hz): Damaged: Missing: Damaged: Damaged: Missing: Damaged: Damaged: Missing: Damaged: Damaged: Missing: Damaged: Damaged: Damaged: Missing: Damaged: Damaged: Damaged: Missing: Damaged: Damaged: Damaged: Damaged: Damaged: Missing: Damaged:		Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks:	
Condition of Protective Casing: Good: Damaged: Condition of Locking Cap: Good: Damaged: Damaged: Condition of Lock: Good: Damaged: Damaged: Condition of Weepholes: Good: Damaged: Remarks:  Well Riser: Material: Condition of Riser: Good: Damaged: Damaged: Condition of Riser Cap: Good: Damaged: Measurment reference point: Yes: No: Remarks:  Dedicated Pump: Type: Condition: Good: Damaged: Missing: Current (Hz): Damaged: Missing: Current (Hz): Damaged: Missing: Damaged: Damaged: Missing: Damaged: Missing: Damaged: Missing: Damaged: Damaged: Missing: Damaged: Missing: Damaged: Damaged: Damaged: Damaged: Damaged: Missing: Damaged: Damaged: Damaged: Damaged: Damaged: Missing: Damaged:	Concrete F	Integrity: Good: Inadequate: Presence of depressions or standing water around well: Yes:	No:
Condition of Riser:  Condition of Riser Cap:  Condition of Riser Cap:  Good:  Damaged:  Measurment reference point:  Remarks:  Dedicated Pump:  Type:  Condition:  Good:  Damaged:  Missing:  Pumping Rate (gpm):  Current (Hz):	Protective	Condition of Protective Casing: Good: Damaged: Condition of Locking Cap: Good: Damaged: Condition of Lock: Good: Damaged: Condition of Weepholes: Good: Damaged:	
Condition: Good: Damaged: Missing:  Pumping Rate (gpm): N/A Current (Hz):/	Well Riser:	Condition of Riser:  Condition of Riser Cap:  Condition of Riser Cap:  Good:  Damaged:  Measurment reference point:  Yes:  No:	
Field Certification:		Condition: Good: Damaged:  Pumping Rate (gpm): N/A Current (Hz): P/A  Remarks:	Missing:

Title



Site Name: Well I.D.: Collected By: Casing Diamete Starting Water I Total Depth (fee	₋evel: et):	MW A	ue Cgn	Samplii Purge s Purge S Samplii Ending	Project No.:  Sampling Date:  Purge start Time:  Purge Stop time:  Sampling (Well Recovery) Time:  Ending Water Level (feet):  Total Purged (gallons):				
Screen Length (	feet):				ite Sample:	,	9.22.16 0907 0935 12.65 7.01 YES NO TEMPERATURE O.R.P. "C mV 21.71 - 129 21.71 - 141 21.75 - 143 21.75 - 143 21.75 - 145 21.80 - 145		
Sample Method Horiba Model S	(	Micro Purge	P8GP5						
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	1	m∨	
0907	0.50	17.65	6.79	5.45	4.1	391	21.71		
0911	1-00	14	6.79	5.44	5.7	3,40	71:31	-141	
0913	1.25	6,	6.79	5.44	6-1	3.79	21-70	-143	
0915	1.50	ls.	6,79	5.44	7.1	3.29	71.75	-143	
0913	1.75	4	6.77	5.44	8.0	3.25	21.77	-145	
0920	7.00	te	6.77	5-44	7.8	3.21	21.80	-145	
Well condition									
Name:	u sude	J		Signature	· O	C.			

	Soushine Cyn Well ID:	MW-1	Date: 9.22	16
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or de Presence of depressions or standing wat Remarks:		Poor: Yes:	No:
Concrete F	Pad: Integrity: Good:  Presence of depressions or standing wat  Remarks: Concrede pad		Yes:	No:
Protective	Outer Casing: Material: Condition of Protective Casing: Condition of Locking Cap: Condition of Lock: Condition of Weepholes: Remarks:	Good: Good: Good:	Damaged: Damaged: Damaged: Damaged:	
Well Riser:	Material: Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good:	Damaged: Damaged: No:	
Dedicated	Pump: Type:  Condition: Good:   Pumping Rate (gpm):   Remarks:	Bladdes  Damaged:  Current (Hz):		Missing:
Field Certifi	cation: Signed	Field Feel		LZ . L



Site Name:	4	Sunshin	e Cyn	Project	No.:	-	2016.00	03/2	
Well I.D.:		MJ-	-ZA	·	ng Date:	3	9.21	11	
Collected By:		A	S		tart Time:		0835		
Casing Diameter	(inches):	L			Stop time:		oais		
Starting Water L	evel:	32:	29	3	ng (Well Reco	very) Time:	0934		
Total Depth (feet	t):	41.7	30		Water Level (		33.39		
Water column (feet):			Total P	urged (gallon:	s):	1.5	+		
Screen Length (	feet):	-		Duplica	ite Sample:		YES _	NÓ	
Sample Method:	(	Micro Purge	Low Flow						
Horiba Model S/	N:	52 while	PRCRS	\					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
0844	0.25	32.71	6.93	4.13	5.3	4.35	22:70	-aj	
0850	0.50	32.82	6.97	4,13	5.2	3.84	72.71	-103	
0856	6.75	32.96	6.98	4-12	4.5	3.45	22.63	-106	
0902	1.00	33.10	6,99	4(13	36	3.36	22.13	-107	
8080	1.25	33.27	6,99	4.13	3.5	3.29	72.63	-108	
09.15	1.50	33.34	6.99	4-13	3.4	3.24	22.63	801-	
									-
								3.	1
								•	1
					6		<b>_</b>		_]
Purge Sampling	Rates: 25 F	si Ket	11/52:5	1 150	hoge	9.0	<b>)</b>	11.74	-
purfel	Sample	Wester	12 7	issell	e Ce e	it had t	No od	ر حری	
Well condition:	D.K	Regiones	Liking	Sampli	ne egs	ipmout	+ box	R.T.	•
dasn 5	lope to	well.	Pump C	as atten	doll for	e-inste	Medon	dou. 9/19	718
Additional Info/	Comments:	eas, WC	sm A.	<u> </u>	1	200	Hee S		-
Duma -	Tulet	39 Ct	ourman			3	1		
Name:	11 511	11	5	Signatur	e: ( ) (	7/			
- AU	the OH	W	10 Pr				1		_

-				
	Sunshine Cyn Well ID:	MW-ZA	Date: 4-21-1	16
Access:	Accessibility: Good:	Fair:	Poor:	
	Vicinity of well clear of weeds and/or del		Yes:	No:
	Presence of depressions or standing water	er around well:	Yes:	
	Remarks: Well Is mid-S		at to me	ν ου συσία σ
	Crestine ( - Hack 40)	cara/like	equipment do	in the
Concrete l	Pad: Integrity: Good:			10/26
	Presence of depressions or standing water	Inadequate:		2
			Yes:	No:
	Remarks: New Concrete	paol.		
Protective	Outer Casing: Material:	Model		
	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:	DIC		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	====1/1
	Measurment reference point:	Yes:	No:	
	Remarks:	· ·		
ned .		- A		
Dedicated F	7,50	Sladdes		
	Condition: Good:	Damaged:	Miss	ing:
I	Pumping Rate (gpm):	Current (Hz):	ALA	
ſ	Remarks: Pump was excles	ided and		
	Monday 9-19-16 .	* Duna T	re-installed	on
ield Certific	ation:	Louch 30	ret - 27-44	
	Signed	Field real	9.21	.16
		THE	Date	



WELL DAIA OFFICE									
Site Name: Well I.D.:	<	Soushin Mus-	2B	•	Project No.:			030	
Collected By:		AS			Purge start Time:			1051	
Casing Diameter (inches):		i		Purge S	Stop time:		1110		
Starting Water Level:		20.	05	Sampli	ng (Well Reco	very) Time:	1125		
Total Depth (feet	t):	·1F	10	Ending	Water Level (	feet):	23.16		
Water column (fo	eet):			Total P	urged (gallons	s):	2.5	>+	
Screen Length (	feet):			Duplica	ite Sample:		YES	NO	
Sample Method: Horiba Model S/	(	S2 Whh	PECHS						
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
1056	0.50	21.33	7.61	4.12	14.3	5.11	22.57	-96	
1100	1.00	22-11	7.59	4.06	2.7	4.44	77.33	-111	
1102	1-25	22.32	32.€	4.08	7-8	4.21	22.30	-113	
1105	1.50	22.63	7.57	4.07	7-8	3.83	22.29	-114	
1108	1.75	22-85	7.57	4-07	7.6	3.80	22.28	-114	
1110	2.00	23.16	7.57	4.04	2.5	3.77	22.29	-114	
								34	
						-			
			1					4	
Purge Sampling	Rates: 40	bzr , 1	Pesil 1	30.0	dischor	se 15	D.		
Mell condition	Slope - L Slope - L Comments: No OCK DU	Populares Schell Son M	- Porting - Porting ny Chr onvince.	c Sampl Dextend in Lin	0 .0.	e-insta	+ bottle	es La 9/9/	
LOMB T	met.	D8 ++		<b>A</b> 1		01	0		
Nismo: IN I				Signatuu	A .				

Facility:	Surstine Cyn Well ID:	MW-ZR	Date: Q DI	1/
Access:			Date: 9.21	6
	Accessibility: Good:	Fair:	Poor:	W.
	Vicinity of well clear of weeds and/or de	bris:	Yes:	No:
	Presence of depressions or standing wat	er around well:	Yes:	No:
	Remarks: Chell is mid.			
	Channel - Had to a	EUTA libe ea	dipuest da	The Stand
Concrete	Pad: Integrity: Good:		o proces coo	or supe
		Inadequate:		
	Presence of depressions or standing wat		Yes:	No:
	Remarks: New concrete	pad		
Protective	e Outer Casing: Material:	— II CX		
, rotective		Medal		
	Condition of Protective Casing:	Good:	Damaged:	
	Condition of Locking Cap:	Good:	Damaged:	
	Condition of Lock:	Good:	Damaged:	
	Condition of Weepholes:	Good:	Damaged:	
	Remarks:			
		1		
Well Rise	Material:	PIC		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	
	Measurment reference point:	Yes:	No:	
	Remarks:			
Dedicated	Pump: Type:	Raddes		medical and a second
	Condition: Good:	Damaged:	M	issing:
	Pumping Rate (gpm): NA	Current (Hz):	SVIA	
	Remarks: Pinn raks a	Leidel a	PH	1
	Remarks: Pump was ex Monday 9-19-11	ar D	re-install	ed on
P1 1 1 =	100 Ki	* You		
Field Certif		Field Tec	4.2	1.16
	Signed	Title	Da	



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name: Well I.D.: Collected By: Casing Diameter Starting Water L Total Depth (fee Water column (f	.evel: t):	Sunshine Cxn. Mw-5 2 20:01 26.20 6.19		Project No.: Sampling Date: Purge start Time: Purge Stop time: Sampling (Well Recovery) Time: Ending Water Level (feet): Total Purged (gallons):			2016.0030 9-21-16 1051 1115 1126 20.12 2.15	
Screen Length (feet):				Duplica	ate Sample:		YES	NO
Sample Method: Horiba Model S/		Micro Purge	LOW FLOW SUPIN					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1056	1/2	20.16	6,47	3,74	2.4	3.01	21.73	-24
1059	3/4	20.20	6,44	3.71	0,4	1,47	21142	-37
1102	\	11	6.41	3,64	0,9	1.01	21.57	-50
1105	11/4		6.39	3.64	1.8	0.96	21.56	- 51
1108	1/2	11	6,39	3.63	2,6	0,90	21.49	-51
111	.,	``	6.39	3.63	2.8	0.89	21.46	-51
1115	214	ч	6.39	3,63	2.5	0.88	21.45	-51
								y
Purge Sampling R	ates: PSP	20 L	2:30/1	):9				
_ Clear	monte							
Well condition: OK - Pleads Weed a Sa Jeman								
Additional Info/Co	omments: ((0	ar hat	=					
		7 1					100	

Signature:

	Bunshine Cxx, Well ID: MW-S	Date: 9-21-16
Access:	Accessibility: Good: Fair:  Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks: ** Needs Weed abadem	Poor: No: No:
	Integrity: Good: Inadequate:  Presence of depressions or standing water around well:  Remarks: \text{Survived} Concrete Real.	Yes: No:
Protective	Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Good:  Good:  Good:  Good:  Remarks:	Damaged:  Damaged:  Damaged:  Damaged:
Well Riser	Condition of Riser:  Condition of Riser Cap:  Condition of Riser Cap:  Good:  Weasurment reference point:  Remarks:	Damaged: Damaged: No:
	Pump: Type: Bladder  Condition: Good: Damaged:  Pumping Rate (gpm): WA Current (Hz):	Missing:
eld Certific	cation: Best Soling G.W. Monager Signed Title	9-21-16 Date



Site Name:	<	Sunshine Cyn		Project No.:			2016.0030	
Well I.D.:	ā	pull	-6-	Sampling Date:			9.2016	
Collected By:		AS		Purge start Time:		5	085	
Casing Diameter	r (inches):			Purge 9	itop time:		0950	2
Starting Water L	evel:	16.81		Sampli	ng (Well Reco	very) Time:	1000	>
Total Depth (fee	t):	73.50		Ending	Water Level (	feet):	17-13	
Water column (f	eet):			Total P	urged (gallons	s):	1.75	5 +
Screen Length (	feet):	-		Duplica	ite Sample:		YES C	NO
Sample Method:		Micro Purge	Low Flow					
Horiba Model S/	/N:	-52 Jaxia	PECRS					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0916	0.50	17.13	7.32	4.33	13.	3.55	26.17	-334
0918	0.75	21	7.27	4.31	12.1	3.26	25,96	-341
0926	1.00	ч	7.25	4.29	13.3	3.15	25.93	-341
0934	1.25	17	7.24	4.28	11.8	3.09	75,93	-341
0942	1.50	į (	7.23	4.27	12-0	3.08	75.90	-34[
0950	1.75	(t	7.23	4.27	12.1	3.05	52.88	-340
				<u>a</u>				
				-				
		-		-		-		
								7.8
								7.5
D Samulia	1 7D I	81 ; Pe	C11 30	1	schazo	0110	100	yeld
ruige sampling	nates:	, pe	1.00 (30)	110	is we f	10.0	1. con	yand
							10.0	
well condition O.K Had to court equip. * Pump Rept				Nepth	: 19.3	t.++.		
Additional Tuf- (		stly Clou		omid		10	3) Bott	60 5
Additional Info/	comments: Y	rig else	and the	DWCIOL		-c	) Dott	<u></u>
						1	p	
Name: ANA	u SHAL	J		Signatui	e: 🗘	CI	1	

	Soushine Cyn Well ID:	MM-P	Date: 9.20	D-16
Access:	Accessibility: Good:  Vicinity of well clear of weeds and/or debi  Presence of depressions or standing water  Remarks: Carried Saura	raround well:	Poor:  Yes:  Yes:  Ment dar	No:
	Integrity: Good:  Presence of depressions or standing water  Remarks:	Inadequate:	Yes:	No:
Protective	Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Good: Good:	Damaged: Damaged: Damaged: Damaged:	
Well Riser	Condition of Riser:  Condition of Riser Cap:  Measurment reference point:  Remarks:	Good:  Good:  Yes:  Pladdes  Damaged:  Current (Hz):		Missing:
Field Certif	ication: Signed	Field Teel	9.	20.46

	The BATA Office I								
	Site Name: Well I.D.: Collected By: Casing Diameter Starting Water L Total Depth (fee Water column (f Screen Length ( Sample Method: Horiba Model S/	evel: t): eet): feet):	Sunshing MW A 15. 26.  Micro Parge	e Cyn 9 146 70 Low Flow	Samplir Purge s Purge S Samplir Ending	No.:  tart Time:  top time:  ng (Well Reco Water Level ( urged (gallons)  te Sample:	feet):	9-20 1257 133 134 15.5	230 11 2 12 12 13 10 10 10 10 10 10 10 10 10 10 10 10 10
	TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
	1307	0.50	15,52	6,37	5.19	7.3	2.11	75.01	501-
	1319	1.25	u(	6.75	5.20	0.0	7.00	24,54 24,43	-106
	1323	1.50	4	6,75	5.21	D.D	1,78	24. 36	-10%
	1327	1.75	ų	6.74	\$.22	0.0	1.75	24.32	-106
	1331	2.00	11	6.74	5.77	0.0	1.73	24.34	-106
3									7.
621-19-13	Purge Sampling, Rates: 25 PS1 - Pefil [20.0] Discharge [5-0]. Ponge Sample water has very stylet your wish fint w/ no odo								
8-mm	Well condition DK Carried Sampling egripment + bottles to well  Additional Info/Comments: Mostly Sunny, Worm Winds (13) Bottle S								
1	Name:	ur Stide	)		Signature	2:	C/		

Facility:	Soushine Cyn Well ID:	Mw-a	Date: 9.74	Dak
Access:	<u> </u>			
	Accessibility: Good:	Fair:	Poor:	
	Vicinity of well clear of weeds and/or debri	s:	Yes:	No:
	Presence of depressions or standing water	around well:	Yes:	No
	Remarks: Had to pary	Sampline	Calinuo, L	- but
	over to well.		C7 5. (1 success	+ bottle 5
Concrete	Pad:			
	Integrity: Good:	Inadequate:		
	Presence of depressions or standing water	around well:	Yes:	No:
	Remarks:			V
			6	*
Protective	Outer Casing: Material:	Metal	Flush May	out
	Condition of Protective Casing:	Good:	Damaged:	
	Condition of Locking Cap:	Good:	Damaged:	<del></del>
	Condition of Lock:	Good:	Damaged:	***************************************
	Condition of Weepholes:	Good:		3 <del>33 144</del>
	Remarks:	C00d	Damaged:	
Well Riser	: Material:	PVC	y	
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	
	Measurment reference point:	Yes:		
	Remarks:		No.	-
Dedicated	Pump: Type:	Rladde		**************************************
	Condition: Good:	3	)	
		Damaged:		Missing:
	Pumping Rate (gpm):	Current (Hz	):_ N/A	
	Remarks:		- 0	
Field Certifi	and a later of the second of t	CIL	0	
icia certifi	cation.	Field red	eli a	N. W.

Signed Title



Site Name:		Sustine Cyn		Project	Project No.:			30	
Well I.D.:		MW-	13R		Sampling Date:		9.20.16		
Collected By:		AS			start Time:		1423		
Casing Diameter	r (inches):	4			Purge Stop time:			1458	
Starting Water L	.evel:	19.22			ng (Well Reco	very) Time:	151	<b>b</b>	
Total Depth (fee	t):	27.80			Water Level (		70.0	2	
Water column (f	eet):			Total P	urged (gallons	s):	1.5	+	
Screen Length (	feet):	-		Duplica	ite Sample:		YES NO		
Sample Method:	(	Micro Purge	Low Flow						
Horiba Model S/	N:	52 Whi	PEGRET						
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
1434	0.50	19.46	7.55	3.50	DiD	2.04	26.11	-388	
1440	0.75	19.50	7.55	3.50	DID	1.97	25.52	-390	
1446	1.00	19.54	7.54	3.53	0.0	196	25.24	-39(	
1452	1.25	19.59	7.54	3.53	0.0	1.93	25-18	-39(	
1458	1.50	20.02	7.54	3.54	0.0	1.92	25.19	-39(	
								1.	
			į.			. \			
Purge Sampling	Rates: 307	151 - Pel	Fill /25.	ol Dis	chespe	2 (6.0)	/		
act bla	iample a	refer is	Mostly	dest	sol plac	k tout	4/ Strong	godoc	
Well condition:	3.K 1	Convinca		4 000	dad a	arrodo	d.		
Additional Tut- //	Comments: M			sur Calic	ds >	E Dente	loot	2L 4 C	
Auditional Info/	comments:	2114 2010	ing, con	sar, Wisc		Lowb	Jebur.	CD L T +	
Name I							1		
Name:	u SHAU	)		Signatur	e: ( ) (	C./			

	Well ID: MW-13R	Date: 9.2016
Vicinity of well clear of weeds  Presence of depressions or st  Remarks:	anding water around well:	Poor:  Yes:  Yes:  No:  Yes:  No:  A battle 5 accord
Concrete Pad: Integrity: Good: _ Presence of depressions or st. Remarks:		Yes: No:
Protective Outer Casing: N.  Condition of Protective Casing  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Good:  Good:  Good:  Good:	Damaged:  Damaged:  Damaged:
Well Riser: N  Condition of Riser:  Condition of Riser Cap:  Measurment reference point:  Remarks:	Good:	Damaged: Damaged:
Dedicated Pump: Type:  Condition: Good:  Pumping Rate (gpm):  Remarks:	Damaged:  Current (Hz):	Missing:
Field Certification: Signed	Field rec	4.70.16



Site Name: Well I.D.: Collected By: Casing Diameter (inches): Starting Water Level: Total Depth (feet): Water column (feet): Screen Length (feet): Sample Method: Horiba Model S/N:  TIME GALLONS				Project No.:  Sampling Date:  Purge start Time:  Purge Stop time:  Sampling (Well Recovery) Time:  Ending Water Level (feet):  Total Purged (gallons):  Duplicate Sample:			2013.0 9.70.1 077 075 15.1 7.0 YES	8 8 3
2111111111111111	PURGED	LEVEL	рп	ms/cm	NTU	mg/L	°C	mV
0735	1.00	15.13	7.19	4.23	2.5	8.01	72.87	-102
6738	1.75	C <sub>1</sub>	7.15	4.17	1.2	6.72	72.86	-96
0741	1.50	S.	7.12	4.10	2.4	7.35	25-87	-89
0745	1.75	Ne	7.10	u.06	2.6	7.37	22.89	-82
0748	7.00	*(	7.08	4.03	2.5	7.39	77.89	-7-7
						100		*
								ř.
								5-1
Purge Sampling Rates: 20 PSI : Petil 20:0 Discharge 10:0  Purge Sample water is clear we no odor  Poots on Sounder tip.  Well condition: O.K Required to Whe Bampling equipment down  Slope over to well.  Additional Info/Comments: Partly Cloudy, Hunid (13) Bottles								
Name:	Name: Asker SHACO Signature:							

Facility:	Sushine Cyn Well ID: MW-14	Date: 9.70.16
Access:	Accessibility: Good: Fair: Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks: Had to Carl Saupling  Slope to well	Poor: No: Yes: No:
Concrete F	Pad: Integrity: Good: Inadequate: Presence of depressions or standing water around well: Remarks:	Yes: No:
Protective	Outer Casing: Material: Good: Condition of Protective Casing: Good: Condition of Locking Cap: Good: Condition of Lock: Good: Condition of Weepholes: Good: Remarks:	Damaged:  Damaged:  Damaged:  Damaged:
Well Riser:	Material:  Condition of Riser:  Condition of Riser Cap:  Good:  Measurment reference point:  Remarks:	Damaged: Damaged: No:
	Condition: Good: Damaged;  Pumping Rate (gpm): DA Current (H	Missing:
ield Certifi	cation: Fold rec	4.20.16

Title



Site Name:		Justine Cyn		Project	Project No.:			2016.0030	
Well I.D.:		D5.5		Samplin	Sampling Date:			aronh	
Collected By:		AS		Purge s	Purge start Time:			1118	
Casing Diameter	(inches):	S		Purge S	top time:		1145		
Starting Water L	evel:	122.	38	Samplir	ng (Well Reco	very) Time:	1155		
Total Depth (feet	i):	160	90	Ending	Water Level (	feet):	126.20		
Water column (fo	eet):			Total Po	urged (gallons	s):	2.0+		
Screen Length (feet):				Duplica	Duplicate Sample:			YES NO	
Sample Method:		Micro Purge	Low Flow						
Horiba Model S/	N:	52 Wa	CPSCRS	1				Ł	
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
1126	0.50	124:30	8:83	6.95	0.9	6.93	77.65	-208	
1132	1.00	125.07	8.93	6.99	D.D	6.90	27.25	~188	
W35	1.75	125.32	3.93	6.97	0.0	6.84	27.01	-18(	
1138	1.50	125.61	8.93	B:47	DO	6.67	26.94	-177	
1141	1.75	125.89	8.93	6.98	OID	6.63	26.83	-174	
1145	2.00	126.20	8.93	7-00	D.D	6.59	26.35	-173	
				j,				1.	
								THE THE	
	Rates: 30	XC T	De C11 (3	0:0	Vischer	PP P	1.0		
Purge sampling	Kates: OU	, ,	en la	0:0	7. 2-000	a la			
Well condition:	DK -	Had	of hil	Ke / cass	of San	up lived	egsip	ment	
Additional Info/	Well condition: (5) K - Had to hike lasty Sampling egsipment accross concrete channel.  Additional Info/Comments: Mostly Svary, Warry, Winda								
AUGUST ATTO									
						-1	0		
Name:	un Stil	6		Signatur	e: ((	21			

	Soushine Cyn Well ID:	PZ-2	Date: 9-2	on6
Access:	Accessibility: Good:		Poor:	_
	Vicinity of well clear of weeds and/or debr Presence of depressions or standing water		Yes:	
	Remarks: Costed Samp	weep egoinue	Yes:	No:
Concrete P	Concrete channel	to sample	well	
concrete r	Integrity: NA Good:			
	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:	340
	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:	
	Measurment reference point:	Yes:	No:	
į	Remarks:			
Dedicated P	ump: Type:	Radde		
(	Condition: Good:	Damaged:		Missing:
	dumping Rate (gpm):	Current (Hz):	ofh	_
ield Certifica	ation: Signed	Freld teel	· q;	ro 16



### **GROUNDWATER MONITORING PROGRAM WELL DATA SHEET**

Site Name: Well I.D.:		Sandine Cxn 12-4		Sampling Date:			9-20-16	
Collected By:		— BS			start Time:		1018	——————————————————————————————————————
Casing Diameter (inches):		<u> </u>			Stop time:		1035	
Starting Water L		111,72			ng (Well Reco	• •	1045	
Total Depth (fee	t):	125.15		Ending Water Level (feet):			18.92	
Water column (fe	eet):	19,43		Total Purged (gallons):			115	
Screen Length (feet):				Duplicate Sample:			YES NO	
Sample Method:		Micro Purgo	Low Flow					
Horiba Model S/	N:	<u> </u>	494H	k	К			
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1023	1/2	112.04	7.21	1,44	3,6	3.26	28.43	120
1026	3/4	112.51	6.96	1,44	67	1.61	75,22	-40
1029	1	12.81	6.92	1,46	4,5	1.24	75,00	53
1032	1/4	112.96	6,92	1.78	4.2	1.18	24.92	31
1035	11/2	113.08	6.93	1,48	4,4	1,12	74,96	-50
								_
Purge Sampling Rates: PSI 80, R:30 D. 15.								
Well condition: OK 13 Carr. filled  Additional Info/Comments: Cloudy, Mot herwind								
Name: Bet Salvos Signature Bet Lug								

Facility:	Sundano Well ID: PZ-4	Date: 9-20-16	
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:		
Concrete	Pad: Integrity: Good: Inadequate:	\(\frac{1}{2}\)	
	Presence of depressions or standing water around well:	Yes: No: 1 /	
	Remarks:	Yes: No: 1	
Protective	Outer Casing: Material: Megen Flus	n manyo)	-
	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:	
	Measurment reference point: Yes:	No:	
	Remarks:		
Dodina I. I			
Dedicated			
	Condition: Good: Damaged:	Missing:	_
	Pumping Rate (gpm): Current (H:	z): W/A	
	Remarks:		
eld Certifi	cation: Pres / Julius Carel 14	90.4	
	Signed Cow Manager Title	9-20-16	



### **GROUNDWATER MONITORING PROGRAM WELL DATA SHEET**

Site Name: Well I.D.: Collected By: Casing Diameter (inches): Starting Water Level: Total Depth (feet): Water column (feet): Screen Length (feet): Sample Method: Horiba Model S/N:	Sunshine Cy Dw-1 BS  Y  Micro Purge Low Flow PSTSU 944		Project No.: Sampling Date: Purge start Time: Purge Stop time: Sampling (Well Recovery) Time: Ending Water Level (feet): Total Purged (gallons): Duplicate Sample:			2016.0030 9-20/16 0945 YES NO)	
TIME GALLONS PURGED	WATER LEVEL	pН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
- Gras		8.73	9,46	2.8	1,55	74.43	-205
						=	
Purge Sampling Rates: Col	lest Sites	amples	() of so	honge	- Tul	7 ·	
Well condition:							
Additional Info/Comments: C	Led y	cess	Signatur	«Breed		Can	

Facility:	Sunshine Well ID	: <u>Dw-1</u>	Date: 9-20-16	
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or Presence of depressions or standing v Remarks:		***	o: o:
Concrete I	Pad: Integrity: Good:  Presence of depressions or standing was remarks:		Yes:N	0:
Protective	Outer Casing: Material:  Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Good:  Good:  Good:  Good:  Good:  Good:	Damaged: Damaged: Damaged: Damaged:	- - -
Well Riser:	Material: Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good: Yes:	Damaged: Damaged: No:	
	Condition: Type: Description: Type: Description: Good: Description: De	Damaged: Current (Hz):	Missing:	

Date



### **GROUNDWATER MONITORING PROGRAM WELL DATA SHEET**

Site Name: Well I.D.: Collected By: Casing Diameter Starting Water L Total Depth (fee Water column (f	evel: t): eet):	Senshine Cyn  Dw-2  Prs  4  35,10  77,97  2,87		Project No.: Sampling Date: Purge start Time: Purge Stop time: Sampling (Well Recovery) Time: Ending Water Level (feet): Total Purged (gallons): Duplicate Sample:			2016,00 9-21 0858 0921 0928 35.7 Z	1. [	
Sample Method: Horiba Model S/N:		Micro Purge	Low Flow	•	8				
TIME	GALLONS PURGED	WATER LEVEL	pН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
cary	3/4		6,60	2,66	0.2	1.38	20.02	-72	
0987			649	2.45	1.0	1.26	70.00	-84	
0910	114		6.85	2.65	0.2	1.21	19.98	-87	
<b>उ</b> राउ	11/2		6.93	2.65	8	1.12	19.94	-fer	
0917	13/4		6.95	2.65	0.1	1,10	19.95	-93	
0921	て		6.98	2.64	۷,۷	1108	19.94	- 93	
Purge Sampling Rates: VST YS R 2735 D. 15  Well condition: OK  Additional Info/Comments: Sample About the American Merce.									
Name:	( Sen)	inves		Signature	Du	+/	Lling		

Facility:	Sunglaine Can Mell ID: Du-2	Date: 9-21~16
Concrete	Accessibility: Good: Fair: Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks:	Poor: No: Yes: No:
	Integrity: Good: Inadequate:	Yes: No:
Protective	Outer Casing: Material: Good: Good: Condition of Protective Casing: Good: Good: Condition of Locking Cap: Good: Good: Condition of Lock: Good: Remarks:	Damaged:  Damaged:  Damaged:  Damaged:
	Material:  Condition of Riser:  Condition of Riser Cap:  Good:  Measurment reference point:  Remarks:	Damaged: Damaged: No:
	ump: Type: Goddy Condition: Good: Damaged:  Pumping Rate (gpm): Gurrent (Hz):  Remarks:	Missing:
eld Certific	signed Title	9-21-16 Date



Site Name:

### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Project No.:

Well I.D.:			1~3/	Sampling Date:			9-20115	
Collected By:		B	2	Purge start Time:			1348	
Casing Diamete	r (inches):	<u> </u>		Purge S	Stop time:		1415	
Starting Water L	.evel:	153,10		Sampli	Sampling (Well Recovery) Time:			3
Total Depth (fee	t):	25	0.60	Ending	Water Level (	feet):	15711	2
Water column (feet):			53,50	Total P	urged (gallon:	s):	23/6	<u> </u>
Screen Length (	feet):		Duplicate Sample: YES NO					
Sample Method:		Micro Purge	Low Flow					14
Horiba Model S/N:		P8JS	494H	ğ				
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1954	Yh_	194.42	7.35	2.03	E	6,11	24,75	205
1358	3/4	194.78	7.33	2.09	0-2	2,46	73,28	8
1402	11/4	145.39	7.10	2.10	1.0	1.37	25,25	-40
1400	13/4	155.88	7.05	2.11	1.1	1.26	32.28	-39
11111	2'/n	156,71	7.86	2.11	1.0	1,23	22.29	-39
1415	23/4	157.23	7.04	2.10	1.1	1.21	22.26	•39
Purge Sampling R	Cleary	100,R	135 D	1, 70				
Well condition:	OK		_					
Additional Info/C	omments: 🔾	eardy, L	1st for	servisol.	ŭ			
							10	
Name:	5	turas		Signature	Bu	7/	Ling	
-,								

				-	
	Sundrive Cyn, Well ID: _	DW3	Date: 9-70-16		
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or deb Presence of depressions or standing water Remarks:		Poor: Yes: Yes:	No: No:	V
Concrete	Pad: Integrity: Good:  Presence of depressions or standing wate  Remarks:	Inadequate: er around well:	Yes:	No:	
Protective	Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weephoies:  Remarks:	Good: Good: Good:	Damaged: Damaged: Damaged:		
Well Riser	: Material: Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good: Yes:	Damaged: Damaged:		
	Condition: Good: Pumping Rate (gpm): Shape Remarks:	Damaged:Current (Hz):			

Date



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:	<	Sunskin	re Cyn	Project	No.:	•	2016.00	370
Well I.D.:		DW.	4	Samplin	Sampling Date:			16
Collected By:		AS	3	Purge s	tart Time:	-	1.25	
Casing Diameter	(inches):	4		Purge S	Purge Stop time:			>
Starting Water Lo	evel:	32.	82	Samplin	ng (Well Reco	very) Time:	1335	
Total Depth (feet	x):	134	08.	Ending	Water Level (	feet):	35-6	8
Water column (fe	eet):	101.	98	Total Purged (gallons):				+
Screen Length (1	feet):			Duplica	ite Sample:		YES C	NO
Sample Method:	(	Micro Purge	Low Flow				300	
Horiba Model S/	N:	52 Wh6P	8C-P5-	8				
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1301	050	33.96	7.62	4.31	26.1	3.15	22.38	-41
1305	100	34.37	7.58	4.30	12.6	4.96	22.22	-88
1309	1.50	34.80	7.57	4.30	11-4	4.25	22.09	-100
1311	1.75	35.05	7.57	4.30	12.2	4.46	72.03	-10(
1314	2.00	35.19	7.57	4.30	10.2	4.34	22.02	501-
1317	2.25	35,47	7.57	4.30	10.8	4.32	22.02	-103
1320	2.50	35.68	7.57	4.26	10,4	4.25	22-03	-104
	``							
	lu .							
								7.
								5
		251 · Da	FIL 30	1 1	izal es	x 114	0	
Purge Sampling	Saus C	Crado	T 150	clear	(2/ V	to ord	05	
1 40	Such				l			
Well condition:	2× -	legsie:	2 raking	& Samp	( 1 )	1) puren		Mor.
Additional Info/	componently	Stl. Su	ud Comp	NES COL	15	+ 10.10	J. realbest of	9/19/11
	ock Dut	- on w	onomer	- tura		* (13)	Bott	25
Pump -	Inlest	1327	54.			1	1	
Name:	an SHAC	الم		Signatu	re: 🔱	(1)		

Facility:	Sushine Cyn Well ID:	DW-4	Date: 971.1	<u>b</u>
Access:	Accessibility: Good:	Coins /	_	
	Vicinity of well clear of weeds and/or deb	Fair:	Poor:	
			Yes:	No:
	Presence of depressions or standing water	er around well	Yes:	No:
	Remarks: Well is mid -	slope adjac	entito new	concete
Concrete	Pad:	carry hike	equipment do	win Slipe
	Integrity: Good:	Inadequate:		
	Presence of depressions or standing water		Yes:	No:
	Remarks: New Concrete	pad.		
Protectiv	e Outer Casing: Material:	Meda	<u> </u>	
	Condition of Protective Casing:	Good:	Damaged:	
	Condition of Locking Cap:	Good:	-	
	Condition of Lock:	Good:	Damaged:	
	Condition of Weepholes:	Good:	Damaged:	
	Remarks:	Jood	Damaged:	
Well Rise	r: Material:	PIC		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	
	Measurment reference point:	Yes:	No:	
	Remarks:	•		
Dedicated	d Pump: Type:	Rladde:		
	Condition: Good:	Damaged: _	Miss	sing:
	Pumping Rate (gpm):	Current (Hz)		
	Remarks: Pump was exten			مردم کم
	Monday 9-19-16	* Pun	up Tulet :	
Field Certi	fication: QCA	Field Teel		
👣	Signed	Title	9.71 Date	



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:		southly a	e Cgn	Project No.:			2016.0030	
Well I.D.:		DW -5		Sampling Date:			9.22.16	
Collected By:		15		Purge start Time:			0745	
Casing Diameter	r (inches):	ų		Purge \$	Stop time:		0816	7
Starting Water L	evel:	15.	02	Sampli	ng (Wall Reco	very) Time:	0828	
Total Depth (fee	t):	101,	00	Ending	Water Level (	feet):	17.9	q
Water column (f	eet):	85.0	78	Total P	urged (gallons	s):	2.0	+
Screen Length (	feet):	-		Duplica	ate Sample:		YES C	NO
Sample Method:	(	Micro Purge	Low Flow					
Horiba Model S/	'N:	-52 Wal	LP8CR5					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0752	0.50	15.81	3.44	2.10	2.6	1-87	71.43	-176
0758	1.00	16.53	8.52	7.09	4.8	1-66	21.34	-206
0801	1.25	17,02	8.51	2.10	13.6	1.56	21-13	-512
0804	1.50	17.40	8.25	2.10	8.2	1.54	21.09	-512
0807	1.95	17.73	8.50	2-11	2.	1.50	21.05	-717
0210	7.00	17,99	8.52	2.11	8.1	1.45	21.03	- 218
								å.
								*
L	Rates: 60 PS	De!	111 25	100	ind on	2 21		
Purge Sampling	ample co	extes ha	s yello	wish for	if ul	27 sone	Edo	7.
Well condition	D.K.							
Additional Info/0	Comments	escast	Cool	A.M.	<b>y</b>	(3)	Rottle	5
Ranks	taken	here	*			R	9	
	en C. S			Signatur	e: ()	CA		

	ine Cgn Well ID:	DW-2	Date: 9.22	nt.
Presenc	of well clear of weeds and/or of depressions or standing was some concessions.	ater around well:	Poor: Yes: Yes:	No: No:
)	y: Good: ee of depressions or standing was: Po Concrete 7	ater around well:	Yes:	No:
Conditio Conditio	on of Protective Casing: on of Locking Cap: on of Lock: on of Weepholes:	Good: Good: Good:	Damaged: Damaged: Damaged: Damaged:	
Conditio	Material: on of Riser: on of Riser Cap: ment reference point: s:	Good: Yes:	Damaged: Damaged: No:	
Dedicated Pump: Condition Pumping Remarks	g Rate (gpm):	Bladde Damaged: Current (Hz	L	issing:
Field Certification:	Signed	Field Ted	6.00	6 ite



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Sund	line G	5	Project No.:	2016.	0030		
Station I.D.: Collected By: Horiba Model S/N:	B.	B. Salinas P. Salinas P. Salinas			Sampling Date: Sampling Time: Duplicate Sample:		9-21-16 1240 YES MO	
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
Throf	Xes	6.52	4,41	HM	3,06	30.83	-102	
Surface water condi	tions (including s	tream flow rate	stream depth):	collec	+ Sc	رمام	6	
			<del></del>					
·			150 00 00					
:								
Additional Info/Com	nments: Co	udy 1	no t					
7 1 75	soml. pol 50 ml. pol 50 ml. po	y w/H	12 fou		1 250 W/pm	mi Ams eservativ	ev glass	
	7 ( 3 21.00		1	7				



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name: Sunghand				Project No.: 2016, 1036				
Station I.D.: Collected By: Horiba Model S/N:	Combined Sulchaing SES RSSSMUND			Sampling Date: Sampling Time: Duplicate Sample:				
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
Cleary	Xes	Confes	2.33	11,9	2,52	34,83	170	
Surface water conditions of the surface water conditions of th		Team now rate	, stream depth):	Certop	Som		2116	
Additional Info/Com	ments: Clos	1 , you	* 101	Yune				
BCu	nt. files	,						
	× )	·	1-(	)				



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name: Sunshine Cxu,				Project No.: 2616, 0030				
Station I.D.:  Collected By:  Horiba Model S/N:  Subclimin N  R, Salimos  RS D Sug 4 H		- ~	Sampling Date: Sampling Time: Duplicate Sample:		9-19-11 YES (10)			
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
Clear	Kee	6,72	3,20	6	2,56	29,98	-73	
Surface water conditions (including stream flow rate, stream depth): Samples were Collected @ The Inle Side of the after tranks,  Gets gerten have,								
Additional Info/Com	nments:	A 1,50	ierter	eel cla	rdy			
13 Caro. Filled								



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Mens	ine cy	( <b>~</b> .	Project No.:	2016	, 0830	
Station I.D.: Collected By: Horiba Model S/N:	CY R	-6 25 - A	e.	Sampling Dat Sampling Tim Duplicate Sar	ne:	9-21-15 YES 6	(9)
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
			NA	-			
Surface water condit	ions (including s	istream flow rate	stream depth):	(42/m	eter B	s dry o	ind
Additional Info/Com	ments: C\	ed the	*				
-			~ N	1	-Q.	=	
		$\overline{}$	2 mg	1 /8	2 Cm	1	



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Surgh	rine Cx		Project No.:	2016.	.0030	5)
Station I.D.: Collected By: Horiba Model S/N:		7-7 775 7-7		Sampling Dat Sampling Tim Duplicate Sar	ie:	9-20-1 0828 YES (	
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
Yellowish	xes	674	11.4	5512	2,03	25,29	-60
Surface water condit				Samo	202	aken (	<u> </u>
Additional Info/Com	ments: (	andy, l	sumrel			T	
R							
•							
2	X2w	7	Lim				

### Geo-Logic

4 PROJECT NAME / NUMBER		comments Comments	24		or NO	on meet sampling Y or N)	r initials \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
PROJEC		Guidance Remarks			enter YES or NO	Did calibration meet criteria in the sampling protocol? (Y or N)	Signature or initials	
0	, 2	DO (mg/L or %)	543	08.8				Soch
Soushin	2 C-S	Turbidity (NTU)	4.0	9.0				
ity Name)	EIH HATTER US	Electrical Conductivity (µMhos/cm)	25h	4.00 4.4ª				
(Site/Facili	ake/Model ‡	bН	4.02 USZ	4.00	>	7	AS	ition of Unit
LOCATION (Site/Facility Name) Novel Name	Instrument Make/Model # Harba U-S	Date/Time	Pre. Cal	Calibration	Calibration Successful? (Y/N)	Satifies Protocol?	Calibration by	Physical Condition of Unit

### Geo-Logic

# FIELD CALIBRATION DOCUMENTATION FORM

LOCATION (Site/Facility Name) Sunglon	(Site/Facil	lity Name)	Singhi	9	PROJECT NAN	PROJECT NAME / NUMBER 2016. (82)	16.0030
Instrument Make/Model #	ake/Model		REJEUGHH				
Date/Time QCIQCIS LOSIS	Hd	Electrical Conductivity (μMhos/cm)	Turbidity (NTU)	DO (mg/L or %)	Guidance Remarks	Comments	rents
Pre. Cal	7.89	4.54	۲,0	11.12			
Calibration	4.00	4.49	9	59.8			
Calibration Successful? (Y/N)	Yes			$\uparrow$	enter YES or NO		
Satifies Protocol?	Yes			<b>1</b>	Did calibration meet criteria in the sampling protocol? (Y or N)		
Calibration by		tri	16		Signature or initials		
Physical Condition of Unit	tion of Unit	,	poor				

Effective June 1, 2009

### Geo-Logic

PROJECT NAME / NUMBER 2016 -003 D		Guidance Remarks Comments			enter YES or NO	Did calibration meet criteria in the sampling protocol? (Y or N)	Signature or initials CCC	
0	2	DO (mg/L or %)	h68	Sh-8				Grood
Soushin	N-0 50	Turbidity (NTU)	0.5	0.0				
ty Name)	+ (Las., b	Electrical Conductivity (µMhos/cm)	3.81 4.81 0.5	4.00 4.49 000				
(Site/Facili	ake/Model ‡	hф	3.81	1.00 h	7	7	AS	ition of Unit
LOCATION (Site/Facility Name) Soushine	Instrument Make/Model # ( Pariba U-S	Date/Time	Pre. Cal	Calibration	Calibration Successful? (Y/N)	Satifies Protocol?	Calibration by	Physical Condition of Unit



LOCATION (Site/Facility Name) Swicking	(Site/Facil	ity Name) S	distrib	S	PROJECT NAN	PROJECT NAME / NUMBER 2016,030
Instrument Make/Model #	[ake/Mode]	# RESSYGUH	HW	i.		
Date/Time 9-20-15 0512	рН	Electrical Conductivity (µMhos/cm)	Turbidity (NTU)	DO (mg/L or %)	Guidancc Remarks	Comments
Pre. Cal	3.94	4.52	9,4	9.76		
Calibration	4.91	H, Ma	4	8.56		
Calibration Successful? (Y/N)	Yes				enter YES or NO	
Satifies Protocol?	Yes				Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by	P				Signature or initials	
Physical Condition of Unit	tion of Unit		Merch	4		

GeoLogic Associates



Physical Condition of Unit	Calibration by Signature or initials	Satisfies Protocol?  Did calibration meet criteria in the sampling protocol? (Y or N)	Calibration Successful?  (Y/N)  Successful?  (Y/N)  Calibration  Successful?  (Y/N)	Calibration 4.00 4.49 E 8.58	Pre. Cal 9.92 4.57 0.5 11.22	Date/Time  (-) - 16  (p) -	Instrument Make/Model # PSTSU9414	LOCATION (Site/Facility Name) Sunshive Cyn. PROJECT NAM
	Signature or initials	Did calibration meet criteria in the sampling protocol? (Y or N)	enter YES or NO	285	2			PROJECT NAME / NUMBER 20136



			5,		ition of Unit	Physical Condition of Unit
OC. //	Signature or initials				45	Calibration by
	Did calibration meet criteria in the sampling protocol? (Y or N)				~	Satifies Protocol?
	enter YES or NO				7	Calibration Successful? (Y/N)
		9.25	B	મ.યવ	4.00	Calibration
		2.8.t	B	4.50	SSE	Pre. Cal
Comments	Guidance Remarks	DO (mg/L or %)	Turbidity (NTU)	Electrical Conductivity (µMhos/cm)	рН	Date/Time 9.21-16 0909
		2	US	# Hariba	[ake/Model	Instrument Make/Model # Horiba U-52
PROJECT NAME / NUMBER 2016.0030	PROJECT NAM	6-5	Sunshin	ity Name)	(Site/Facil	LOCATION (Site/Facility Name) Sunshing



	acility Name)  del # Horit  Electrical Conductivity (µMhos/cm)	Turbidity (NTU)	DO mg/L or %)	PROJECT NAN	PROJECT NAME / NUMBER 2016.0030  Guidance Remarks  Comments
	14.41	de	NSS		
Calibration 4,0	4.00 H.49	B	8.50		
Calibration Successful?				enter YES or NO	
Satifies Protocol?  Y				Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by #\$				Signature or initials	ac 1
Physical Condition of Unit	Jnit 🔵	4	> Good		

### TestAmerica Irvine

Trvine, CA 92614 Phone: 949.261.1022 Fax:

\* Notes \*

Chain of Custody Record

069167

**TestAmerica** 

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

Phone: 949.261.1622 Fax:	Regul	Regulatory Program:		DW NPDES	S RCRA	A Other:	er:					TAL-8210 (0713)
Client Contact	Project Manager:	inager:	1010	platiene	Site Contact:	act: M.	ナシー	C LA Date:	1-1-	91-5	COC No.	
Company Name/	Tel/Fax:	コイメシ	1110	130	Lab Contact:	act: Z	1750	col Carrier:	)	V	soco Toologo	Ss
		Analysis Turnaround Time	rnaround	ime	-	)					Sampler: V	SHOP
			Na Com	TAIC DAY	J.						For Lab Use Only	
City/State/Zip:	CALENC	CALENDAR DAYS	WORK	WORKING DAYS	3,00	V.					With it Olivet	
Phone:	TAT	TAT If different from Below	m Below	1	N		- 1				Walk-in Cilent:	
Fax: 121-154		2 v	2 weeks		/人 (N	- \					Lab Sampling:	
Project Name: Report Line Tay Vice		1 \	1 week								000	
Site: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		20	2 days			71					SON SON / GOD	
			Sample			12						
	Sample	Sample	Type	#	ered S form I	12	- 73					
Sample Identification	Date	Time	G=Grab)	Matrix Cont.		1					Sample Specific Notes:	otes:
CA3-3(A)	which	5 1123	و ا	- 7015	×	*						
DW-3(8)	*****	1174	_	-	7	×						
(A) 2-13(A)		1232		-		X						
Ju. 5(8)	7	1232	->	-		×	_					
	-2"											
		a 2										
				5								
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	5=NaOH; (	5= Other										200
<b>Possible Hazard Identification:</b> 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.	e List any E	EPA Waste (	Codes for th	ne sample in t		le Dispos	al (A fee ma	ay be asse	ssed if sar	nples are retain	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	
Non-Hazard Skin Irritant	Poison B	В	Unknown	ПV		Return to Client	ınt	Disposal by Lab	oy Lab	Archive for	Months	=
Special Instructions/QC Requirements & Comments:												
1	ON COO Mooter	· old loo		1/4/11	100	Coole	Cooler Temp. ("C): Obs'd:	p,sqo (		Corr'd:	Therm ID No::	
Custody Seats Intact. Yes No	Custody O	dal Ivo		-	1	4					E T	
Relinquished by:	Company:	30 100	-	Date/Time:	Recei	Received by:	2. R	CONTR	Company:	IN	Date/Time:	935
Relinquished by:	Company:	,		Date/Time	Recei	Received by:			Company	.; V:	Date/Time:	
Relinquished by:	Company:			Date/Time:	Recei	Received in Laboratory by:	oratory by:		Company:	y:	Date/Time:	



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:		Sund	Lucia	Project	No.:	a a	2016.	0830
Well I.D.:		DW	-3	Sampli	ng Date:		11-15-	-16
Collected By:			گ	Purge s	tart Time:		1054	
Casing Diameter	(inches):			Purge S	Stop time:		1120	
Starting Water Le	evel:	153,	29	Sampli	ng (Well Reco	very) Time: 🗚	18/113	25
Total Depth (feet	t):	256	60.	Ending	Water Level (	feet):	158,7	١
Water column (fe	eet):	10	ر3،	Total P	urged (gallon	s):	<u>"3'/\</u>	1
Screen Length (1	feet):			Duplica	ite Sample:		YES	NO
Sample Method:		Micro Purgo	Low Flow					
Horiba Model S/I	N:	285	timpn2	<del>-</del> :				
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1100	1/2	154.81	6.47	2,13	0,4	3.00	5513	230
1103	1	155.23	6.77	2.15	0.6	1,44	21,45	-34
1107	11/2	155.72	6.89	2.14	0,7	1,72	21.37	-5(
1111	2	156.50	6.88	2.14	0.3	1,21	21,35	-58
1114	2/12	156-98	6,91	2.14	0.3	1.16	21,33	-59
1118 3 157.73 6,93 2,14 0,4 1,14 21.27 -61								
1120 3/4 158.11 6.92 2.13 0.5 1.11 21.28 -61								
	1							
Purge Sampling R	lates: PSD	Ser	@ 100	12:3	5/12:21	2	9	
	lar	water	Mil	1 NO	adin			
Well condition:	N							
	Refest	- Jey -	ISISI A	1Kahun	y as	y 310.1		
Additional Info/C	Comments: SC	affere	of cla	icy; wen	<u></u>			
		70						
		(	1	Clanch		1	1)	

Facility:	Sanding Well ID: DW-3	Date: 11-15-14
Access:	Accessibility: Good: Fair: Fair: Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks:	Poor: No: No:
Concrete	Integrity: Good: Inadequate: Presence of depressions or standing water around well: Remarks:	Yes: No:
Protective	Outer Casing: Material: Mercal  Condition of Protective Casing: Good: Good: Good: Condition of Locking Cap: Good: Good: Condition of Lock: Good: Good: Remarks:	Damaged:  Damaged:  Damaged:  Damaged:
	Material: PVC  Condition of Riser: Good:  Condition of Riser Cap: Good:  Measurment reference point: Yes:  Remarks:	Damaged: Damaged: No:
F	Condition: Good: Damaged:  Pumping Rate (gpm): Current (Hz):  Remarks:	
eld Certific	signed Signed Title	0 Pate 11-15-16



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:		rpring	me	Project	No.:		2016-00	30
Well I.D.:		_ Dw	-5	Sampli	ng Date:		11-15	16
Collected By:			\$	Purge s	start Time:		1158	
Casing Diameter	r (inches):			Purge S	Stop time:		1274	School Care
Starting Water L	evel:	15	118	Sampli	ng (Well Reco	very) Time:		132
Total Depth (feet	t):		.00.	. Ending	Water Level (	(feet):	18.13	
Water column (f	eet):	85	.82	Total P	urged (gallon	s):	23/1	1
Screen Length (	feet):			Duplica	ate Sample:		YES	NO
Sample Method:			Low Flow					
Horiba Model S/	N:	P803	HMPM					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1205	1/2	15.80	775	1,73	10.5	7.79	21.60	-2
1209	3/4	16.24	7.80	173	4.0	1.11	2/123	-60
1212	114	16.57	7,82	1.73	4.3	1,02	21,15	-71
1216	13/4	16.81	7.81	1.72	4.8	0.81	21,25	-92
1220	21/4	17.32	7.80	1,72	4.5	0,79	21,20	-93
1224	23/4	17.87	7.80	172	4,7	0.75	21.21	-98
Purge Sampling R	Lates: RST		(2:3°	s Dig	20.	BUTI	w52h	
Well condition:	OC							
Additional Info/C	omments: C	endrin	JEVM					
		J						

Signature:\

Facility:	Sundrive Well ID: DW-S	Date: 11-15-16
Access:	Accessibility: Good: Fair:  Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks:	Poor: No: Yes: No:
Concrete	Pad: Integrity: Good: Inadequate:  Presence of depressions or standing water around well:  Remarks:	Yes: No:
Protective	Outer Casing: Material: Metal  Condition of Protective Casing: Good: Goo	Damaged: Damaged: Damaged: Damaged:
Well Riser:	Material:  Condition of Riser:  Condition of Riser Cap:  Good:  Weasurment reference point:  Remarks:	Damaged: Damaged: No:
	Condition: Type: Damaged:  Pumping Rate (gpm): Current (Hz):	Missing:
eld Certific	Signed Signed Title	ger 11-15-16  Date



LOCATION (Site/Facility Name) School	(Site/Facil	ity Name)	Songhin	þ	PROJECT NAV	PROJECT NAME / NUMBER 2016, 0030
Instrument Make/Model #	ake/Model ;	#R8354941+	417			
Date/Time	рН	Electrical Conductivity (µMhos/cm)	Turbidity (NTU)	DO (mg/L or %)	Guidancc Remarks	Comments
Pre. Cal	5.01	4.83	9	10.60		
Calibration	4,01	4,49	q	8.71		
Calibration Successful? (Y/N)	Xes				enter YES or NO	
Satifies Protocol?	Xes			V	Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by	R	4	1	}	Signature or initials	
Fhysical Condition of Unit	tion of Unit		, 200N			
					The second secon	

### TestAmerica Irvine

17461 Berian Ave Suite 100

Truine, C9 92614 Phone: 949,261,1022 Fax:

140910 Chain of Custody Record

**TestAmerica** 

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

Phone: 949.261.1022 Fax:	Regulator	Regulatory Program:	DW NPDES		RCRA	Other:						TAL-8210 (0713)
	Droiget Manager	or / / of	total solution	< Site C	Site Contact:	Mar	L Date:	12	. 22	14	COC No:	
Client contact	Tolfear	1000	CALL MAN	Lab	ab Contact:	VER LINE	Carrier	100	A Due	esica	of C	COCs
Company Name: Ken Mile		X	Time	-	1	5000			0	0	Sampler: A.S.	NO
Address: \\L\C\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Anai	Inrnard	allille	T	20	N	100	- I		77	For Lab Use Only:	
City/State/Zip: Seu Niero OA 92127	CALENDAR DAYS		WORKING DATS	\ T	15	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1	2	P	04	Walk-in Client:	
Phone: 32-9 - USE 3- 1/36	TAT if dif	TAT if different from Below		N	18	100	1 2 1 2 1	S	3	10	Lab Sampling:	
Fax: 55-9 - 451 - 1083		2 weeks		( N /	- S	77	TO	N	25	1		
Project Name: Venublica		1 week			34	ייון	100	1	>	1	Job / SDG No.:	
Site:		2 days			1-	A.	7	1	2	1		
415	-	Sample	9		78	7	9			7		
たからいろいい キロム	(1)	-		P. Itered	AG	011	105	W (1)	965	tzs	Sample Specific Notes:	Notes:
Sample Identification	Date	Time G=Grab	Matrix	4	3	7		1		1		
Viz	Milcolo	9000	7	3 N K	アメメ	アント	スメメ	7 7	7	7		
	41	1		- 0	7	X	XXXX	X	×	XXX		
- 000	-			1	$\vdash$	-		2	7	7		
MW-13K	0,0	0420	0	1	N X		L L	_				
CYOP		-	31	_	×							
(ACA)	-	7	,	-1								
200	\$		P	3	X							
	>											
				+		+		-		-		
											-	,
				+								
							4	1		-		
				F								
		-		+		-		ļ				
Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	S=NaOH; 6=	otner		ľ	oin olume	A / leson	e may be asse	ssed if sa	amples al	e retained	Sample Disnosal ( & 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	se List any EPA	Waste Codes	for the sample									
zion ii me ia	Poison B	5	Tunknown	Γ	Return to Client	to Client	Disposal by Lab	by Lab		Archive for	Months	
Non-Hazard Flammable Shiri Irinani	a local	4		1	}		1					
Special Instructions/QC Requirements & Comments:												
	Custody Seal No.:	No:				Cooler Tem	Cooler Temp. (°C): Obs'd:		Corr'd:		Therm ID No.:	
s Intact.	Company.		Date/Time		Received by:	V / X		Company:	any:		Date/Time:	
Relinquished by:	Sulpany.	0:00	رر دا	(1)	13	3		4	1		12.22.16 1210	0
Relinquished by:	Company:		Date/Time:	3	Received by:	) [K	0	Company:	any:		Date/Time:	
Relinquished by:	Company:		Date/Time:		Received in	Received in Laboratory by:	by:	Company:	any:		Date/Time:	

TestAmerica Irvine

Truine, EM 92614 Phone: 949.261.1822 Fax:

**Chain of Custody Record** 

RCRA Other:

Regulatory Program: Dw NPDES

TestAmerica Laboratories, Inc. TAL-8210 (0713)

Client Contact	Project Manager:	ager:	1421	hran	Site	Site Contact:	m-4	Date:	21	20.16	0	COC No:	
Company Name: Confirm Company Name: Company	Tel/Fax:	24-3	1. 1186		Lab	Lab Contact:	Kr55- F)	Carrier:	er: Tas	A Ame	. 60	of 3	cocs
S to Balanch	An	Analysis Turnaround Time	naround 1	ime		ς					92	Sampler: [8, 8, 7, 16]	AS
City/State/Zip: 5	CALENDAR DAYS	DAYS	WORK	WORKING DAYS		)					u.	For Lab Use Only:	
Phone: U.S. I. S. I. S. I.	TAT if	TAT if different from Below	Below			0					_	Walk-in Client:	
Fax: C < 5 4 5 1 1 5 5		2 W	2 weeks			111						Lab Sampling:	
Project Name:		1 w	1 week			g							
Site:		2 days	ıys			(F)			20		2	Job / SDG No.:	
PO#		1 day	ιγ			77							
Sample Identification	Sample S Date	Sample	Sample Type (C=Comp, G=Grab)	Matrix C	Cont filtered Sa	M mroha9						Sample Specific Notes:	c Notes:
SADO	13.50	-	11	II .	17 H	7							
Q (7 )	11.02.51	1	Ü	Hr.C.	C	N.							
											, (1 185		
							<i>y</i> -						
								f					
					× .								
Y.					7								
										7			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	5=NaOH; 6=	Other			9								
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Pleaso Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Codes for the sample in the	A Waste C	odes for th	e sample		sample D	isposal ( A fe	e may be asse	ssed if s	amples are	retained	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	
Non-Hazard Flammable Skin Irritant	Poison B		Unknown	u/	¥.	Retu	Return to Client	Disposal by Lab	by Lab	Arc	Archive for	Months	
Special Instructions/QC Requirements & Comments:													
Custody Seals Intact: Yes No	Custody Seal No.:	No.:					Cooler Temp. (°C): Obs'd	(°C): Obs'd:		Corr'd:	_	Therm ID No.:	1
Relinquished by:	Company:			Date/Time:	116	Received by:	) Aq		Company:	any:			(1000)
Relinquished by:	Сотрапу:			Date/Time:		Received by:	by:	,	Company	any:		Date/Time:	
Relinquished by:	Company:			Date/Time:		Received	Received in Laboratory by:	.kc	Company	any:		Date/Time:	

TestAmerica Irvine Phone: 949.261.1022 Fax:

### **Chain of Custody Record**

147599

TAL-8210 (0713)

THE LEADER IN ENVIRONMENTAL TESTING TESTING TESTING. **TestAmerica** 

FRUITE, SASTACT TOLE LOSS.	Regulatory Program:	y Prograr	m: Dw	/ NPDES		RCRA	Other:							TAL-8210 (0713)
Client Contact   Contact	Project Manager:	er: Will	344 9	Je kar	Site	Site Contact:	MOF		Date:	:e:	12-	- 16	COC No:	
Company Name: C - Lower Assert	Tel/Fax:	15/7	1136	0	Lab	Lab Contact:	K. S	Sport	Cal	Carrier:	7	America	of COCs	
11/1/2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1		Total	The same of		-	7		3	d	L	-		Sampler 14 St. No. C. L.	200
Address:	Aliai	Analysis Lumiaround Illie	roana	<u>u</u>		71	2	5	-	đ	40		and the second	
City/State/Zip:	CALENDAR DAYS	AYS	WORKING DAYS	3 DAYS		0	U	1000	10	2	7		For Lab Use Only:	
	3. 1				1	9	C		9	J	P		Walk-in Client:	
Finone:		Al It different from Below	MOI	1	N	1	4.0	A S	1	3	7			
Fax: 9.58. 11.51-10-7		2 weeks	S		/ A	1	)	7	i c	40	11		Lab sampling:	
Project Name:	E	1 week				7	7	1	31	9	1			
Sile:	][	System C				20	Fi.	1		5 -	74		Job / SDG No.:	
PO#	1.	1 day				160	01	ge T	01	7	F			
		CS	olum	-		10	5	W O S	1		Š			
	_	_	vpe			A	4	200	51	-	9			
Sample Identification	Sample Sar Date T	Sample (C=	(C=Comp, G=Grab) Ma	# of # of Matrix Cont.	بَہ ہَ Filter Perfo	133	41		137	uis UJ3	19		Sample Specific Notes:	es:
MW-74	-	0		345 13	N. N.	1 1	*	7	メナナ	7	×			
OC 1 183	YOU	200			O.	7	7 7	1/2 ×	X	Y.	X			
1	5	7												
Dec - 14	080	0180		-	55	X	*	*	XXX	X	X			
M14.5	Σ.	5/3		5		1×	-	4	7	7	X		v	
5.44	91	J.C.				7	3	7	メメ	_	Ž			
K	Č	1 0			F	7	>	X	× ×	>	2		,	
	Š.	8				-				1				
Dealecto					- (	<i>&gt;</i>	×.	X	XXX	×	X			
		4	7	7 65		><								
2 ピアング	J	1	80	(0		-								
	CG.	2		9	4	5		+						
			E							_1				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	5=NaOH; 6= 0	ther				V								
	- C	0,000	odt di clamaca odt ref ed	i clama		ample D	isposal	(А fее п	lay be as	pesses	if sam	ples are retain	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	
Comments Section if the lab is to dispose of the sample.	Piease List any ETA Waste Cou	vvdsle coo	10 50	Sallipid	D =				_					
□ Non-Hazard □ Skin Irritant	Poison B		Unknown			Retur	Return to Client		'S Disposal by Lab	al by Lab		Archive for	Months	
Special Instructions/QC Requirements & Comments:														
::	I loop whoten	0					Cooler Temp.	~	C): Opsid:		ŏ	Corr'd:	Therm ID No.:	
s macr. Yes No	Custody Seal		-	The second second	1	100000000000000000000000000000000000000		1		Š			The state of the s	
Relinquished by:	Company:	Asser	ind I	Date/Time:	/H00	Received by:	The last	4	11	3	Company	L. F.	12/4/1//	400
Relinquished by:	Company:		۵	Date/Time:	T.	Received by:	ρλ:	-		Ö	Company:	2	Date/Time:	
Rejinquished by:	Company:		ă	Date/Time:	I.E.	eceived	in Labor	Received in Laboratory by		Ö	Company:	.,	Date/Time:	
										1	١			

TestAmerica Invine 17461 Derian Ove Suite 100

Chain of Custody Record

**TestAmerica** 

THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.

TAL-8210 (0713) Sample Specific Notes: 1600 COCS 201411 Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) For Lab Use Only Date/Time: Walk-in Client: -ab Sampling: Job / SDG No.: of Therm ID No Date/Time: Date/Time: COC No Archive for Company: Company Company. Disposal by Lab Date: Carrier: Cooler Temp. ("C): Obs'd Received in Laboratory by: X × Other: Return to Client Site Contact: Received by: Lab Contact RCRA Perform MS / MSD (Y / N) Filtered Sample (Y / N ) Date/Time: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the NPDES # of Cont. 5 Date/Time: Date/Time: WORKING DAYS Matrix Analysis Turnaround Time MO - Unknown Type (C=Comp, G=Grab) Sample Regulatory Program: TAT if different from Below 2 weeks 1 week 2 days Sample Time Project Manager: X 14135 V 150 シングクロアル CALENDAR DAYS Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Custody Seal No.: Company: Poison B Sample Company Tel/Fax: Compan Date Comments Section if the lab is to dispose of the sample. Special Instructions/QC Requirements & Comments: 2 Sample Identification Client Contact Trvine, CR 92614 Phone: 949.261.1822 1112 1 000 00ossible Hazard Identification: Custody Seals Intact: 5 5 Company Name: 2:00 Relinquished by: telinquished by: Relinquished by Non-Hazard Address: 11 City/State/Zip: Project Name: Phone: # O d Fax: Site:



### GROUNDWATER MONITORING PROGRAM WATER LEVEL SURVEY RECORD SHEET

Site	Sunstine	Cyu.
Project No.:	2016,030	
Date_	12-19-16	
Field Personnel	Die MS	

r	107170			
WELL I.D.	CONSTRUCTED TOTAL DEPTH (TD)	ACTUAL TOTAL DEPTH (TD)	DEPTH TO WATER (DTW)	COMMENTS
Mw-1	11		17.12	
MW-ZA			31,33	
MW-2B			19,49	
Mw-5			19.85	
MW-6			17.33	
MW-8			16.03	
MW-9			15-15	
MW-132			19,26	
MW-14			14.61	
DW-1			toc	
DW-2			35.28	
DW-3			153.56	
DW-4			34.65	
Durs			15.00	
CM-SR			211.36	
CM-10R			52.94	The state of the s
CM-11R			28.54	
CM-983			19,91	····
			92.39	
82-2			122-61	
REMARKS:				



### GROUNDWATER MONITORING PROGRAM WATER LEVEL SURVEY RECORD SHEET

Site	Sursine Cyn,
Project No	2016,0030
Date	12-19-16
Field Personnel	BS, AS

WELL I.D.	CONSTRUCTED TOTAL DEPTH (TD)	ACTUAL TOTAL DEPTH (TD)	DEPTH TO WATER	COMMENTS
	DEPTH (10)	DEPTH (ID)	(DTW)	
12-3			219.13	
PZ-4 EW-2 EW-3 EW-4 OM-3			112.01	
EW-2			14,30	
EW-3			18.59	15 10 10 10 10 10 10 10 10 10 10 10 10 10
BW-4			17.73	
0M-3			18.85	
***************************************				
dinien, and a second				
			<del>                                     </del>	



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:		Surshi	me Cyn	Project	No.:		2016.00	3D
Well I.D.:		CM-	983	Sampli	ng Date:		12.20.	16
Collected By:		A	3	Purge s	start Time:		0180	1
Casing Diamete	r (inches):	4		Purge !	Stop time:		0831	_
Starting Water L	.evel:	19.0	15		ng (Well Reco	very) Time:	083	1)
Total Depth (fee	t):	79.	00		Water Level (		21.3	
Water column (f	eet):	-			urged (gallon:		7-0	
Screen Length (	feet):		_	Duplica	ate Sample:		YES	NO
Sample Method	:	Micro Purge	Low Flow					
Horiba Model Si	/N: U	-52 1361	Praps					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0824	0.50	7031	4.67	7.91	745	7.73	18.33	-25
5230	1.00	20.60	6.60	7.62	115	7.11	12.47	-21
0930	1.25	70.79	6.3-9	7.55	58.3	1,97	13.55	-19
0833	1.50	20.94	6.58	7.44	37.7	1.23	18.81	-18
0836	1.75	21.26	6.58	7.45	57.3	1.24	18.59	-17
0833	2.00	21.38	6.58	7,42	56.9	181	12,62	-16
					17.11			
								18
								4
L				1				
Purge Sampling	Sauge	psi , Pe	FII 150	of , co	sischer	Se 10	odar	•1
Well condition:	OV		H			( n	No.il **	7.46
Men condition:						- homb	Chiti.	C7.7 +t
Additional Info/0	Comments: C	as Coo	1, Wind	4				
						0	1	
Name: Ad	am Sh	ald		Signatur	e:	01		

li .				
Facility:	Surstine Jyn Well ID:	CM-9R3	Date:	0.16
Access:	Accessibility: Good:	Fair	Poor:	
	Vicinity of well clear of weeds and/or del		Yes:	N
	Presence of depressions or standing water			No:
	Remarks:	er around wen	Yes:	No:
Concrete	Pad:			
	Integrity: Good:	Inadequate:	V	
	Presence of depressions or standing water	er around well:	Yes:	No:
	Remarks: No pad observed	<b>(</b>		•
Protective	Outer Casing: Material:	11.6	v-111	20-3-20-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
l Totaliye	-	1		
	Condition of Protective Casing:	Good:	Damaged:	
	Condition of Locking Cap:	Good:	Damaged:	_
	Condition of Lock:	Good:	Damaged:	
	Condition of Weepholes:	Good:	Damaged:	
	Remarks: Locking cap/sin	g is cock	ed and c	can be
Well Riser		PVC	1.	
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	
	Measurment reference point:	Yes:		
	Remarks:	· · · · · · · · · · · · · · · · · · ·	No:	
Dedicated	Pump: Type:	Bladdies	Specific fill one thing washing.	
	Condition: Good:	Damaged:		Nissing:
	Pumping Rate (gpm):			
	Remarks:	Current (Hz):	N/\	
Field Certif		Field Teel	17	20.16
	Signed	Title		0

Date



### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:		Junshine Cyn		Project No.:			2016.0030	
Well I.D.:		CM-IDR		Sampling Date:			12.20 14	
Collected By:		AS		Purge start Time:			1519	
Casing Diameter (inches):		4		Purge Stop time:			1245	
Starting Water Level:		\$7.97		Sampling (Well Recovery) Time:			1300	
Total Depth (feet):		110.90		Ending Water Level (feet):			53.11	
Water column (feet):		57.98		Total Purged (gallons):			2.5+	
Screen Length (feet):				Duplicate Sample:			YES NO	
Sample Method:		Micro Purge Low Flow						
Horiba Model S/	N:	52 W.C	~P8G125	27				
TIME	GALLONS PURGED	WATER LEVEL	На	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
1228	1.00	53.11	7.05	5.07	2.9	3.94	21.45	-208
1233	1.50	144	7.04	5.07	\$	3,91	21.56	-770
1236	1.75	1.	7-04	5.05	Ø	3.85	21.60	-225
1239	7-00	1/	7-04	5.06	Ø	3.88	21.61	-2.50
1242	2.25	<u> </u>	7-04	5.05	4	3.43	21.62	-234
1245	7.50	15	7-04	5.06	Ø	3.95	21.12	-532
								5
Purge Sampling Rates: 50 PSi Pefil 45.0 Discharge 15.0								
Well condition: D. K. Y Pump depth: 100 ft.								
Additional Yafa /Comments								
Additional Info/Comments:								
0 0								
Name: Adam Shall								

Facility:	Soushine Cyn Well ID:	CM-IOR	Date: _\ね.つル。	16
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or deb Presence of depressions or standing wate Remarks:		Poor: Yes: Yes:	No:
Concrete	Pad: Integrity: Good:  Presence of depressions or standing wate Remarks:	Inadequate:	Yes:	No:
Protective	Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Good: Good: Good:	Damaged:	
Well Riser	Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good: Yes:	Damaged: Damaged: No:	
	Condition: Good:  Pumping Rate (gpm):	Damaged:  Current (Hz):	Miss	ing:
Field Certifi	ication: Signed	Field Tech	17.20	16_

Date



Site Name:		Sushin	re Cyn	Project	No.:		2016.00	30
Well I.D.:		CM-	UR"	Sampling Date:			12-20.16	
Collected By:		Purge start Time:						
Casing Diamete	r (inches):			Purge \$	Stop time:		103	2
Starting Water L	_evel:	. 22.	50	Sampli	ng (Well Reco	very) Time:	1045	5
Total Depth (fee	et):	31.1	D	Ending	Water Level (	feet):	79.8	Con Con
Water column (f	feet):	2.5	0	Total P	urged (gallon	s):	1.5-	ŧ
Screen Length (	(feet):		es.A.E.	Duplica	ate Sample:		YES C	NO 3
Sample Method	<	Micro Purge	Low Flow				12	
Horiba Model Sa	/N:	52 Will	PREPS	-				
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0954	0.25	72.61	6.90	6,40	O.L	3.56	14.81	£ <del>3</del>
1002	D.50	78.69	6.64	6.45	0,7	3/11	15.43	123
1009	0.75	78.77	6.60	6.44	Dib	7.57	15.5-3	179
1016	1.00	78.33	6.59	6.43	0.9	7.39	15.61	137
1021	1.25	29.83	6.59	6.42	0.7	738	15.62	133
1032	1.50	28.83	6.28	6.41	0.6	7.36	15.63	134
							-	y
								i#
B 6 - E	Rates: 30 P	x: 1 D (	-1( )	1				
Purge Sampling	Sample	water	15 Cle	w 6/	no od	105 200		
Well conditions	DV-ho	or + to	o till po	offles.		1	4 70 6	5 0
Well condition:	, P.				* PUN	18541	79.5	5 .++ .
Additional Info/G	Comments:Cle	ev, Cad	. Wind.	(				
		.,				1		
Name: Add	am Sha	(C)		Signature		01	1	
-						-		

1				
Facility:	Soustine Cyn Well ID: Com-	UR Date:	12.20.16	
Access.	Accessibility: Good: Fair:	Poor:		
	Vicinity of well clear of weeds and/or debris:		✓ N	0.
	Presence of depressions or standing water around w		N	
	Remarks: Pagaires backing touch		de obou	
		e of concre	4 Count	ac to
Concrete	that the second	equate:		
	Presence of depressions or standing water around w		N.	
	Remarks:	res		0: -
Protective	e Outer Casing: Material: U	etal		
	Condition of Protective Casing: Good: _	Da	amaged:	
	Condition of Locking Cap: Good: _	✓	amaged:	
	Condition of Lock: Good: _	/	amaged:	— ·
	Condition of Weepholes: Good: _		amaged:	_
	Remarks:			
Well Riser	Mareusi:	NC		
	Condition of Riser: Good:	<b>D</b> a	amaged:	_
	Condition of Riser Cap: Good:	<b>√</b> Da	amaged	
	Measurment reference point: Yes:	<b>/</b>	No:	=
	Remarks:			
Dedicated	Pump			
	Condition			
	Dai	maged:	Missing:	
		Current (Hz):	A	
	Remarks:	8.0%	,	
ield Certifi	cation: (LC.) Fold	Tech	10 00 1	
	Signed Titl		12.70.16 Date	



Site Name:		Sunshi	ne Cyn	Project No.: 2016 .0030				030
Well I.D.:		MU	-1,	2	Sampling Date:			.16
Collected By:		L.	S		start Time:		403	3
Casing Diameter (	(inches):	ا			Stop time:		0950	
Starting Water Le	vel:	17.	12	_	ng (Well Reco	verv) Time:	1003	118
Total Depth (feet)	:	29	10		Water Level (		12.2	
Water column (fee	et):		-0-0		urged (gallons	•	7.6	
Screen Length (fe	et):	9340			ate Sample:	-,.		NO
Sample Method:		Micro Purge	Low Flow				123	
Horiba Model S/N	ı,	-52 Wal	PRCRS					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0937	050	12.17	6.76	5.31	8-12	7.97	71.13	-93
0941	1.00	17.21	6.76	5.28	58,41	7.41	21.15	-104
0943	1.25	24	6.77	5.27	42.5	2.12	21.57	-107
0945	1.50	T+	6.77	5.24	3900	7.17	71.50	-102
0947	1.75		6.77	5.27	39,6	7.11	71.60	-108
8950	2.00	ŦĒ	6.78	5.26	39.7	2-14	7159	-109
								27 1 8
		<del> </del>	47	0.0				
			(3)	(A)	Company of the last of the las			
Purge Sampling Ra	has 51	ight y	allow to	+int	Mischa d	sge 1	1.0/.	
Well condition:	.K							
Additional Info/Co	mments:	ins, W	and of			13 12	ort. FCS	
+ Note: E	EPA on	-site to	Split	Sample	S		Jules 7	
Name: Ad	am S			Signatur		C./		

Facility: Surshine Cyn Well ID: MW-1 Date: 12.22.16	
Access:  Accessibility: Good: Fair: Poor:	
Visinity of the control of the contr	
Presence of depressions or standing water around well:  Yes: No:	/
Remarks:	
Concrete Pad:	
Integrity: Good:Inadequate:	
Presence of deprecians on the divining	
	/_
Remarks: No concrete pad observed/visable.	
Protective Outer Casing: Material:	~~~
Condition of Protective Casing	
Condition of Locking Can:	
Daniageu.	
Damaged: No Cock	
Condition of Weepholes: Good: Damaged:	
Remarks: No Lock	
Well Riser: Material: DVC	
Condition of Riser: Good: Damaged:	
Condition of Riser Cap: Good: Damaged:	
Measurment reference point: Yes: No:	
Remarks:	
Dedicated Pump: Type: Raddes	
Condition: Good:	
Pumping Bata (	
Pumping Rate (gpm): Different (Hz): Nice	
Remarks;	
ield Certification: Field Tech 12.22.11	
Signed Title	_



		0 1	. 12						
Site Name Surshine Cyn		Project No.:			2016.2	2030			
Well I.D.:		MW.		Sampli	ng Date:		12.21	-16	
Collected By:		A.	5	Purge s	start Time:		093	7	
Casing Diamete				Purge (	Stop time:		1017	2	
Starting Water L	_evel:	·31.		Sampli	ng (Well Reco	overy) Time:	103	0	
Total Depth (fee	et);	ul.	30	Ending	Water Level	(feet):	32.5		
Water column (f	feet):	Cy.	95	Total P	urged (gallon	s):	1.5		
Screen Length (	(feet):			Duplica	ste Sample:		YES	40	
Sample Method		Micro Purge	Low Flow						
Horiba Model S/	/N:	5-25 MM	PRCRS						
TIME	GALLONS PURGED	WATER LEVEL	На	CONDUCTIVITY  ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O R P	7
ogu3	0.25	31.67	7.28	4.12	9.9	3.88	19.89	-113	*
0948	050	31.90	7.19	4.16	6.6	7.22	19,99	-114	
0954	0.75	32.05	7.19	4.10	3.6	7.75	70.53	-11/	
1000	1.00	32.22	7.19	4.10	53	2.71	20.58	-117	1
1006	1.25	32.34	7.19	4.09	2.2	7-69	70,54	-118	
1012	1.50	32.50	7.19	4.10	5.3	7-67	20.59	-119	
									1
								7.	1
				ļ				1	1
L		0.0	<del></del>	A Hanner		(AS)	-	3 841 48 255 345 644	
Purge Sampling	Rates: 75 F	Vale E	11 /25-	2/ Dis	charge	100	.(6.0)		
TOOK S	one to	ince to	Sut	MAGE 5	dae	(1) ha	odo	1	_
Well condition	7.K -	Require	S hiki	is Sam	oliuc e	BUIDME	not of t	Nottle	-
acesoss	concre	te chau	uel an	do up.	Stope.	to ace	055 .		-
Additional Info/C	Comments:	oudy Co	el. ligh	of Wind	5 /-				
DUMP T	alet.	39 Ci				5) 130	ttles		_
Name:	am Cla			4*:4	0	n	1		
<b>扩</b>	un Ch	$G_{\bullet}$ $\cup$ $U$		Signatur	( ) (				

Facility: Soushine Cyn Well	ID: MW-ZA	Date: 12.21	-16
Accessibility: Good:	Fair:	Poor:	
Vicinity of well clear of weeds and/	V	Yes:	N1 = 27
Presence of depressions or standin	g water around well:	Voc	No:
Remarks: Well is mid	-56pe - Pea.	الما الما الما الما الما الما الما الما	No:
+ Bottles acesoss (Concrete Pad:	concrete chain	relandon si	eg sipureant
Concrete Pad: Integrity: Good:		(0000 p p 30	spe to acce
No. of the last of			
Presence of depressions or standin Remarks:	g water around well;	Yes:	No:
Neman Ks.			
Protective Outer Casing: Materi	al: Mela		
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: Materia	el: DVC		
Condition of Riser:	Good:	Damaged:	
Condition of Riser Cap:	Good:	Damaged:	
Measurment reference point:	Yes:	No:	
Remarks:			
Dedicated Pump: Type:	Bladde	)	
Condition: Good:	Damaged:	Mi	ssing:
Pumping Rate (gpm):	Current (Hz)	014	
Remarks:		10/16	
* Pump Inlet: 39 ft	á.		
Field Certification:	X = 0 =	(	<u> </u>
Signed	Field Tec	Dat	21.16



#### **GROUNDWATER MONITORING PROGRAM**

WELL DATA SHEET								
Site Name:  Well I.D.:  Collected By:  Casing Diameter (inches):  Starting Water Level:  Total Depth (feet):  Water column (feet):  Screen Length (feet):  Sample Method:  Southine Cyn  Micro Purge  Low Flow				Project Samplii Purge s Purge S Samplii Ending	No.: ng Date: start Time: Stop time: ng (Well Reco Water Level ( urged (gallons ate Sample:	very) Time: feet):	2016.00 12-21. 0820 085 72-7 7-0	0
Horiba Model S/	N:	J-52 (66)6	LP8CR5	\ .				
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0825	0.50	20.36	745	4-14	7.8	791	71.11	-192
0879	1.00	21.20	7.39	4-12	1.9	8.30	21.32	181-
0837	1.25	21.66	7.38	4.12	1.5	8.12	21.32	-177
0835	1.50	72.00	7.38	4-11	1.4	8.00	71.35	-175
0838	1.75	22.41	7-37	4.10	1.5	8.03	21.34	-173
0840	2.00	22.79	7.37	4.10	1.3	7,98	21.37	-171
								ž d
			P.					*
Purge Sampling I	Rates: 40	PSI.	Pes:11	35.0\. tet 5t		rge 1	3.0	(4.000)
STENT	000	C-	. 3-6 16	· cer si	-1,7	my cou	to the first the same of the s	w
Well condition	7.K	Peguire	= S hiki	us Sam	plinse	Boidme	cut + b	ort 6.5
accisoss	0	ete a	rauno 1	and	DD 2	Pope +	e acce	55.
Additional Info/C	Comments:	loody.	Cool	light C	divid	2		
PumpI	Pump Inlet: 68ft. (13) Bottles							
Name:								

	Soushive Cyn Well ID:	MM-SB	Date: 12.21-	16
Access:	Accessibility: Good:	Fair:	Poor:	
	Vicinity of well clear of weeds and/or d		Yes:	No:
	Presence of depressions or standing wa	ater around well	Vac·	No
	Remarks: Well is wid:	Slope - Par	see like	NO.
+3	pattles accoss conc	rete charmel	and waster	equipment access
Concrete	Pad: Integrity: Good:		- P Jerlan	2 10 00 3
	Presence of depressions or standing wa	Inadequate		
	Remarks:	ater around well;	Yes:	No:
Protective	Outer Casing: Material:	Meta		
	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	iviaterist.	- PVC		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	
	Measurment reference point:	Yes:	No:	
	Remarks:			
Dedicated	Pump		THE STREET, SALES	
- saicotca		Bladdes		
	0364.	Damaged:	Mis	sing:
	Pumping Rate (gpm):	Current (Hz):	Ala	
0	Remarks:			
POW	up Inlet: 68 ft.			
ield Certif	ication:	Field Teel	12.7	/
	Signed	Title	Date	



	6						
Site Name:	Sinstane Con	Project No.:	2016-0030				
Well I.D.;	Mw-307						
Collected By:	MC	111 2 6					
Casing Diameter (inches):	2	Purge start Time: Purge Stop time:	17/0/				
Starting Water Level:	19.85	Sampling (Well Reco	1204 1711				
Total Depth (feet):	26,20	Ending Water Level (					
Water column (feet):	6.35	Total Purged (gallons					
Screen Length (feet):		Duplicate Sample:					
Sample Method:	Micro Purge Low Flow	ouplicate sample:	YES				
Horiba Model S/N:	1-52/2/1/1mB	20					
TIME GALLONS PURGED	WATER pH LEVEL	CONDUCTIVITY TURBIDITY ms/cm NTU	D.O. TEMPERATURE ORP				
11:45 .5	20.07 6.21	425 5.2	1.79 74.44 -15				
11:51 1.0	20.13 6.73	4.08 4.3	7 20				
11:511 127		2 1	1.14 20.60-42				
11.37 1.25	20.16 6.68	3.954.5	.88 20.68 -50				
11.57 1.5	20.17 6.66	3.954.4	. 84 20.76 -50				
12:00 1.75	20:17 6.65	3.95 3.9	. 84 20,7 -53				
12:04 2.0	2112 (11)		0 0 000				
2.0	20.17 6.64	3.94 3.4	185 20,80 -54				
			154				
Purge Sampling Rates: 20	psi ref. 1)	30 di	schorso 10				
Well condition: OK pa	red some n	reed abat	nend				
		•					
Additional Info/Comments:	1000/ cool	windy					
Name: M. Ke C	c moho.II	Signature: Tule					
1	11/10/1	rile	confi				

Facility:	Sinshire Cyn Wellio: MW-5	Date: 12-21. H
Access:	Accessibility: Good: Fair:  Vicinity of well clear of weeds and/or debris:  Presence of depressions or standing water around well:  Remarks:	Poor:  Yes: No:  Yes: No:
Concrete I	Integrity: Good: Inadequate:  Presence of depressions or standing water around well:	Yes:
Protective	Outer Casing: Material: Me La J  Condition of Protective Casing: Good: J  Condition of Locking Cap: Good: J  Condition of Lock: Good: J  Condition of Weepholes: Good: J  Remarks:	Damaged:  Damaged:  Damaged:  Damaged:
Well Riser:	Material: PVC  Condition of Riser: Good: J  Condition of Riser Cap: Good: J  Measurment reference point: Yes: J  Remarks:	Damaged: Damaged: No:
Dedicated	Pump: Type:	Missing:
Field Certif	ication: Turk Carbell Legic Te	12.21.16 Date



#### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

			VVLLE DA	NA SHEET				
Site Name:		Sunshin	0 000	Projec	t No :	~	016-0	030
Well I.D.:		Mn.	- 4		ing Date:	2	12-20	
Collected By:		MC	5		start Time:		9170	9:27
Casing Diameter	(inches):	2			Stop time:		10:3	9
Starting Water Le	evel:	ĨĨ.	3.0		ing (Well Reco	wand Tima	10, 2	0
Total Depth (feet	):	23.	50		Water Level		15.91	
Water column (fe	eet):	6.	18		ovater Lever		155	1
Screen Length (f	eet):				ate Sample:	3).	1//	
Sample Method:	- 3	Micro Purge	Low Flow	Daplic	ate Sample.		YES	$^{\circ}$
Horiba Model S/M	v: L	-52/us	414B	00				
TIME	GALLONS PURGED	WATER LEVEL	На	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	ORP
9:46	5	17 77	7 11	400		210	7200	20/
0	-/	17.00	7.4	7,05	1,9	2.18	22.78	275
9:56	. 75	11.00	1.08	4.00	4.6	2.00	2332	304
10.06	1.0	17.89	7.05	3.97	9.3	7.86	23.39	-305
10:17	1.25	17.92	7.03	3.94	10.3	179	2240	-30/
10:70	15	17 64		2 6:		1.70	33.10	200
10.20	1-/	11.97	7.02	3.43	155	1.75	23.43	-308
10.39	1.15	17.90	7.02	3.92	12.9	1.73	23.45	-309
					,			
								**
								7
Purge Sampling R	20	12:	£ 11 3	0 1		,		
water	is cla	psi re	1n -	U di	scharge	6	Ion yiet	
black,	is cla	6) pu	14977 Y	Ornsie!	5-li	pecc	me	
Well condition: (	ok		1 1					
Additional Info/Co	COVVY	gupmen	and the second second	Slope	along	a trail	terev	
Δ .	enments: 1 C	lear co	100	1 only	ain 5			
Pump de	19 ntg	.7 ++				_		
Name: M. K	Q (	LaLou		Signatur	e: 7 1	^	17	
1. V. F	Name: M. Ke Compbell signature: Tuke Control							

Facility:	Enshine cyn Well ID:	M4-6	Date: 12-20.16	
Access:	carriel down a	debris: ater around well: Piny Equips	Poor:  Yes:  Yes:  No:  Yes:  No:  No:  No:  No:  No:  No:  No:  N	Hes
	Presence of depressions or standing w Remarks:	!nadequate: ater around well:	Yes: No: \(\sum_{\text{No}}\)	
Protective	Outer Casing: Material:  Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Good: V Good: V Good: V	Damaged: Damaged: Damaged: Damaged:	
Well Riser:	Material: Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good: V Good: V Ves: J	Damaged: Damaged: No:	
Dedicated	Pump: Type: Dla Condition: Good: U  Pumping Rate (gpm): MA  Remarks: Lon Yell	Damaged:Current (Hz	Missing:	
ield Certifi	cation: The Caylell Signed	FieldTech	12-20-16	

Date



Site Name:  Well I.D.:  Collected By:  Casing Diameter (inches):  Starting Water Level:  Total Depth (feet):  Water column (feet):  Screen Length (feet):  Sample Method:	Sunshine Caryo Mh. 9  Mc 4  15.15  26.76  11.55	Project No.: Sampling Date: Purge start Time: Purge Stop time: Sampling (Well Rec Ending Water Level Total Purged (gallor Duplicate Sample:	overy) Time: (feet):	016 -00 2-21.1 9:43 10:16 10:3 15-2 2-0	0	
Horiba Model S/N:  TIME GALLONS PURGED	WATER DH	CONDUCTIVITY TURBIDITY		of 47	n er	
9:52 .5 10:00 1.0 10:04 1.25 10:08 1.5 10:12 1.75 10:16 2.0	15.18 6.49 15.20 6.49 11 6.49 11 6.49 11 6.49 11 6.49	4.85 1.6 4.86 0.5 4.86 0.2 4.86 0.0 4.86 0.1 4.86 0.1	1-13 •99 •85 •80 •77 •75	22.31 22.39 22.41 22.47 22.54	-62 -67 -69 -71 -73 -73	
	3.					
					1694	
Purge Sampling Rates: 25 PSi rell 20 dixhory  Well condition: Ut  Ron hose throught the fence to sample net  Additional Info/Comments: Cloudy, cool, very my b  Name: M. Ke Comphell Signature: Referenced						

Facility:	Sunhire Cyn Wellid:	M4-9	Date: 12-2	1.18
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or debr Presence of depressions or standing water Remarks: Ccrrved equal He well	r around well:	Poor: Yes: Yes: Somple	No: No: boHley
Concrete	Pad: Integrity: Good:   Presence of depressions or standing water Remarks:	Inadequate;	Yes:	No: <u>V</u>
Protective	Outer Casing: Material: Accordition of Protective Casing: Condition of Locking Cap: Condition of Lock: Condition of Weepholes: Remarks:	Good: V Good: V Good: V Good: V	Damaged: Damaged: Damaged: Damaged:	
Well Riser	Condition of Riser:  Condition of Riser Cap:  Measurment reference point:  Remarks:  Pump: Type: Black  Condition: Good: J	Good: Good: Yes: J  Damaged:	Damaged: Damaged: No:	Missing:
	Pumping Rate (gpm):	Current (Hz):		7 71 16

Field Certification: We captled Field Tech 12.21.16
Signed Title Date

# Geo-Logic

Geologists • Hydrogeologists • Engineers

	WELL DA	TA SHEET				
Site Name:  Well I.D.:  Collected By:  Casing Diameter (inches):  Starting Water Level:  Total Depth (feet):  Water column (feet):  Screen Length (feet):  Sample Method:  Horiba Model S/N:	Simphine Conyon MW-13R MC H 1976 27.80 6.54  Wicropurge Low Flow 1.52/NSYINBD	Sampling Date: Purge start Time: Purge Stop time: Sampling (Well Reco Ending Water Level Total Purged (gallon Duplicate Sample:	(feet):	2016-12-22 8:3 9:3( 19.71 1,5 t	0030 2.16 7	
TIME GALLONS PURGED	LEVEL	CONDUCTIVITY TURBIDITY  ms/cm NTU	D.O. mg/L	TEMPERATURE °C	ORP mV	
9:51 . 75 9:55 1. 0 9:00 1.25 9:04 1.50	19.63 7.23 19.63 7.23 19.66 7.23 19.69 7.24 19.71 7.25	3.01 0.0 3.00 0.0 3.00 0.0 2.99 0.0	127 698 .93 .89 .87	20.55 20.86 20.89 20.91 20.91	-35. -35. -35. -35.	
					<u> </u>	
				2.4	Ţ.	
Purge Sampling Rates: 30 psi ref. 11 25.0 discharge 5 Water 12 mostly clear with a black tint and a strong odor Well condition: OK nell moment is heavily carrided  Additional Info/Comments: Clarky, Cold, windy, and rain Pump depth 26.444  Name: Mike Compbell Signature: Tule captell						

Facility: <b>5</b>	sunshine Conyon Wellio:	Mus 13R	Date: 12-3	23.16
Access:	Accessibility: Good:  Vicinity of well clear of weeds and/or deleared of depressions or standing wat Remarks: Corried Scrations of the leaffill en	Fair: bris: er around well: pling equiparts: Inadequate:	Poor: Yes:  Yes:  Prent and	No: No:
Protective	Outer Casing: Material: _ Condition of Protective Casing: Condition of Locking Cap: Condition of Lock: Condition of Weepholes: Remarks:	Good: V Good: V Good: V	Damaged: Damaged: Damaged: Damaged:	V corrid
Well Riser:	: Material: _ Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good: J Good: J Yes: J	Damaged: Damaged: No:	
Dedicated	Pump: Type: DC  Condition: Good: D  Pumping Rate (gpm): DA  Remarks:	Damaged: Current (Hz)	:_NP	Missing:

Signed Title Date



Site Name: Well I.D.: Collected By: Casing Diameter (inches): Starting Water Level: Total Depth (feet): Water column (feet): Screen Length (feet): Sample Method:	14.64 28.10 13,46		Project No.: Sampling Date: Purge start Time: Purge Stop time: Sampling (Well Recovery) Time: Ending Water Level (feet): Total Purged (gallons): Duplicate Sample:		2-016-0030 12-20-16 8:42 9:03 9:13 14.99 7.04		
Horiba Model S/N: L	1-52/45	YINBA	)				
TIME GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O R P mV
8:50 10	1498	6,73	3.52	145	1.28	22.1)	~ <
8:53 1.25	14.99	6.73	3,49	12.1	1.11	2223	~1
8:56 1.5	11	6.73	3.46	8.4	1.09	22.26	3
9:00 1.75	11	6.73	345	1.2	1.03	2231	6
9:0) 2.00	X	673	3.43	0.0	1.00	2234	é
Purge Sampling Rates: 20 PSi rof. 11 20 discherse 11  Veta 15 clear with no ode  Roods on sounder  Well condition: UK  Corried equippent down slope to well  Additional Info/Comments: Clear cold very wind							

	well iD:	Mr-14	Date: 12-20.16
Access: Concrete	Accessibility: Good:  Vicinity of well clear of weeds and/or delegated presence of depressions or standing water Remarks: Corried scooping a Slope to Pad:  Integrity: Good:  Presence of depressions or standing water Remarks:	er around well:  8	Poor:  Yes: V No:  Yes: No: V  Cond 5 cmple bottles  Hy rel'  Yes: No: V
Protective	e Outer Casing: Material:  Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Me Jal  Good: V  Good: U  Good: U  Good: U	Damaged: Damaged: Damaged: Damaged:
Well Riser	Condition of Riser: Condition of Riser Cap: Measurment reference point: Remarks:	Good: U Good: T Yes:	Damaged: Damaged No:
Dedicated	Pump: Type: 5/c ( Condition: Good:   Pumping Rate (gpm):   Remarks:	Damaged: Current (Hz	Missing:

Date



Site Name:		SUNGTINE		Project No.:			LO16.0030		
Well I.D.:		Du	1-1	Sampli	ng Date:		12-20	5-15	
Collected By:			BS	Purge	start Time:				
Casing Diamete	r (inches):		4	Purge	Stop time:				
Starting Water L	_evel:	1	sc	Sampli	ng (Well Reco	overy) Time:	140	D	
Total Depth (fee	et):			Ending	Water Level	(feet):	'	/	
Water column (f	feet):			Total P	urged (gallon	s):	/		
Screen Length (	(feet):			Duplica	ite Sample:		YES	<b>6</b>	
Sample Method	:	Micro Purge	Low Flow						
Horiba Model Sa	/N:	128550	1914 H						
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
1246	Cras		9.08	3.67	2.8	3.43	18-40	-141	
Purge Sampling F	Rates: Saw	Mus	rakey	0 0	discus	nye 1	use.		
COON	Mayer	MAN	an od	ØV					
Well condition:	OK	/ flor	ics c	rand	well	Cen	rede o	man	
Additional Info/Comments: Sunny, Windy,									
·				3			· · · · · · · · · · · · · · · · · · ·		
Name: 🕥		7 h		Signature		1	10	,	
	Hame: Der Selives Signature: Sond								

Facility: 5	Sanshine Well ID: DW-1	Date: 12-20-14
	ccessibility: Good: Fair:	Poor:
l	cinity of well clear of weeds and/or debris:	Yes: No:
	esence of depressions or standing water around well:	Yes: No:
Rei	well manument	oncind
Concrete Pad:		
	tegrity: Good: Inadequate:	
1	esence of depressions or standing water around well:	Yes: No:
Rei	emarks:	
	* 7 (4)	
Protective Out		9
Coi	andition of Protective Casing: Good:	Damaged:
Cor	endition of Locking Cap: Good:	Damaged:
Cor	andition of Weepholes:  Good:  Good:  Good:	Damaged:
Cor	andition of Weepholes: Good:	Damaged:
Rer	marks:	
Well Riser:	Material:	
Cor	ndition of Riser: Good:	Damaged:
Cor	ndition of Riser Cap: Good:	Damaged:
Me	easurment reference point: Yes:	No:
Rer	marks:	
Dedicated Pum	mp: Type: Dup Juse	
Cor	ndition: Good: Damaged:	Missing:
Pur	mping Rate (gpm): Current (Hz): _	NA
Rer	marks:	
L		12.12 Maria
Field Certificati	Signed Title	Date



Site Name:	<b>ار</b> ک	Singhine Cyn			Project No.: 2016 ~ 0030			237	
Well I.D.:		04-3	"	Sampling Date:			12.20.16		
Collected By:		MC			start Time:		12:41		
Casing Diameter	r (inches):	Ч			Stop time:		13:05	5	
Starting Water L	evel:	35.	28		ng (Well Reco	weryl Time:	13:15		
Total Depth (fee	t): we	37.	9771		Water Level (	90 1	39.02		
Water column (f	eet): 12-20-1L	2-6	54 35.		urged (gallon		2.0 +		
Screen Length (	feet):			. ~	ate Sample:	3).	YES /	NO)	
Sample Method:		Micro Purge	Low Flow	a aprilot	ate dample.		(	2	
Horiba Model S/	N: L	-52/h	5414BC	h					
TIME	GALLONS PURGED	WATER LEVEL	На	CONDUCTIVITY	TURBIDITY	D.O.	TEMPERATURE	ORP	
12117	2/	Î		ms/cm	NTU	mg/L	°C	mV	
12.7	- 5		1021	2,94	0.0	1.47	2015	-67	
12.53	1.0		7.65	2.90	0.0	1.25	203/	-87	
12:56	1.25	7 H.	7.60	2.97	0.0	113	20,09	-08	
12:59	1.5		200	2 (2)	0.0	1.08	- 1	-06	
13:02	1.75		7.50	201	<b>A</b>	100	20.02	00	
			1.5 (	2.91	0-0	1.05	20.01	-89	
13.05	2-0	<b></b>	1,55	2.92	0.0	1.03	19.97	-89	
								-	
					9				
								**	
								7	
P	110	46.1	7 0	1 3/			1.0		
Purge Sampling I	Rates: 75	el n. +	ret.	1) 35	213	chorse	18		
		-V		0 000					
Well condition:									
Additional Info/C	omments: C	lear	Ma . I.I						
	Additional Info/Comments: Clear mild, very winds								
Name:	ke Co	mbell		Signatur	Toch	e ce	1)		
							.0		

	Sunshine Cyn Well ID:	) W-3	Date: 12-20.	16
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or debtersence of depressions or standing water Remarks: Veselation are Dath to well	er around well:	Poor: Yes:	No: V No: V
Concrete	Presence of depressions or standing water  Remarks:	-86	Yes:	No:
Protectiv	Condition of Protective Casing:  Condition of Locking Cap:  Condition of Lock:  Condition of Weepholes:  Remarks:	Good: V Good: V Good: V	Damaged: Damaged: Damaged: Damaged:	
Well Rise	Condition of Riser:  Condition of Riser Cap:  Measurment reference point:  Remarks:	Good: V  Good: V  Yes: V	Damaged: Damaged: No:	
Dedicated	Condition: Good: Condit	Damaged:  Current (Hz	Mis	sing:

Field Certification: The Captul Field Tech 12-20-16
Signed Title Date



Site Name:	Sunshine Conyen	Project No.	2.1/ 2432
Well I.D.:	0 m-3	Sampling Date:	2016-0030
Collected By:	mc	Purge start Time:	7.36
Casing Diameter (inches):	4	Purge Stop time:	9:20
Starting Water Level:	153.54	Sampling (Well Reco	0.07
Total Depth (feet):	256.60	Ending Water Level	
Water column (feet):	103.00	Total Purged (gallor	
Screen Length (feet):		Duplicate Sample:	
Sample Method:	Micro Purge Low Flow	ouplicate Sample:	VES NO
Horiba Model S/N;	4.52/WSYIMBO	n 0.1	1. 1.1. 1.1.
TIME GALLONS	WATER PH COI	NDUCTIVITY TURNIDITY	DO. TEMPERATURE ORP
PURGED	LEVEL	ms/cm NTU	mg/L °C mV
7:45 1.0	155.11 6.91	2.32 0.0	1.79 20,28 - 22
7:49 1.5	155.80 6.97 3		1.56 2029 - 38
7:53 1.25	15/18/2000		1. 16 5 5 7 1 5
- (()	1.00	1,32 00	1.3/20.31-40
7.50 2.0	15639 7.01 2	1.32 0.0	1.29 20.33 - 42
8:07 3.24	5 156.69 7.03 3	1.31 0.0	1.26 20.34 - 45
8:07 2.50	1166 60 0		1 01 1 5 1 111
7.50	156.47 7.03	132 00	1.24 20.35 - 46
			*
Purge Sampling Rates:	U ps: cot 1)	35 1	1 . 22
water 15 c	lace with	000	ischors 20
		110 000	
Well condition: OV			
Additional Info/Comments:	cloudy, cool	very .	
Duplicable tak		y very L	-in dy
			11
Name: M. Ke	compbell	Signature: 2	10/11/
		- IW	- July

	sunshine conjun Well ID:	0 W-3	Date: 12-2	1.16
Access:	Accessibility: Good: Vicinity of well clear of weeds and/or del Presence of depressions or standing water Remarks:		Poor: Yes: Yes:	No:
Concrete (	Pad: Integrity: Good:  Presence of depressions or standing wate  Remarks:	Inadequate: er around well:	Yes:	No: <u>/</u>
Protective	Outer Casing: Material: Condition of Protective Casing: Condition of Locking Cap: Condition of Lock: Condition of Weepholes: Remarks:	Good: V  Good: V  Good: V	Damaged: Damaged: Damaged: Damaged:	
Well Riser	Condition of Riser:  Condition of Riser Cap:  Measurment reference point:	Good: V	Damaged: Damaged: No:	
Dedicated	Pump: Type: 5/6 Condition: Good: V Pumping Rate (gpm): NA Remarks:	Damaged:Current (Hz):	•	Aissing:
ield Certif	ication: Mk Caplell Signed	Field Tech		ate

Date



Site Name: Well I.D.: Collected By: Casing Diameter Starting Water L Total Depth (fee Water column (f Screen Length ( Sample Method	evel: t): eet): feet):	Sushi. Au Ai	Low Flow	Purge Purge Sampli Ending Total P	t No.: ng Date: start Time; Stop time; ng (Well Reco ) Water Level ( Purged (gallon; ate Sample:	2016.0030 12.21.16 0734 0755 0816 35-19		
Horiba Model S	•	152 WAG	1					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
0739	0.50	33.51	7.35	4.45	47.8	4.34	70.64	-235
0743	1.00	33,92	7.34	4.44	47.8	न्त्र निव्	20.65	-218
0745	1.50	34.29	7.38	ध्याप	19.0	312	70-84	-206
0748	1.75	34.70	7.40	4.44	3.3	2.22	70.88	~70~7
0750	7.00	35.05	7.41	4.45	3.3	7.74	70.89	-201
0752	7.25	35.37	7.42	भ. ५५	7.9	2 67	70,88	-700
0755	7.50	35.69	7.42	4.43	7.4	7.65	20.88	-199
								7. H
							\	<u> </u>
Purge Sampling I	Rates: 75	psi . P	2 fill 3	ard the	ischer	oing c		rodoc
Well condition:	Course Comments: Cl	1	- V 1 1 -	6 0D. 2	lope -	to acco	- 4 Ba	Has ell.
Down I	104	130 0		)		(13)	Bette 5	<b>-</b>
Name: Ad	am St	125-44		Signatur	e:	13/	1	

	Sonshine Cyn Well ID:	DW-4	Date: 12.21	-16
Access:	Accessibility: Good:	Fair:	Poor:	
	Vicinity of well clear of weeds and/or deb	<b>V</b>	Yes:	No:
	Presence of depressions or standing water	er around well	Ves-	No
	Remarks: Well is will -5	Slope - Roa	ones Liking	26.3124.0
+ Box	Remarks: Well is mid-5 tles occ5055 Concre	te channel	and D-Slos	e to acces
Concrete	Pad: Integrity: Good:		1 302	
	Presence of depressions or standing wate	Inadequate:		
	Remarks:	er around weil:	Yes:	No:
Protective	Outer Casing: Material:	Mota		
	Condition of Protective Casing:	Good:		
	Condition of Locking Cap:	Good:	Damaged: Damaged:	
	Condition of Lock:	Good:	Damaged:	
	Condition of Weepholes:	Good:	Damaged:	
	Remarks:		Damaged,	
Well Riser:	Material:	. byc		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	
	Measurment reference point:	Yes:	No:	
	Remarks:			
Dedicated	Dumai			
scuicateu	7,500	Bladde	7	
	Condition: Good:	Damaged:	Mis	sing:
	Pumping Rate (gpm):	Current (Hz):	NA	
Date	Remarks:		V V	
. Lowe	Frulet: 132 ft.			
ield Certifi	cation:	( Field Tec		)
	Signed	Title	12.2	1-16

Date



Site Name:	Synshin	ceCyn	Project No.: Zald 2030						
Well I.D.:	DW-5		Sampling Date:			12.22.16			
Collected By:	AS		Purge start Time:			0819			
Casing Diameter (inches):	4		Purge \$	Stop time:		084	3_		
Starting Water Level:	15.	06	Sampli	ng (Well Reco	very) Time:	090	0		
Total Depth (feet):	101	00	Ending	Water Level (	feet):	12.2			
Water column (feet):	85.6	14	Total P	urged (gallons	s):	2-0.	+		
Screen Length (feet):		_	Duplica	ate Sample:		YES C	NO		
Sample Method:		ow Flow							
Horiba Model S/N:	252 Wel	P3625							
TIME GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV		
0825 050	16.00	8.50	72.17	65.0	1.33	1915	-98		
0831 1.00	16.72	8.52	2.15	52.5	1.10	19.80	-137		
0834 1.25	17.25	8.52	7.18	41.0	1.10	19,79	-152		
0837 1.50	17.56	7.52	2-18	38.2	trol	19.77	-153		
0840 1.75	17.82	8.52	7.17	38.4	1.00	19.70	-167		
0843 7.00	12.25	3.52	2.19	3.8.8	109	19.67	-167		
							·•		
,			L				10		
Purge Sampling Rates: 60 PS	ellowish	11 35	1. LS.	scharge strong	e 21.				
*			0015	U .			9		
Well condition:		MINT							
Additional Info/Comments: Ra	ins, Wi	gh Wi	uds		460	702.12	200		
Note: EPA ous	te to sa	olit Sa	mples	×	*(1)	1 Softe	2.5		
A Company of the Comp	Note: Ephonsite to Split Samples.  Name: Adam Shaw Signature:								

	5 4 0	1		
Facility:	Sunshine Cyn Well ID:	DW-S	Date: 12.2	2.16
Access:	Accessibility: Good:	Fair:	Poor:	
	Vicinity of well clear of weeds and/or de		Yes:	
	Presence of depressions or standing wa		Yes:	-
	Remarks: Broken coner			
Concrete				
	Integrity: Good:	_		
	Presence of depressions or standing war		Yes:	No:
	Remarks: No concrete	red observ	ed	
Protective	Outer Casing: Material:	Metal	V	
	Condition of Protective Casing:	Good:	Damaged:	
	Condition of Locking Cap:	Good:	Damaged:	
	Condition of Lock:	Good:	Damaged:	
	Condition of Weepholes:	Good:	Damaged:	
	Remarks:		Damageu.	
Well Riser:		<b>7</b> 15		11
Well Kisel	iviaterial	byc		
	Condition of Riser:	Good:	Damaged:	
	Condition of Riser Cap:	Good:	Damaged:	*
	Measurment reference point:	Yes:	No:	
	Remarks:			
Dedicated	Pump: Type:	Bladdes		
	Condition: Good:	Damaged:		Missing:
	Pumping Rate (gpm):	Current (Hala	177	
	Remarks:	Current (Hz):	NIA	-
	and to			
ield Certifi	Cation: Signed	Field Tec	h 12	d1.55.
	JiBrieu	Title		Date



			×						
Site Name:		Sunghin	e Cur	<b>√</b> Project	No.:	3	2016 - C	0030	
Well I.D.:		PZ-2.		1	ng Date:		12-20.17		
Collected By:		mc			start Time:		11:14		
Casing Diameter	(inches):	2			Stop time:		11.4	4	
Starting Water L	evel:	122	2.61		ng (Well Reco	overv) Time:	11.5	5	
Total Depth (feet):		160	1.90		Water Level		128	69	
Water column (fo	eet):	38.	29		urged (gallon		2.0	j j	
Screen Length (	feet):				ate Sample:	- /	YES (	NO)	
Sample Method:		Micro Purge	Low Flow		,				
Horiba Model S/	N: L	1-52/45	YIN BC	10					
TIME	GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O mg/L	TEMPERATURE °C	O R P mV	
11:23	.5	125.04	8.43	6.44	36.)	4.49	24.72	-187	
11:31	1.0	12646	8.59	6.43	5-0	4.33	2446	-167	
11:34	1-25	127.16	8.61	6.43	1.6	4.27	24.47	-160	
11:38	1.5	12266	0.62	6.42	0.5	4.24	24.50	-156	
11.41	1.75	128.18	8.62	6.42	1.0	4.26	24.48	-154	
11:44	2.0	128 69	8.63	6.43	0.6	4.23		~153	
								₹•	
Purge Sampling F	Rates: P)	nsi r	0(1)	30	disch	100	) \		
mater 1)	mosty	psi r Clear	rifh a	moder	ate	odor	1./		
Well condition: [									
Hed to c	GWW A	Manna	CARACI	1.1.		. ~(0)			
Additional Info/C	comments: C	juipment loty m	100	avornas	e cho	אויט לי	isty		
			17) -1		· · · · · · · · · · · · · · · · · · ·		7017		
Blooms 4		( N					1.1		
Name: M	10 (10	mm h 0.11		Signature	11	0	~ / //		

	PZ-2	Date: 12-20./6	
Access:  Accessibility: Good:		Poor: \(  \)	¥.
Vicinity of well clear of weeds and/or		Yes: No:	
Presence of depressions or standing v		Yes: No:	
Remarks: Corried Scop	ling equipn	rent and brilles	
Concrete Pad:	- channel	to get to the	els
Integrity: NA Good:	Inadequate:		
Presence of depressions or standing v		Yes;No	<b>I</b>
Remarks: NO concr	ete pad		
Protective Outer Casing: Material:	meta)		
Condition of Protective Casing:	Good:	Damaged:	
Condition of Locking Cap:	Good: V	Damaged:	<del>.</del>
Condition of Lock:	Good: V	Damaged;	-
Condition of Weepholes:	Good:	Damaged:	
Remarks:			<del>-</del>
Well Riser: Material:	Prc		N
Condition of Riser:	Good:	Damaged:	=
Condition of Riser Cap:	Good:	Damaged:	
Measurment reference point:	Yes:	No:	
Remarks:			
Dedicated Pump: Type: 3	ladder	The state of the s	
Condition: Good:	_ Damaged:	Missing:	
Pumping Rate (gpm): VP	Current (F	A < 5	
Remarks:	Correlle (s		
Field Certification: The Caylell Signed	Feld Tex	h 12-20	.16

Title

Date



Site Name:		Sunstin	ie Cyn	Project	No.:	2011.00	030		
Well I.D.:		b5 -	4	Sampling Date:			12.20.16		
Collected By:		AS	2	Purge :	start Time:	1400			
Casing Diamete	r (inches):			Purge Stop time:			1427		
Starting Water L	_evel:	112	04	Sampli	ng (Well Reco	1435			
Total Depth (fee	et):	125	.15	Ending	Water Level (	feet):	113.75		
Water column (f	feet):			Total P	'urged (gallon:	1.54			
Screen Length (	(feet):			Duplic	ate Sample:		YES C	NO	
Sample Method		Micro Purge	Low Flow						
Horiba Model S	/N: U	-57 While	PERF						
TIME	GALLONS PURGED	WATER LEVEL	pН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV	
inoh	0.50	112.81	7.41	2-13	4.2	200	72 77		
	1		- 110			2.32	73.27	-27	
1410	D.75	113.30	3.49	7.21	3.4	2.08	73.19	-5-6	
1414	1-00	113.19	7.50	72.21	3,2	2-01	23.17	-5-6	
11113	1.25	113.62	7.51	2.22	3.3	1.99	73.70	-5%	
1422	1.50	113,25	7.52	722	2.9	1.95	23.19	-57	
	1 20	. ,,,,	/ - 3			1.003	23.12	3 -7	
				İ				7.	
			947	0					
Purge Sampling	Rates: 801	PSC! Pe	S.U 3	ad di	schoop	05.0			
Closi	5 Wante	5 , 40	odo		9				
Well condition:	O.K.								
Additional Info/0	Comments:	205,000	1, Wino	ld					
Blank	< John								
Name:	dia Si	n here	Cientus		000	1			
Name: Adam Shace Signature:									

Facility:	Surshine Cyn Wellio: PZ	Date:	12.20.16
Access:	Accessibility: Good: Fair Vicinity of well clear of weeds and/or debris: Presence of depressions or standing water aroun Remarks:	Poor: Yes: d well: Yes:	-
		nadequate: d well: Yes:	No:
	Condition of Protective Casing: Good Condition of Locking Cap: Good Condition of Lock: Good	Dar	maged:maged:maged:maged:
	Coodition	: Dan	naged: naged: No:
F	ump: Type: Radio Condition: Good: C Pumping Rate (gpm): D // Remarks:	Damaged:  Current (Hz):	Missing:
ield Certific	ation: Signed	ld Tech Title	12.20.16 Date



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Suns	Hine	-	Project No.: 2016.0030					
Station I.D.: Collected By: Horiba Model S/N:	Extraction Thereby P28		Sampling Date: Sampling Time: Duplicate Sample:		12-20-15 1120 YES NO				
COLOR	ODOR	pН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV		
Yellauish	yes	6.74	3.47	12-6	3.24	17.79	-24		
Surface water conditions (including stream flow rate, stream depth): Samples reten a conditions (including stream flow rate, stream depth): Samples reten a conditional Info/Comments: Samples reten a conditional Info/Comments reten a									
	But Jaling								



#### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Suns	us ne	•	Project No.:	1016.	0070	
Station I.D.: Collected By: Horiba Model S/N:	Combined Subdicatus PSJ Sugyt			Sampling Dat Sampling Tim Duplicate San	e:	12-20-16 1040 YES (10)	
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
Cleer	xes	6.56	3.33	32.4	7.81	19.93	-28
Surface water condition	elemen	JS Sa	Mudy 1	<b>V</b> 5.		AAVUS (	
	02	and the	- )	ling			



#### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Suns	your	•	Project No.:	2016	. 0030	
Station I.D.: Collected By: Horiba Model S/N:	225		Sampling Date: Sampling Time: Duplicate Sample:		12-70-16 1008 YES @		
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
Clear	Yes	6.23	2.55	0.6	3.41	18.10	36
Surface water conditions (including stream flow rate, stream depth): Collect Scruples  C. Inlet Stale to Cathertonics,  Additional Info/Comments: Survey, windy, cold							
		d Zw	) / l	Lui	\$		



Geologists • Hydrogeologists • Engineers

### GROUNDWATER MONITORING PROGRAM WELL DATA SHEET

Site Name:	Surg	Mine	Projec	No.:		2016.0	030
Well I.D.:	LY-	6	Sampli	ng Date:		12-20	-16
Collected By:		25	Purge	start Time:			
Casing Diameter (inches):			Purge	Stop time:			
Starting Water Level:		_/_	Sampli	ng (Well Reco	very) Time:		7
Total Depth (feet):				Water Level (			
Water column (feet):		/		urged (gallons		1	
Screen Length (feet):	/			ate Sample:		YES	10
Sample Method:	Micro Purge	Low Flow					
Horiba Model S/N:			_				
TIME GALLONS PURGED	WATER LEVEL	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
					/		
					/_		
			VY				
		,					
		1					
		Y/					
							_
Purge Sampling Rates:	)   5	\ .	(T )	61	z, c		
Collected.	1471	mest	175 d	νχ. <u>⊢</u>	, Se	mpag	
Well condition:							
Additional Info/Comments:	lear c	141					
Addictional anno/ comments:	lear, S	runy	( M) MA	Y			
						1	
Name: Ben S	atinera	2	Signature	Bu	+ /	Lin	



### GROUNDWATER MONITORING PROGRAM SURFACE WATER DATA SHEET

Site Name:	Sundi	ne	-	Project No.:	2016.	EUZO	
Station I.D.: Collected By: Horiba Model S/N:	- Co	-7 BS 5494 Y	- -	Sampling Dat Sampling Tin Duplicate Sai	ne:	12-20-1 0915 YES	-(BO)
COLOR	ODOR	рН	CONDUCTIVITY ms/cm	TURBIDITY NTU	D.O. mg/L	TEMPERATURE °C	O.R.P. mV
Surface water conditional Info/Comm	fer 75	. , , , , ,		afrone	Jan J	p e Muse	
	Bung	L /	Jelin				



Physical Condition of Unit	Calibration by	Satifies Protocol?	Calibration Successful? (Y/N)	Calibration	Pre. Cal	Date/Time 12-20-15	Instrument Make/Model #	LOCATION (Site/Facility Name) كرسيكان سو
tion of Unit	(Ku)	Yes	Xes	4.00	2.77	рН	[ake/Model	(Site/Facil
	-/D:			N- NA	5.00	Electrical Conductivity (µMhos/cm)	# PSJS49414	ity Name)
had	,			r	?	Turbidity (NTU)	1944	Saughir
		<b>&gt;</b>			13.81	DO (mg/L or %)		<b> </b>   6
	Signature or initials	Did calibration meet criteria in the sampling protocol? (Y or N)	enter YES or NO			Guidance Remarks		PROJECT NAME / NUMBER
								IE / NUMB
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						Comments		2016-0030



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				2	Cocd		tion of Unit	Physical Condition of Unit
Mas	1	Turka	Signature or initials			P		Calibration by
			Did calibration meet criteria in the sampling protocol? (Y or N)				4es-	Satifies Protocol?
			enter YES or NO				40>-	Calibration Successful? (Y/N)
				0.3 10.19	C. 3	399 4.50	399	Calibration
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Comments			Guidance Remarks	DO (mg/L or %)	Turbidity (NTU)	Electrical Conductivity (µMhos/cm)	рН	Date/Time
				4800	145m/	# 4-52	ake/Model	Instrument Make/Model # 4-52/w54/wB00
	B				-			

### Geo-Logic

LOCATION (Site/Facility Name) Susskinee  Instrument Make/Model # Por Book Conductivity  Date/Time	To Site/Facility Name  Take/Model # Hore  Should  Electrical  Conductivit  (µMhos/cm  Litil (i.yf)  Y  AS	# Herrby Constitution (NTU)  (µMhos/cm)   MTU)  (µMhos/cm)   MTU)	Turbidity (NTU)		Guidance Remarks  Guidance Remarks  enter YES or NO  Did calibration meet criteria in the sampling protocol? (Y or N)  Signature or initials	DO Guidance Remarks Comments  L or %)  Cuidance Remarks  Comments
Physical Condition of Unit	ition of Unit		-26000	Pol		
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\$ 25.50 b		Electrical Conductivity (µMhos/cm)	Turbidity (NTU)	DO (mg/L or %)	Guidance Remarks	Comments
D - 4 / /TV		200	2000			
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Instrument M	[ake/Model	# (+C)T.B				
				11		
LOCATION	[Site/Facil	ity Name)	Sorshi		PROJECT NAM	E/NUMBER 7016.0030
			(	(		

### Geo-Logic

LOCATION (Site/Facility Name)	(Site/Facil	lity Name)	Sunsh	9	PROJECT NAM	Cyn PROJECT NAME / NUMBER 26/6-0030
Instrument Make/Model # 10.52   w541 w 800	lake/Model	# 10.52	145~1	~ 600		
Date/Time 12-22-16	Н	Electrical Conductivity (μΜhos/cm)	Turbidity (NTU)	DO (mg/L or %)	Guidance Remarks	Comments
Pre <sub>c</sub> Cal	4.04	4.04 4.45	HO	11.95		
Calibration	3,99	4.49	0.0	8.33		
Calibration Successful? (Y/N)	hes-				enter YES or NO	
Satifies Protocol?	-(34				Did calibration meet criteria in the sampling protocol? (Y or N)	
Calibration by	m				Signature or initials	Turael Call
Physical Condition of Unit	ition of Unit		Gocal			

### Geo-Logic

Calibration 4.06 4.48 0.0 0.53  Calibration Successful? 7  Satifies Protocol? 7  Calibration by AS  Calibration of Unit	Pre. Cal 4, 47 6, 3 10, 68	Date/Time  Conductivity Conductivity (mg/L or %)  Comments  Comments		LOCATION (Site/Facility Name) Sunshine Con PROJECT NAME / NUMBER Zoub. 0030
	0.0	4.00 84.43 0.7 4.00 4.48 0.0	Electrical Turbidity DO Guidance Remarks (µMhos/cm) (NTU) (mg/L or %) Guidance Remarks  14.03 14.43 0.7 10.64  14.00 14.18 0.0 10.53	Aake/Model # Herba US2  SN WCLD 8C. RS  Electrical Turbidity Do  (µMhos/cm) (NTU) (mg/L  U.OS U.UP C.O (O.O)
4.00 4.48 00.V		4.03 4.47 6.3	Electrical Turbidity DO Guidance Remarks (µMhos/cm) (MTU) (mg/L or %) Guidance Remarks	DO (mg/L)

### Effective June 1, 2009

### Geo-Logic

Instrument Make/Model # U-S-2   Instrument Make/Model # Instrument Make/Mode	CATION (Site/Facility Name) Surshine Cy in PROJECT NAME / NUMBER 2016. 2008		Electrical Turbidity DO (μMhos/cm) (mg/L or %)	4.32 4.89 B	4.00 4.49 B	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	λ	**	5 1	
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# FIELD CALIBRATION DOCUMENTATION FORM

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12BDP	DO (mg/L or %)	6.47	8.97				bo
h Sm	Turbidity (NTU)	0,0	0.0				600
N 7 #	Electrical Conductivity (µWhos/cm)	4.17 4.56	3.99 4.49 0.0				T. F. F. C. T
ake/Model ‡	Нф	4.17	3.99	4e>-	762	1	tion of Unit
Instrument Make/Model # U - S 2 / mS 41 mBOp	Date/Time 17.1た-に1	Pre, Cal	Calibration	Calibration Successful? (Y/N)	Satifies Protocol?	Calibration by	Physical Condition of Unit

Effective June 1, 2009

### **LABORATORY ANALYTICAL DATA REPORTS**





THE LEADER IN ENVIRONMENTAL TESTING

### ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-153298-1

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: 7/28/2016 3:03:49 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

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Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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### **Sample Summary**

Client: Geo-Logic Associates Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-153298-1	DW-3-A	Water	07/20/16 10:00	07/20/16 16:00
440-153298-2	DW-3-B	Water	07/20/16 10:00	07/20/16 16:00

### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

Job ID: 440-153298-1

Laboratory: TestAmerica Irvine

**Narrative** 

Job Narrative 440-153298-1

### Comments

No additional comments.

### Receipt

The samples were received on 7/20/2016 4:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.4° C, 2.9° C, 5.2° C and 5.4° C.

### HPLC/IC

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

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Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

Lab Sample ID: 440-153298-1

Matrix: Water

Date Collected: 07/20/16 10:00 Date Received: 07/20/16 16:00

Client Sample ID: DW-3-A

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 07/22/16 00:20 5

Client Sample ID: DW-3-B Lab Sample ID: 440-153298-2

Date Collected: 07/20/16 10:00 Matrix: Water

Date Received: 07/20/16 16:00

Method: 300.0 - Anions, Ion ChromatographyAnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDil FacChloride142.51.3mg/L07/22/16 02:205

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### **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV

### **Protocol References:**

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

### Laboratory References:

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

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### **Lab Chronicle**

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

Lab Sample ID: 440-153298-1

**Matrix: Water** 

Date Collected: 07/20/16 10:00 Date Received: 07/20/16 16:00

Client Sample ID: DW-3-A

Batch Batch Dil Initial Final Batch Prepared Method **Factor Amount** or Analyzed **Prep Type** Type Run Amount Number Analyst Lab Total/NA Analysis 300.0 343924 07/22/16 00:20 NTN TAL IRV

Client Sample ID: DW-3-B Lab Sample ID: 440-153298-2 **Matrix: Water** 

Date Collected: 07/20/16 10:00

Date Received: 07/20/16 16:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	5 mL	1.0 mL	343924	07/22/16 02:20	NTN	TAL IRV

**Laboratory References:** 

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

### QC Sample Results

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-343924/4

**Matrix: Water** 

Analysis Batch: 343924

MB MB

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 0.50 0.25 mg/L 07/21/16 14:21 ND

LCS LCS

4.91

Result Qualifier

Unit

mg/L

Lab Sample ID: LCS 440-343924/2

**Matrix: Water** 

**Analysis Batch: 343924** 

Analyte Chloride 5.00 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

%Rec.

Limits

%Rec 98 90 - 110

> Client Sample ID: DW-3-B **Prep Type: Total/NA**

> Client Sample ID: DW-3-B

Prep Type: Total/NA

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 440-153298-2 MS

**Matrix: Water** 

Analysis Batch: 343924

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride - DL 25 F1 50.0 65.8 81 80 - 120 mg/L

Spike

Added

Lab Sample ID: 440-153298-2 MSD

**Matrix: Water** 

**Analysis Batch: 343924** 

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride - DL 25 F1 50.0 63.0 F1 mg/L 75 80 - 120

### **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

### HPLC/IC

### Analysis Batch: 343924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-153298-1	DW-3-A	Total/NA	Water	300.0	
440-153298-2	DW-3-B	Total/NA	Water	300.0	
MB 440-343924/4	Method Blank	Total/NA	Water	300.0	
LCS 440-343924/2	Lab Control Sample	Total/NA	Water	300.0	
440-153298-2 MS - DL	DW-3-B	Total/NA	Water	300.0	
440-153298-2 MSD - DL	DW-3-B	Total/NA	Water	300.0	

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### **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

### **Qualifiers**

### **HPLC/IC**

MS and/or MSD Recovery is outside acceptance limits.

### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid **CNF** Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration MDA Minimum detectable activity **EDL Estimated Detection Limit** MDC Minimum detectable concentration

MDL Method Detection Limit MLMinimum Level (Dioxin) NC Not Calculated

Not detected at the reporting limit (or MDL or EDL if shown) ND

**PQL Practical Quantitation Limit** 

**Quality Control** QC **RER** Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

### **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic sunshine canyon

TestAmerica Job ID: 440-153298-1

### **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-13-16
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 12.002r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-16 *
Nevada	State Program	9	CA015312016-2	07-31-16 *
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-09-00080	07-08-18
Washington	State Program	10	C900	09-03-16

<sup>\*</sup> Certification renewal pending - certification considered valid.

TestAmerica Irvine

Chain of Custody Record

THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.

TAL-8210 (0713)

) नेपण

For Lab Use Only:

Sampler:

Walk-in Client:

.ab Sampling:

Job / SDG No.

Filtered Sample (Y/N)
Perform MS/MSD (Y/N)

# of # of Matrix Cont.

Type (C=Comp, G=Grab)

Sample

Sample

Date

Gil 35

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> 0001 316AT 7/20/16 1000

7W-3-A Sample Identification

Chiloride

☐ WORKING DAYS

CALENDAR DAYS

TAT if different from Below

2 weeks 1 week 2 days 1 day

Project Name: Republic Savices Fue.

Site: Eruchine Cyn,

# O d

Address: 11415 th. Prindrolo CT.
City/State/Zip-Sch. Diego, Or 92127
Phone: K-K-451-1126

Company Name: GLA | Report |

Client Contact

Irvine, CA 92614 Phone: 949.261.1022 Fax:

**Analysis Turnaround Time** 

COCs

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COC No:

Site Contact: Math Enton Date: 7-20-16

Other:

RCRA

Regulatory Program: Dw NPDES

\* Perest \*

estAmerica Irvine

17461 Derian Ave Suite 100

Project Manager: Kyl Welchows

Tel/Fax: 858-45

Carrier:

Lab Contact: ROSSIMO

Sample Specific Notes:

**TestAmerica** 

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Company:

Received in Laboratory by:

Received by:

7/20/14 1600

Company

Company:

Date/Time:

2016 Date/Time:

Custody Seal No.: Company: see-losis

Yes

Custody Seals Intact

dished by: linquished by:

Relinquished by:

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Date/Time:

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Date/Time: 7/2 0/1/4

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Date/Time: //

Company:

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Date/Time:

Company:

Therm ID No

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

440-153298 Chain of Custody

Months

Archive for

Disposal by Lab

Return to Client

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.

Possible Hazard Identification:

Flammable

Non-Hazard

Special Instructions/QC Requirements & Comments:

Poison B

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

### **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-153298-1

Login Number: 153298 List Source: TestAmerica Irvine

List Number: 1

Creator: Chavez, Yonny 1

Creator: Chavez, Yonny 1		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	

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THE LEADER IN ENVIRONMENTAL TESTING

### ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-158947-1

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: 9/30/2016 2:55:35 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

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

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

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### **Sample Summary**

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

TestAmerica Job ID: 440-158947-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-158947-1	Subdrain N	Water	09/19/16 13:00	09/19/16 17:30
440-158947-2	Combined Subdrains	Water	09/19/16 14:20 0	09/19/16 17:30
440-158947-3	CM-9R3	Water	09/19/16 13:25 0	09/19/16 17:30
440-158947-4	CM-10R	Water	09/19/16 12:25 0	09/19/16 17:30
440-158947-5	CM-11R	Water	09/19/16 15:00 0	09/19/16 17:30
440-158947-6	Duplicate	Water	09/19/16 00:01 0	09/19/16 17:30
440-158947-7	QCAB	Water	09/19/16 00:01 0	09/19/16 17:30
440-158947-8	QCTB	Water	09/19/16 00:01 0	09/19/16 17:30

### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Job ID: 440-158947-1

**Laboratory: TestAmerica Irvine** 

**Narrative** 

Job Narrative 440-158947-1

### Comments

No additional comments.

### Receipt

The samples were received on 9/19/2016 5:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.6° C and 1.0° C.

### GC/MS VOA

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

### GC/MS Semi VOA

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

### HPLC/IC

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

### Metals

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

### **General Chemistry**

Method(s) SM 5310C: The continuing calibration blank (CCB) for analytical batch 440-357124 contained Total Organic Carbon above the reporting limit (RL). All reported samples associated with this CCB contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples were not performed.

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

### **Organic Prep**

Method(s) 3520C: Elevated reporting limits are provided for the following sample due to insufficient sample provided for 3520C preparation/analysis: CM-11R (440-158947-5).

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

### VOA Prep

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

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Lab Sample ID: 440-158947-1

**Matrix: Water** 

### Client Sample ID: Subdrain N

Date Collected: 09/19/16 13:00 Date Received: 09/19/16 17:30

Method: 8260B - Volatile Org					_			<b></b> -
Analyte	Result Qualifier	RL	MDL		<u>D</u> .	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND	1.0	0.40	-			09/26/16 12:32	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	-			09/26/16 12:32	
1,1,1-Trichloroethane	ND	0.50	0.25	-			09/26/16 12:32	
1,1,2,2-Tetrachloroethane	ND	0.50		ug/L			09/26/16 12:32	
1,1,2-Trichloroethane	ND	0.50	0.25	-			09/26/16 12:32	
1,1-Dichloroethane	ND	0.50	0.25	-			09/26/16 12:32	
1,1-Dichloroethene	ND	0.50	0.25	-			09/26/16 12:32	
1,1-Dichloropropene	ND	0.50	0.25	-			09/26/16 12:32	
1,2,4-Trichlorobenzene	ND	1.0	0.40	-			09/26/16 12:32	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/26/16 12:32	
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 12:32	
,2-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 12:32	
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 12:32	
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 12:32	
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 12:32	
1,4-Dichlorobenzene	0.70	0.50	0.25	ug/L			09/26/16 12:32	
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/26/16 12:32	
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/26/16 12:32	
2-Hexanone	ND	5.0		ug/L			09/26/16 12:32	
Acetone	ND	20		ug/L			09/26/16 12:32	
Acetonitrile	ND	20		ug/L			09/26/16 12:32	
3enzene	0.44 J	0.50	0.25				09/26/16 12:32	
Allyl chloride	ND	1.0	0.50	-			09/26/16 12:32	
Bromoform	ND	1.0	0.40	-			09/26/16 12:32	
Bromomethane	ND	0.50	0.25				09/26/16 12:32	
Carbon disulfide	ND	1.0	0.50	•			09/26/16 12:32	
Carbon tetrachloride	ND	0.50	0.25	-			09/26/16 12:32	
Chlorobenzene	ND	0.50	0.25	-			09/26/16 12:32	
Bromochloromethane	ND	0.50	0.25	-			09/26/16 12:32	
Chloroethane	ND	1.0	0.40	-			09/26/16 12:32	
Chloroform	ND	0.50	0.25	-			09/26/16 12:32	
Chloromethane	ND	0.50	0.25	-			09/26/16 12:32	
cis-1,2-Dichloroethene	0.69	0.50	0.25	_			09/26/16 12:32	
cis-1,3-Dichloropropene	ND	0.50	0.25	Ū			09/26/16 12:32	
Dibromochloromethane	ND	0.50	0.25	-			09/26/16 12:32	
Dibromomethane	ND	0.50	0.25	•			09/26/16 12:32	
Bromodichloromethane	ND	0.50		ug/L			09/26/16 12:32	
Dichlorodifluoromethane								
	ND ND	1.0		ug/L			09/26/16 12:32	
Ethyl methacrylate	ND	2.0		ug/L			09/26/16 12:32	
Ethylbenzene	ND ND	0.50		ug/L			09/26/16 12:32	
odomethane	ND ND	2.0		ug/L			09/26/16 12:32	
sobutyl alcohol	ND	25		ug/L			09/26/16 12:32	
n,p-Xylene	ND	1.0		ug/L			09/26/16 12:32	
Methylacrylonitrile	ND	5.0		ug/L			09/26/16 12:32	
Methyl methacrylate	ND	2.0		ug/L			09/26/16 12:32	
Methylene Chloride	ND	2.0		ug/L			09/26/16 12:32	
Methyl tert-butyl ether	0.75	0.50		ug/L			09/26/16 12:32	
Naphthalene	ND	1.0		ug/L			09/26/16 12:32	
o-Xylene	ND	0.50	0.25	ug/L			09/26/16 12:32	

TestAmerica Irvine

9/30/2016

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TestAmerica Job ID: 440-158947-1

Client Sample ID: Subdrain N

Date Collected: 09/19/16 13:00 Date Received: 09/19/16 17:30 Lab Sample ID: 440-158947-1

Matrix: Water

	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Propionitrile	ND		20	10	ug/L			09/26/16 12:32	
Styrene	ND		0.50	0.25	ug/L			09/26/16 12:32	
t-Butanol	16		10	5.0	ug/L			09/26/16 12:32	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/26/16 12:32	
Tetrahydrofuran	ND		10	5.0	ug/L			09/26/16 12:32	
Toluene	ND		0.50	0.25	ug/L			09/26/16 12:32	
trans-1,2-Dichloroethene	ND		0.50		ug/L			09/26/16 12:32	
trans-1,3-Dichloropropene	ND		0.50		ug/L			09/26/16 12:32	
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/26/16 12:32	
Trichloroethene	ND		0.50		ug/L			09/26/16 12:32	
Trichlorofluoromethane	ND		0.50		ug/L			09/26/16 12:32	
Vinyl acetate	ND		4.0		ug/L			09/26/16 12:32	
Vinyl chloride	ND		0.50		ug/L			09/26/16 12:32	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			09/26/16 12:32	
2-Butanone (MEK)	ND		5.0		ug/L			09/26/16 12:32	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/26/16 12:32	
Acrylonitrile	ND		2.0		ug/L			09/26/16 12:32	
Acrolein	ND		5.0		ug/L			09/26/16 12:32	
Acroient	ND		3.0	2.5	ug/L			09/20/10 12.32	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil F
Ethyl ether	1.0	J	ug/L	4	.90 —	60-29-7		09/26/16 12:32	
Unknown	4.0	ΤJ	ug/L	5	.89			09/26/16 12:32	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dill
Taliana do (Cium)	115		80 - 128					09/26/16 12:32	
Toluene-d8 (Surr)	115		00 - 120					00, 20, 10 12.02	
4-Bromofluorobenzene (Surr)	101		80 - 120					09/26/16 12:32	
Toluerie-do (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)									
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile	101 106 Organic Co	_	80 - 120 76 - 132 6 (GC/MS)	MDI	Unit	n	Prenared	09/26/16 12:32 09/26/16 12:32	Dil F
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte	101 106 Organic Co Result	mpounds Qualifier	80 - 120 76 - 132 6 (GC/MS) RL		Unit	<u>D</u>	Prepared 00/25/16 12:13	09/26/16 12:32 09/26/16 12:32 Analyzed	Dil F
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile	101 106 Organic Co	_	80 - 120 76 - 132 6 (GC/MS)		Unit ug/L	<u>D</u>	<u> </u>	09/26/16 12:32 09/26/16 12:32	Dil F
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte	101 106 Organic Co Result	Qualifier	80 - 120 76 - 132 6 (GC/MS) RL			<u>D</u>	<u> </u>	09/26/16 12:32 09/26/16 12:32 Analyzed	Dil F
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane	101 106 Organic Co Result 9.6	Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98			<u>D</u>	09/25/16 12:13  Prepared	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38	
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr)	Organic Co Result 9.6  %Recovery 48	Qualifier  Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98			<u> </u>	09/25/16 12:13  Prepared	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed	
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate	Organic Co Result 9.6  %Recovery 48	Qualifier  Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98	0.24		<u>D</u>	09/25/16 12:13  Prepared	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed	Dil
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte	Organic Co Result 9.6  %Recovery 48	Qualifier  Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL	ug/L		09/25/16 12:13  Prepared  09/25/16 12:13	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed 09/27/16 17:38	Dil
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110	Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL	ug/L Unit		09/25/16 12:13  Prepared  09/25/16 12:13	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed 09/27/16 17:38	Dil
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP)	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco	Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL 13	ug/L  Unit mg/L  Unit		09/25/16 12:13  Prepared  09/25/16 12:13	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed 09/27/16 17:38	Dil I
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 25	0.24 MDL 13	ug/L  Unit mg/L	D	09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed 09/27/16 17:38 Analyzed 09/20/16 00:48	Dil I
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 25	0.24 MDL 13	ug/L  Unit mg/L  Unit	D	09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed 09/27/16 17:38 Analyzed 09/20/16 00:48	
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco Result 7.9	Qualifier  Qualifier  phy Qualifier  Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 25	0.24  MDL  13  MDL  0.25	ug/L  Unit mg/L  Unit	D	09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared	09/26/16 12:32 09/26/16 12:32 Analyzed 09/27/16 17:38 Analyzed 09/27/16 17:38 Analyzed 09/20/16 00:48	Dil F
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco Result 7.9	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	80 - 120 76 - 132 8 (GC/MS) RL 0.98 Limits 30 - 120 RL 25	MDL 13 MDL 0.25	Unit mg/L Unit mg/L		09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared  09/27/16 13:24	09/26/16 12:32 09/26/16 12:32  Analyzed 09/27/16 17:38  Analyzed 09/27/16 17:38  Analyzed 09/20/16 00:48  Analyzed 09/28/16 15:49	Dil I
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco Result 7.9  Result	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 0.50 RL	MDL 13 MDL 0.25	Unit mg/L Unit mg/L Unit		09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared  09/27/16 13:24	09/26/16 12:32 09/26/16 12:32  Analyzed 09/27/16 17:38  Analyzed 09/27/16 17:38  Analyzed 09/20/16 00:48  Analyzed 09/28/16 15:49  Analyzed	Dil I
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids	Organic Co Result 9.6  **Recovery 48  **Chromatogra Result 110  - Total Reco Result 7.9  Result 75 2600	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 25 RL 0.50	MDL 13 MDL 0.25 MDL 10	Unit mg/L  Unit mg/L  Unit mg/L		09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared  09/27/16 13:24  Prepared	09/26/16 12:32 09/26/16 12:32  Analyzed 09/27/16 17:38  Analyzed 09/27/16 17:38  Analyzed 09/20/16 00:48  Analyzed 09/28/16 15:49  Analyzed 09/28/16 15:49	Dil I
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C Analyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids Ammonia (as N)	## Companies Com	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 0.50 RL 25	MDL 13 MDL 0.25 MDL 10 0.10	Unit mg/L Unit mg/L unit mg/L mg/L mg/L		09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared  09/27/16 13:24	09/26/16 12:32 09/26/16 12:32  Analyzed 09/27/16 17:38  Analyzed 09/27/16 17:38  Analyzed 09/20/16 00:48  Analyzed 09/28/16 15:49  Analyzed 09/28/16 15:49	Dil I
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids	Organic Co Result 9.6  **Recovery 48  Chromatogra Result 110  - Total Reco Result 7.9  Result 75 2600 3.1 24	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	80 - 120 76 - 132 6 (GC/MS) RL 0.98 Limits 30 - 120 RL 25 RL 0.50	MDL 13 MDL 0.25 MDL 10 0.10 0.50	Unit mg/L  Unit mg/L  Unit mg/L		09/25/16 12:13  Prepared  09/25/16 12:13  Prepared  Prepared  09/27/16 13:24  Prepared	09/26/16 12:32 09/26/16 12:32  Analyzed 09/27/16 17:38  Analyzed 09/27/16 17:38  Analyzed 09/20/16 00:48  Analyzed 09/28/16 15:49  Analyzed 09/28/16 15:49	Dil I

Client: Geo-Logic Associates

Date Collected: 09/19/16 14:20

Project/Site: Republic Sunshine Canyon

**Client Sample ID: Combined Subdrains** 

TestAmerica Job ID: 440-158947-1

Lab Sample ID: 440-158947-2

Matrix: Water

Date Received: 09/19/16	17:30

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND ND	1.0	0.40 ug/L		09/26/16 13:51	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,1,1-Trichloroethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,1,2-Trichloroethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,1-Dichloroethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,1-Dichloroethene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,1-Dichloropropene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,2,4-Trichlorobenzene	ND	1.0	0.40 ug/L		09/26/16 13:51	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50 ug/L		09/26/16 13:51	1
1,2-Dichlorobenzene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,2-Dichloroethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,2-Dichloropropane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,3-Dichlorobenzene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,3-Dichloropropane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
1,4-Dichlorobenzene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
2,2-Dichloropropane	ND	1.0	0.40 ug/L		09/26/16 13:51	1
2-Chloro-1,3-butadiene	ND	1.0	0.50 ug/L		09/26/16 13:51	1
2-Hexanone	ND	5.0	2.5 ug/L		09/26/16 13:51	
Acetone	ND	20	10 ug/L		09/26/16 13:51	1
Acetonitrile	ND	20	10 ug/L		09/26/16 13:51	1
Benzene	ND	0.50	0.25 ug/L		09/26/16 13:51	
Allyl chloride	ND	1.0	0.50 ug/L		09/26/16 13:51	1
Bromoform	ND	1.0	0.40 ug/L		09/26/16 13:51	1
Bromomethane	ND	0.50	0.25 ug/L		09/26/16 13:51	
Carbon disulfide	ND	1.0	0.50 ug/L		09/26/16 13:51	1
Carbon tetrachloride	ND	0.50	0.25 ug/L		09/26/16 13:51	1
Chlorobenzene	ND	0.50	0.25 ug/L		09/26/16 13:51	· · · · · · · · · · · · 1
Bromochloromethane	ND	0.50	0.25 ug/L		09/26/16 13:51	1
Chloroethane	ND	1.0	0.40 ug/L		09/26/16 13:51	1
Chloroform	ND	0.50	0.40 ug/L 0.25 ug/L		09/26/16 13:51	
Chloromethane	ND ND	0.50	0.25 ug/L 0.25 ug/L		09/26/16 13:51	,
	ND ND	0.50	0.25 ug/L 0.25 ug/L		09/26/16 13:51	
cis-1,2-Dichloroethene	ND	0.50	0.25 ug/L 0.25 ug/L		09/26/16 13:51	1
cis-1,3-Dichloropropene			_			1
Dibromochloromethane	ND	0.50	0.25 ug/L		09/26/16 13:51	
Dibromomethane	ND	0.50	0.25 ug/L		09/26/16 13:51	
Bromodichloromethane	ND	0.50	0.25 ug/L		09/26/16 13:51	
Dichlorodifluoromethane	ND	1.0	0.40 ug/L		09/26/16 13:51	1
Ethyl methacrylate	ND	2.0	1.0 ug/L		09/26/16 13:51	1
Ethylbenzene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
Iodomethane	ND	2.0	1.0 ug/L		09/26/16 13:51	1
Isobutyl alcohol	ND	25	13 ug/L		09/26/16 13:51	1
m,p-Xylene	ND	1.0	0.50 ug/L		09/26/16 13:51	1
Methylacrylonitrile	ND	5.0	2.5 ug/L		09/26/16 13:51	1
Methyl methacrylate	ND	2.0	1.0 ug/L		09/26/16 13:51	1
Methylene Chloride	1.1 J	2.0	0.88 ug/L		09/26/16 13:51	•
Methyl tert-butyl ether	ND	0.50	0.25 ug/L		09/26/16 13:51	1
o-Xylene	ND	0.50	0.25 ug/L		09/26/16 13:51	1
Propionitrile	ND	20	10 ug/L		09/26/16 13:51	1

TestAmerica Job ID: 440-158947-1

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

**Client Sample ID: Combined Subdrains** 

Date Collected: 09/19/16 14:20 Date Received: 09/19/16 17:30

Lab Sample ID: 440-158947-2

**Matrix: Water** 

Styrene t-Butanol Tetrachloroethene Tetrahydrofuran	ND	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Tetrachloroethene	ND		0.50	0.25	ug/L			09/26/16 13:51	
	ND		10	5.0	ug/L			09/26/16 13:51	
Tetrahydrofuran	ND		0.50	0.25	ug/L			09/26/16 13:51	
	ND		10	5.0	ug/L			09/26/16 13:51	
Toluene	ND		0.50	0.25	ug/L			09/26/16 13:51	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/26/16 13:51	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 13:51	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/26/16 13:51	
Trichloroethene	ND		0.50	0.25	ug/L			09/26/16 13:51	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/26/16 13:51	
Vinyl acetate	ND		4.0	2.0	ug/L			09/26/16 13:51	
Vinyl chloride	ND		0.50		ug/L			09/26/16 13:51	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			09/26/16 13:51	
2-Butanone (MEK)	ND		5.0		ug/L			09/26/16 13:51	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/26/16 13:51	
Acrylonitrile	ND		2.0		ug/L			09/26/16 13:51	
Acrolein	ND		5.0		ug/L			09/26/16 13:51	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Tentatively Identified Compound	None		ug/L					09/26/16 13:51	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	110		80 - 128					09/26/16 13:51	
4-Bromofluorobenzene (Surr)	103		80 - 120					09/26/16 13:51	
Dibromofluoromethane (Surr)	104		76 - 132					09/26/16 13:51	
Method: 8260B - Volatile Orga	anic Compo	unds (GC	/MS) - RA						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Naphthalene	ND		1.0	0.40	ug/L			09/24/16 16:27	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	106		80 - 128					09/24/16 16:27	
4-Bromofluorobenzene (Surr)	98		80 <sub>-</sub> 120					09/24/16 16:27	
Dibromofluoromethane (Surr)	104		76 - 132					09/24/16 16:27	
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)						
Analyte	_	Qualifier	ŘL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	1.4		0.98	0.24	ug/L		09/25/16 12:13	09/27/16 18:00	
,	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Surrogate			30 - 120				09/25/16 12:13	09/27/16 18:00	
•	54								
Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C	Chromatogra						_	_	
Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C Analyte	Chromatogra Result	iphy Qualifier	RL		Unit	<u>D</u>	Prepared	Analyzed	
Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C	Chromatogra		RL 10		Unit mg/L	<u>D</u>	Prepared	Analyzed 09/20/16 14:17	Dil Fa
Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C Analyte	Chromatogra Result 29  - Total Reco	Qualifier		5.0		<u>D</u>	Prepared Prepared		

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

**Client Sample ID: Combined Subdrains** 

Date Collected: 09/19/16 14:20 Date Received: 09/19/16 17:30 Lab Sample ID: 440-158947-2

**Matrix: Water** 

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	27		20	10	mg/L			09/27/16 16:16	1
Total Dissolved Solids	1900		20	10	mg/L			09/23/16 09:42	1
Ammonia (as N)	0.52		0.50	0.10	mg/L		09/21/16 05:00	09/21/16 08:31	1
Total Organic Carbon	3.9		0.10	0.050	mg/L			09/21/16 08:48	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	340		4.0	4.0	mg/L			09/22/16 09:18	1

Client Sample ID: CM-9R3 Lab Sample ID: 440-158947-3 Matrix: Water

Date Collected: 09/19/16 13:25 Date Received: 09/19/16 17:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/26/16 14:17	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/26/16 14:17	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/26/16 14:17	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			09/26/16 14:17	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			09/26/16 14:17	1
2-Hexanone	ND		5.0	2.5	ug/L			09/26/16 14:17	1
Acetone	ND		20	10	ug/L			09/26/16 14:17	1
Acetonitrile	ND		20	10	ug/L			09/26/16 14:17	1
Benzene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Allyl chloride	ND		1.0	0.50	ug/L			09/26/16 14:17	1
Bromoform	ND		1.0	0.40	ug/L			09/26/16 14:17	1
Bromomethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/26/16 14:17	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Chloroethane	ND		1.0	0.40	ug/L			09/26/16 14:17	1
Chloroform	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Chloromethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			09/26/16 14:17	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/26/16 14:17	1
Dibromomethane	ND		0.50		ug/L			09/26/16 14:17	1

TestAmerica Job ID: 440-158947-1

**Client Sample ID: CM-9R3** 

Date Collected: 09/19/16 13:25 Date Received: 09/19/16 17:30 Lab Sample ID: 440-158947-3

**Matrix: Water** 

Method: 8260B - Volatile Org <sup>Analyte</sup>		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Bromodichloromethane	ND		0.50	0.25	ug/L			09/26/16 14:17	
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/26/16 14:17	
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/26/16 14:17	
Ethylbenzene	ND		0.50	0.25	ug/L			09/26/16 14:17	
odomethane	ND		2.0	1.0	ug/L			09/26/16 14:17	
sobutyl alcohol	ND		25	13	ug/L			09/26/16 14:17	
n,p-Xylene	ND		1.0	0.50	ug/L			09/26/16 14:17	
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/26/16 14:17	
Methyl methacrylate	ND		2.0	1.0	ug/L			09/26/16 14:17	
Methylene Chloride	1.1	J	2.0	0.88	ug/L			09/26/16 14:17	
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/26/16 14:17	
Naphthalene	ND		1.0		ug/L			09/26/16 14:17	
o-Xylene	ND		0.50		ug/L			09/26/16 14:17	
Propionitrile	ND		20		ug/L			09/26/16 14:17	
Styrene	ND		0.50		ug/L			09/26/16 14:17	
-Butanol	ND		10		ug/L			09/26/16 14:17	
Tetrachloroethene	ND		0.50		ug/L			09/26/16 14:17	
Tetrahydrofuran	ND		10		ug/L			09/26/16 14:17	
Toluene	ND		0.50		ug/L			09/26/16 14:17	
rans-1,2-Dichloroethene	ND		0.50		ug/L			09/26/16 14:17	
rans-1,3-Dichloropropene	ND		0.50		ug/L			09/26/16 14:17	
rans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/26/16 14:17	
Trichloroethene	ND		0.50		ug/L			09/26/16 14:17	
Trichlorofluoromethane	ND		0.50		ug/L			09/26/16 14:17	
Vinyl acetate	ND		4.0		ug/L			09/26/16 14:17	
√inyl chloride	ND		0.50		ug/L			09/26/16 14:17	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			09/26/16 14:17	
2-Butanone (MEK)	ND		5.0		ug/L			09/26/16 14:17	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/26/16 14:17	
Acrylonitrile	ND		2.0		ug/L			09/26/16 14:17	
Acrolein	ND		5.0		ug/L			09/26/16 14:17	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D i	RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown		TJ	ug/L	16.		<u> </u>		09/26/16 14:17	
Surrogato	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Surrogate Toluene-d8 (Surr)	70 <b>Recovery</b>	- Quaiiiiti	80 - 128				гтератец	09/26/16 14:17	יווע
	103		80 - 120					09/26/16 14:17	
4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	103		76 - 132						
Dibromotiuoromethane (Surr)	104		70-132					09/26/16 14:17	
Method: 8270C - Semivolatile			•			_			
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil F
1,4-Dioxane	ND		0.98	0.24	ug/L		09/25/16 12:13	09/27/16 18:22	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
1,4-Dioxane-d8 (Surr)	51		30 - 120				09/25/16 12:13	09/27/16 18:22	
Method: 300.0 - Anions, Ion (	_	phy Qualifier	RL			_	Prepared		
Analyte					Unit	D		Analyzed	Dil F

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Client Sample ID: CM-9R3

Date Collected: 09/19/16 13:25 Date Received: 09/19/16 17:30

Lab Sample ID: 440-158947-3

**Matrix: Water** 

Method: 6010B - Metals (ICP)						_			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	14		0.50	0.25	mg/L		09/27/16 13:24	09/28/16 15:58	1
General Chemistry	Dooule	Ovelifier	DI.	MDI	11m:4		Drawarad	Analyzad	Dil Fac
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	36		20	10	mg/L			09/27/16 16:16	1
<b>Total Dissolved Solids</b>	4300		50	25	mg/L			09/22/16 10:49	1
Ammonia (as N)	3.9		0.50	0.10	mg/L		09/21/16 05:00	09/21/16 08:31	1
Total Organic Carbon	5.8		0.10	0.050	mg/L			09/21/16 09:02	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	140		4.0	4.0	mg/L			09/22/16 09:30	1

Client Sample ID: CM-10R Lab Sample ID: 440-158947-4 Date Collected: 09/19/16 12:25

**Matrix: Water** 

Date Received: 09/19/16 17:30

Method: 8260B - Volatile Org Analyte	Result Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/26/16 14:43	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/26/16 14:43	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/26/16 14:43	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/26/16 14:43	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/26/16 14:43	1
2-Hexanone	ND	5.0	2.5	ug/L			09/26/16 14:43	1
Acetone	ND	20	10	ug/L			09/26/16 14:43	1
Acetonitrile	ND	20	10	ug/L			09/26/16 14:43	1
Benzene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
Allyl chloride	ND	1.0	0.50	ug/L			09/26/16 14:43	1
Bromoform	ND	1.0	0.40	ug/L			09/26/16 14:43	1
Bromomethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/26/16 14:43	1
Carbon tetrachloride	ND	0.50	0.25	ug/L			09/26/16 14:43	1
Chlorobenzene	ND	0.50	0.25	ug/L			09/26/16 14:43	1
Bromochloromethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
Chloroethane	ND	1.0	0.40	ug/L			09/26/16 14:43	1
Chloroform	ND	0.50	0.25	ug/L			09/26/16 14:43	1
Chloromethane	ND	0.50	0.25	ug/L			09/26/16 14:43	1
cis-1,2-Dichloroethene	ND	0.50	0.25	ug/L			09/26/16 14:43	1

TestAmerica Irvine

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9/30/2016

Client: Geo-Logic Associates

Client Sample ID: CM-10R

Date Collected: 09/19/16 12:25

Date Received: 09/19/16 17:30

1,4-Dioxane

Surrogate

1,4-Dioxane-d8 (Surr)

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Lab Sample ID: 440-158947-4

**Matrix: Water** 

Analyte	anic Compor Result	Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Dibromochloromethane	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Dibromomethane	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Bromodichloromethane	ND		0.50	C	.25	ug/L			09/26/16 14:43	1
Dichlorodifluoromethane	ND		1.0	C	.40	ug/L			09/26/16 14:43	1
Ethyl methacrylate	ND		2.0		1.0	ug/L			09/26/16 14:43	1
Ethylbenzene	ND		0.50	C	.25	ug/L			09/26/16 14:43	1
lodomethane	ND		2.0		1.0	ug/L			09/26/16 14:43	1
Isobutyl alcohol	ND		25		13	ug/L			09/26/16 14:43	1
m,p-Xylene	ND		1.0	C	).50	ug/L			09/26/16 14:43	1
Methylacrylonitrile	ND		5.0		2.5	ug/L			09/26/16 14:43	1
Methyl methacrylate	ND		2.0		1.0	ug/L			09/26/16 14:43	1
Methylene Chloride	1.2	J	2.0	C	.88	ug/L			09/26/16 14:43	1
Methyl tert-butyl ether	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Naphthalene	ND		1.0	C	).40	ug/L			09/26/16 14:43	1
o-Xylene	ND		0.50	C	.25	ug/L			09/26/16 14:43	1
Propionitrile	ND		20		10	ug/L			09/26/16 14:43	1
Styrene	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
t-Butanol	ND		10		5.0	ug/L			09/26/16 14:43	1
Tetrachloroethene	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Tetrahydrofuran	ND		10		5.0	ug/L			09/26/16 14:43	1
Toluene	ND		0.50	C	.25	ug/L			09/26/16 14:43	1
trans-1,2-Dichloroethene	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
trans-1,3-Dichloropropene	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
trans-1,4-Dichloro-2-butene	ND		5.0		2.5	ug/L			09/26/16 14:43	1
Trichloroethene	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Trichlorofluoromethane	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
Vinyl acetate	ND		4.0		2.0	ug/L			09/26/16 14:43	1
Vinyl chloride	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
1,2-Dibromoethane (EDB)	ND		0.50	C	).25	ug/L			09/26/16 14:43	1
2-Butanone (MEK)	ND		5.0		2.5	ug/L			09/26/16 14:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		2.5	ug/L			09/26/16 14:43	1
Acrylonitrile	ND		2.0		1.0	ug/L			09/26/16 14:43	1
Acrolein	ND		5.0		2.5	ug/L			09/26/16 14:43	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L						09/26/16 14:43	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111	·	80 - 128				•	<u> </u>	09/26/16 14:43	1
4-Bromofluorobenzene (Surr)	103		80 - 120						09/26/16 14:43	1
Dibromofluoromethane (Surr)	105		76 - 132						09/26/16 14:43	1
Method: 8270C - Semivolatile Analyte		mpounds Qualifier	(GC/MS)		ını	Unit	D	Prepared	Analyzed	Dil Fac

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Dil Fac

Analyzed

09/25/16 12:13 09/27/16 18:45

09/25/16 12:13 09/27/16 18:45

Prepared

1.0

Limits

30 - 120

ND

%Recovery Qualifier

51

0.26 ug/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Lab Sample ID: 440-158947-4 Client Sample ID: CM-10R

Date Collected: 09/19/16 12:25 Date Received: 09/19/16 17:30

**Matrix: Water** 

Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL **MDL** Unit D Analyzed Prepared Dil Fac 2.5 09/20/16 14:53 Chloride 1.3 mg/L 11

Method: 6010B - Metals (ICP) - Total Recoverable Analyte **Result Qualifier** RL **MDL** Unit D Prepared Analyzed Dil Fac

0.50 0.25 mg/L 09/27/16 13:24 09/28/16 16:00 Potassium 10

**General Chemistry** Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac **Chemical Oxygen Demand** 66 20 10 mg/L 09/27/16 16:16 20 **Total Dissolved Solids** 1700 10 mg/L 09/24/16 12:14 2.5 0.50 mg/L 09/21/16 05:00 09/21/16 08:31 Ammonia (as N) 7.5 0.10 0.050 mg/L **Total Organic Carbon** 5.7 09/21/16 09:16 Result Qualifier RL **RL** Unit Analyte D Prepared Dil Fac Analyzed **Alkalinity as CaCO3** 4.0 4.0 mg/L 09/23/16 09:21 880

Client Sample ID: CM-11R Lab Sample ID: 440-158947-5

Date Collected: 09/19/16 15:00 Matrix: Water

Date Received: 09/19/16 17:30

Analyte	Result Qua	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/26/16 15:10	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/26/16 15:10	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/26/16 15:10	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/26/16 15:10	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/26/16 15:10	1
2-Hexanone	ND	5.0	2.5	ug/L			09/26/16 15:10	1
Acetone	ND	20	10	ug/L			09/26/16 15:10	1
Acetonitrile	ND	20	10	ug/L			09/26/16 15:10	1
Benzene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
Allyl chloride	ND	1.0	0.50	ug/L			09/26/16 15:10	1
Bromoform	ND	1.0	0.40	ug/L			09/26/16 15:10	1
Bromomethane	ND	0.50	0.25	ug/L			09/26/16 15:10	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/26/16 15:10	1
Carbon tetrachloride	ND	0.50	0.25	ug/L			09/26/16 15:10	1
Chlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:10	1
Bromochloromethane	ND	0.50	0.25				09/26/16 15:10	1

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-158947-5

Matrix: Water

Client Sample ID: CM-11R Date Collected: 09/19/16 15:00

Date Received: 09/19/16 17:30

Method: 8260B - Volatile Organic Compo

ND ND ND ND ND ND ND ND	1.0 0.50 0.50 0.50 0.50 0.50	0.40 0.25 0.25 0.25	ug/L ug/L			09/26/16 15:10 09/26/16 15:10	1
ND ND ND ND ND	0.50 0.50 0.50	0.25 0.25	ug/L				1
ND ND ND ND	0.50 0.50	0.25	•				
ND ND ND	0.50		ua/l			09/26/16 15:10	1
ND ND		U 2E	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
		0.25	ug/L			09/26/16 15:10	1
NID	0.50	0.25	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	1.0	0.40	ug/L			09/26/16 15:10	1
ND	2.0	1.0	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	2.0	1.0	ug/L			09/26/16 15:10	1
ND	25	13	ug/L			09/26/16 15:10	1
ND	1.0	0.50	ug/L			09/26/16 15:10	1
ND	5.0	2.5	ug/L			09/26/16 15:10	1
ND	2.0	1.0	ug/L			09/26/16 15:10	1
1.2 J	2.0	0.88	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	1.0	0.40	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	20	10	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	10	5.0	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	10	5.0	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	5.0	2.5	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	4.0	2.0	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	0.50	0.25	ug/L			09/26/16 15:10	1
ND	5.0	2.5	ug/L			09/26/16 15:10	1
ND	5.0	2.5	ug/L			09/26/16 15:10	1
ND	2.0	1.0	ug/L			09/26/16 15:10	1
ND	5.0	2.5	ug/L			09/26/16 15:10	1
Est. Result Qualifier		D I	RT	CAS No.	Prepared	Analyzed	Dil Fac
	ug/L					09/26/16 15:10	1
	ND N	ND       0.50         ND       10         ND       0.50         ND       4.0         ND       0.50         ND       0.50         ND       0.50         ND       5.0         ND       5.0         ND       5.0         ND       2.0         ND       5.0	ND         0.50         0.25           ND         10         5.0           ND         0.50         0.25           ND         10         5.0           ND         0.50         0.25           ND         0.50         0.25           ND         5.0         2.5           ND         0.50         0.25           ND         0.50         0.25           ND         4.0         2.0           ND         0.50         0.25           ND         0.50         0.25           ND         0.50         0.25           ND         5.0         2.5           ND         5.0         2.5           ND         5.0         2.5           ND         2.0         1.0           ND         5.0         2.5           ND         5.0         2.5           ND         5.0         2.5	ND         0.50         0.25 ug/L           ND         10         5.0 ug/L           ND         0.50         0.25 ug/L           ND         10         5.0 ug/L           ND         0.50         0.25 ug/L           ND         4.0         2.0 ug/L           ND         0.50         0.25 ug/L           ND         0.50         0.25 ug/L           ND         0.50         0.25 ug/L           ND         5.0         2.5 ug/L	ND       0.50       0.25 ug/L         ND       10       5.0 ug/L         ND       0.50       0.25 ug/L         ND       10       5.0 ug/L         ND       0.50       0.25 ug/L         ND       4.0       2.0 ug/L         ND       0.50       0.25 ug/L         ND       0.50       0.25 ug/L         ND       5.0       2.5 ug/L	ND       0.50       0.25 ug/L         ND       10       5.0 ug/L         ND       0.50       0.25 ug/L         ND       10       5.0 ug/L         ND       0.50       0.25 ug/L         ND       0.50       0.25 ug/L         ND       5.0       2.5 ug/L         ND       0.50       0.25 ug/L         ND       4.0       2.0 ug/L         ND       0.50       0.25 ug/L         ND       0.50       0.25 ug/L         ND       0.50       0.25 ug/L         ND       5.0       2.5 ug/L	ND       0.50       0.25       ug/L       09/26/16 15:10         ND       10       5.0       ug/L       09/26/16 15:10         ND       0.50       0.25       ug/L       09/26/16 15:10         ND       10       5.0       ug/L       09/26/16 15:10         ND       0.50       0.25       ug/L       09/26/16 15:10

Tentatively Identified Compound	None	ug/L		09/26/16 15:10	1
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	112	80 - 128		09/26/16 15:10	1
4-Bromofluorobenzene (Surr)	101	80 - 120		09/26/16 15:10	1
Dibromofluoromethane (Surr)	104	76 - 132		09/26/16 15:10	1

Method: 8270C - Semivolatile	Organic Co	mpounds (	(GC/MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.1	0.28	ug/L		09/25/16 12:13	09/27/16 19:08	1

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Client: Geo-Logic Associates

Client Sample ID: CM-11R

Date Collected: 09/19/16 15:00

Date Received: 09/19/16 17:30

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Lab Sample ID: 440-158947-5

. Matrix: Water

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Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	53		30 - 120				09/25/16 12:13	09/27/16 19:08	1
- Method: 300.0 - Anions, Ior	n Chromatogra	phy							
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		5.0	2.5	mg/L			09/20/16 15:11	10
_ Method: 6010B - Metals (IC	P) - Total Reco	overable							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	9.2		0.50	0.25	mg/L		09/27/16 13:24	09/28/16 16:02	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	30		20	10	mg/L			09/27/16 16:16	1
<b>Total Dissolved Solids</b>	3500		50	25	mg/L			09/24/16 12:14	1
Ammonia (as N)	1.7		0.50	0.10	mg/L		09/21/16 05:00	09/21/16 08:31	1
<b>Total Organic Carbon</b>	4.1	^	0.10	0.050	mg/L			09/21/16 09:55	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	66		4.0	4.0	mg/L			09/23/16 09:27	1

Client Sample ID: Duplicate Lab Sample ID: 440-158947-6

Date Collected: 09/19/16 00:01 Matrix: Water

Date Received: 09/19/16 17:30	

Method: 8260B - Volatile Org Analyte	Result (		MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/26/16 15:36	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/26/16 15:36	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/26/16 15:36	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 15:36	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/26/16 15:36	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/26/16 15:36	1
2-Hexanone	ND	5.0	2.5	ug/L			09/26/16 15:36	1
Acetone	ND	20	10	ug/L			09/26/16 15:36	1
Acetonitrile	ND	20	10	ug/L			09/26/16 15:36	1
Benzene	ND	0.50	0.25	ug/L			09/26/16 15:36	1
Allyl chloride	ND	1.0	0.50	ug/L			09/26/16 15:36	1
Bromoform	ND	1.0	0.40	ug/L			09/26/16 15:36	1
Bromomethane	ND	0.50	0.25	ug/L			09/26/16 15:36	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/26/16 15:36	1

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Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-158947-6

Matrix: Water

**Client Sample ID: Duplicate** 

Date Collected: 09/19/16 00:01 Date Received: 09/19/16 17:30

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.50		ug/L			09/26/16 15:36	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Chloroethane	ND		1.0	0.40	ug/L			09/26/16 15:36	1
Chloroform	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Chloromethane	ND		0.50	0.25	ug/L			09/26/16 15:36	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/26/16 15:36	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Dibromomethane	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/26/16 15:36	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/26/16 15:36	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/26/16 15:36	1
Iodomethane	ND		2.0	1.0	ug/L			09/26/16 15:36	1
Isobutyl alcohol	ND		25		ug/L			09/26/16 15:36	1
m,p-Xylene	ND		1.0		ug/L			09/26/16 15:36	1
Methylacrylonitrile	ND		5.0		ug/L			09/26/16 15:36	1
Methyl methacrylate	ND		2.0		ug/L			09/26/16 15:36	1
Methylene Chloride	1.2	J	2.0		ug/L			09/26/16 15:36	
Methyl tert-butyl ether	ND		0.50		ug/L			09/26/16 15:36	1
Naphthalene	ND		1.0		ug/L			09/26/16 15:36	1
o-Xylene	ND		0.50		ug/L			09/26/16 15:36	1
Propionitrile	ND		20		ug/L			09/26/16 15:36	1
Styrene	ND		0.50		ug/L			09/26/16 15:36	1
t-Butanol	ND		10		ug/L			09/26/16 15:36	1
Tetrachloroethene	ND		0.50		ug/L			09/26/16 15:36	1
Tetrahydrofuran	ND		10		ug/L			09/26/16 15:36	1
Toluene	ND		0.50		ug/L			09/26/16 15:36	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			09/26/16 15:36	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			09/26/16 15:36	1
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/26/16 15:36	· · · · · · · · · 1
Trichloroethene	ND		0.50		ug/L			09/26/16 15:36	1
Trichlorofluoromethane	ND		0.50		ug/L			09/26/16 15:36	1
Vinyl acetate	ND		4.0		ug/L			09/26/16 15:36	
Vinyl chloride	ND ND		0.50		ug/L ug/L			09/26/16 15:36	1
1,2-Dibromoethane (EDB)	ND ND		0.50		ug/L ug/L			09/26/16 15:36	1
								09/26/16 15:36	
2-Butanone (MEK)	ND		5.0		ug/L				1
4-Methyl-2-pentanone (MIBK)	ND ND		5.0 2.0		ug/L			09/26/16 15:36 09/26/16 15:36	1
Acrylonitrile					ug/L			09/26/16 15:36	1
Acrolein	ND		5.0	2.5	ug/L			09/20/10 15.30	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	<u>D</u>	RT _	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					09/26/16 15:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		80 - 128					09/26/16 15:36	1
4-Bromofluorobenzene (Surr)	101		80 - 120					09/26/16 15:36	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Client Sample ID: Duplicate

Date Collected: 09/19/16 00:01 Date Received: 09/19/16 17:30 Lab Sample ID: 440-158947-6

**Matrix: Water** 

Analyte	Result	Qualifier	ŘL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.1	0.27	ug/L		09/25/16 12:13	09/27/16 19:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	49		30 - 120				09/25/16 12:13	09/27/16 19:30	
Method: 300.0 - Anions, Ion	Chromatogra	phy							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride			2.5	1.3	mg/L			09/20/16 15:29	
•		overable Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 6010B - Metals (ICF Analyte Potassium			RL 0.50	<b>MDL</b> 0.25	Unit mg/L	<u>D</u>	Prepared 09/27/16 13:24	Analyzed 09/28/16 16:10	Dil Fac
Analyte Potassium  General Chemistry	Result 11				mg/L	D_			1
Analyte Potassium  General Chemistry Analyte	Result 11	Qualifier	0.50	0.25	mg/L		09/27/16 13:24	09/28/16 16:10	Dil Fac
Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand	Result Result	Qualifier	0.50	0.25 MDL 10	mg/L Unit		09/27/16 13:24	09/28/16 16:10  Analyzed	1
Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids	Result 70	Qualifier	0.50 RL 20	0.25 MDL 10 10	mg/L  Unit mg/L		09/27/16 13:24	09/28/16 16:10  Analyzed  09/27/16 16:17	1
Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids Ammonia (as N)	Result 11 Result 70 1800	Qualifier  Qualifier	0.50  RL 20 20	0.25 MDL 10 10	mg/L  Unit  mg/L  mg/L  mg/L		09/27/16 13:24  Prepared	09/28/16 16:10  Analyzed 09/27/16 16:17 09/24/16 12:14	1
Analyte	Result 70 1800 7.5 5.6	Qualifier  Qualifier	0.50  RL 20 20 2.5	0.25 MDL 10 10 0.50 0.050	mg/L  Unit  mg/L  mg/L  mg/L		09/27/16 13:24  Prepared	09/28/16 16:10  Analyzed  09/27/16 16:17  09/24/16 12:14  09/21/16 08:31	1

Client Sample ID: QCAB

Date Collected: 09/19/16 00:01

Lab Sample ID: 440-158947-7

Matrix: Water

Date Received: 09/19/16 17:30

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND -	1.0	0.40	ug/L			09/26/16 10:21	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/26/16 10:21	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/26/16 10:21	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 10:21	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 10:21	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/26/16 10:21	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/26/16 10:21	1
2-Hexanone	ND	5.0	2.5	ug/L			09/26/16 10:21	1
Acetone	ND	20	10	ug/L			09/26/16 10:21	1
Acetonitrile	ND	20	10	ug/L			09/26/16 10:21	1
Benzene	ND	0.50	0.25	ug/L			09/26/16 10:21	1

TestAmerica Irvine

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46

Client: Geo-Logic Associates

Tentatively Identified Compound

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Client Sample ID: QCAB Lab Sample ID: 440-158947-7

Date Collected: 09/19/16 00:01 Date Received: 09/19/16 17:30 Matrix: Water

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND		1.0	0.50	ug/L			09/26/16 10:21	1
Bromoform	ND		1.0	0.40	ug/L			09/26/16 10:21	1
Bromomethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/26/16 10:21	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Chloroethane	ND		1.0	0.40	ug/L			09/26/16 10:21	1
Chloroform	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Chloromethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Dibromomethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/26/16 10:21	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/26/16 10:21	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
lodomethane	ND		2.0	1.0	ug/L			09/26/16 10:21	1
Isobutyl alcohol	ND		25	13	ug/L			09/26/16 10:21	1
m,p-Xylene	ND		1.0	0.50	ug/L			09/26/16 10:21	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/26/16 10:21	1
Methyl methacrylate	ND		2.0	1.0	ug/L			09/26/16 10:21	1
Methylene Chloride	0.88	J	2.0	0.88	ug/L			09/26/16 10:21	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Naphthalene	ND		1.0	0.40	ug/L			09/26/16 10:21	1
o-Xylene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Propionitrile	ND		20	10	ug/L			09/26/16 10:21	1
Styrene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
t-Butanol	ND		10	5.0	ug/L			09/26/16 10:21	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/26/16 10:21	1
Toluene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/26/16 10:21	1
Trichloroethene	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/26/16 10:21	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/26/16 10:21	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/26/16 10:21	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/26/16 10:21	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/26/16 10:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/26/16 10:21	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/26/16 10:21	1
Acrolein	ND		5.0	2.5	ug/L			09/26/16 10:21	1

TestAmerica Irvine

09/26/16 10:21

ug/L

None

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

**Client Sample ID: QCAB** 

Date Collected: 09/19/16 00:01 Date Received: 09/19/16 17:30 Lab Sample ID: 440-158947-7

**Matrix: Water** 

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114	80 - 128		09/26/16 10:21	1
4-Bromofluorobenzene (Surr)	101	80 - 120		09/26/16 10:21	1
Dibromofluoromethane (Surr)	101	76 - 132		09/26/16 10:21	1

Client Sample ID: QCTB

Date Collected: 09/19/16 00:01

Lab Sample ID: 440-158947-8

Matrix: Water

Date Received: 09/19/16 17:30

Ethyl methacrylate

Ethylbenzene

Method: 8260B - Volatile Org Analyte	Result Qualifie		MDL (		D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/26/16 10:48	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,1,1-Trichloroethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/26/16 10:48	1
1,1,2-Trichloroethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,1-Dichloroethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,1-Dichloroethene	ND	0.50	0.25 ι	ug/L			09/26/16 10:48	1
1,1-Dichloropropene	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,2,4-Trichlorobenzene	ND	1.0	0.40 ι	ug/L			09/26/16 10:48	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/26/16 10:48	1
1,2-Dichlorobenzene	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,2-Dichloroethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/26/16 10:48	1
1,3-Dichlorobenzene	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,3-Dichloropropane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/26/16 10:48	1
2,2-Dichloropropane	ND	1.0	0.40 ι	ug/L			09/26/16 10:48	1
2-Chloro-1,3-butadiene	ND	1.0	0.50 t	ug/L			09/26/16 10:48	1
2-Hexanone	ND	5.0	2.5 ι	ug/L			09/26/16 10:48	1
Acetone	ND	20	10 ι	ug/L			09/26/16 10:48	1
Acetonitrile	ND	20	10 ι	ug/L			09/26/16 10:48	1
Benzene	ND	0.50	0.25	ug/L			09/26/16 10:48	1
Allyl chloride	ND	1.0	0.50 t	ug/L			09/26/16 10:48	1
Bromoform	ND	1.0	0.40 u	ug/L			09/26/16 10:48	1
Bromomethane	ND	0.50	0.25	ug/L			09/26/16 10:48	1
Carbon disulfide	ND	1.0	0.50 t	ug/L			09/26/16 10:48	1
Carbon tetrachloride	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
Chlorobenzene	ND	0.50	0.25	ug/L			09/26/16 10:48	1
Bromochloromethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
Chloroethane	ND	1.0	0.40 ι	ug/L			09/26/16 10:48	1
Chloroform	ND	0.50	0.25	ug/L			09/26/16 10:48	1
Chloromethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
cis-1,2-Dichloroethene	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			09/26/16 10:48	1
Dibromochloromethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
Dibromomethane	ND	0.50	0.25 t	ug/L			09/26/16 10:48	1
Bromodichloromethane	ND	0.50	0.25	ug/L			09/26/16 10:48	1
Dichlorodifluoromethane	ND	1.0	0.40 ι				09/26/16 10:48	1

TestAmerica Irvine

09/26/16 10:48

09/26/16 10:48

2.0

0.50

1.0 ug/L

0.25 ug/L

ND

ND

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Lab Sample ID: 440-158947-8

Matrix: Water

Client Sample ID: QCTB

Date Collected: 09/19/16 00:01 Date Received: 09/19/16 17:30

Analyte	Result	Qualifier	RL	MI	DL	Unit	D	Prepared	Analyzed	Dil Fac
lodomethane	ND		2.0		1.0	ug/L			09/26/16 10:48	1
Isobutyl alcohol	ND		25		13	ug/L			09/26/16 10:48	1
m,p-Xylene	ND		1.0	0.	50	ug/L			09/26/16 10:48	1
Methylacrylonitrile	ND		5.0	2	2.5	ug/L			09/26/16 10:48	1
Methyl methacrylate	ND		2.0	•	1.0	ug/L			09/26/16 10:48	1
Methylene Chloride	ND		2.0	0.	88	ug/L			09/26/16 10:48	1
Methyl tert-butyl ether	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
Naphthalene	ND		1.0	0.	40	ug/L			09/26/16 10:48	1
o-Xylene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
Propionitrile	ND		20		10	ug/L			09/26/16 10:48	1
Styrene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
t-Butanol	ND		10		5.0	ug/L			09/26/16 10:48	1
Tetrachloroethene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
Tetrahydrofuran	ND		10		5.0	ug/L			09/26/16 10:48	1
Toluene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
trans-1,2-Dichloroethene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
trans-1,3-Dichloropropene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
trans-1,4-Dichloro-2-butene	ND		5.0	2	2.5	ug/L			09/26/16 10:48	1
Trichloroethene	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
Trichlorofluoromethane	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
Vinyl acetate	ND		4.0	2	2.0	ug/L			09/26/16 10:48	1
Vinyl chloride	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
1,2-Dibromoethane (EDB)	ND		0.50	0.	25	ug/L			09/26/16 10:48	1
2-Butanone (MEK)	ND		5.0	2	2.5	ug/L			09/26/16 10:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2	2.5	ug/L			09/26/16 10:48	1
Acrylonitrile	ND		2.0	•	1.0	ug/L			09/26/16 10:48	1
Acrolein	ND		5.0	2	2.5	ug/L			09/26/16 10:48	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	ı	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L						09/26/16 10:48	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 128				•		09/26/16 10:48	1
4-Bromofluorobenzene (Surr)	100		80 - 120						09/26/16 10:48	1
Dibromofluoromethane (Surr)	100		76 - 132						09/26/16 10:48	1

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## **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
410.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5310C	TOC	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:**

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

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12

Project/Site: Republic Sunshine Canyon

Client Sample ID: Subdrain N Lab Sample ID: 440-158947-1 Date Collected: 09/19/16 13:00 **Matrix: Water** 

Date Received: 09/19/16 17:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357960	09/26/16 12:32	SHS	TAL IRV
Total/NA	Prep	3520C			1025 mL	1 mL	357934	09/25/16 12:13	BMN	TAL IRV
Total/NA	Analysis	8270C		1			358292	09/27/16 17:38	Al	TAL IRV
Total/NA	Analysis	300.0		50			356512	09/20/16 00:48	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358766	09/28/16 15:49	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358479	09/27/16 16:16	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 09:10	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	357654	09/23/16 09:42	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357260	09/21/16 15:48	YZ	TAL IRV

**Client Sample ID: Combined Subdrains** 

Lab Sample ID: 440-158947-2 Date Collected: 09/19/16 14:20 **Matrix: Water** Date Received: 09/19/16 17:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	-	1	10 mL	10 mL	357960	09/26/16 13:51	SHS	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	357838	09/24/16 16:27	SHS	TAL IRV
Total/NA	Prep	3520C			1025 mL	1 mL	357934	09/25/16 12:13	BMN	TAL IRV
Total/NA	Analysis	8270C		1			358292	09/27/16 18:00	Al	TAL IRV
Total/NA	Analysis	300.0		20			356759	09/20/16 14:17	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358766	09/28/16 15:56	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358479	09/27/16 16:16	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 09:18	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	357654	09/23/16 09:42	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357124	09/21/16 08:48	YZ	TAL IRV

Client Sample ID: CM-9R3 Lab Sample ID: 440-158947-3 Date Collected: 09/19/16 13:25 **Matrix: Water** 

Date Received: 09/19/16 17:30

Prep Type Total/NA	Batch Type Analysis	Batch Method 8260B	Run	Dil Factor	Initial Amount 10 mL	Final Amount 10 mL	Batch Number 357960	Prepared or Analyzed 09/26/16 14:17	Analyst SHS	Lab TAL IRV
Total/NA Total/NA	Prep Analysis	3520C 8270C		1	1025 mL	1 mL	357934 358292	09/25/16 12:13 09/27/16 18:22		TAL IRV TAL IRV
Total/NA	Analysis	300.0		20			356759	09/20/16 14:35		TAL IRV

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-158947-3

**Matrix: Water** 

Client Sample ID: CM-9R3

Date Collected: 09/19/16 13:25 Date Received: 09/19/16 17:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358766	09/28/16 15:58	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358479	09/27/16 16:16	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 09:30	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	357339	09/22/16 10:49	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357124	09/21/16 09:02	YZ	TAL IRV

Lab Sample ID: 440-158947-4 Client Sample ID: CM-10R Date Collected: 09/19/16 12:25

**Matrix: Water** 

Date Received: 09/19/16 17:30

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Туре Method Factor **Amount Amount** Number or Analyzed Analyst Run Lab Total/NA 8260B 10 mL 357960 09/26/16 14:43 SHS TAL IRV Analysis 10 mL Total/NA Prep 3520C 960 mL 1 mL 357934 09/25/16 12:13 BMN TAL IRV Total/NA Analysis 8270C 358292 09/27/16 18:45 AI TAL IRV 1 Total/NA Analysis 300.0 5 356759 09/20/16 14:53 NTN TAL IRV 25 mL 3005A 358428 TAL IRV Total Recoverable Prep 25 ml 09/27/16 13:24 Q1N Total Recoverable 6010B 358766 09/28/16 16:00 EN TAL IRV Analysis 1 Total/NA 410.4 0.625 mL 358479 Analysis 1 2.5 mL 09/27/16 16:16 KYP TAL IRV Total/NA Analysis SM 2320B 1 357824 09/23/16 09:21 YZ TAL IRV Total/NA 50 mL Analysis SM 2540C 100 mL 357870 09/24/16 12:14 MMH TAL IRV Total/NA Prep SM 4500 NH3 B 10.0 mL 50 mL 356962 09/21/16 05:00 YZ TAL IRV Total/NA Analysis SM 4500 NH3 D 357017 09/21/16 08:31 YZ TAL IRV Total/NA Analysis SM 5310C 100 mL 100 mL 357124 09/21/16 09:16 YZ TAL IRV

Client Sample ID: CM-11R Lab Sample ID: 440-158947-5 Date Collected: 09/19/16 15:00 **Matrix: Water** 

Date Received: 09/19/16 17:30

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357960	09/26/16 15:10	SHS	TAL IRV
Total/NA	Prep	3520C			890 mL	1 mL	357934	09/25/16 12:13	BMN	TAL IRV
Total/NA	Analysis	8270C		1			358292	09/27/16 19:08	Al	TAL IRV
Total/NA	Analysis	300.0		10			356759	09/20/16 15:11	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358766	09/28/16 16:02	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358479	09/27/16 16:16	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357824	09/23/16 09:27	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	357870	09/24/16 12:14	MMH	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV

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Project/Site: Republic Sunshine Canyon

Client Sample ID: CM-11R Lab Sample ID: 440-158947-5

Date Collected: 09/19/16 15:00 **Matrix: Water** Date Received: 09/19/16 17:30

Batch Dil Batch Batch Initial Final **Prepared Prep Type** Type Method Run **Factor Amount Amount** Number or Analyzed Analyst Lab Total/NA Analysis SM 4500 NH3 D 357017 09/21/16 08:31  $\overline{YZ}$ TAL IRV Total/NA Analysis SM 5310C 1 100 mL 100 mL 357124 09/21/16 09:55 YZ TAL IRV

Client Sample ID: Duplicate Lab Sample ID: 440-158947-6

Date Collected: 09/19/16 00:01 **Matrix: Water** Date Received: 09/19/16 17:30

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount** Amount Number or Analyzed **Analyst** Lab Total/NA 357960 09/26/16 15:36 TAL IRV Analysis 8260B 10 mL 10 mL SHS Total/NA Prep 3520C 915 mL 357934 09/25/16 12:13 BMN TAL IRV 1 mL Total/NA 8270C 358292 09/27/16 19:30 AI TAL IRV Analysis 1 5 Total/NA Analysis 300.0 356759 09/20/16 15:29 NTN TAL IRV Total Recoverable 3005A 25 mL 25 mL 358428 09/27/16 13:24 Q1N TAL IRV Prep Total Recoverable Analysis 6010B 1 358766 09/28/16 16:10 EN TAL IRV Total/NA 410.4 0.625 mL 2.5 mL 358479 TAL IRV Analysis 1 09/27/16 16:17 KYP Total/NA Analysis SM 2320B 1 357824 09/23/16 09:41 YZ TAL IRV Total/NA SM 2540C 50 mL 357870 TAL IRV Analysis 1 100 mL 09/24/16 12:14 MMH Total/NA Prep SM 4500 NH3 B 10.0 mL 50 mL 356962 09/21/16 05:00 YZ TAL IRV Total/NA SM 4500 NH3 D 357017 09/21/16 08:31 YZ TAL IRV Analysis 1 Total/NA 357124 09/21/16 10:08 YZ TAL IRV Analysis SM 5310C 100 mL 100 mL

Client Sample ID: QCAB Lab Sample ID: 440-158947-7

Date Collected: 09/19/16 00:01 Date Received: 09/19/16 17:30

Batch **Batch** Dil Initial Final Batch Prepared Method Amount Number Analyst **Prep Type** Type Run **Factor** Amount or Analyzed Lab 09/26/16 10:21 SHS Total/NA Analysis 8260B 10 mL 10 mL 357960 TAL IRV

Client Sample ID: QCTB Lab Sample ID: 440-158947-8

Date Collected: 09/19/16 00:01

Date Received: 09/19/16 17:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357960	09/26/16 10:48	SHS	TAL IRV

**Laboratory References:** 

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

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Matrix: Water

**Matrix: Water** 

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

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

Client Sample ID: Method Blank Lab Sample ID: MB 440-357838/4 **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 357838

•	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.40	ug/L			09/24/16 10:59	1
	МВ	MB							

ı		MB	MB					
	Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
	Toluene-d8 (Surr)	105		80 - 128	_		09/24/16 10:59	1
	4-Bromofluorobenzene (Surr)	100		80 - 120			09/24/16 10:59	1
	Dibromofluoromethane (Surr)	103		76 - 132			09/24/16 10:59	1

Lab Sample ID: LCS 440-357838/5 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 357838

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Naphthalene	25.0	24.0		ug/L		96	60 - 140	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132

Lab Sample ID: 720-74623-A-1 MS Client Sample ID: Matrix Spike **Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 357838** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Naphthalene	ND		25.0	25.0		ua/L		100	60 - 140	 

ı		IVIS	MS	
	Surrogate	%Recovery	Qualifier	Limits
	Toluene-d8 (Surr)	102		80 - 128
	4-Bromofluorobenzene (Surr)	96		80 - 120
	Dibromofluoromethane (Surr)	99		76 - 132

Lab Sample ID: 720-74623-A-1 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** 

**Analysis Batch: 357838** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Nanhthalene	ND		25.0	26.0	-	ua/l		104	60 140		30	

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

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Prep Type: Total/NA

## **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

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

Lab Sample ID: MB 440-357960/4

**Matrix: Water** 

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

		MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0		ug/L			09/26/16 08:48	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/26/16 08:48	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/26/16 08:48	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/26/16 08:48	1
1,3-Dichlorobenzene	ND		0.50		ug/L			09/26/16 08:48	1
1,3-Dichloropropane	ND		0.50		ug/L			09/26/16 08:48	1
1,4-Dichlorobenzene	ND		0.50		ug/L			09/26/16 08:48	1
2,2-Dichloropropane	ND		1.0		ug/L			09/26/16 08:48	1
2-Chloro-1,3-butadiene	ND		1.0		ug/L			09/26/16 08:48	1
2-Hexanone	ND		5.0		ug/L			09/26/16 08:48	1
Acetone	ND		20		ug/L			09/26/16 08:48	1
Acetonitrile	ND		20		ug/L			09/26/16 08:48	1
Benzene	ND		0.50		ug/L			09/26/16 08:48	·
Allyl chloride	ND		1.0		ug/L			09/26/16 08:48	1
Bromoform	ND		1.0		ug/L			09/26/16 08:48	1
Bromomethane	ND		0.50		ug/L			09/26/16 08:48	· · · · · · · · · · · · · · · · · · ·
Carbon disulfide	ND		1.0		ug/L			09/26/16 08:48	1
Carbon tetrachloride	ND		0.50		ug/L			09/26/16 08:48	1
Chlorobenzene	ND		0.50		ug/L			09/26/16 08:48	· · · · · · · · · · · · · · · · · · ·
Bromochloromethane	ND		0.50		ug/L			09/26/16 08:48	1
Chloroethane	ND		1.0		ug/L			09/26/16 08:48	1
Chloroform	ND		0.50		ug/L			09/26/16 08:48	
Chloromethane	ND ND		0.50					09/26/16 08:48	
	ND ND		0.50		ug/L ug/L			09/26/16 08:48	1
cis-1,2-Dichloroethene cis-1,3-Dichloropropene	ND		0.50		ug/L ug/L			09/26/16 08:48	1
• •					_				
Dibromochloromethane	ND		0.50		ug/L			09/26/16 08:48	1
Dibromomethane	ND		0.50		ug/L			09/26/16 08:48	1
Bromodichloromethane	ND		0.50		ug/L			09/26/16 08:48	1
Dichlorodifluoromethane	ND		1.0		ug/L			09/26/16 08:48	1
Ethyl methacrylate	ND		2.0		ug/L			09/26/16 08:48	1
Ethylbenzene	ND		0.50		ug/L			09/26/16 08:48	1
lodomethane	ND		2.0		ug/L			09/26/16 08:48	1
Isobutyl alcohol	ND		25		ug/L			09/26/16 08:48	1
m,p-Xylene	ND		1.0		ug/L			09/26/16 08:48	1
Methylacrylonitrile	ND		5.0		ug/L			09/26/16 08:48	1
Methyl methacrylate	ND		2.0		ug/L			09/26/16 08:48	1
Methylene Chloride	ND		2.0		ug/L			09/26/16 08:48	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/26/16 08:48	1
Naphthalene	ND		1.0	0.40	ug/L			09/26/16 08:48	1

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: MB 440-357960/4 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357960** 

MB MB Result Qualifier **MDL** Unit Analyte RL D Prepared Analyzed Dil Fac o-Xylene  $\overline{\mathsf{ND}}$ 0.50 0.25 ug/L 09/26/16 08:48 Propionitrile ND 20 10 ug/L 09/26/16 08:48 Styrene ND 0.50 0.25 ug/L 09/26/16 08:48 t-Butanol ND 10 5.0 ug/L 09/26/16 08:48 Tetrachloroethene ND 0.50 0.25 ug/L 09/26/16 08:48 Tetrahydrofuran ND 10 5.0 ug/L 09/26/16 08:48 ND 0.50 09/26/16 08:48 Toluene 0.25 ug/L ND 0.25 ug/L trans-1,2-Dichloroethene 0.50 09/26/16 08:48 trans-1,3-Dichloropropene ND 0.50 0.25 ug/L 09/26/16 08:48 ND 5.0 trans-1,4-Dichloro-2-butene 2.5 ug/L 09/26/16 08:48 Trichloroethene ND 0.50 0.25 ug/L 09/26/16 08:48 Trichlorofluoromethane ND 0.50 0.25 ug/L 09/26/16 08:48 ND 4.0 Vinyl acetate 2.0 ug/L 09/26/16 08:48 ND Vinyl chloride 0.50 0.25 ug/L 09/26/16 08:48 1,2-Dibromoethane (EDB) ND 0.50 0.25 ug/L 09/26/16 08:48 ND 2-Butanone (MEK) 5.0 2.5 ug/L 09/26/16 08:48 4-Methyl-2-pentanone (MIBK) ND 5.0 2.5 ug/L 09/26/16 08:48 Acrylonitrile ND 2.0 1.0 ug/L 09/26/16 08:48 Acrolein ND 5.0 2.5 ug/L 09/26/16 08:48

MB MB Tentatively Identified Compound Est. Result Qualifier Unit D RT CAS No. Prepared Analyzed Dil Fac Tentatively Identified Compound ug/L 09/26/16 08:48 None

	IVIB	IVIB						
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	106		80 - 128	-		09/26/16 08:48	1	
4-Bromofluorobenzene (Surr)	102		80 - 120			09/26/16 08:48	1	
Dibromofluoromethane (Surr)	108		76 - 132			09/26/16 08:48	1	

LCS LCS

25.4

26.4

25.9

ug/L

ug/L

ug/L

102

105

103

57 - 138

67 - 130

70 - 130

Lab Sample ID: LCS 440-357960/5

**Matrix: Water** 

1,2-Dichloroethane

1,2-Dichloropropane

1,3-Dichlorobenzene

**Analysis Batch: 357960** 

Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	25.0	25.6		ug/L		102	63 - 130	
1,1,1,2-Tetrachloroethane	25.0	26.1		ug/L		104	60 - 141	
1,1,1-Trichloroethane	25.0	25.9		ug/L		104	70 - 130	
1,1,2,2-Tetrachloroethane	25.0	24.6		ug/L		99	63 - 130	
1,1,2-Trichloroethane	25.0	26.4		ug/L		106	70 - 130	
1,1-Dichloroethane	25.0	25.0		ug/L		100	64 - 130	
1,1-Dichloroethene	25.0	24.1		ug/L		96	70 - 130	
1,1-Dichloropropene	25.0	25.3		ug/L		101	70 - 130	
1,2,4-Trichlorobenzene	25.0	31.8		ug/L		127	60 - 140	
1,2-Dibromo-3-Chloropropane	25.0	28.0		ug/L		112	52 - 140	
1,2-Dichlorobenzene	25.0	25.9		ug/L		104	70 - 130	

Spike

25.0

25.0

25.0

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

%Rec.

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

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

Lab Sample ID: LCS 440-357960/5

**Matrix: Water** 

**Analysis Batch: 357960** 

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

•	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier	Unit	D %Red	Limits	
1,3-Dichloropropane	25.0	25.5	-	ug/L	102	70 - 130	
1,4-Dichlorobenzene	25.0	25.0		ug/L	100	70 - 130	
2,2-Dichloropropane	25.0	28.8		ug/L	115	68 - 141	
2-Hexanone	25.0	28.7		ug/L	115	10 - 150	
Acetone	25.0	28.4		ug/L	114	10 - 150	
Benzene	25.0	25.2		ug/L	101	68 - 130	
Bromoform	25.0	28.8		ug/L	115	60 - 148	
Bromomethane	25.0	23.4		ug/L	93	64 - 139	
Carbon disulfide	25.0	23.6		ug/L	94	52 - 136	
Carbon tetrachloride	25.0	26.4		ug/L	105	60 - 150	
Chlorobenzene	25.0	24.6		ug/L	98	3 70 - 130	
Bromochloromethane	25.0	25.8		ug/L	103	3 70 <sub>-</sub> 130	
Chloroethane	25.0	25.3		ug/L	101	64 - 135	
Chloroform	25.0	25.1		ug/L	100	70 - 130	
Chloromethane	25.0	21.5		ug/L	86	6 47 <sub>-</sub> 140	
cis-1,2-Dichloroethene	25.0	25.2		ug/L	101	70 - 133	
cis-1,3-Dichloropropene	25.0	27.5		ug/L	110	70 - 133	
Dibromochloromethane	25.0	26.4		ug/L	105	69 - 145	
Dibromomethane	25.0	25.5		ug/L	102	2 70 - 130	
Bromodichloromethane	25.0	25.7		ug/L	103	3 70 - 132	
Dichlorodifluoromethane	25.0	19.8		ug/L	79	29 - 150	
Ethylbenzene	25.0	26.1		ug/L	104	70 - 130	
m,p-Xylene	25.0	26.2		ug/L	105	70 - 130	
Methylene Chloride	25.0	25.1		ug/L	100	52 - 130	
Methyl tert-butyl ether	25.0	26.0		ug/L	104	63 - 131	
Naphthalene	25.0	28.9		ug/L	115	60 - 140	
o-Xylene	25.0	25.1		ug/L	100	70 - 130	
Styrene	25.0	26.5		ug/L	106	70 - 134	
t-Butanol	250	255		ug/L	102	2 70 - 130	
Tetrachloroethene	25.0	27.7		ug/L	111	70 - 130	
Toluene	25.0	24.5		ug/L	98	3 70 - 130	
trans-1,2-Dichloroethene	25.0	25.3		ug/L	101	70 - 130	
trans-1,3-Dichloropropene	25.0	26.5		ug/L	106	70 - 132	
Trichloroethene	25.0	25.6		ug/L	102	2 70 - 130	
Trichlorofluoromethane	25.0	25.4		ug/L	102	2 60 - 150	
Vinyl acetate	25.0	30.2		ug/L	121	48 - 140	
Vinyl chloride	25.0	20.8		ug/L	83	3 59 <sub>-</sub> 133	
1,2-Dibromoethane (EDB)	25.0	27.6		ug/L	110	70 - 130	
2-Butanone (MEK)	25.0	25.2		ug/L	101	44 - 150	
4-Methyl-2-pentanone (MIBK)	25.0	29.9		ug/L	119	59 - 149	

I CS	LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 128
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	105		76 - 132

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## **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

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

Lab Sample ID: 440-158947-1 MS

**Matrix: Water** 

Client Sample ID: Subdrain N Prep Type: Total/NA

Matrix: Water									Prep Type: 1	otal/N
Analysis Batch: 357960	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	ND		25.0	28.4		ug/L		113	60 - 130	
1,1,1,2-Tetrachloroethane	ND		25.0	26.6		ug/L		106	60 - 149	
1,1,1-Trichloroethane	ND		25.0	26.2		ug/L		105	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	27.4		ug/L		110	63 - 130	
1,1,2-Trichloroethane	ND		25.0	28.4		ug/L		113	70 - 130	
1,1-Dichloroethane	ND		25.0	24.8		ug/L		99	65 - 130	
1,1-Dichloroethene	ND		25.0	24.7		ug/L		99	70 - 130	
1,1-Dichloropropene	ND		25.0	25.1		ug/L		101	64 - 130	
1,2,4-Trichlorobenzene	ND		25.0	31.0		ug/L		124	60 - 140	
1,2-Dibromo-3-Chloropropane	ND		25.0	33.2		ug/L		133	48 - 140	
1,2-Dichlorobenzene	ND		25.0	26.6		ug/L		106	70 - 130	
1,2-Dichloroethane	ND		25.0	25.8		ug/L		103	56 <sub>-</sub> 146	
1,2-Dichloropropane	ND		25.0	25.6		ug/L		102	69 - 130	
1,3-Dichlorobenzene	ND		25.0	25.2		ug/L		101	70 - 130	
1,3-Dichloropropane	ND		25.0	27.8		ug/L		111	70 - 130	
1,4-Dichlorobenzene	0.70		25.0	25.6		ug/L		100	70 - 130	
2,2-Dichloropropane	ND		25.0	27.0		ug/L		108	69 - 138	
2-Hexanone	ND		25.0	32.9		ug/L		132	10 <sub>-</sub> 150	
Acetone	ND		25.0	31.7		ug/L		127	10 - 150	
Benzene	0.44	J	25.0	25.4		ug/L		100	66 - 130	
Bromoform	ND		25.0	30.8		ug/L		123	59 - 150	
Bromomethane	ND		25.0	22.7		ug/L		91	62 - 131	
Carbon disulfide	ND		25.0	24.5		ug/L		98	49 - 140	
Carbon tetrachloride	ND		25.0	26.5		ug/L		106	60 - 150	
Chlorobenzene	ND		25.0	25.6		ug/L		102	70 - 130	
Bromochloromethane	ND		25.0	25.3		ug/L		101	70 - 130	
Chloroethane	ND		25.0	23.9		ug/L		95	68 - 130	
Chloroform	ND		25.0	24.7		ug/L		99	70 - 130	
Chloromethane	ND		25.0	21.2		ug/L		85	39 - 144	
cis-1,2-Dichloroethene	0.69		25.0	25.3		ug/L		99	70 - 130	
cis-1,3-Dichloropropene	ND		25.0	27.5		ug/L		110	70 - 133	
Dibromochloromethane	ND		25.0	27.1		ug/L		109	70 - 148	
Dibromomethane	ND		25.0	26.2		ug/L		105	70 - 130	
Bromodichloromethane	ND		25.0	25.4		ug/L		102	70 - 138	
Dichlorodifluoromethane	ND		25.0	21.1				84	25 - 142	
Ethylbenzene	ND		25.0	26.3		ug/L ug/L		105	70 <sub>-</sub> 130	
m,p-Xylene	ND		25.0	26.3		ug/L		105	70 - 133	
Methylene Chloride	ND		25.0	25.7		ug/L		103	52 <sub>-</sub> 130	
Methyl tert-butyl ether	0.75		25.0	27.2		ug/L		106	70 <sub>-</sub> 130	
Naphthalene	0.75 ND		25.0	32.4				129	60 <sub>-</sub> 140	
o-Xylene	ND ND		25.0 25.0	32. <del>4</del> 26.1		ug/L ug/L		104	70 <sub>-</sub> 133	
	ND ND		25.0 25.0					104	70 - 133 29 - 150	
Styrene t-Butanol	16		25.0	26.5 271		ug/L		100	70 <sub>-</sub> 130	
Tetrachloroethene	ND		25.0	27.4		ug/L		110	70 - 130 70 - 137	
						ug/L				
Toluene	ND		25.0	25.6		ug/L		103	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	25.6		ug/L		102	70 <sub>-</sub> 130	
trans-1,3-Dichloropropene	ND		25.0	27.4		ug/L		110	70 - 138	
Trichloroethene	ND		25.0	24.8		ug/L		99	70 - 130	

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## **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

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

Lab Sample ID: 440-158947-1 MS

**Matrix: Water** 

Analysis Batch: 357960

Client Sample ID: Subdrain N **Prep Type: Total/NA** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Trichlorofluoromethane	ND		25.0	25.9		ug/L		104	60 - 150	
Vinyl acetate	ND		25.0	32.0		ug/L		128	23 - 150	
Vinyl chloride	ND		25.0	20.5		ug/L		82	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	29.0		ug/L		116	70 - 131	
2-Butanone (MEK)	ND		25.0	27.9		ug/L		112	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	36.1		ug/L		144	52 - 150	

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 110 80 - 128 80 - 120 4-Bromofluorobenzene (Surr) 100 Dibromofluoromethane (Surr) 105 76 - 132

Lab Sample ID: 440-158947-1 MSD

**Matrix: Water** 

Client Sample ID: Subdrain N

Prep Type: Total/NA

Analysis Batch: 357960										
	-	Sample	Spike	_	MSD			%Rec.		RPD
Analyte		Qualifier	Added		Qualifier Un			Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	27.2	ug	L	109	60 - 130	4	30
1,1,1,2-Tetrachloroethane	ND		25.0	26.2	ug	L	105	60 - 149	2	20
1,1,1-Trichloroethane	ND		25.0	27.0	ug	Ľ	108	70 - 130	3	20
1,1,2,2-Tetrachloroethane	ND		25.0	26.5	ug	Ĺ	106	63 - 130	3	30
1,1,2-Trichloroethane	ND		25.0	26.5	ug	Ľ	106	70 - 130	7	25
1,1-Dichloroethane	ND		25.0	24.9	ug	Ľ	100	65 - 130	0	20
1,1-Dichloroethene	ND		25.0	24.6	ug	Ľ	98	70 - 130	0	20
1,1-Dichloropropene	ND		25.0	25.6	ug	Ľ	102	64 - 130	2	20
1,2,4-Trichlorobenzene	ND		25.0	30.6	ug	Ľ	122	60 - 140	1	20
1,2-Dibromo-3-Chloropropane	ND		25.0	31.2	ug	Ĺ	125	48 - 140	6	30
1,2-Dichlorobenzene	ND		25.0	25.6	ug	'L	103	70 - 130	4	20
1,2-Dichloroethane	ND		25.0	25.8	ug	'L	103	56 - 146	0	20
1,2-Dichloropropane	ND		25.0	25.6	ug	Ĺ	102	69 - 130	0	20
1,3-Dichlorobenzene	ND		25.0	25.3	ug	Ľ	101	70 - 130	1	20
1,3-Dichloropropane	ND		25.0	26.7	ug	Ľ	107	70 - 130	4	25
1,4-Dichlorobenzene	0.70		25.0	25.5	ug	Ľ	99	70 - 130	0	20
2,2-Dichloropropane	ND		25.0	30.4	ug	Ľ	121	69 - 138	12	25
2-Hexanone	ND		25.0	30.6	ug	Ľ	122	10 - 150	7	35
Acetone	ND		25.0	30.7	ug	Ĺ	123	10 - 150	3	35
Benzene	0.44	J	25.0	25.6	ug	Ľ	101	66 - 130	1	20
Bromoform	ND		25.0	30.4	ug	Ľ	122	59 - 150	1	25
Bromomethane	ND		25.0	25.1	ug	Ľ	100	62 - 131	10	25
Carbon disulfide	ND		25.0	24.9	ug		100	49 - 140	1	20
Carbon tetrachloride	ND		25.0	26.9	ug	Ľ	108	60 - 150	2	25
Chlorobenzene	ND		25.0	25.3	ug		101	70 - 130	1	20
Bromochloromethane	ND		25.0	25.8	ug	'L	103	70 - 130	2	25
Chloroethane	ND		25.0	25.5	ug		102	68 - 130	7	25
Chloroform	ND		25.0	25.3	ug		101	70 - 130	2	20
Chloromethane	ND		25.0	21.8	ug.		87	39 - 144	3	25
cis-1,2-Dichloroethene	0.69		25.0	26.0	ug		101	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	27.0	ug		108	70 - 133	2	20

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-158947-1 MSD

**Matrix: Water** 

**Analysis Batch: 357960** 

Client Sample ID: Subdrain N

**Prep Type: Total/NA** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dibromochloromethane	ND		25.0	26.9		ug/L		108	70 - 148	1	25
Dibromomethane	ND		25.0	25.7		ug/L		103	70 - 130	2	25
Bromodichloromethane	ND		25.0	25.4		ug/L		102	70 - 138	0	20
Dichlorodifluoromethane	ND		25.0	21.4		ug/L		86	25 - 142	1	30
Ethylbenzene	ND		25.0	26.2		ug/L		105	70 - 130	0	20
m,p-Xylene	ND		25.0	26.5		ug/L		106	70 - 133	1	25
Methylene Chloride	ND		25.0	25.9		ug/L		103	52 - 130	1	20
Methyl tert-butyl ether	0.75		25.0	27.1		ug/L		105	70 - 130	1	25
Naphthalene	ND		25.0	32.1		ug/L		129	60 - 140	1	30
o-Xylene	ND		25.0	26.1		ug/L		104	70 - 133	0	20
Styrene	ND		25.0	26.6		ug/L		106	29 - 150	0	35
t-Butanol	16		250	270		ug/L		102	70 - 130	1	25
Tetrachloroethene	ND		25.0	26.9		ug/L		108	70 - 137	2	20
Toluene	ND		25.0	25.7		ug/L		103	70 - 130	0	20
trans-1,2-Dichloroethene	ND		25.0	26.1		ug/L		104	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	26.4		ug/L		106	70 - 138	4	25
Trichloroethene	ND		25.0	24.9		ug/L		99	70 - 130	0	20
Trichlorofluoromethane	ND		25.0	26.3		ug/L		105	60 - 150	1	25
Vinyl acetate	ND		25.0	30.2		ug/L		121	23 - 150	6	30
Vinyl chloride	ND		25.0	19.6		ug/L		78	50 - 137	5	30
1,2-Dibromoethane (EDB)	ND		25.0	28.0		ug/L		112	70 - 131	3	25
2-Butanone (MEK)	ND		25.0	27.3		ug/L		109	48 - 140	2	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	32.8		ug/L		131	52 - 150	9	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	109		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

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

Lab Sample ID: MB 440-357934/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 358292** Prep Batch: 357934

MB MB

Analyte **MDL** Unit Result Qualifier RL Prepared Analyzed Dil Fac 1,4-Dioxane ND 1.0 0.25 ug/L 09/25/16 12:13 09/27/16 15:00

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 1,4-Dioxane-d8 (Surr) 56 30 - 120 09/25/16 12:13 09/27/16 15:00

Lab Sample ID: LCS 440-357934/3-A

**Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 358730** Prep Batch: 357934 LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 2.00 1,4-Dioxane 1.12 ug/L 35 - 120

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Client Sample ID: Matrix Spike

%Rec.

Limits

35 - 120

D %Rec

66

%Rec

**Prepared** 

%Rec

101

59

**Client Sample ID: Matrix Spike Duplicate** 

%Rec.

Limits

35 - 120

Client Sample ID: Method Blank

90 - 110

%Rec.

Client Sample ID: Matrix Spike

Prep Type: Total/NA

**Prep Batch: 357934** 

Prep Type: Total/NA

Prep Batch: 357934

Prep Type: Total/NA

**Prep Batch: 357934** 

RPD

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**Client Sample ID: Lab Control Sample** 

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: LCS 440-357934/3-A

**Matrix: Water** 

**Analysis Batch: 358730** 

LCS LCS

Sample Sample

MS MS

%Recovery Qualifier

74

ND

MSD MSD

%Recovery Qualifier

69

ND

Result Qualifier

%Recovery Qualifier Surrogate Limits 1,4-Dioxane-d8 (Surr) 30 - 120 68

Lab Sample ID: 550-69803-C-3-A MS

**Matrix: Water** 

Analysis Batch: 358730

**Analyte** 

1,4-Dioxane

Surrogate 1,4-Dioxane-d8 (Surr)

Lab Sample ID: 550-69803-C-3-B MSD

**Matrix: Water** 

**Analysis Batch: 358730** 

Analyte

1,4-Dioxane

Surrogate 1,4-Dioxane-d8 (Surr)

Sample Sample Result Qualifier

MB MB

ND

Result Qualifier

Spike Added

2.14

Limits 30 - 120

Spike

Added

5.00

Spike

Added

Limits

30 - 120

2.13

MS MS

MSD MSD

1.25

Result Qualifier

1.40

Result Qualifier

Unit

ug/L

Unit

ug/L

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-356512/4

**Matrix: Water** 

**Analysis Batch: 356512** 

Analyte

Chloride

Lab Sample ID: LCS 440-356512/2 **Matrix: Water** 

Analyte

**Analysis Batch: 356512** 

Chloride

Lab Sample ID: 440-158936-L-1 MS **Matrix: Water** 

**Analysis Batch: 356512** 

Sample Sample Spike Result Qualifier Analyte Chloride 69

Added 25.0

RL

0.50

MS MS Result Qualifier 96.9

**MDL** Unit

0.25 mg/L

LCS LCS

5.04

Result Qualifier

Unit mg/L

Unit

mg/L

D

D %Rec

Limits 80 - 120 112

**RPD** 

Limit

25

Prep Type: Total/NA

Dil Fac Analyzed

09/19/16 12:33

Dil Fac

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

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 440-158936-L-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 356512** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 25.0 Chloride 98.2 mg/L 117 80 - 120 20 69

Lab Sample ID: MB 440-356759/4 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 356759** MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Prepared 0.50 Chloride  $\overline{\mathsf{ND}}$ 0.25 mg/L 09/20/16 11:41

Lab Sample ID: LCS 440-356759/6 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 356759** 

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Chloride 5.00 5.05 mg/L 101 90 - 110

**Client Sample ID: Duplicate** Lab Sample ID: 440-158947-6 MS Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 356759** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 11 25.0 36.3 99 80 - 120 mg/L

Lab Sample ID: 440-158947-6 MSD **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 356759** 

Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 25.0 99 11 36.2 mg/L 80 - 120 20

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-358428/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total Recoverable Prep Batch: 358428** 

**Analysis Batch: 358766** 

MB MB RL **MDL** Unit Analyte Result Qualifier D Prepared Analyzed Dil Fac 0.25 mg/L Potassium 0.50 09/27/16 13:24 09/28/16 15:45 ND

Lab Sample ID: LCS 440-358428/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Water** 

**Analysis Batch: 358766** 

**Prep Type: Total Recoverable** Prep Batch: 358428 Spike LCS LCS %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits Potassium 10.0 9.47 mg/L 95 80 - 120

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-158947-1 MS Client Sample ID: Subdrain N **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 358766 Prep Batch: 358428** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 10.0 75 <sub>-</sub> 125 Potassium 7.9 17.8 mg/L

Lab Sample ID: 440-158947-1 MSD Client Sample ID: Subdrain N **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 358766 Prep Batch: 358428** Sample Sample Spike MSD MSD **RPD** %Rec. Result Qualifier Added Analyte Result Qualifier Limits **RPD** Limit Unit %Rec

17.9

mg/L

101

75 - 125

Prep Type: Total/NA

20

10.0

Method: 410.4 - COD

Potassium

Lab Sample ID: MB 440-358479/3 Client Sample ID: Method Blank

7.9

**Matrix: Water** 

**Analysis Batch: 358479** MB MB

Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 20 09/27/16 16:14 **Chemical Oxygen Demand**  $\overline{\mathsf{ND}}$ 10 mg/L

Lab Sample ID: LCS 440-358479/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 358479** 

Spike LCS LCS %Rec. Added Result Qualifier %Rec Limits Unit **Chemical Oxygen Demand** 200 205 mg/L 103 90 - 110

Lab Sample ID: 440-158947-6 MS **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 358479** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Unit %Rec Limits 200 250 Chemical Oxygen Demand 70 90 70 - 120 mg/L

Lab Sample ID: 440-158947-6 MSD **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 358479** 

Sample Sample Spike MSD MSD %Rec. **RPD** Added Limits RPD Analyte Result Qualifier Result Qualifier Unit %Rec Limit **Chemical Oxygen Demand** 200 244 70 mg/L 87 70 - 120 15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-357558/30 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357558** 

MB MB Analyte Result Qualifier RL **RL** Unit D Prepared Analyzed Dil Fac Alkalinity as CaCO3 ND 4.0 4.0 mg/L 09/22/16 08:14

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 440-357558/29 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357558** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 85.8 Alkalinity as CaCO3 89.9 mg/L 105 80 - 120

Lab Sample ID: 440-158947-3 DU Client Sample ID: CM-9R3

**Matrix: Water** 

**Analysis Batch: 357558** 

Sample Sample DU DU **RPD** Result Qualifier Analyte Result Qualifier **RPD** Limit Unit D Alkalinity as CaCO3 140 138 mg/L 0.3 20

Lab Sample ID: MB 440-357824/30 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 357824

MB MB Result Qualifier RL **RL** Unit Dil Fac Analyte Prepared Analyzed Alkalinity as CaCO3  $\overline{\mathsf{ND}}$ 4.0 4.0 mg/L 09/23/16 08:39

Lab Sample ID: LCS 440-357824/29 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357824** 

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Alkalinity as CaCO3 85.8 86.8 101 80 - 120 mg/L

Lab Sample ID: 440-159016-B-1 DU **Client Sample ID: Duplicate** 

**Matrix: Water** 

**Analysis Batch: 357824** 

DU DU RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit RPD Limit 172 Alkalinity as CaCO3 170 mg/L 0.3 20

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

Lab Sample ID: MB 440-357339/1 **Client Sample ID: Method Blank Matrix: Water** 

**Analysis Batch: 357339** 

MB MB RL **MDL** Unit Analyzed Analyte Result Qualifier Dil Fac Prepared 10 mg/L **Total Dissolved Solids** 5.0 09/22/16 10:49 ND

Lab Sample ID: LCS 440-357339/2 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357339** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits **Total Dissolved Solids** 1000 986 mg/L 99 90 - 110

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Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

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

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

Lab Sample ID: 440-158645-H-11 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357339** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit RPD Limit D **Total Dissolved Solids** 8700 8700 mg/L 0.1

Lab Sample ID: MB 440-357654/1 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357654** 

MB MB **MDL** Unit Analyte Result Qualifier RL Prepared Analyzed Dil Fac Total Dissolved Solids 10  $\overline{\mathsf{ND}}$ 5.0 mg/L 09/23/16 09:39

Lab Sample ID: LCS 440-357654/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 357654

Spike LCS LCS %Rec. Added Result Qualifier D %Rec Limits Analyte Unit Total Dissolved Solids 1000 944 mg/L 94 90 - 110

Lab Sample ID: 440-159392-C-1 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357654** 

DU DU Sample Sample RPD Result Qualifier Result Qualifier Unit **RPD** Limit Total Dissolved Solids 1500 1470 mg/L

Lab Sample ID: MB 440-357870/1 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357870** 

MR MR

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids ND 10 5.0 mg/L 09/24/16 12:14

Lab Sample ID: LCS 440-357870/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 357870

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits **Total Dissolved Solids** 1000 99 992 mg/L 90 - 110

Lab Sample ID: 440-159114-A-1 DU

**Matrix: Water** 

Analysis Batch: 357870

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier RPD Limit Analyte Unit D **Total Dissolved Solids** 1000 1030 mg/L 0.3

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**Client Sample ID: Duplicate** 

Prep Type: Total/NA

**Prep Batch: 356962** 

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-356962/2-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357017** MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac **Prepared** 0.50 09/21/16 05:00 09/21/16 08:31  $\overline{\mathsf{ND}}$ 0.10 mg/L Ammonia (as N)

Lab Sample ID: LCS 440-356962/1-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357017 Prep Batch: 356962** Spike LCS LCS %Rec.

Added Limits Analyte Result Qualifier Unit D %Rec Ammonia (as N) 2.50 2.24 mg/L 89 85 - 115

Lab Sample ID: 440-159104-A-1-C MS Client Sample ID: Matrix Spike **Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 357017 **Prep Batch: 356962** Sample Sample Spike MS MS %Rec.

Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Ammonia (as N) 0.93 2.50 3.34 96 75 - 125 mg/L

Lab Sample ID: 440-159104-A-1-D MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357017 Prep Batch: 356962** Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Ammonia (as N) 0.93 2.50 3.22 92 75 - 125

Lab Sample ID: 440-159104-A-1-B DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357017 Prep Batch: 356962** 

mg/L

DU DU Sample Sample RPD Analyte Result Qualifier Result Qualifier Unit RPD Limit Ammonia (as N) 0.93 0.930 mg/L 15

Method: SM 5310C - TOC

Lab Sample ID: MB 440-357124/7 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357124** 

MB MB RL **MDL** Unit Analyte Result Qualifier Dil Fac Prepared Analyzed **Total Organic Carbon** 0.10 0.050 mg/L 09/21/16 06:48 ND

Lab Sample ID: LCS 440-357124/6 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357124** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits **Total Organic Carbon** 10.0 10.1 mg/L 101 90 - 110

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

Method: SM 5310C - TOC (Continued)

Lab Sample ID: MRL 440-357124/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357124** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 0.100 Total Organic Carbon 0.0869 J mg/L 87 50 - 150

Lab Sample ID: 440-159012-I-4 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357124** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Limits Analyte Result Qualifier Unit %Rec Total Organic Carbon 0.13 10.0 9.92 mg/L 98 80 - 120

Lab Sample ID: 440-159012-I-4 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 357124

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec Total Organic Carbon 0.13 10.0 9.78 mg/L 97 80 - 120

Client Sample ID: Method Blank Lab Sample ID: MB 440-357260/9 Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357260** 

MR MR Result Qualifier RL **MDL** Unit Prepared Dil Fac Analyzed Total Organic Carbon  $\overline{\mathsf{ND}}$ 0.10 0.050 mg/L 09/21/16 14:01

Lab Sample ID: LCS 440-357260/8 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357260** 

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

Lab Sample ID: MRL 440-357260/5 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 357260

Spike MRL MRL %Rec. Added Result Qualifier Analyte Unit %Rec Limits **Total Organic Carbon** 0.100 0.0869 J 87 50 - 150 mg/L

Lab Sample ID: 440-158897-AH-1 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 357260

Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Total Organic Carbon 3.5 10.0 13.5 mg/L 100 80 - 120

Lab Sample ID: 440-158897-AH-1 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Alialysis Dalcii. 301200											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Organic Carbon	3.5		10.0	13.6		mg/L		101	80 - 120	1	20

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## **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

## **GC/MS VOA**

#### Analysis Batch: 357838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-2 - RA	Combined Subdrains	Total/NA	Water	8260B	
MB 440-357838/4	Method Blank	Total/NA	Water	8260B	
LCS 440-357838/5	Lab Control Sample	Total/NA	Water	8260B	
720-74623-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
720-74623-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

#### **Analysis Batch: 357960**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	8260B	
440-158947-2	Combined Subdrains	Total/NA	Water	8260B	
440-158947-3	CM-9R3	Total/NA	Water	8260B	
440-158947-4	CM-10R	Total/NA	Water	8260B	
440-158947-5	CM-11R	Total/NA	Water	8260B	
440-158947-6	Duplicate	Total/NA	Water	8260B	
440-158947-7	QCAB	Total/NA	Water	8260B	
440-158947-8	QCTB	Total/NA	Water	8260B	
MB 440-357960/4	Method Blank	Total/NA	Water	8260B	
LCS 440-357960/5	Lab Control Sample	Total/NA	Water	8260B	
440-158947-1 MS	Subdrain N	Total/NA	Water	8260B	
440-158947-1 MSD	Subdrain N	Total/NA	Water	8260B	

## **GC/MS Semi VOA**

#### **Prep Batch: 357934**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	3520C	
440-158947-2	Combined Subdrains	Total/NA	Water	3520C	
440-158947-3	CM-9R3	Total/NA	Water	3520C	
440-158947-4	CM-10R	Total/NA	Water	3520C	
440-158947-5	CM-11R	Total/NA	Water	3520C	
440-158947-6	Duplicate	Total/NA	Water	3520C	
MB 440-357934/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-357934/3-A	Lab Control Sample	Total/NA	Water	3520C	
550-69803-C-3-A MS	Matrix Spike	Total/NA	Water	3520C	
550-69803-C-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

#### **Analysis Batch: 358292**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	8270C	357934
440-158947-2	Combined Subdrains	Total/NA	Water	8270C	357934
440-158947-3	CM-9R3	Total/NA	Water	8270C	357934
440-158947-4	CM-10R	Total/NA	Water	8270C	357934
440-158947-5	CM-11R	Total/NA	Water	8270C	357934
440-158947-6	Duplicate	Total/NA	Water	8270C	357934
MB 440-357934/1-A	Method Blank	Total/NA	Water	8270C	357934

#### **Analysis Batch: 358730**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-357934/3-A	Lab Control Sample	Total/NA	Water	8270C	357934
550-69803-C-3-A MS	Matrix Spike	Total/NA	Water	8270C	357934

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## **QC Association Summary**

Client: Geo-Logic Associates

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TestAmerica Job ID: 440-158947-1

## GC/MS Semi VOA (Continued)

#### **Analysis Batch: 358730 (Continued)**

La	b Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
55	0-69803-C-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	357934

#### HPLC/IC

#### Analysis Batch: 356512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	300.0	
MB 440-356512/4	Method Blank	Total/NA	Water	300.0	
LCS 440-356512/2	Lab Control Sample	Total/NA	Water	300.0	
440-158936-L-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-158936-L-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### **Analysis Batch: 356759**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-2	Combined Subdrains	Total/NA	Water	300.0	_
440-158947-3	CM-9R3	Total/NA	Water	300.0	
440-158947-4	CM-10R	Total/NA	Water	300.0	
440-158947-5	CM-11R	Total/NA	Water	300.0	
440-158947-6	Duplicate	Total/NA	Water	300.0	
MB 440-356759/4	Method Blank	Total/NA	Water	300.0	
LCS 440-356759/6	Lab Control Sample	Total/NA	Water	300.0	
440-158947-6 MS	Duplicate	Total/NA	Water	300.0	
440-158947-6 MSD	Duplicate	Total/NA	Water	300.0	

#### **Metals**

#### **Prep Batch: 358428**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total Recoverable	Water	3005A	
440-158947-2	Combined Subdrains	Total Recoverable	Water	3005A	
440-158947-3	CM-9R3	Total Recoverable	Water	3005A	
440-158947-4	CM-10R	Total Recoverable	Water	3005A	
440-158947-5	CM-11R	Total Recoverable	Water	3005A	
440-158947-6	Duplicate	Total Recoverable	Water	3005A	
MB 440-358428/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358428/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-158947-1 MS	Subdrain N	Total Recoverable	Water	3005A	
440-158947-1 MSD	Subdrain N	Total Recoverable	Water	3005A	

## **Analysis Batch: 358766**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total Recoverable	Water	6010B	358428
440-158947-2	Combined Subdrains	Total Recoverable	Water	6010B	358428
440-158947-3	CM-9R3	Total Recoverable	Water	6010B	358428
440-158947-4	CM-10R	Total Recoverable	Water	6010B	358428
440-158947-5	CM-11R	Total Recoverable	Water	6010B	358428
440-158947-6	Duplicate	Total Recoverable	Water	6010B	358428
MB 440-358428/1-A	Method Blank	Total Recoverable	Water	6010B	358428
LCS 440-358428/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358428
440-158947-1 MS	Subdrain N	Total Recoverable	Water	6010B	358428

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Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

## **Metals (Continued)**

#### **Analysis Batch: 358766 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1 MSD	Subdrain N	Total Recoverable	Water	6010B	358428

## **General Chemistry**

#### **Prep Batch: 356962**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	SM 4500 NH3 B	
440-158947-2	Combined Subdrains	Total/NA	Water	SM 4500 NH3 B	
440-158947-3	CM-9R3	Total/NA	Water	SM 4500 NH3 B	
440-158947-4	CM-10R	Total/NA	Water	SM 4500 NH3 B	
440-158947-5	CM-11R	Total/NA	Water	SM 4500 NH3 B	
440-158947-6	Duplicate	Total/NA	Water	SM 4500 NH3 B	
MB 440-356962/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-356962/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-159104-A-1-C MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-159104-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-159104-A-1-B DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

#### **Analysis Batch: 357017**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	SM 4500 NH3 D	356962
440-158947-2	Combined Subdrains	Total/NA	Water	SM 4500 NH3 D	356962
440-158947-3	CM-9R3	Total/NA	Water	SM 4500 NH3 D	356962
440-158947-4	CM-10R	Total/NA	Water	SM 4500 NH3 D	356962
440-158947-5	CM-11R	Total/NA	Water	SM 4500 NH3 D	356962
440-158947-6	Duplicate	Total/NA	Water	SM 4500 NH3 D	356962
MB 440-356962/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	356962
LCS 440-356962/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	356962
440-159104-A-1-C MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	356962
440-159104-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	356962
440-159104-A-1-B DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	356962

#### **Analysis Batch: 357124**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-2	Combined Subdrains	Total/NA	Water	SM 5310C	
440-158947-3	CM-9R3	Total/NA	Water	SM 5310C	
440-158947-4	CM-10R	Total/NA	Water	SM 5310C	
440-158947-5	CM-11R	Total/NA	Water	SM 5310C	
440-158947-6	Duplicate	Total/NA	Water	SM 5310C	
MB 440-357124/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-357124/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-357124/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-159012-I-4 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-159012-I-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

#### **Analysis Batch: 357260**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	SM 5310C	
MB 440-357260/9	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-357260/8	Lab Control Sample	Total/NA	Water	SM 5310C	

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

## **General Chemistry (Continued)**

#### **Analysis Batch: 357260 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 440-357260/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-158897-AH-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-158897-AH-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

#### **Analysis Batch: 357339**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-3	CM-9R3	Total/NA	Water	SM 2540C	
MB 440-357339/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-357339/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-158645-H-11 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 357558**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	SM 2320B	
440-158947-2	Combined Subdrains	Total/NA	Water	SM 2320B	
440-158947-3	CM-9R3	Total/NA	Water	SM 2320B	
MB 440-357558/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357558/29	Lab Control Sample	Total/NA	Water	SM 2320B	
440-158947-3 DU	CM-9R3	Total/NA	Water	SM 2320B	

#### Analysis Batch: 357654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	SM 2540C	
440-158947-2	Combined Subdrains	Total/NA	Water	SM 2540C	
MB 440-357654/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-357654/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-159392-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### Analysis Batch: 357824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-4	CM-10R	Total/NA	Water	SM 2320B	
440-158947-5	CM-11R	Total/NA	Water	SM 2320B	
440-158947-6	Duplicate	Total/NA	Water	SM 2320B	
MB 440-357824/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357824/29	Lab Control Sample	Total/NA	Water	SM 2320B	
440-159016-B-1 DU	Duplicate	Total/NA	Water	SM 2320B	

### **Analysis Batch: 357870**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-4	CM-10R	Total/NA	Water	SM 2540C	_
440-158947-5	CM-11R	Total/NA	Water	SM 2540C	
440-158947-6	Duplicate	Total/NA	Water	SM 2540C	
MB 440-357870/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-357870/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-159114-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 358479**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-1	Subdrain N	Total/NA	Water	410.4	
440-158947-2	Combined Subdrains	Total/NA	Water	410.4	
440-158947-3	CM-9R3	Total/NA	Water	410.4	

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# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

## **General Chemistry (Continued)**

#### **Analysis Batch: 358479 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-158947-4	CM-10R	Total/NA	Water	410.4	
440-158947-5	CM-11R	Total/NA	Water	410.4	
440-158947-6	Duplicate	Total/NA	Water	410.4	
MB 440-358479/3	Method Blank	Total/NA	Water	410.4	
LCS 440-358479/4	Lab Control Sample	Total/NA	Water	410.4	
440-158947-6 MS	Duplicate	Total/NA	Water	410.4	
440-158947-6 MSD	Duplicate	Total/NA	Water	410.4	

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## **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

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#### **Qualifiers**

#### **GC/MS VOA**

Qualifier Qualifier Description

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	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J	Indicates an Estimated Value for TICs
T	Result is a tentatively identified compound (TIC) and an estimated value.

#### **General Chemistry**

Qualitier	Qualifier Description
۸	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit

MDL	Method Detection Limit
ML	Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control RER Relative error ratio

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)

## **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-158947-1

## **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-13-16 *
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17 *
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

<sup>\*</sup> Certification renewal pending - certification considered valid.

CHAIN OF CUSTODY FORM 17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297 THE LEADER IN ENVIRONMENTAL TESTING **TestAmerica** 

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~9769人 ~~ 人人人	9,18,18	14.30	_	A.	X	_				48 hours	c	normal
Relinquished By: \ Date/Time: Received in Lab/69	Date / Time:	_	Received in Lab	Lab	The state of the s		Date/Time:	13	0	Sample Integrity:	(Chec	k) on ice
Note: By relinquishing samples to Tes	tAmerica, client agre	es to pay for the	services rec	ME.	his chain	of custod	y form an	d any addi	tional and	chain of custody form and any additional analyses performed on this project	ed on this pro	oject.
Payment for services is due within 30	days from the date o	f invoice. Sample	e(s) will be d	\$	after 30 days	ays.			ノ, `		ZXX	さ

## **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-158947-1

Login Number: 158947 List Source: TestAmerica Irvine

List Number: 1

Creator: Soderblom, Tim

orcator. Goderbiom, rim		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or ampered 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	
s the Field Sampler's name present on COC?	True	
here 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	

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-159066-1

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: 9/30/2016 5:31:55 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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# **Sample Summary**

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

TestAmerica Job ID: 440-159066-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-159066-1	DW-1	Water	09/20/16 09:45	09/20/16 18:25
440-159066-2	DW-3	Water	09/20/16 14:23	09/20/16 18:25
440-159066-3	PZ-4	Water	09/20/16 10:45	09/20/16 18:25
440-159066-4	LY-7	Water	09/20/16 08:28	09/20/16 18:25
440-159066-5	PZ-2	Water	09/20/16 11:55	09/20/16 18:25
440-159066-6	MW-6	Water	09/20/16 10:00	09/20/16 18:25
440-159066-7	MW-9	Water	09/20/16 13:41	09/20/16 18:25
440-159066-8	MW-13R	Water	09/20/16 15:10	09/20/16 18:25
440-159066-9	MW-14	Water	09/20/16 07:58	09/20/16 18:25
440-159066-10	QCAB	Water	09/20/16 00:01	09/20/16 18:25
440-159066-11	QCTB	Water	09/20/16 00:01	09/20/16 18:25

#### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Job ID: 440-159066-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-159066-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/20/2016 6:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.2° C, 1.3° C and 2.4° C.

#### GC/MS VOA

Method(s) 8260B: The following sample was collected in properly preserved vial for analysis of volatile organic compounds (VOCs). However, the pH of 6 was outside the required criteria when verified by the laboratory, and corrective action was not possible: LY-7 (440-159066-4). The sample was analyzed within 7 days per EPA recommendation.

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

#### GC/MS Semi VOA

Method(s) 8270C: The following sample required a dilution due to the nature of the sample matrix: LY-7 (440-159066-4). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

#### HPLC/IC

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

#### Metals

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

#### **General Chemistry**

Method(s) SM 5310C: The continuing calibration blank (CCB) for analytical batch 440-357124 contained Total Organic Carbon above the reporting limit (RL). All reported samples associated with this CCB contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples were not performed.

Method(s) SM 5310C: The reference method 5310C requires samples to be preserved to a pH<2. The following sample was received with insufficient preservation at a pH>2: LY-7 (440-159066-4). The pH of the sample was adjusted to the appropriate pH<2 using phosphoric acid 1:1 in the laboratory prior to analysis.

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

#### **Organic Prep**

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

#### **VOA Prep**

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

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-1

**Matrix: Water** 

Client Sample ID: DW-1

Date Collected: 09/20/16 09:45 Date Received: 09/20/16 18:25

Method: 8260B - Volatile Org	•				_	_		<b></b> -
Analyte	Result Qualifier	RL	MDL		<u>D</u> .	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND	1.0	0.40	-			09/23/16 14:53	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	-			09/23/16 14:53	
1,1,1-Trichloroethane	ND	0.50	0.25	-			09/23/16 14:53	
1,1,2,2-Tetrachloroethane	ND	0.50		ug/L			09/23/16 14:53	
I,1,2-Trichloroethane	ND	0.50	0.25	-			09/23/16 14:53	
1,1-Dichloroethane	ND	0.50	0.25	-			09/23/16 14:53	
1,1-Dichloroethene	ND	0.50	0.25	-			09/23/16 14:53	
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/23/16 14:53	
,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/23/16 14:53	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/23/16 14:53	
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/23/16 14:53	
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/23/16 14:53	
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/23/16 14:53	
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/23/16 14:53	
1,3-Dichloropropane	ND	0.50	0.25	-			09/23/16 14:53	
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/23/16 14:53	
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/23/16 14:53	
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/23/16 14:53	
2-Hexanone	ND	5.0	2.5	ug/L			09/23/16 14:53	
Acetone	ND	20		ug/L			09/23/16 14:53	
Acetonitrile	ND	20		ug/L			09/23/16 14:53	
Benzene	ND	0.50	0.25	-			09/23/16 14:53	
Allyl chloride	ND	1.0	0.50	-			09/23/16 14:53	
Bromoform	ND	1.0	0.40	-			09/23/16 14:53	
Bromomethane	ND	0.50	0.25				09/23/16 14:53	
Carbon disulfide	ND	1.0	0.50	-			09/23/16 14:53	
Carbon tetrachloride	ND	0.50	0.25	•			09/23/16 14:53	
Chlorobenzene	ND	0.50	0.25	-			09/23/16 14:53	
Bromochloromethane	ND	0.50	0.25	-			09/23/16 14:53	
Chloroethane	ND	1.0	0.40	-			09/23/16 14:53	
Chloroform	ND	0.50	0.25	-			09/23/16 14:53	
Chloromethane	ND	0.50	0.25	-			09/23/16 14:53	
cis-1,2-Dichloroethene	ND	0.50	0.25	-			09/23/16 14:53	
cis-1,3-Dichloropropene	ND	0.50	0.25	•			09/23/16 14:53	
Dibromochloromethane	ND	0.50	0.25	-			09/23/16 14:53	
Dibromomethane	ND	0.50	0.25	J			09/23/16 14:53	
Bromodichloromethane	ND	0.50		ug/L			09/23/16 14:53	
Dichlorodifluoromethane	ND	1.0		ug/L			09/23/16 14:53	
Ethyl methacrylate	ND	2.0		ug/L			09/23/16 14:53	
Ethylbenzene	ND	0.50		ug/L			09/23/16 14:53	
odomethane	ND ND	2.0		ug/L ug/L			09/23/16 14:53	
	ND ND	2.0 25		ug/L ug/L			09/23/16 14:53	
sobutyl alcohol				-				
n,p-Xylene	ND ND	1.0 5.0		ug/L			09/23/16 14:53	
Methylacrylonitrile	ND ND	5.0		ug/L			09/23/16 14:53	
Methyl methacrylate	ND	2.0		ug/L			09/23/16 14:53	
Methylene Chloride	ND	2.0		ug/L			09/23/16 14:53	
Methyl tert-butyl ether	ND	0.50		ug/L			09/23/16 14:53	
Naphthalene o-Xylene	ND ND	1.0 0.50		ug/L ug/L			09/23/16 14:53 09/23/16 14:53	

TestAmerica Irvine

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**Client Sample ID: DW-1** 

Lab Sample ID: 440-159066-1

Date Collected: 09/20/16 09:45 Matrix: Water Date Received: 09/20/16 18:25

		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil F
Propionitrile	ND		20		ug/L			09/23/16 14:53	
Styrene	ND		0.50	0.25	ug/L			09/23/16 14:53	
-Butanol	ND		10	5.0	ug/L			09/23/16 14:53	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/23/16 14:53	
Tetrahydrofuran	ND		10	5.0	ug/L			09/23/16 14:53	
Toluene	ND		0.50	0.25	ug/L			09/23/16 14:53	
rans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 14:53	
rans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 14:53	
rans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/23/16 14:53	
Trichloroethene	ND		0.50	0.25	ug/L			09/23/16 14:53	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/23/16 14:53	
/inyl acetate	ND		4.0	2.0	ug/L			09/23/16 14:53	
/inyl chloride	ND		0.50	0.25	ug/L			09/23/16 14:53	
I,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/23/16 14:53	
-Butanone (MEK)	ND		5.0		ug/L			09/23/16 14:53	
-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/23/16 14:53	
Acrylonitrile	ND		2.0		ug/L			09/23/16 14:53	
Acrolein	ND		5.0		ug/L			09/23/16 14:53	
Fentatively Identified Compound	Est. Result	Qualifier	Unit L	D .	RT	CAS No.	Prepared	Analyzed	Dil l
Cyclopropane	3.7	TJN	ug/L	<u></u>	.14	75-19-4		09/23/16 14:53	
Inknown	18	TJ	ug/L	17.	21			09/23/16 14:53	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil
Toluene-d8 (Surr)	114	-	80 - 128					09/23/16 14:53	
1-Bromofluorobenzene (Surr)	103		80 - 120					09/23/16 14:53	
Dibromofluoromethane (Surr)	105		76 - 132					09/23/16 14:53	
Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile		mpounds						09/23/16 14:53	
Method: 8270C - Semivolatile	e Organic Co	mpounds Qualifier		MDL		D	Prepared	09/23/16 14:53 Analyzed	Dil I
Method: 8270C - Semivolatile	e Organic Co	•	s (GC/MS)		Unit ug/L	<u>D</u>	•	Analyzed	Dill
Method: 8270C - Semivolatile Analyte 1,4-Dioxane	Organic Co Result	Qualifier	G (GC/MS)			<u>D</u>	•	Analyzed 09/28/16 21:17	
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate	e Organic Co Result	Qualifier	G (GC/MS) RL 0.96			<u>D</u>	09/26/16 10:51	Analyzed 09/28/16 21:17  Analyzed	
Method: 8270C - Semivolatile Analyte 1,4-Dioxane 6,4-Dioxane-d8 (Surr)	e Organic Co Result ND %Recovery 54	Qualifier  Qualifier	G (GC/MS) RL 0.96			<u>D</u>	09/26/16 10:51  Prepared	Analyzed 09/28/16 21:17  Analyzed	
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C	e Organic Co Result ND %Recovery 54 Chromatogra	Qualifier  Qualifier	G (GC/MS) RL 0.96		ug/L	<u>D</u>	09/26/16 10:51  Prepared	Analyzed 09/28/16 21:17  Analyzed	Dil
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte	e Organic Co Result ND %Recovery 54 Chromatogra	Qualifier  Qualifier	G (GC/MS) RL 0.96  Limits 30 - 120	0.24 MDL	ug/L		09/26/16 10:51  Prepared 09/26/16 10:51	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17	Dil
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride	e Organic Co Result ND  %Recovery  54  Chromatogra  Result  14	Qualifier  Qualifier  phy Qualifier	G (GC/MS) RL 0.96  Limits 30 - 120	0.24 MDL	ug/L Unit		09/26/16 10:51  Prepared 09/26/16 10:51	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed	Dil
Method: 8270C - Semivolatile Analyte J.4-Dioxane  Surrogate J.4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP)	e Organic Co Result ND  %Recovery 54  Chromatogra Result 14  - Total Reco	Qualifier  Qualifier  phy Qualifier	G (GC/MS) RL 0.96  Limits 30 - 120	0.24 MDL 5.0	ug/L Unit		09/26/16 10:51  Prepared 09/26/16 10:51	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed	Dil I
Method: 8270C - Semivolatile Analyte ,4-Dioxane  Surrogate ,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte	e Organic Co Result ND  %Recovery 54  Chromatogra Result 14  - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	Company   Comp	0.24 MDL 5.0	ug/L  Unit mg/L	D	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared	Analyzed  09/28/16 21:17  Analyzed  09/28/16 21:17  Analyzed  09/21/16 18:12	Dil
Method: 8270C - Semivolatile Analyte J.4-Dioxane Surrogate J.4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium	e Organic Co Result ND  %Recovery 54  Chromatogra Result 14  - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	Company   Comp	0.24 MDL 5.0	ug/L  Unit mg/L  Unit	D	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared	Analyzed  09/28/16 21:17  Analyzed  09/28/16 21:17  Analyzed  09/21/16 18:12  Analyzed	Dil I
Method: 8270C - Semivolatile Analyte ,4-Dioxane  Surrogate (,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte	chromatogra Result 14 - Total Reco Result 1.6	Qualifier  Qualifier  phy Qualifier  Qualifier	RL   0.50   RL	MDL 5.0 MDL 0.25	Unit mg/L Unit mg/L Unit	D	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed 09/21/16 18:12  Analyzed 09/26/16 23:17  Analyzed	Dil I
Method: 8270C - Semivolatile Analyte ,4-Dioxane  Surrogate (,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte	chromatogra Result ND  %Recovery 54  Chromatogra Result 14  - Total Reco Result 1.6	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL   0.50   RL	MDL 5.0 MDL 0.25	Unit mg/L	D_	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared  09/26/16 10:58	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed 09/21/16 18:12  Analyzed 09/26/16 23:17	Dil I
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 4,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium General Chemistry Analyte Chemical Oxygen Demand	chromatogra Result 14 - Total Reco Result 1.6	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL   0.50   RL	0.24  MDL  5.0  MDL  0.25	Unit mg/L Unit mg/L Unit	D_	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared  09/26/16 10:58	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed 09/21/16 18:12  Analyzed 09/26/16 23:17  Analyzed	Dil I
Method: 8270C - Semivolatile Analyte ,4-Dioxane  Surrogate ,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Fotal Dissolved Solids	Chromatogra Result 14 1 - Total Recorrance Result 1.6 Result 22	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL   0.50   RL	MDL 5.0 MDL 0.25 MDL 10 25	Unit mg/L  Unit mg/L  Unit mg/L	D_	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared  09/26/16 10:58	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed 09/21/16 18:12  Analyzed 09/26/16 23:17  Analyzed 09/27/16 08:58	Dil I
Method: 8270C - Semivolatile Analyte J.4-Dioxane Surrogate J.4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids Ammonia (as N)	Chromatogra Result 14  - Total Recoresult 1.6  Result 22 3300	Qualifier  Qualifier  phy Qualifier  overable Qualifier  Qualifier	RL   0.50   RL   20   50   50   6   C   C   C   C   C   C   C   C   C	MDL 5.0 MDL 0.25 MDL 10 25	Unit mg/L Unit mg/L unit mg/L mg/L mg/L mg/L	D_	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared  09/26/16 10:58  Prepared	Analyzed 09/28/16 21:17  Analyzed 09/28/16 21:17  Analyzed 09/21/16 18:12  Analyzed 09/26/16 23:17  Analyzed 09/27/16 08:58 09/24/16 12:10	Dil I
, ,	Chromatogra Result 14  - Total Reco Result 1.6  Result 1.6  Result 22 3300 1.8 3.3	Qualifier  Qualifier  phy Qualifier  overable Qualifier  Qualifier	RL   0.50   RL   20   50   0.50	MDL 5.0 MDL 0.25 MDL 10 25 0.10	Unit mg/L Unit mg/L unit mg/L mg/L mg/L mg/L	D_	09/26/16 10:51  Prepared  09/26/16 10:51  Prepared  Prepared  09/26/16 10:58  Prepared	Analyzed  09/28/16 21:17  Analyzed  09/28/16 21:17  Analyzed  09/21/16 18:12  Analyzed  09/26/16 23:17  Analyzed  09/27/16 08:58  09/24/16 12:10  09/21/16 08:31	Dil I

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-2

**Matrix: Water** 

Client Sample ID: DW-3

Date Collected: 09/20/16 14:23 Date Received: 09/20/16 18:25

Method: 8260B - Volatile Org <sup>Analyte</sup>	Result C	Qualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane		1.0	0.40	ug/L		•	09/23/16 15:20	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	-			09/23/16 15:20	
1,1,1-Trichloroethane	ND	0.50	0.25	•			09/23/16 15:20	
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	-			09/23/16 15:20	
1,1,2-Trichloroethane	ND	0.50	0.25	-			09/23/16 15:20	
1,1-Dichloroethane	ND	0.50	0.25	-			09/23/16 15:20	
1,1-Dichloroethene	ND	0.50	0.25	-			09/23/16 15:20	
1,1-Dichloropropene	ND	0.50	0.25				09/23/16 15:20	
1,2,4-Trichlorobenzene	ND	1.0	0.40	-			09/23/16 15:20	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	-			09/23/16 15:20	
1,2-Dichlorobenzene	ND	0.50	0.25	-			09/23/16 15:20	
1,2-Dichlorobenzene	ND ND	0.50	0.25	-			09/23/16 15:20	
	ND	0.50	0.25	-			09/23/16 15:20	
1,2-Dichloropropane				-				
1,3-Dichlorobenzene	ND ND	0.50	0.25	-			09/23/16 15:20 09/23/16 15:20	
1,3-Dichloropropane		0.50	0.25					
1,4-Dichlorobenzene	ND	0.50	0.25				09/23/16 15:20	
2,2-Dichloropropane	ND	1.0	0.40	-			09/23/16 15:20	
2-Chloro-1,3-butadiene	ND	1.0	0.50	-			09/23/16 15:20	
2-Hexanone	ND	5.0		ug/L			09/23/16 15:20	
Acetone	ND	20		ug/L			09/23/16 15:20	
Acetonitrile	ND	20		ug/L			09/23/16 15:20	
Benzene	ND	0.50	0.25				09/23/16 15:20	
Allyl chloride	ND	1.0	0.50	-			09/23/16 15:20	
Bromoform	ND	1.0	0.40	-			09/23/16 15:20	
Bromomethane	ND	0.50	0.25	-			09/23/16 15:20	
Carbon disulfide	ND	1.0	0.50	-			09/23/16 15:20	
Carbon tetrachloride	ND	0.50	0.25	-			09/23/16 15:20	
Chlorobenzene	ND	0.50	0.25	-			09/23/16 15:20	
Bromochloromethane	ND	0.50	0.25	ug/L			09/23/16 15:20	
Chloroethane	ND	1.0	0.40	ug/L			09/23/16 15:20	
Chloroform	ND	0.50	0.25	ug/L			09/23/16 15:20	
Chloromethane	ND	0.50	0.25	ug/L			09/23/16 15:20	
cis-1,2-Dichloroethene	ND	0.50	0.25	ug/L			09/23/16 15:20	
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			09/23/16 15:20	
Dibromochloromethane	ND	0.50	0.25	ug/L			09/23/16 15:20	
Dibromomethane	ND	0.50	0.25	ug/L			09/23/16 15:20	
Bromodichloromethane	ND	0.50		ug/L			09/23/16 15:20	
Dichlorodifluoromethane	ND	1.0		ug/L			09/23/16 15:20	
Ethyl methacrylate	ND	2.0		ug/L			09/23/16 15:20	
Ethylbenzene	ND	0.50	0.25	-			09/23/16 15:20	
odomethane	ND	2.0		ug/L			09/23/16 15:20	
sobutyl alcohol	ND	25		ug/L			09/23/16 15:20	
n,p-Xylene	ND	1.0	0.50				09/23/16 15:20	
Methylacrylonitrile	ND	5.0		ug/L			09/23/16 15:20	
Methyl methacrylate	ND	2.0		ug/L			09/23/16 15:20	
Methylene Chloride	ND	2.0	0.88				09/23/16 15:20	
Methyl tert-butyl ether	ND ND	0.50	0.86				09/23/16 15:20	
Naphthalene	ND ND	1.0		ug/L ug/L			09/23/16 15:20	
o-Xylene	ND	0.50		ug/L ug/L			09/23/16 15:20	

TestAmerica Irvine

4

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12

Client: Geo-Logic Associates

**Client Sample ID: DW-3** 

Date Collected: 09/20/16 14:23

Date Received: 09/20/16 18:25

Alkalinity as CaCO3

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-159066-2

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	. Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			09/23/16 15:20	
Styrene	ND		0.50	0.25	ug/L			09/23/16 15:20	1
t-Butanol	ND		10	5.0	ug/L			09/23/16 15:20	1
Tetrachloroethene	ND		0.50	0.25	5 ug/L			09/23/16 15:20	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/23/16 15:20	1
Toluene	ND		0.50	0.25	5 ug/L			09/23/16 15:20	1
trans-1,2-Dichloroethene	ND		0.50		5 ug/L			09/23/16 15:20	1
trans-1,3-Dichloropropene	ND		0.50		5 ug/L			09/23/16 15:20	1
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/23/16 15:20	1
Trichloroethene	ND		0.50		5 ug/L			09/23/16 15:20	1
Trichlorofluoromethane	ND		0.50		5 ug/L			09/23/16 15:20	1
Vinyl acetate	ND		4.0		ug/L			09/23/16 15:20	1
Vinyl chloride	ND		0.50		ug/L			09/23/16 15:20	1
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			09/23/16 15:20	1
2-Butanone (MEK)	ND		5.0		ug/L			09/23/16 15:20	· · · · · · · · · · · · · · · · · · ·
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L ug/L			09/23/16 15:20	1
Acrylonitrile	ND.		2.0		ug/L ug/L			09/23/16 15:20	1
Acrolein	ND		5.0		ug/L ug/L			09/23/16 15:20	
ACIOIEIII	ND		5.0	۷.:	ug/L			09/23/10 15.20	'
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.0	TJ	ug/L		6.59			09/23/16 15:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 128					09/23/16 15:20	1
4-Bromofluorobenzene (Surr)	105		80 - 120					09/23/16 15:20	1
Dibromofluoromethane (Surr)	108		76 - 132					09/23/16 15:20	1
Method: 8270C - Semivolatile	Organic Co	mnounds	(GC/MS)						
Analyte	_	Qualifier	RL	MDI	. Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.99		ug/L	<u> </u>	09/26/16 10:51	-	1
Surrogata	%Recovery	Qualifier	Limita				Dronorod	Analyzed	Dil Fac
Surrogate	67	Qualifier	30 - 120				Prepared		DII Fac
1,4-Dioxane-d8 (Surr)	67		30 - 120				09/26/16 10:51	09/26/10 21.39	,
Method: 300.0 - Anions, Ion (	Chromatogra	phy							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		5.0	2.5	mg/L			09/21/16 18:30	10
Method: 6010B - Metals (ICP)	- Total Reco	overable							
Analyte		Qualifier	RL	MDI	. Unit	D	Prepared	Analyzed	Dil Fac
Potassium	9.1		0.50		mg/L		09/26/16 10:58	-	1
General Chemistry		o				=			<b>5</b> –
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	10	J	20		mg/L			09/26/16 15:27	1
Total Dissolved Solids	1900		10		) mg/L			09/24/16 12:10	1
Ammonia (as N)	0.52		0.50		) mg/L		09/21/16 05:00		1
Total Organic Carbon	0.32		0.10	0.050	) mg/L			09/21/16 17:05	1
	Danula	Qualifier	RL	DI	115:4	<b>D</b>	Droporod	Analyzad	D:: F
Analyte	Result	Qualifier	KL	K	. Unit	D	Prepared	Analyzed	Dil Fac

09/23/16 08:00

4.0

170

4.0 mg/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-3

**Matrix: Water** 

Client Sample ID: PZ-4

Date Collected: 09/20/16 10:45 Date Received: 09/20/16 18:25

ND N	1.0 0.50 0.50 0.50 0.50 0.50 0.50 1.0 1.0 0.50 0.50 0.50 0.50 0.50	0.25 0.25 0.25 0.25 0.25 0.25 0.40 0.50 0.25	ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND N	0.50 0.50 0.50 0.50 0.50 1.0 1.0 0.50 0.50 0.50 0.50	0.25 0.25 0.25 0.25 0.25 0.25 0.40 0.50 0.25 0.25	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND N	0.50 0.50 0.50 0.50 1.0 1.0 0.50 0.50 0.50 0.50	0.25 0.25 0.25 0.25 0.40 0.50 0.25 0.25	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND N	0.50 0.50 0.50 1.0 1.0 0.50 0.50 0.50 0.50	0.25 0.25 0.25 0.25 0.40 0.50 0.25 0.25	ug/L ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND N	0.50 0.50 0.50 1.0 1.0 0.50 0.50 0.50	0.25 0.25 0.25 0.40 0.50 0.25 0.25	ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND N	0.50 0.50 1.0 1.0 0.50 0.50 0.50	0.25 0.25 0.40 0.50 0.25 0.25	ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND	0.50 1.0 1.0 0.50 0.50 0.50	0.25 0.25 0.40 0.50 0.25 0.25	ug/L ug/L ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46 09/23/16 15:46	
ND	1.0 1.0 0.50 0.50 0.50 0.50	0.40 0.50 0.25 0.25 0.25	ug/L ug/L ug/L ug/L			09/23/16 15:46 09/23/16 15:46	
ND ND ND ND ND ND ND	1.0 0.50 0.50 0.50 0.50	0.40 0.50 0.25 0.25 0.25	ug/L ug/L ug/L ug/L			09/23/16 15:46	
ND ND ND ND ND	0.50 0.50 0.50 0.50	0.50 0.25 0.25 0.25	ug/L ug/L ug/L				
ND ND ND ND ND	0.50 0.50 0.50	0.25 0.25 0.25	ug/L ug/L			09/23/16 15:46	
ND ND ND ND	0.50 0.50	0.25 0.25	ug/L				
ND ND ND	0.50	0.25	-			09/23/16 15:46	
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ND			ug/L			09/23/16 15:46	
	0.50		ug/L			09/23/16 15:46	
	1.0		-			09/23/16 15:46	
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ND	1.0		-			09/23/16 15:46	
ND			-			09/23/16 15:46	
ND	2.0		-			09/23/16 15:46	
ND	2.0	0.88	ug/L			09/23/16 15:46	
ND	0.50	0.25	ug/L			09/23/16 15:46	
ND	1.0	0.40	ug/L			09/23/16 15:46	
	ND N	ND       1.0         ND       5.0         ND       20         ND       0.50         ND       1.0         ND       1.0         ND       1.0         ND       0.50         ND       2.0         ND       2.0         ND       2.0         ND       2.0         ND       2.0         ND       0.50         ND       2.0         ND       2.0         ND       0.50 </td <td>ND       1.0       0.50         ND       5.0       2.5         ND       20       10         ND       20       10         ND       0.50       0.25         ND       1.0       0.50         ND       1.0       0.40         ND       0.50       0.25         ND       0.50<td>ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L</td><td>ND         1.0         0.50         ug/L           ND         5.0         2.5         ug/L           ND         20         10         ug/L           ND         20         10         ug/L           ND         0.50         0.25         ug/L           ND         1.0         0.50         ug/L           ND         1.0         0.40         ug/L           ND         0.50         0.25         ug/L           ND         0.50         <td< td=""><td>ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L</td><td>ND 1.0 0.50 ug/L 09/23/16 15:46 ND 5.0 2.5 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46</td></td<></td></td>	ND       1.0       0.50         ND       5.0       2.5         ND       20       10         ND       20       10         ND       0.50       0.25         ND       1.0       0.50         ND       1.0       0.40         ND       0.50       0.25         ND       0.50 <td>ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L</td> <td>ND         1.0         0.50         ug/L           ND         5.0         2.5         ug/L           ND         20         10         ug/L           ND         20         10         ug/L           ND         0.50         0.25         ug/L           ND         1.0         0.50         ug/L           ND         1.0         0.40         ug/L           ND         0.50         0.25         ug/L           ND         0.50         <td< td=""><td>ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L</td><td>ND 1.0 0.50 ug/L 09/23/16 15:46 ND 5.0 2.5 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46</td></td<></td>	ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L	ND         1.0         0.50         ug/L           ND         5.0         2.5         ug/L           ND         20         10         ug/L           ND         20         10         ug/L           ND         0.50         0.25         ug/L           ND         1.0         0.50         ug/L           ND         1.0         0.40         ug/L           ND         0.50         0.25         ug/L           ND         0.50 <td< td=""><td>ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L</td><td>ND 1.0 0.50 ug/L 09/23/16 15:46 ND 5.0 2.5 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46</td></td<>	ND       1.0       0.50       ug/L         ND       5.0       2.5       ug/L         ND       20       10       ug/L         ND       20       10       ug/L         ND       0.50       0.25       ug/L         ND       1.0       0.50       ug/L         ND       1.0       0.40       ug/L         ND       0.50       0.25       ug/L	ND 1.0 0.50 ug/L 09/23/16 15:46 ND 5.0 2.5 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 20 10 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 1.0 0.50 ug/L 09/23/16 15:46 ND 0.50 0.25 ug/L 09/23/16 15:46

TestAmerica Irvine

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Client Sample ID: PZ-4

Lab Sample ID: 440-159066-3

Matrix: Water

Date Collected: 09/20/16 10:45 Date Received: 09/20/16 18:25

Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Propionitrile	ND		20	10	ug/L			09/23/16 15:46	
Styrene	ND		0.50	0.25	ug/L			09/23/16 15:46	
t-Butanol	ND		10	5.0	ug/L			09/23/16 15:46	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/23/16 15:46	
Tetrahydrofuran	ND		10	5.0	ug/L			09/23/16 15:46	
Toluene	ND		0.50	0.25	ug/L			09/23/16 15:46	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 15:46	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 15:46	
rans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/23/16 15:46	
Trichloroethene	ND		0.50		ug/L			09/23/16 15:46	
Trichlorofluoromethane	ND		0.50		ug/L			09/23/16 15:46	
Vinyl acetate	ND		4.0	2.0	ug/L			09/23/16 15:46	
Vinyl chloride	ND		0.50		ug/L			09/23/16 15:46	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			09/23/16 15:46	
2-Butanone (MEK)	ND		5.0		ug/L			09/23/16 15:46	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/23/16 15:46	
Acrylonitrile	ND		2.0		ug/L			09/23/16 15:46	
Acrolein	ND		5.0	2.5	ug/L			09/23/16 15:46	
Tentatively Identified Compound	Est. Result	-	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil F
Inknown	12	TJ	ug/L	17.	44			09/23/16 15:46	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
<u> </u>	111		80 - 128					09/23/16 15:46	
Toluene-d8 (Surr)	111 104		80 - 128 80 - 120				<u> </u>	09/23/16 15:46 09/23/16 15:46	
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	104 105	•	80 - 120 76 - 132				<u> </u>		
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Method: 8270C - Semivolatile Analyte	104 105 • Organic Co Result	•	80 - 120 76 - 132 (GC/MS) RL	MDL 0.24		<b>D</b>	Prepared	09/23/16 15:46 09/23/16 15:46 Analyzed	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane	104 105 Organic Co	mpounds	80 - 120 76 - 132 (GC/MS)		Unit ug/L	<u>D</u>		09/23/16 15:46 09/23/16 15:46	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane	104 105 • Organic Co Result	mpounds Qualifier	80 - 120 76 - 132 (GC/MS) RL			<u>D</u>	Prepared	09/23/16 15:46 09/23/16 15:46 Analyzed	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate	Organic Co Result ND	mpounds Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98			<u>D</u>	Prepared 09/26/16 10:51	09/23/16 15:46 09/23/16 15:46 Analyzed 09/28/16 22:01 Analyzed	
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Method: 8270C - Semivolatile Analyte	Organic Co Result ND  **Recovery** 67  Chromatogra	mpounds Qualifier Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98			<u>D</u>	Prepared 09/26/16 10:51 Prepared	09/23/16 15:46 09/23/16 15:46 Analyzed 09/28/16 22:01 Analyzed	
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)	Organic Co Result ND  **Recovery** 67  Chromatogra	mpounds Qualifier Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL	ug/L Unit	<u>D</u>	Prepared 09/26/16 10:51 Prepared	09/23/16 15:46 09/23/16 15:46 Analyzed 09/28/16 22:01 Analyzed 09/28/16 22:01	
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte	Organic Co Result ND  **Recovery** 67  Chromatogra	mpounds Qualifier Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL	ug/L		Prepared 09/26/16 10:51  Prepared 09/26/16 10:51	09/23/16 15:46 09/23/16 15:46 Analyzed 09/28/16 22:01 Analyzed 09/28/16 22:01	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (	Organic Co Result ND  **Recovery 67  Chromatogra Result 8.3	mpounds Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL	ug/L Unit		Prepared 09/26/16 10:51  Prepared 09/26/16 10:51	09/23/16 15:46 09/23/16 15:46 Analyzed 09/28/16 22:01 Analyzed 09/28/16 22:01	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP)	Organic Co Result ND  **Recovery 67  Chromatogra Result 8.3	mpounds Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120	0.24 MDL 1.3	ug/L Unit		Prepared 09/26/16 10:51  Prepared 09/26/16 10:51	09/23/16 15:46 09/23/16 15:46 Analyzed 09/28/16 22:01 Analyzed 09/28/16 22:01	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (Analyte Chloride  Method: 6010B - Metals (ICP) Analyte	Organic Co Result ND  **Recovery 67  Chromatogra Result 8.3	mpounds Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 2.5	0.24 MDL 1.3	ug/L  Unit mg/L	D	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium	Organic Co Result ND  **Recovery 67  Chromatogra Result 8.3  - Total Reco	mpounds Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 2.5	0.24 MDL 1.3	ug/L  Unit mg/L  Unit	D	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry	Chromatogra Result 8.3 - Total Reco	mpounds Qualifier  Qualifier  phy Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 2.5	MDL 1.3 MDL 0.25	ug/L  Unit mg/L  Unit	D	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte	Chromatogra Result 8.3 - Total Reco	mpounds Qualifier  Qualifier  phy Qualifier  overable Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 2.5	MDL 1.3 MDL 0.25	ug/L  Unit mg/L  Unit mg/L	<u>D</u>	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared 09/26/16 10:58	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed 09/26/16 23:21	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand	Chromatogra Result 8.3 - Total Record Result 4.7 Result	mpounds Qualifier  Qualifier  phy Qualifier  overable Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 0.50	MDL 1.3 MDL 0.25 MDL 10	Unit mg/L Unit mg/L Unit	<u>D</u>	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared 09/26/16 10:58	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed 09/26/16 23:21  Analyzed	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids	Chromatogra Result 8.3 - Total Reco Result 4.7  Result ND	mpounds Qualifier  Qualifier  phy Qualifier  overable Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 2.5	MDL 1.3 MDL 0.25 MDL 10 5.0	Unit mg/L  Unit mg/L  Unit mg/L	<u>D</u>	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared 09/26/16 10:58	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed 09/26/16 23:21  Analyzed 09/26/16 15:27	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Chemical Oxygen Demand Total Dissolved Solids Ammonia (as N)	Chromatogra Result 8.3 - Total Reco Result 8.7 Result 8.7 Result 1.00	mpounds Qualifier  Qualifier  phy Qualifier  overable Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 0.50 RL 2.5	MDL 1.3 MDL 0.25 MDL 10 5.0	Unit mg/L Unit mg/L mg/L mg/L mg/L mg/L	<u>D</u>	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared 09/26/16 10:58  Prepared	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed 09/26/16 23:21  Analyzed 09/26/16 15:27 09/24/16 12:10	Dil F
Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride	Chromatogra Result 8.3 - Total Reco Result 4.7  Result ND  Result 2.0 1.0	mpounds Qualifier  Qualifier  phy Qualifier  overable Qualifier	80 - 120 76 - 132 (GC/MS) RL 0.98 Limits 30 - 120 RL 0.50	MDL 1.3 MDL 0.25 MDL 10 5.0 0.10 0.050	Unit mg/L Unit mg/L mg/L mg/L mg/L mg/L	<u>D</u>	Prepared 09/26/16 10:51  Prepared 09/26/16 10:51  Prepared  Prepared 09/26/16 10:58  Prepared	09/23/16 15:46 09/23/16 15:46  Analyzed 09/28/16 22:01  Analyzed 09/28/16 22:01  Analyzed 09/21/16 18:48  Analyzed 09/26/16 23:21  Analyzed 09/26/16 15:27 09/24/16 12:10 09/21/16 08:31	Dil F

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-4

**Matrix: Water** 

Client Sample ID: LY-7

Date Collected: 09/20/16 08:28 Date Received: 09/20/16 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/23/16 16:12	
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/23/16 16:12	
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/23/16 16:12	
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/23/16 16:12	
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/23/16 16:12	
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/23/16 16:12	
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 16:12	
1,1-Dichloropropene	ND		0.50		ug/L			09/23/16 16:12	
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/23/16 16:12	
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/23/16 16:12	
1,2-Dichlorobenzene	ND		0.50	0.25	-			09/23/16 16:12	
1,2-Dichloroethane	0.86		0.50		ug/L			09/23/16 16:12	
1,2-Dichloropropane	0.31	j	0.50		ug/L			09/23/16 16:12	
1,3-Dichlorobenzene	ND		0.50		ug/L			09/23/16 16:12	
1,3-Dichloropropane	ND		0.50		ug/L			09/23/16 16:12	
1,4-Dichlorobenzene	3.3		0.50		ug/L			09/23/16 16:12	
2,2-Dichloropropane	ND		1.0		ug/L			09/23/16 16:12	
2-Chloro-1,3-butadiene	ND		1.0	0.50	-			09/23/16 16:12	
2-Hexanone	ND		5.0		ug/L			09/23/16 16:12	
Acetone	13	1	20		ug/L			09/23/16 16:12	
Acetonitrile	ND	•	20		ug/L			09/23/16 16:12	
Benzene	3.1		0.50		ug/L			09/23/16 16:12	
Allyl chloride	ND		1.0		ug/L			09/23/16 16:12	
Bromoform	ND		1.0		ug/L			09/23/16 16:12	
Bromomethane	ND		0.50		ug/L			09/23/16 16:12	
Carbon disulfide	ND ND		1.0		ug/L ug/L			09/23/16 16:12	
Carbon tetrachloride	ND ND		0.50		ug/L ug/L			09/23/16 16:12	
Chlorobenzene	ND		0.50		ug/L			09/23/16 16:12	
Bromochloromethane	ND ND		0.50		-			09/23/16 16:12	
Chloroethane	ND ND		1.0	0.25	ug/L			09/23/16 16:12	
Chloroform	ND ND				-				
	ND ND		0.50		ug/L			09/23/16 16:12	
Chloromethane			0.50	0.25	-			09/23/16 16:12	
cis-1,2-Dichloroethene	1.6		0.50		ug/L			09/23/16 16:12	
cis-1,3-Dichloropropene	ND		0.50		ug/L			09/23/16 16:12	
Dibromochloromethane	ND		0.50		ug/L			09/23/16 16:12	
Dibromomethane	ND		0.50		ug/L			09/23/16 16:12	
Bromodichloromethane	ND		0.50		ug/L			09/23/16 16:12	
Dichlorodifluoromethane	ND		1.0		ug/L			09/23/16 16:12	
Ethyl methacrylate	ND		2.0		ug/L			09/23/16 16:12	
Ethylbenzene	ND		0.50		ug/L			09/23/16 16:12	
odomethane	ND		2.0		ug/L			09/23/16 16:12	
sobutyl alcohol	ND		25		ug/L			09/23/16 16:12	
m,p-Xylene	ND		1.0		ug/L			09/23/16 16:12	
Methylacrylonitrile	ND		5.0		ug/L			09/23/16 16:12	
Methyl methacrylate	ND		2.0		ug/L			09/23/16 16:12	
Methylene Chloride	ND		2.0		ug/L			09/23/16 16:12	
Methyl tert-butyl ether	0.98		0.50	0.25	ug/L			09/23/16 16:12	
Naphthalene	ND		1.0	0.40	ug/L			09/23/16 16:12	
o-Xylene	ND		0.50	0.25	ug/L			09/23/16 16:12	

TestAmerica Irvine

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

**Client Sample ID: LY-7** Lab Sample ID: 440-159066-4

Date Collected: 09/20/16 08:28 Date Received: 09/20/16 18:25

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			09/23/16 16:12	1
Styrene	ND		0.50	0.25	ug/L			09/23/16 16:12	1
t-Butanol	1200		10	5.0	ug/L			09/23/16 16:12	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/23/16 16:12	1
Tetrahydrofuran	9.6	J	10	5.0	ug/L			09/23/16 16:12	1
Toluene	ND		0.50	0.25	ug/L			09/23/16 16:12	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 16:12	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 16:12	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/23/16 16:12	1
Trichloroethene	ND		0.50	0.25	ug/L			09/23/16 16:12	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/23/16 16:12	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/23/16 16:12	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/23/16 16:12	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/23/16 16:12	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/23/16 16:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/23/16 16:12	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/23/16 16:12	1
Acrolein	ND		5.0	2.5	ug/L			09/23/16 16:12	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	3.3	TJ	ug/L		3.43			09/23/16 16:12	1
Ethyl ether	1.9	J	ug/L		4.90	60-29-7		09/23/16 16:12	1
3,3-Dimethylpentane	1.1	J	ug/L		7.63	562-49-2		09/23/16 16:12	1
Unknown	2.8	TJ	ug/L		14.83			09/23/16 16:12	1
Unknown	6.6	TJ	ug/L		16.98			09/23/16 16:12	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109	80 - 128		09/23/16 16:12	1
4-Bromofluorobenzene (Surr)	104	80 - 120		09/23/16 16:12	1
Dibromofluoromethane (Surr)	105	76 - 132		09/23/16 16:12	1

Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	160		49	12	ug/L		09/26/16 10:51	09/30/16 05:18	50
Surrogate	%Recovery		Limits 30 - 120				Prepared	Analyzed 09/30/16 05:18	Dil Fac
1,4-Dioxane-d8 (Surr)	U	X	30 - 120				09/20/10 10.51	09/30/10 05.16	50

Method: 300.0 - Anions, Ion Cl	nromatography							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	250	130	mg/L			09/21/16 07:55	500

Method: 6010B - Metals (ICP) -	Total Reco	overable							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	130		5.0	2.5	mg/L		09/27/16 10:35	09/27/16 21:33	10

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	960		40	20	mg/L			09/26/16 15:27	2
Total Dissolved Solids	9300		100	50	mg/L			09/26/16 08:24	1
Ammonia (as N)	190		25	5.0	mg/L		09/21/16 05:00	09/21/16 08:31	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

**Client Sample ID: LY-7** 

Date Collected: 09/20/16 08:28 Date Received: 09/20/16 18:25 Lab Sample ID: 440-159066-4

Matrix: Water

**General Chemistry (Continued)** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	310		5.0	2.5	mg/L			09/21/16 16:03	50
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	2300		4.0	4.0	mg/L			09/22/16 11:13	1

Client Sample ID: PZ-2 Lab Sample ID: 440-159066-5

Date Collected: 09/20/16 11:55 Matrix: Water

Date Received: 09/20/16 18:25

Analyte	Result Qualifie	er RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/23/16 16:38	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/23/16 16:38	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/23/16 16:38	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/23/16 16:38	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/23/16 16:38	1
2-Hexanone	ND	5.0		ug/L			09/23/16 16:38	1
Acetone	ND	20		ug/L			09/23/16 16:38	1
Acetonitrile	ND	20	10	ug/L			09/23/16 16:38	1
Benzene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
Allyl chloride	ND	1.0	0.50	ug/L			09/23/16 16:38	1
Bromoform	ND	1.0	0.40	ug/L			09/23/16 16:38	1
Bromomethane	ND	0.50	0.25	ug/L			09/23/16 16:38	1
Carbon disulfide	ND	1.0	0.50	-			09/23/16 16:38	1
Carbon tetrachloride	ND	0.50	0.25	_			09/23/16 16:38	1
Chlorobenzene	ND	0.50	0.25	ug/L			09/23/16 16:38	1
Bromochloromethane	ND	0.50	0.25	_			09/23/16 16:38	1
Chloroethane	ND	1.0	0.40	•			09/23/16 16:38	1
Chloroform	ND	0.50	0.25	ug/L			09/23/16 16:38	1
Chloromethane	ND	0.50	0.25	_			09/23/16 16:38	1
cis-1,2-Dichloroethene	ND	0.50	0.25	•			09/23/16 16:38	1
cis-1,3-Dichloropropene	ND	0.50	0.25				09/23/16 16:38	1
Dibromochloromethane	ND	0.50	0.25				09/23/16 16:38	1
Dibromomethane	ND	0.50	0.25	•			09/23/16 16:38	1
Bromodichloromethane	ND	0.50	0.25				09/23/16 16:38	1
Dichlorodifluoromethane	ND	1.0	0.40				09/23/16 16:38	1
Ethyl methacrylate	ND	2.0		ug/L			09/23/16 16:38	1

TestAmerica Irvine

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Client Sample ID: PZ-2

Chloride

Date Collected: 09/20/16 11:55
Date Received: 09/20/16 18:25

Lab Sample ID: 440-159066-5

**Matrix: Water** 

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Ethylbenzene	ND		0.50	0.25	ug/L			09/23/16 16:38	
lodomethane	ND		2.0	1.0	ug/L			09/23/16 16:38	
Isobutyl alcohol	ND		25	13	ug/L			09/23/16 16:38	
m,p-Xylene	ND		1.0	0.50	ug/L			09/23/16 16:38	
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/23/16 16:38	
Methyl methacrylate	ND		2.0	1.0	ug/L			09/23/16 16:38	
Methylene Chloride	ND		2.0	0.88	ug/L			09/23/16 16:38	
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/23/16 16:38	
Naphthalene	ND		1.0	0.40	ug/L			09/23/16 16:38	
o-Xylene	ND		0.50	0.25	ug/L			09/23/16 16:38	
Propionitrile	ND		20	10	ug/L			09/23/16 16:38	
Styrene	ND		0.50	0.25	ug/L			09/23/16 16:38	
t-Butanol	ND		10	5.0	ug/L			09/23/16 16:38	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/23/16 16:38	
Tetrahydrofuran	ND		10	5.0	ug/L			09/23/16 16:38	
Toluene	ND		0.50	0.25	ug/L			09/23/16 16:38	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 16:38	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 16:38	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/23/16 16:38	
Trichloroethene	ND		0.50	0.25	ug/L			09/23/16 16:38	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/23/16 16:38	
Vinyl acetate	ND		4.0	2.0	ug/L			09/23/16 16:38	
Vinyl chloride	ND		0.50	0.25	ug/L			09/23/16 16:38	
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/23/16 16:38	
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/23/16 16:38	
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/23/16 16:38	
Acrylonitrile	ND		2.0	1.0	ug/L			09/23/16 16:38	
Acrolein	ND		5.0	2.5	ug/L			09/23/16 16:38	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil F
Unknown	2.5	TJ	ug/L		.16		<u> </u>	09/23/16 16:38	
Unknown	19	TJ	ug/L	17	.41			09/23/16 16:38	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Toluene-d8 (Surr)	114		80 - 128					09/23/16 16:38	
4-Bromofluorobenzene (Surr)	107		80 - 120					09/23/16 16:38	
Dibromofluoromethane (Surr)	107		76 - 132					09/23/16 16:38	
Method: 8270C - Semivolatile				MDI	11:4	ь.	Dunnanad	A a l a al	D:: F
Analyte 1,4-Dioxane	ND Result	Qualifier	- RL 1.1		Unit ug/L	D	Prepared 09/26/16 10:51	Analyzed 09/28/16 22:44	Dil F
		0			J				<b>5</b>
Surrogate	%Recovery	Qualifier	Limits				Prepared 00/00/10 10:51	Analyzed	Dil F
1,4-Dioxane-d8 (Surr)	60		30 - 120				09/26/16 10:51	09/28/16 22:44	
Method: 300.0 - Anions, Ion (	Chromatogra	phy							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
		_						00/04/40 40 00	

09/21/16 19:06

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5.0 mg/L

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

**Client Sample ID: PZ-2** Lab Sample ID: 440-159066-5

Date Collected: 09/20/16 11:55 Matrix: Water

Date Received: 09/20/16 18:25

Method: 6010B - Metals (ICP) - Analyte		overable Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	3.1		0.50	0.25	mg/L		09/26/16 10:58	09/26/16 23:23	1
General Chemistry						_			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			09/27/16 08:58	1
Total Dissolved Solids	4300		100	50	mg/L			09/26/16 08:24	1
Ammonia (as N)	2.9		0.50	0.10	mg/L		09/21/16 05:00	09/21/16 08:31	1
Total Organic Carbon	2.5	^	0.10	0.050	mg/L			09/21/16 11:17	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	380		4.0	4.0	mg/L			09/22/16 11:22	1

Client Sample ID: MW-6 Lab Sample ID: 440-159066-6

Date Collected: 09/20/16 10:00 **Matrix: Water** Date Received: 09/20/16 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/23/16 17:04	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/23/16 17:04	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/23/16 17:04	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			09/23/16 17:04	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			09/23/16 17:04	1
2-Hexanone	ND		5.0	2.5	ug/L			09/23/16 17:04	1
Acetone	ND		20	10	ug/L			09/23/16 17:04	1
Acetonitrile	ND		20	10	ug/L			09/23/16 17:04	1
Benzene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Allyl chloride	ND		1.0	0.50	ug/L			09/23/16 17:04	1
Bromoform	ND		1.0	0.40	ug/L			09/23/16 17:04	1
Bromomethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/23/16 17:04	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Chloroethane	ND		1.0	0.40	ug/L			09/23/16 17:04	1
Chloroform	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Chloromethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 17:04	1

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-6

**Matrix: Water** 

Client Sample ID: MW-6 Date Collected: 09/20/16 10:00

Date Received: 09/20/16 18:25

Method: 8260B - Volatile Org Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/23/16 17:04	
Dibromomethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/23/16 17:04	1
Dichlorodifluoromethane	ND		1.0		ug/L			09/23/16 17:04	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/23/16 17:04	1
Ethylbenzene	ND		0.50		ug/L			09/23/16 17:04	1
Iodomethane	ND		2.0		ug/L			09/23/16 17:04	1
Isobutyl alcohol	ND		25		ug/L			09/23/16 17:04	1
m,p-Xylene	ND		1.0		ug/L			09/23/16 17:04	1
Methylacrylonitrile	ND		5.0		ug/L			09/23/16 17:04	1
Methyl methacrylate	ND		2.0		ug/L			09/23/16 17:04	1
Methylene Chloride	ND		2.0		ug/L			09/23/16 17:04	1
Methyl tert-butyl ether	ND		0.50		ug/L			09/23/16 17:04	1
Naphthalene	ND		1.0		ug/L			09/23/16 17:04	1
o-Xylene	ND		0.50		ug/L			09/23/16 17:04	1
Propionitrile	ND		20		ug/L			09/23/16 17:04	1
Styrene	ND		0.50		ug/L			09/23/16 17:04	1
t-Butanol	ND		10		ug/L			09/23/16 17:04	· · · · · · · · · · · · · · · · · · ·
Tetrachloroethene	ND		0.50		ug/L			09/23/16 17:04	1
Tetrahydrofuran	ND		10		ug/L			09/23/16 17:04	1
Toluene	ND		0.50		ug/L			09/23/16 17:04	
trans-1,2-Dichloroethene	ND		0.50		ug/L			09/23/16 17:04	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			09/23/16 17:04	1
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/23/16 17:04	
Trichloroethene	ND		0.50		ug/L ug/L			09/23/16 17:04	1
Trichlorofluoromethane	ND.		0.50		ug/L ug/L			09/23/16 17:04	1
Vinyl acetate	ND		4.0		ug/L			09/23/16 17:04	
Vinyl chloride	ND ND		0.50		ug/L ug/L			09/23/16 17:04	1
1,2-Dibromoethane (EDB)	ND ND		0.50		ug/L ug/L			09/23/16 17:04	1
	ND		5.0		ug/L ug/L			09/23/16 17:04	
2-Butanone (MEK)	ND ND		5.0		ug/L ug/L			09/23/16 17:04	1
4-Methyl-2-pentanone (MIBK)					-				-
Acrylonitrile	ND ND		2.0 5.0		ug/L			09/23/16 17:04	
Acrolein	ND		5.0	2.5	ug/L			09/23/16 17:04	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	22	TJ	ug/L		2.89			09/23/16 17:04	1
Unknown	5.2	TJ	ug/L	16	6.28			09/23/16 17:04	1
Unknown	2.6	TJ	ug/L	16	6.89			09/23/16 17:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		80 - 128					09/23/16 17:04	1
4-Bromofluorobenzene (Surr)	101		80 - 120					09/23/16 17:04	1
Dibromofluoromethane (Surr)	104		76 - 132					09/23/16 17:04	1
Method: 8270C - Semivolatile	e Organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.97	0.24	ug/L		09/26/16 10:51	09/28/16 23:05	1

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Client Sample ID: MW-6 Lab Sample ID: 440-159066-6

Date Collected: 09/20/16 10:00 Date Received: 09/20/16 18:25

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	64		30 - 120				09/26/16 10:51	09/28/16 23:05	1
Method: 300.0 - Anions, Ion Chi	omatogra	phy							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29		5.0	2.5	mg/L			09/21/16 19:24	10
Method: 6010B - Metals (ICP) -	Total Reco	overable							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	5.8		0.50	0.25	mg/L		09/26/16 10:58	09/26/16 23:26	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			09/27/16 08:58	1
Total Dissolved Solids	2800		20	10	mg/L			09/24/16 12:14	1
Ammonia (as N)	1.3		0.50	0.10	mg/L		09/21/16 05:00	09/21/16 08:31	1
Total Organic Carbon	5.1	٨	0.10	0.050	mg/L			09/21/16 11:32	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	480		4.0	4.0	mg/L			09/22/16 11:32	1

Lab Sample ID: 440-159066-7 **Client Sample ID: MW-9** 

Date Collected: 09/20/16 13:41 **Matrix: Water** Date Received: 09/20/16 18:25

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/29/16 17:12	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/29/16 17:12	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/29/16 17:12	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 17:12	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/29/16 17:12	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/29/16 17:12	1
2-Hexanone	ND	5.0	2.5	ug/L			09/29/16 17:12	1
Acetone	ND	20	10	ug/L			09/29/16 17:12	1
Acetonitrile	ND	20	10	ug/L			09/29/16 17:12	1
Benzene	ND	0.50	0.25	ug/L			09/29/16 17:12	1
Allyl chloride	ND	1.0	0.50	ug/L			09/29/16 17:12	1
Bromoform	ND	1.0	0.40	ug/L			09/29/16 17:12	1
Bromomethane	ND	0.50	0.25	ug/L			09/29/16 17:12	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/29/16 17:12	1

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

**Client Sample ID: MW-9** Lab Sample ID: 440-159066-7

Date Collected: 09/20/16 13:41 Date Received: 09/20/16 18:25

Matrix: Water

Method: 8260B - Volatile Org Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.50		ug/L			09/29/16 17:12	1
Chlorobenzene	ND		0.50		ug/L			09/29/16 17:12	1
Bromochloromethane	ND		0.50		5 ug/L			09/29/16 17:12	1
Chloroethane	ND		1.0		ug/L			09/29/16 17:12	1
Chloroform	ND		0.50		ug/L			09/29/16 17:12	1
Chloromethane	ND		0.50		5 ug/L			09/29/16 17:12	1
cis-1,2-Dichloroethene	0.50		0.50		5 ug/L			09/29/16 17:12	1
cis-1,3-Dichloropropene	ND		0.50		5 ug/L			09/29/16 17:12	1
Dibromochloromethane	ND		0.50		5 ug/L			09/29/16 17:12	1
Dibromomethane	ND		0.50		5 ug/L			09/29/16 17:12	1
Bromodichloromethane	ND		0.50		ug/L			09/29/16 17:12	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/29/16 17:12	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/29/16 17:12	1
Ethylbenzene	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
Iodomethane	ND		2.0	1.0	ug/L			09/29/16 17:12	1
Isobutyl alcohol	ND		25	13	3 ug/L			09/29/16 17:12	1
m,p-Xylene	ND		1.0	0.50	ug/L			09/29/16 17:12	1
Methylacrylonitrile	ND		5.0	2.5	5 ug/L			09/29/16 17:12	1
Methyl methacrylate	ND		2.0	1.0	ug/L			09/29/16 17:12	1
Methylene Chloride	ND		2.0	0.88	3 ug/L			09/29/16 17:12	1
Methyl tert-butyl ether	0.36	J	0.50	0.2	5 ug/L			09/29/16 17:12	1
Naphthalene	ND		1.0	0.40	ug/L			09/29/16 17:12	1
o-Xylene	ND		0.50	0.2	ug/L			09/29/16 17:12	1
Propionitrile	ND		20	10	ug/L			09/29/16 17:12	1
Styrene	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
t-Butanol	20		10	5.0	ug/L			09/29/16 17:12	1
Tetrachloroethene	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/29/16 17:12	1
Toluene	ND		0.50	0.2	ug/L			09/29/16 17:12	1
trans-1,2-Dichloroethene	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
trans-1,3-Dichloropropene	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.	ug/L			09/29/16 17:12	1
Trichloroethene	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
Trichlorofluoromethane	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/29/16 17:12	1
Vinyl chloride	ND		0.50	0.2	5 ug/L			09/29/16 17:12	1
1,2-Dibromoethane (EDB)	ND		0.50		5 ug/L			09/29/16 17:12	1
2-Butanone (MEK)	ND		5.0		5 ug/L			09/29/16 17:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		5 ug/L			09/29/16 17:12	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/29/16 17:12	1
Acrolein	ND		5.0		5 ug/L			09/29/16 17:12	1
Tentatively Identified Compound	Est. Result		Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.9	TJ	ug/L		4.73			09/29/16 17:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 128			•		09/29/16 17:12	1
4-Bromofluorobenzene (Surr)	99		80 - 120					09/29/16 17:12	1
Dibromofluoromethane (Surr)	98		76 - 132					09/29/16 17:12	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-7

**Client Sample ID: MW-9** 

Date Collected: 09/20/16 13:41 Matrix: Water Date Received: 09/20/16 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	19		0.96	0.24	ug/L		09/26/16 10:51	09/28/16 23:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	63		30 - 120				09/26/16 10:51	09/28/16 23:27	1
Method: 300.0 - Anions, Ior	n Chromatogra	phy							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	200		100	50	mg/L			09/21/16 09:09	200
Analyte Potassium	Result 23	Qualifier	RL 	<b>MDL</b> 0.25	mg/L	<u>D</u>	Prepared 09/26/16 11:03	Analyzed 09/27/16 22:26	Dil Fac
	23		0.30	0.23	IIIg/L		09/20/10 11:03	03/21/10 22:20	'
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	93		20	10	mg/L			09/27/16 08:58	1
Total Dissolved Solids	3500		20	10	mg/L			09/24/16 12:14	1
Ammonia (as N)	4.8		2.5	0.50	mg/L		09/21/16 05:00	09/21/16 08:31	1
Total Organic Carbon	39		1.0	0.50	mg/L			09/21/16 16:41	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	660		4.0	4.0	mg/L			09/22/16 11:48	1

**Client Sample ID: MW-13R** Lab Sample ID: 440-159066-8

Date Collected: 09/20/16 15:10 **Matrix: Water** Date Received: 09/20/16 18:25

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND ND	1.0	0.40	ug/L			09/29/16 17:41	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/29/16 17:41	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/29/16 17:41	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 17:41	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 17:41	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/29/16 17:41	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/29/16 17:41	1
2-Hexanone	ND	5.0	2.5	ug/L			09/29/16 17:41	1
Acetone	ND	20	10	ug/L			09/29/16 17:41	1
Acetonitrile	ND	20	10	ug/L			09/29/16 17:41	1
Benzene	ND	0.50	0.25	ug/L			09/29/16 17:41	1

Client: Geo-Logic Associates

Tentatively Identified Compound

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Client Sample ID: MW-13R Lab Sample ID: 440-159066-8

Date Collected: 09/20/16 15:10 Matrix: Water

Date Received: 09/20/16 18:25

Method: 8260B - Volatile Organalyte	Result Qualifie			Unit	D	Prepared	Analyzed	Dil Fac
Allyl chloride	ND —	1.0	0.50	ug/L		-	09/29/16 17:41	1
Bromoform	ND	1.0	0.40	ug/L			09/29/16 17:41	1
Bromomethane	ND	0.50		ug/L			09/29/16 17:41	1
Carbon disulfide	ND	1.0		ug/L			09/29/16 17:41	1
Carbon tetrachloride	ND	0.50		ug/L			09/29/16 17:41	1
Chlorobenzene	ND	0.50		ug/L			09/29/16 17:41	1
Bromochloromethane	ND	0.50		ug/L			09/29/16 17:41	1
Chloroethane	ND	1.0		ug/L			09/29/16 17:41	1
Chloroform	ND	0.50		ug/L			09/29/16 17:41	1
Chloromethane	ND	0.50		ug/L			09/29/16 17:41	1
cis-1,2-Dichloroethene	ND	0.50		ug/L			09/29/16 17:41	1
cis-1,3-Dichloropropene	ND	0.50		ug/L			09/29/16 17:41	1
Dibromochloromethane	ND	0.50		ug/L			09/29/16 17:41	1
Dibromomethane	ND	0.50		ug/L			09/29/16 17:41	1
Bromodichloromethane	ND	0.50		ug/L			09/29/16 17:41	1
Dichlorodifluoromethane	ND	1.0		ug/L			09/29/16 17:41	1
Ethyl methacrylate	ND	2.0		ug/L			09/29/16 17:41	1
Ethylbenzene	ND	0.50		ug/L			09/29/16 17:41	1
lodomethane	ND	2.0		ug/L			09/29/16 17:41	1
Isobutyl alcohol	ND	25		ug/L			09/29/16 17:41	1
m,p-Xylene	ND	1.0		ug/L			09/29/16 17:41	1
Methylacrylonitrile	ND	5.0		ug/L			09/29/16 17:41	1
Methyl methacrylate	ND	2.0		ug/L			09/29/16 17:41	1
Methylene Chloride	ND	2.0		ug/L			09/29/16 17:41	· · · · · · · · · · · · · · · · · · ·
Methyl tert-butyl ether	ND	0.50		ug/L			09/29/16 17:41	1
Naphthalene	ND	1.0		ug/L			09/29/16 17:41	1
o-Xylene	ND	0.50		ug/L			09/29/16 17:41	1
Propionitrile	ND	20		ug/L			09/29/16 17:41	1
Styrene	ND	0.50		ug/L			09/29/16 17:41	1
t-Butanol	ND	10		ug/L			09/29/16 17:41	1
Tetrachloroethene	ND	0.50		ug/L			09/29/16 17:41	1
Tetrahydrofuran	ND	10		ug/L			09/29/16 17:41	1
Toluene	ND	0.50		ug/L			09/29/16 17:41	· · · · · · · · · · · · · · · · · · ·
trans-1,2-Dichloroethene	ND	0.50		ug/L			09/29/16 17:41	1
trans-1,3-Dichloropropene	ND	0.50		ug/L			09/29/16 17:41	1
trans-1,4-Dichloro-2-butene	ND	5.0		ug/L			09/29/16 17:41	1
Trichloroethene	ND	0.50		ug/L			09/29/16 17:41	1
Trichlorofluoromethane	ND	0.50		ug/L			09/29/16 17:41	1
Vinyl acetate	ND	4.0		ug/L ug/L			09/29/16 17:41	1
Vinyl chloride	ND	0.50		ug/L			09/29/16 17:41	1
1,2-Dibromoethane (EDB)	ND	0.50		ug/L			09/29/16 17:41	1
2-Butanone (MEK)	ND	5.0		ug/L			09/29/16 17:41	1
4-Methyl-2-pentanone (MIBK)	ND ND	5.0		ug/L ug/L			09/29/16 17:41	1
Acrylonitrile	ND ND	2.0		-			09/29/16 17:41	1
Acrolein	ND	5.0		ug/L ug/L			09/29/16 17:41	1
		3.0	2.0	~g, L			30,20,10 17.41	'
Tentatively Identified Compound	Est. Result Qualifie	r Unit	<u>D</u>	RT	CAS No.	Prepared	Analyzed	Dil Fac
	A 1 -	,,					00/00/10 17 11	-

09/29/16 17:41

ug/L

None

3

4

6

8

10

10

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Date Collected: 09/20/16 15:10 Date Received: 09/20/16 18:25

Lab Sample ID: 440-159066-8

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 128					09/29/16 17:41	1
4-Bromofluorobenzene (Surr)	97		80 - 120					09/29/16 17:41	1
Dibromofluoromethane (Surr)	97		76 - 132					09/29/16 17:41	1
- Method: 8270C - Semivolatil	e Organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	8.1		0.98	0.24	ug/L		09/26/16 10:51	09/28/16 23:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	65		30 - 120				09/26/16 10:51	09/28/16 23:48	1
Method: 300.0 - Anions, Ion Analyte	_	i <mark>phy</mark> Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		50	25	mg/L			09/21/16 09:24	100
Method: 6010B - Metals (ICP	) - Total Reco	overable							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	24		0.50	0.25	mg/L		09/26/16 11:03	09/27/16 22:33	1
- General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chemical Oxygen Demand</b>	240		20	10	mg/L			09/27/16 08:58	1
<b>Total Dissolved Solids</b>	2100		20	10	mg/L			09/24/16 12:14	1
Ammonia (as N)	6.0		2.5	0.50	mg/L		09/21/16 05:00	09/21/16 08:31	1
Total Organic Carbon	24		1.0	0.50	mg/L			09/21/16 16:54	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	700		4.0	4.0	mg/L			09/22/16 12:00	1

Lab Sample ID: 440-159066-9 **Client Sample ID: MW-14** Date Collected: 09/20/16 07:58 **Matrix: Water** 

Date Received: 09/20/16 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/30/16 01:06	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/30/16 01:06	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/30/16 01:06	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 01:06	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 01:06	1
2,2-Dichloropropane	ND		1.0	0.40	ua/L			09/30/16 01:06	1

TestAmerica Irvine

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9/30/2016

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-9

Matrix: Water

Client Sample ID: MW-14

Date Collected: 09/20/16 07:58 Date Received: 09/20/16 18:25

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloro-1,3-butadiene	ND ND	1.0	0.50	ug/L			09/30/16 01:06	
2-Hexanone	ND	5.0	2.5	ug/L			09/30/16 01:06	
Acetone	ND	20	10	ug/L			09/30/16 01:06	
Acetonitrile	ND	20	10	ug/L			09/30/16 01:06	1
Benzene	ND	0.50	0.25	ug/L			09/30/16 01:06	1
Allyl chloride	ND	1.0	0.50	ug/L			09/30/16 01:06	•
Bromoform	ND	1.0	0.40	ug/L			09/30/16 01:06	•
Bromomethane	ND	0.50	0.25	ug/L			09/30/16 01:06	,
Carbon disulfide	ND	1.0	0.50	ug/L			09/30/16 01:06	•
Carbon tetrachloride	ND	0.50	0.25	ug/L			09/30/16 01:06	
Chlorobenzene	ND	0.50	0.25	ug/L			09/30/16 01:06	
Bromochloromethane	ND	0.50	0.25	ug/L			09/30/16 01:06	
Chloroethane	ND	1.0	0.40	ug/L			09/30/16 01:06	
Chloroform	ND	0.50		ug/L			09/30/16 01:06	1
Chloromethane	ND	0.50		ug/L			09/30/16 01:06	1
cis-1,2-Dichloroethene	ND	0.50		ug/L			09/30/16 01:06	
cis-1,3-Dichloropropene	ND	0.50		ug/L			09/30/16 01:06	,
Dibromochloromethane	ND	0.50		ug/L			09/30/16 01:06	
Dibromomethane	ND	0.50		ug/L			09/30/16 01:06	
Bromodichloromethane	ND	0.50		ug/L			09/30/16 01:06	,
Dichlorodifluoromethane	ND	1.0		ug/L			09/30/16 01:06	
Ethyl methacrylate	ND	2.0		ug/L			09/30/16 01:06	
Ethylbenzene	ND	0.50		ug/L			09/30/16 01:06	
lodomethane	ND	2.0		ug/L			09/30/16 01:06	1
Isobutyl alcohol	ND	25		ug/L			09/30/16 01:06	
m,p-Xylene	ND	1.0		ug/L			09/30/16 01:06	
Methylacrylonitrile	ND	5.0		ug/L			09/30/16 01:06	
Methyl methacrylate	ND	2.0		ug/L			09/30/16 01:06	
Methylene Chloride	ND	2.0		ug/L			09/30/16 01:06	
Methyl tert-butyl ether	ND	0.50		ug/L			09/30/16 01:06	
Naphthalene	ND	1.0		ug/L			09/30/16 01:06	
o-Xylene	ND	0.50		ug/L			09/30/16 01:06	,
Propionitrile	ND	20		ug/L			09/30/16 01:06	
Styrene	ND	0.50		ug/L			09/30/16 01:06	,
t-Butanol	ND	10		ug/L			09/30/16 01:06	,
Tetrachloroethene							09/30/16 01:06	,
	ND ND	0.50 10		ug/L ug/L				,
Tetrahydrofuran	ND						09/30/16 01:06	
Toluene	ND ND	0.50		ug/L			09/30/16 01:06	,
trans-1,2-Dichloroethene	ND ND	0.50		ug/L			09/30/16 01:06	,
trans-1,3-Dichloropropene	ND	0.50		ug/L			09/30/16 01:06	
trans-1,4-Dichloro-2-butene	ND	5.0		ug/L			09/30/16 01:06	
Trichloroethene	ND	0.50		ug/L			09/30/16 01:06	•
Trichlorofluoromethane	ND	0.50		ug/L			09/30/16 01:06	
Vinyl acetate	ND	4.0		ug/L			09/30/16 01:06	•
Vinyl chloride	ND	0.50		ug/L			09/30/16 01:06	•
1,2-Dibromoethane (EDB)	ND	0.50		ug/L			09/30/16 01:06	
2-Butanone (MEK)	ND	5.0		ug/L			09/30/16 01:06	1
4-Methyl-2-pentanone (MIBK)	ND	5.0		ug/L			09/30/16 01:06	1
Acrylonitrile	ND	2.0	1.0	ug/L			09/30/16 01:06	•

TestAmerica Irvine

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7

9

11

09/30/16 01:06

Client: Geo-Logic Associates

Dibromofluoromethane (Surr)

Project/Site: Republic Sunshine Canyon

Client Sample ID: MW-14

Lab Sample ID: 440-159066-9 Date Collected: 09/20/16 07:58

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**Matrix: Water** Date Received: 09/20/16 18:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued) Dil Fac **Analyte** Result Qualifier RL **MDL** Unit D Prepared Analyzed Acrolein  $\overline{\mathsf{ND}}$ 5.0 2.5 ug/L 09/30/16 01:06 Tentatively Identified Compound D CAS No. Est. Result Qualifier Unit RT Prepared Analyzed Dil Fac Unknown 7.5 TJug/L 3.51 09/30/16 01:06 Unknown 14 T J ug/L 16.39 09/30/16 01:06 Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed Toluene-d8 (Surr) 106 80 - 128 09/30/16 01:06 4-Bromofluorobenzene (Surr) 101 80 - 120 09/30/16 01:06

76 - 132

Method: 8270C - Semivolatile Organic Compounds (GC/MS) Analyte Result Qualifier **MDL** Unit Prepared RLAnalyzed Dil Fac 1,4-Dioxane  $\overline{\mathsf{ND}}$ 0.99 0.25 ug/L 09/26/16 10:51 09/29/16 00:10 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,4-Dioxane-d8 (Surr) 30 - 120 09/26/16 10:51 09/29/16 00:10 73

Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Chloride 5.0 2.5 mg/L 09/21/16 19:42 24 10

Method: 6010B - Metals (ICP) - Total Recoverable Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Potassium 0.50 0.25 mg/L 09/26/16 11:03 09/27/16 22:39 6.9

**General Chemistry** Result Qualifier RL **MDL** Unit Dil Fac **Analyte** ח Prepared Analyzed **Chemical Oxygen Demand** 10 20 10 mg/L 09/27/16 08:59 2600 20 10 mg/L 09/24/16 12:14 **Total Dissolved Solids** 0.50 0.16 J 0.10 mg/L 09/21/16 05:00 09/21/16 08:31 Ammonia (as N) 3.3 0.10 0.050 mg/L 09/21/16 12:44 **Total Organic Carbon** Analyte Result Qualifier RL RL Unit D Dil Fac Prepared Analyzed 4.0 4.0 mg/L 09/22/16 12:13 **Alkalinity as CaCO3** 410

Client Sample ID: QCAB Lab Sample ID: 440-159066-10 Date Collected: 09/20/16 00:01

Date Received: 09/20/16 18:25

Method: 8260B - Volatile Organic Compounds (GC/MS) Result Qualifier RLAnalyte MDL Unit ח Prepared Analyzed Dil Fac 1,2,3-Trichloropropane  $\overline{\mathsf{ND}}$ 1.0 0.40 ug/L 09/29/16 05:17 1,1,1,2-Tetrachloroethane ND 0.50 0.25 09/29/16 05:17 ug/L 1,1,1-Trichloroethane ND 0.50 0.25 ug/L 09/29/16 05:17 1,1,2,2-Tetrachloroethane ND 0.50 0.25 ug/L 09/29/16 05:17 09/29/16 05:17 ND 0.50 0.25 ug/L 1,1,2-Trichloroethane 1.1-Dichloroethane ND 0.50 0.25 ua/L 09/29/16 05:17 1,1-Dichloroethene ND 0.50 0.25 ug/L 09/29/16 05:17 1,1-Dichloropropene ND 0.50 0.25 ug/L 09/29/16 05:17 ND 0.40 ug/L 1,2,4-Trichlorobenzene 1.0 09/29/16 05:17 1,2-Dibromo-3-Chloropropane ND 1.0 0.50 ug/L 09/29/16 05:17

TestAmerica Irvine

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**Matrix: Water** 

Client: Geo-Logic Associates

**Client Sample ID: QCAB** Date Collected: 09/20/16 00:01

Date Received: 09/20/16 18:25

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Lab Sample ID: 440-159066-10

Matrix: Water

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

Analyte	Result Q	ds (GC/MS) (Con ualifier RL	. MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND ND	0.50	0.25	ug/L			09/29/16 05:17	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 05:17	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 05:17	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 05:17	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 05:17	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 05:17	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/29/16 05:17	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/29/16 05:17	1
2-Hexanone	ND	5.0		ug/L			09/29/16 05:17	1
Acetone	ND	20	10	ug/L			09/29/16 05:17	1
Acetonitrile	ND	20	10	ug/L			09/29/16 05:17	1
Benzene	ND	0.50		ug/L			09/29/16 05:17	1
Allyl chloride	ND	1.0		ug/L			09/29/16 05:17	1
Bromoform	ND	1.0		ug/L			09/29/16 05:17	1
Bromomethane	ND	0.50		ug/L			09/29/16 05:17	1
Carbon disulfide	ND	1.0		ug/L			09/29/16 05:17	1
Carbon tetrachloride	ND	0.50		ug/L			09/29/16 05:17	-
Chlorobenzene	ND	0.50		ug/L			09/29/16 05:17	
Bromochloromethane	ND	0.50		ug/L			09/29/16 05:17	
Chloroethane	ND	1.0		ug/L			09/29/16 05:17	-
Chloroform	ND	0.50		ug/L			09/29/16 05:17	
Chloromethane	ND ND	0.50		ug/L ug/L			09/29/16 05:17	-
	ND ND	0.50		ug/L ug/L			09/29/16 05:17	
cis-1,2-Dichloroethene				-				1
cis-1,3-Dichloropropene	ND ND	0.50 0.50		ug/L			09/29/16 05:17	1
Dibromochloromethane				ug/L			09/29/16 05:17	1
Dibromomethane	ND	0.50		ug/L			09/29/16 05:17	1
Bromodichloromethane	ND	0.50		ug/L			09/29/16 05:17	1
Dichlorodifluoromethane	ND	1.0		ug/L			09/29/16 05:17	1
Ethyl methacrylate	ND	2.0		ug/L			09/29/16 05:17	1
Ethylbenzene	ND	0.50		ug/L			09/29/16 05:17	1
lodomethane	ND	2.0		ug/L			09/29/16 05:17	1
Isobutyl alcohol	ND	25		ug/L			09/29/16 05:17	1
m,p-Xylene	ND	1.0		ug/L			09/29/16 05:17	1
Methylacrylonitrile	ND	5.0		ug/L			09/29/16 05:17	1
Methyl methacrylate	ND	2.0		ug/L			09/29/16 05:17	1
Methylene Chloride	ND	2.0	0.88	ug/L			09/29/16 05:17	1
Methyl tert-butyl ether	ND	0.50		ug/L			09/29/16 05:17	1
Naphthalene	ND	1.0		ug/L			09/29/16 05:17	1
o-Xylene	ND	0.50	0.25	ug/L			09/29/16 05:17	1
Propionitrile	ND	20	10	ug/L			09/29/16 05:17	1
Styrene	ND	0.50	0.25	ug/L			09/29/16 05:17	1
t-Butanol	ND	10	5.0	ug/L			09/29/16 05:17	1
Tetrachloroethene	ND	0.50	0.25	ug/L			09/29/16 05:17	1
Tetrahydrofuran	ND	10	5.0	ug/L			09/29/16 05:17	1
Toluene	ND	0.50		ug/L			09/29/16 05:17	1
trans-1,2-Dichloroethene	ND	0.50		ug/L			09/29/16 05:17	1
trans-1,3-Dichloropropene	ND	0.50		ug/L			09/29/16 05:17	1
trans-1,4-Dichloro-2-butene	ND	5.0		ug/L			09/29/16 05:17	1
Trichloroethene	ND	0.50		ug/L			09/29/16 05:17	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-159066-10

Matrix: Water

Client Sample ID: QCAB Date Collected: 09/20/16 00:01

Date Received: 09/20/16 18:25

Analyte	Result	Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		0.50		0.25	ug/L			09/29/16 05:17	1
Vinyl acetate	ND		4.0		2.0	ug/L			09/29/16 05:17	1
Vinyl chloride	ND		0.50		0.25	ug/L			09/29/16 05:17	1
1,2-Dibromoethane (EDB)	ND		0.50		0.25	ug/L			09/29/16 05:17	1
2-Butanone (MEK)	ND		5.0		2.5	ug/L			09/29/16 05:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		2.5	ug/L			09/29/16 05:17	1
Acrylonitrile	ND		2.0		1.0	ug/L			09/29/16 05:17	1
Acrolein	ND		5.0		2.5	ug/L			09/29/16 05:17	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	7.0	TJ	ug/L		4.	.38			09/29/16 05:17	1
Unknown	13	TJ	ug/L		13.	.83			09/29/16 05:17	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 128						09/29/16 05:17	1
4-Bromofluorobenzene (Surr)	99		80 - 120						09/29/16 05:17	1
Dibromofluoromethane (Surr)	104		76 <sub>-</sub> 132						09/29/16 05:17	1

Client Sample ID: QCTB

Date Collected: 09/20/16 00:01

Lab Sample ID: 440-159066-11

Matrix: Water

Date Received: 09/20/16 18:25

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/29/16 05:47	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/29/16 05:47	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/29/16 05:47	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 05:47	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/29/16 05:47	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/29/16 05:47	1
2-Hexanone	ND	5.0	2.5	ug/L			09/29/16 05:47	1
Acetone	ND	20	10	ug/L			09/29/16 05:47	1
Acetonitrile	ND	20	10	ug/L			09/29/16 05:47	1
Benzene	ND	0.50	0.25	ug/L			09/29/16 05:47	1
Allyl chloride	ND	1.0	0.50	ug/L			09/29/16 05:47	1
Bromoform	ND	1.0	0.40	ug/L			09/29/16 05:47	1
Bromomethane	ND	0.50	0.25	ug/L			09/29/16 05:47	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/29/16 05:47	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

**Client Sample ID: QCTB** Date Collected: 09/20/16 00:01

Date Received: 09/20/16 18:25

Dibromofluoromethane (Surr)

Lab Sample ID: 440-159066-11

Matrix: Water

Analyte	Result	Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fa
Carbon tetrachloride	ND		0.50		0.25	ug/L			09/29/16 05:47	
Chlorobenzene	ND		0.50		0.25	ug/L			09/29/16 05:47	
Bromochloromethane	ND		0.50		0.25	ug/L			09/29/16 05:47	
Chloroethane	ND		1.0		0.40	ug/L			09/29/16 05:47	
Chloroform	ND		0.50		0.25	ug/L			09/29/16 05:47	
Chloromethane	ND		0.50		0.25	ug/L			09/29/16 05:47	
cis-1,2-Dichloroethene	ND		0.50		0.25	ug/L			09/29/16 05:47	
cis-1,3-Dichloropropene	ND		0.50		0.25	ug/L			09/29/16 05:47	
Dibromochloromethane	ND		0.50		0.25	ug/L			09/29/16 05:47	
Dibromomethane	ND		0.50		0.25	ug/L			09/29/16 05:47	
Bromodichloromethane	ND		0.50		0.25	ug/L			09/29/16 05:47	
Dichlorodifluoromethane	ND		1.0			ug/L			09/29/16 05:47	
Ethyl methacrylate	ND		2.0			ug/L			09/29/16 05:47	
Ethylbenzene	ND		0.50			ug/L			09/29/16 05:47	
Iodomethane	ND		2.0			ug/L			09/29/16 05:47	
Isobutyl alcohol	ND		25			ug/L			09/29/16 05:47	
m,p-Xylene	ND		1.0			ug/L			09/29/16 05:47	
Methylacrylonitrile	ND		5.0			ug/L			09/29/16 05:47	
Methyl methacrylate	ND		2.0			ug/L			09/29/16 05:47	
Methylene Chloride	ND		2.0			ug/L			09/29/16 05:47	
Methyl tert-butyl ether	ND		0.50			ug/L			09/29/16 05:47	
Naphthalene	ND		1.0			ug/L			09/29/16 05:47	
o-Xylene	ND		0.50			ug/L			09/29/16 05:47	
Propionitrile	ND		20			ug/L			09/29/16 05:47	
Styrene	ND		0.50			ug/L			09/29/16 05:47	
t-Butanol	ND		10			ug/L			09/29/16 05:47	
Tetrachloroethene	ND ND		0.50			ug/L ug/L			09/29/16 05:47	
Tetrahydrofuran	ND ND		10			ug/L			09/29/16 05:47	
Toluene	ND		0.50			ug/L ug/L			09/29/16 05:47	
	ND ND		0.50			ug/L ug/L			09/29/16 05:47	
trans-1,2-Dichloroethene						-				
trans-1,3-Dichloropropene	ND		0.50 5.0			ug/L			09/29/16 05:47	
trans-1,4-Dichloro-2-butene	ND					ug/L			09/29/16 05:47	
Trichloroethene	ND		0.50			ug/L			09/29/16 05:47	
Trichlorofluoromethane	ND		0.50			ug/L			09/29/16 05:47	
Vinyl acetate	ND		4.0			ug/L			09/29/16 05:47	
Vinyl chloride	ND		0.50			ug/L			09/29/16 05:47	
1,2-Dibromoethane (EDB)	ND		0.50			ug/L			09/29/16 05:47	
2-Butanone (MEK)	ND		5.0			ug/L			09/29/16 05:47	
4-Methyl-2-pentanone (MIBK)	ND		5.0			ug/L			09/29/16 05:47	
Acrylonitrile	ND		2.0			ug/L			09/29/16 05:47	
Acrolein	ND		5.0		2.5	ug/L			09/29/16 05:47	
Tentatively Identified Compound	Est. Result		Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown		TJ	ug/L			.44			09/29/16 05:47	
Unknown	11	TJ	ug/L		15.	.50			09/29/16 05:47	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	106		80 - 128						09/29/16 05:47	
4-Bromofluorobenzene (Surr)	99		80 - 120						09/29/16 05:47	
			70 400						00/00/40 05 17	

TestAmerica Irvine

09/29/16 05:47

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### **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
410.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5310C	TOC	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:**

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

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-159066-1 Client Sample ID: DW-1 Date Collected: 09/20/16 09:45 **Matrix: Water** 

Date Received: 09/20/16 18:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357595	09/23/16 14:53	RM	TAL IRV
Total/NA	Prep	3520C			1045 mL	1 mL	358079	09/26/16 10:51	BMN	TAL IRV
Total/NA	Analysis	8270C		1			358730	09/28/16 21:17	Al	TAL IRV
Total/NA	Analysis	300.0		20			357058	09/21/16 18:12	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358086	09/26/16 10:58	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358309	09/26/16 23:17	ND	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358331	09/27/16 08:58	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357824	09/23/16 07:52	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	357869	09/24/16 12:10	MMH	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357124	09/21/16 10:24	YZ	TAL IRV

**Client Sample ID: DW-3** Lab Sample ID: 440-159066-2 **Matrix: Water** 

Date Collected: 09/20/16 14:23 Date Received: 09/20/16 18:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	-	1	10 mL	10 mL	357595	09/23/16 15:20	RM	TAL IR\
Total/NA	Prep	3520C			1015 mL	1 mL	358079	09/26/16 10:51	BMN	TAL IR\
Total/NA	Analysis	8270C		1			358730	09/28/16 21:39	Al	TAL IR\
Total/NA	Analysis	300.0		10			357058	09/21/16 18:30	NTN	TAL IR\
Total Recoverable	Prep	3005A			25 mL	25 mL	358086	09/26/16 10:58	Q1N	TAL IR\
Total Recoverable	Analysis	6010B		1			358309	09/26/16 23:20	ND	TAL IR\
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358166	09/26/16 15:27	KYP	TAL IR\
Total/NA	Analysis	SM 2320B		1			357824	09/23/16 08:00	YZ	TAL IR\
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	357869	09/24/16 12:10	MMH	TAL IR\
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IR\
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IR\
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357260	09/21/16 17:05	YZ	TAL IR\

**Client Sample ID: PZ-4** Lab Sample ID: 440-159066-3 Date Collected: 09/20/16 10:45 **Matrix: Water** 

Date Received: 09/20/16 18:25

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357595	09/23/16 15:46	RM	TAL IRV
Total/NA Total/NA	Prep Analysis	3520C 8270C		1	1025 mL	1 mL	358079 358730	09/26/16 10:51 09/28/16 22:01	BMN Al	TAL IRV TAL IRV
Total/NA	Analysis	300.0		5			357058	09/21/16 18:48	NTN	TAL IRV
Total Recoverable Total Recoverable	Prep Analysis	3005A 6010B		1	25 mL	25 mL	358086 358309	09/26/16 10:58 09/26/16 23:21	Q1N ND	TAL IRV TAL IRV

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#### **Lab Chronicle**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358166	09/26/16 15:27	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 07:11	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	357869	09/24/16 12:10	MMH	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357260	09/21/16 17:17	YZ	TAL IRV

Client Sample ID: LY-7 Lab Sample ID: 440-159066-4

Date Collected: 09/20/16 08:28 Matrix: Water

Date Received: 09/20/16 18:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357595	09/23/16 16:12	RM	TAL IRV
Total/NA	Prep	3520C			1025 mL	1 mL	358079	09/26/16 10:51	BMN	TAL IRV
Total/NA	Analysis	8270C		50			359039	09/30/16 05:18	Al	TAL IRV
Total/NA	Analysis	300.0		500			356765	09/21/16 07:55	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358354	09/27/16 10:35	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		10			358612	09/27/16 21:33	ND	TAL IRV
Total/NA	Analysis	410.4		2	0.625 mL	2.5 mL	358166	09/26/16 15:27	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 11:13	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	358011	09/26/16 08:24	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			1.0 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		50	100 mL	100 mL	357260	09/21/16 16:03	YZ	TAL IR\

Client Sample ID: PZ-2

Date Collected: 09/20/16 11:55

Lab Sample ID: 440-159066-5

Matrix: Water

Date Received: 09/20/16 18:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357595	09/23/16 16:38	RM	TAL IRV
Total/NA	Prep	3520C			940 mL	1 mL	358079	09/26/16 10:51	BMN	TAL IRV
Total/NA	Analysis	8270C		1			358730	09/28/16 22:44	Al	TAL IRV
Total/NA	Analysis	300.0		20			357058	09/21/16 19:06	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358086	09/26/16 10:58	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358309	09/26/16 23:23	ND	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358331	09/27/16 08:58	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 11:22	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	358011	09/26/16 08:24	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357124	09/21/16 11:17	YZ	TAL IRV

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-159066-6

Matrix: Water

Client Sample ID: MW-6 Date Collected: 09/20/16 10:00 Date Received: 09/20/16 18:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	357595	09/23/16 17:04	RM	TAL IRV
Total/NA	Prep	3520C			1030 mL	1 mL	358079	09/26/16 10:51	BMN	TAL IRV
Total/NA	Analysis	8270C		1			358730	09/28/16 23:05	Al	TAL IRV
Total/NA	Analysis	300.0		10			357058	09/21/16 19:24	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358086	09/26/16 10:58	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358309	09/26/16 23:26	ND	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358331	09/27/16 08:58	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 11:32	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	357870	09/24/16 12:14	MMH	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357124	09/21/16 11:32	YZ	TAL IRV

Client Sample ID: MW-9

Lab Sample ID: 440-159066-7

Date Collected: 09/20/16 13:41 Matrix: Water Date Received: 09/20/16 18:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	358874	09/29/16 17:12	AYL	TAL IR\
Total/NA	Prep	3520C			1040 mL	1 mL	358079	09/26/16 10:51	BMN	TAL IR\
Total/NA	Analysis	8270C		1			358730	09/28/16 23:27	Al	TAL IR\
Total/NA	Analysis	300.0		200			356765	09/21/16 09:09	NN	TAL IR\
Total Recoverable	Prep	3005A			25 mL	25 mL	358091	09/26/16 11:03	Q1N	TAL IR\
Total Recoverable	Analysis	6010B		1			358615	09/27/16 22:26	ND	TAL IR\
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358331	09/27/16 08:58	KYP	TAL IR\
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 11:48	YZ	TAL IR\
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	357870	09/24/16 12:14	MMH	TAL IR\
Total/NA	Prep	SM 4500 NH3 B			10.0 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IR
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IR
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357260	09/21/16 16:41	YZ	TAL IR

Client Sample ID: MW-13R

Date Collected: 09/20/16 15:10

Lab Sample ID: 440-159066-8

Matrix: Water

Date Collected: 09/20/16 15:10 Date Received: 09/20/16 18:25

Prep Type Total/NA	Batch Type Analysis	Batch Method 8260B	Run	Factor 1	Initial Amount 10 mL	Final Amount 10 mL	Batch Number 358874	Prepared or Analyzed 09/29/16 17:41	Analyst AYL	Lab TAL IRV
Total/NA Total/NA	Prep Analysis	3520C 8270C		1	1025 mL	1 mL	358079 358730	09/26/16 10:51 09/28/16 23:48	BMN Al	TAL IRV TAL IRV
Total/NA	Analysis	300.0		100	5 mL	1.0 mL	356765	09/21/16 09:24	NN	TAL IRV
Total Recoverable Total Recoverable	Prep Analysis	3005A 6010B		1	25 mL	25 mL	358091 358615	09/26/16 11:03 09/27/16 22:33	Q1N ND	TAL IRV TAL IRV

TestAmerica Irvine

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Client Sample ID: MW-13R Lab Sample ID: 440-159066-8

Date Collected: 09/20/16 15:10 Date Received: 09/20/16 18:25

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358331	09/27/16 08:58	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357558	09/22/16 12:00	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	357870	09/24/16 12:14	MMH	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10.0 mL	50 mL	356962	09/21/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357017	09/21/16 08:31	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357260	09/21/16 16:54	YZ	TAL IRV

Client Sample ID: MW-14 Lab Sample ID: 440-159066-9 Date Collected: 09/20/16 07:58 **Matrix: Water** 

Date Received: 09/20/16 18:25

Dil Initial Final Batch Batch Batch Prepared **Prep Type** Type Method **Factor Amount** Amount Number or Analyzed **Analyst** Lab Run Total/NA Analysis 8260B 10 mL 10 mL 359136 09/30/16 01:06 WC TAL IRV Total/NA Prep 3520C 1010 mL 1 mL 358079 09/26/16 10:51 BMN TAL IRV Total/NA Analysis 8270C 358730 09/29/16 00:10 AI TAL IRV 1 Total/NA Analysis 300.0 10 357058 09/21/16 19:42 NTN TAL IRV 09/26/16 11:03 Q1N Total Recoverable 3005A 25 mL 358091 TAL IRV Prep 25 mL Total Recoverable Analysis 6010B 358615 09/27/16 22:39 ND TAL IRV 1 0.625 mL Total/NA Analysis 410.4 2.5 mL 358331 09/27/16 08:59 KYP TAL IRV 1 Total/NA 357558 TAL IRV Analysis SM 2320B 09/22/16 12:13 YZ 1 Total/NA SM 2540C 1 50 mL 357870 09/24/16 12:14 MMH TAL IRV **Analysis** 100 mL Total/NA 50 mL TAL IRV Prep SM 4500 NH3 B 50 mL 356962 09/21/16 05:00 YZ Total/NA Analysis SM 4500 NH3 D 357017 09/21/16 08:31 YZ TAL IRV Total/NA Analysis SM 5310C 1 100 mL 100 mL 357124 09/21/16 12:44 YZ TAL IRV

Client Sample ID: QCAB Lab Sample ID: 440-159066-10 Date Collected: 09/20/16 00:01

Date Received: 09/20/16 18:25

Batch Batch Dil Initial Final **Batch Prepared** Method **Factor Prep Type** Type Run **Amount Amount** Number or Analyzed Analyst Lab 358798 09/29/16 05:17 WC Total/NA Analysis 8260B 10 mL 10 mL TAL IRV

Client Sample ID: QCTB Lab Sample ID: 440-159066-11 **Matrix: Water** 

Date Collected: 09/20/16 00:01 Date Received: 09/20/16 18:25

Dil Batch Batch Initial Final **Batch** Prepared Number Method or Analyzed **Prep Type** Type Run **Factor Amount** Amount **Analyst** Lab 358798 09/29/16 05:47 WC TAL IRV Total/NA Analysis 8260B 10 mL 10 mL

**Laboratory References:** 

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

TestAmerica Irvine

**Matrix: Water** 

### **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: MB 440-357595/4

**Matrix: Water** 

Analysis Batch: 357595

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

		MB							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND		1.0	0.40	-			09/23/16 07:21	
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/23/16 07:21	•
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 07:21	•
1,1-Dichloropropene	ND		0.50	0.25	-			09/23/16 07:21	
1,2,4-Trichlorobenzene	ND		1.0	0.40	-			09/23/16 07:21	
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	-			09/23/16 07:21	· · · · · · .
1,2-Dichlorobenzene	ND		0.50	0.25	-			09/23/16 07:21	
1,2-Dichloroethane	ND		0.50	0.25	-			09/23/16 07:21	
1,2-Dichloropropane	ND		0.50	0.25	-			09/23/16 07:21	· · · · · · .
1,3-Dichlorobenzene	ND		0.50	0.25	-			09/23/16 07:21	
1,3-Dichloropropane	ND		0.50	0.25	-			09/23/16 07:21	
1,4-Dichlorobenzene	ND		0.50		ug/L			09/23/16 07:21	
2,2-Dichloropropane	ND		1.0	0.40	-			09/23/16 07:21	
2-Chloro-1,3-butadiene	ND		1.0		ug/L			09/23/16 07:21	
2-Hexanone	ND		5.0		ug/L			09/23/16 07:21	· · · · · · .
Acetone	ND ND		20		ug/L ug/L			09/23/16 07:21	
			20		-			09/23/16 07:21	
Acetonitrile	ND				ug/L				
Benzene	ND		0.50	0.25	_			09/23/16 07:21	•
Allyl chloride	ND		1.0	0.50	-			09/23/16 07:21	•
Bromoform	ND		1.0	0.40	-			09/23/16 07:21	
Bromomethane	ND		0.50	0.25	-			09/23/16 07:21	•
Carbon disulfide	ND		1.0	0.50	_			09/23/16 07:21	•
Carbon tetrachloride	ND		0.50	0.25	-			09/23/16 07:21	
Chlorobenzene	ND		0.50	0.25				09/23/16 07:21	•
Bromochloromethane	ND		0.50	0.25	-			09/23/16 07:21	•
Chloroethane	ND		1.0	0.40	-			09/23/16 07:21	
Chloroform	ND		0.50	0.25	-			09/23/16 07:21	•
Chloromethane	ND		0.50	0.25	ug/L			09/23/16 07:21	•
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/23/16 07:21	•
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/23/16 07:21	
Dibromochloromethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
Dibromomethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
Bromodichloromethane	ND		0.50	0.25	ug/L			09/23/16 07:21	
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/23/16 07:21	
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/23/16 07:21	
Ethylbenzene	ND		0.50		ug/L			09/23/16 07:21	
lodomethane	ND		2.0		ug/L			09/23/16 07:21	
Isobutyl alcohol	ND		25		ug/L			09/23/16 07:21	
m,p-Xylene	ND		1.0		ug/L			09/23/16 07:21	
Methylacrylonitrile	ND		5.0		ug/L			09/23/16 07:21	
Methyl methacrylate	ND		2.0		ug/L			09/23/16 07:21	
Methylene Chloride	ND		2.0		ug/L			09/23/16 07:21	· · · · · · .
Methyl tert-butyl ether	ND		0.50		ug/L			09/23/16 07:21	
Naphthalene	ND		1.0		ug/L			09/23/16 07:21	

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

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued) Lab Sample ID: MB 440-357595/4

**Matrix: Water** 

**Analysis Batch: 357595** 

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

MB MB Result Qualifier **MDL** Unit Analyte RL Prepared Analyzed Dil Fac o-Xylene  $\overline{\mathsf{ND}}$ 0.50 0.25 ug/L 09/23/16 07:21 Propionitrile ND 20 10 ug/L 09/23/16 07:21 Styrene ND 0.50 0.25 ug/L 09/23/16 07:21 t-Butanol ND 10 5.0 ug/L 09/23/16 07:21 Tetrachloroethene ND 0.50 0.25 ug/L 09/23/16 07:21 Tetrahydrofuran ND 10 5.0 ug/L 09/23/16 07:21 09/23/16 07:21 Toluene ND 0.50 0.25 ug/L ND 0.25 ug/L trans-1,2-Dichloroethene 0.50 09/23/16 07:21 trans-1,3-Dichloropropene ND 0.50 0.25 ug/L 09/23/16 07:21 trans-1,4-Dichloro-2-butene ND 5.0 2.5 ug/L 09/23/16 07:21 Trichloroethene ND 0.50 0.25 ug/L 09/23/16 07:21 Trichlorofluoromethane ND 0.50 0.25 ug/L 09/23/16 07:21 ND 4.0 2.0 ug/L Vinyl acetate 09/23/16 07:21 Vinyl chloride ND 0.50 0.25 ug/L 09/23/16 07:21 1,2-Dibromoethane (EDB) ND 0.50 0.25 ug/L 09/23/16 07:21 ND 2-Butanone (MEK) 5.0 2.5 ug/L 09/23/16 07:21 4-Methyl-2-pentanone (MIBK) ND 5.0 2.5 ug/L 09/23/16 07:21 Acrylonitrile ND 2.0 1.0 ug/L 09/23/16 07:21 Acrolein ND 5.0 2.5 ug/L 09/23/16 07:21

MB MB

Tentatively Identified Compound Est. Result Qualifier Unit RT CAS No. Prepared Analyzed Dil Fac 2-Methylnaphthalene 1.08 J ug/L 16.71 91-57-6 09/23/16 07:21 1-Methylnaphthalene 1.38 J ug/L 16.94 90-12-0 09/23/16 07:21 Tentatively Identified Compound None ug/L 09/23/16 07:21

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	116		80 - 128		09/23/16 07:21	1
4-Bromofluorobenzene (Surr)	101		80 - 120		09/23/16 07:21	1
Dibromofluoromethane (Surr)	103		76 - 132		09/23/16 07:21	1

Lab Sample ID: LCS 440-357595/5

**Matrix: Water** 

**Analysis Batch: 357595** 

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

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	26.4		ug/L		105	63 - 130
1,1,1,2-Tetrachloroethane	25.0	27.3		ug/L		109	60 - 141
1,1,1-Trichloroethane	25.0	27.5		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	25.0	26.0		ug/L		104	63 - 130
1,1,2-Trichloroethane	25.0	27.5		ug/L		110	70 - 130
1,1-Dichloroethane	25.0	26.8		ug/L		107	64 - 130
1,1-Dichloroethene	25.0	25.5		ug/L		102	70 - 130
1,1-Dichloropropene	25.0	26.8		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	25.0	32.5		ug/L		130	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	29.0		ug/L		116	52 <sub>-</sub> 140
1,2-Dichlorobenzene	25.0	27.2		ug/L		109	70 - 130
1,2-Dichloroethane	25.0	26.8		ug/L		107	57 <sub>-</sub> 138

TestAmerica Irvine

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

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

Lab Sample ID: LCS 440-357595/5

**Matrix: Water** 

**Analysis Batch: 357595** 

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

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1,2-Dichloropropane 25.0 27.3 ug/L 67 - 130 109 1,3-Dichlorobenzene 25.0 27.6 ug/L 110 70 - 130 25.0 27.0 108 70 - 130 1,3-Dichloropropane ug/L 1,4-Dichlorobenzene 25.0 26.0 ug/L 104 70 - 130 2,2-Dichloropropane 25.0 30.1 ug/L 120 68 - 141 2-Hexanone 25.0 30.6 ug/L 122 10 - 150 ug/L Acetone 25.0 29.0 116 10 - 150 Benzene 25.0 27.2 ug/L 109 68 - 130**Bromoform** 25.0 30.3 ug/L 121 60 - 14825.0 104 64 - 139 Bromomethane 26.1 ug/L Carbon disulfide 25.0 25.8 ug/L 103 52 - 136 Carbon tetrachloride 25.0 27.4 ug/L 110 60 - 15025.0 107 Chlorobenzene 26.9 ug/L 70 - 130 108 Bromochloromethane 25.0 27.0 70 - 130 ug/L Chloroethane 25.0 26.1 ug/L 104 64 - 135 Chloroform 25.0 26.5 ug/L 106 70 - 130 Chloromethane 25.0 22.7 ug/L 91 47 - 140 cis-1.2-Dichloroethene 25.0 26.9 ug/L 108 70 - 133 cis-1,3-Dichloropropene 25.0 28.2 ug/L 113 70 - 133 Dibromochloromethane 25.0 27.7 111 69 - 145 ug/L Dibromomethane 25.0 26.9 ug/L 108 70 - 130 Bromodichloromethane 25.0 27.0 ug/L 108 70 - 132Dichlorodifluoromethane 25.0 21.3 ug/L 85 29 - 150 Ethylbenzene 25.0 27.3 ug/L 109 70 - 130 m,p-Xylene 25.0 28.4 ug/L 113 70 - 130 Methylene Chloride 25.0 26.8 ug/L 107 52 - 130 Methyl tert-butyl ether 25.0 27.1 108 ug/L 63 - 131Naphthalene 25.0 32.3 ug/L 129 60 - 140 o-Xylene 25.0 27.0 108 70 - 130 ug/L Styrene 25.0 28.6 ug/L 115 70 - 134t-Butanol 250 282 113 70 - 130 ug/L Tetrachloroethene 25.0 28.0 ug/L 112 70 - 130 Toluene 25.0 26.9 ug/L 108 70 - 130 trans-1,2-Dichloroethene 25.0 27.2 ug/L 109 70 - 130trans-1,3-Dichloropropene 25.0 27.5 ug/L 110 70 - 132 25.0 26.9 Trichloroethene ug/L 108 70 - 130 Trichlorofluoromethane 25.0 26.7 ug/L 107 60 - 150Vinyl acetate 25.0 28.9 ug/L 116 48 - 140 87 Vinyl chloride 25.0 21.9 ug/L 59 - 133 1,2-Dibromoethane (EDB) 25.0 28.2 ug/L 113 70 - 130 2-Butanone (MEK) 25.0 105 44 - 150 26.3 ug/L 31.3 125 4-Methyl-2-pentanone (MIBK) 25.0 ug/L 59 \_ 149 Acrylonitrile 250 278 ug/L 111 48 - 140 Acrolein 25.0 26.0 ug/L 104 10 - 145

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	107		80 - 128
4-Bromofluorobenzene (Surr)	100		80 - 120

### **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: LCS 440-357595/5

**Matrix: Water** 

**Analysis Batch: 357595** 

LCS LCS

Surrogate %Recovery Qualifier Limits 76 - 132 Dibromofluoromethane (Surr) 104

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

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

Lab Sample ID: 440-158812-A-2 MS **Matrix: Water** 

Analysis Batch: 357595										
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	ND		25.0	24.7		ug/L		99	60 - 130	
1,1,1,2-Tetrachloroethane	ND		25.0	25.7		ug/L		103	60 - 149	
1,1,1-Trichloroethane	ND		25.0	25.5		ug/L		102	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	24.1		ug/L		96	63 - 130	
1,1,2-Trichloroethane	ND		25.0	25.3		ug/L		101	70 - 130	
1,1-Dichloroethane	ND		25.0	24.5		ug/L		98	65 - 130	
1,1-Dichloroethene	5.7		25.0	29.3		ug/L		95	70 - 130	
1,1-Dichloropropene	ND		25.0	24.6		ug/L		98	64 - 130	
1,2,4-Trichlorobenzene	ND		25.0	30.8		ug/L		123	60 - 140	
1,2-Dibromo-3-Chloropropane	ND		25.0	25.7		ug/L		103	48 - 140	
1,2-Dichlorobenzene	ND		25.0	25.5		ug/L		102	70 - 130	
1,2-Dichloroethane	ND		25.0	25.2		ug/L		101	56 - 146	
1,2-Dichloropropane	ND		25.0	25.3		ug/L		101	69 - 130	
1,3-Dichlorobenzene	ND		25.0	25.1		ug/L		101	70 - 130	
1,3-Dichloropropane	ND		25.0	25.0		ug/L		100	70 - 130	
1,4-Dichlorobenzene	ND		25.0	24.7		ug/L		99	70 - 130	
2,2-Dichloropropane	ND		25.0	27.7		ug/L		111	69 - 138	
2-Hexanone	ND		25.0	26.8		ug/L		107	10 - 150	
Acetone	ND		25.0	28.6		ug/L		114	10 - 150	
Benzene	ND		25.0	25.2		ug/L		101	66 - 130	
Bromoform	ND		25.0	27.6		ug/L		110	59 - 150	
Bromomethane	ND		25.0	24.5		ug/L		98	62 - 131	
Carbon disulfide	ND		25.0	23.7		ug/L		95	49 - 140	
Carbon tetrachloride	4.0		25.0	29.8		ug/L		103	60 - 150	
Chlorobenzene	ND		25.0	24.7		ug/L		99	70 - 130	
Bromochloromethane	ND		25.0	24.9		ug/L		100	70 - 130	
Chloroethane	ND		25.0	24.7		ug/L		99	68 - 130	
Chloroform	1.0		25.0	25.8		ug/L		99	70 - 130	
Chloromethane	ND		25.0	21.4		ug/L		86	39 - 144	
cis-1,2-Dichloroethene	ND		25.0	25.0		ug/L		100	70 - 130	
cis-1,3-Dichloropropene	ND		25.0	26.7		ug/L		107	70 - 133	
Dibromochloromethane	ND		25.0	25.6		ug/L		102	70 - 148	
Dibromomethane	ND		25.0	24.7		ug/L		99	70 - 130	
Bromodichloromethane	ND		25.0	25.0		ug/L		100	70 - 138	
Dichlorodifluoromethane	ND		25.0	20.3		ug/L		81	25 - 142	
Ethylbenzene	ND		25.0	25.7		ug/L		103	70 - 130	
m,p-Xylene	ND		25.0	26.5		ug/L		106	70 - 133	
Methylene Chloride	ND		25.0	24.9		ug/L		100	52 - 130	
Methyl tert-butyl ether	ND		25.0	24.9		ug/L		99	70 - 130	
Naphthalene	ND		25.0	28.2		ug/L		113	60 - 140	
o-Xylene	ND		25.0	25.5		ug/L		102	70 - 133	
- ,			_0.0	_0.0		3				

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9/30/2016

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

Lab Sample ID: 440-158812-A-2 MS

Project/Site. Republic Surishine Canyon

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

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

**Matrix: Water** 

**Analysis Batch: 357595** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Styrene	ND		25.0	26.5	-	ug/L		106	29 - 150	
t-Butanol	ND		250	269		ug/L		108	70 - 130	
Tetrachloroethene	2.1		25.0	28.0		ug/L		103	70 - 137	
Toluene	ND		25.0	25.0		ug/L		100	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	25.4		ug/L		101	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	25.4		ug/L		102	70 - 138	
Trichloroethene	14		25.0	38.0		ug/L		95	70 - 130	
Trichlorofluoromethane	ND		25.0	25.2		ug/L		101	60 - 150	
Vinyl acetate	ND		25.0	29.0		ug/L		116	23 - 150	
Vinyl chloride	ND		25.0	20.2		ug/L		81	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	26.3		ug/L		105	70 - 131	
2-Butanone (MEK)	ND		25.0	23.2		ug/L		93	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	28.3		ug/L		113	52 - 150	
Acrylonitrile	ND		250	247		ug/L		99	38 - 144	
Acrolein	ND		25.0	23.9		ug/L		96	10 - 147	
	140	140								

MS MS

Surrogate	%Recovery Qualifier	Limits
Toluene-d8 (Surr)	107	80 - 128
4-Bromofluorobenzene (Surr)	101	80 - 120
Dibromofluoromethane (Surr)	104	76 - 132

Lab Sample ID: 440-158812-A-2 MSD

**Matrix: Water** 

Analysis Batch: 357595

Analysis batch: 35/595											
		Sample	Spike	_	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	25.9		ug/L		104	60 - 130	5	30
1,1,1,2-Tetrachloroethane	ND		25.0	26.4		ug/L		106	60 - 149	3	20
1,1,1-Trichloroethane	ND		25.0	25.7		ug/L		103	70 - 130	1	20
1,1,2,2-Tetrachloroethane	ND		25.0	25.5		ug/L		102	63 - 130	6	30
1,1,2-Trichloroethane	ND		25.0	26.4		ug/L		106	70 - 130	4	25
1,1-Dichloroethane	ND		25.0	25.2		ug/L		101	65 - 130	3	20
1,1-Dichloroethene	5.7		25.0	29.3		ug/L		95	70 - 130	0	20
1,1-Dichloropropene	ND		25.0	25.1		ug/L		100	64 - 130	2	20
1,2,4-Trichlorobenzene	ND		25.0	31.6		ug/L		126	60 - 140	3	20
1,2-Dibromo-3-Chloropropane	ND		25.0	28.6		ug/L		114	48 - 140	11	30
1,2-Dichlorobenzene	ND		25.0	26.1		ug/L		104	70 - 130	3	20
1,2-Dichloroethane	ND		25.0	25.7		ug/L		103	56 - 146	2	20
1,2-Dichloropropane	ND		25.0	26.1		ug/L		105	69 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130	4	20
1,3-Dichloropropane	ND		25.0	26.8		ug/L		107	70 - 130	7	25
1,4-Dichlorobenzene	ND		25.0	24.6		ug/L		98	70 - 130	1	20
2,2-Dichloropropane	ND		25.0	28.3		ug/L		113	69 - 138	2	25
2-Hexanone	ND		25.0	29.5		ug/L		118	10 - 150	9	35
Acetone	ND		25.0	31.0		ug/L		124	10 - 150	8	35
Benzene	ND		25.0	25.3		ug/L		101	66 - 130	1	20
Bromoform	ND		25.0	29.4		ug/L		118	59 - 150	6	25
Bromomethane	ND		25.0	24.1		ug/L		96	62 - 131	2	25

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

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-158812-A-2 MSD

**Matrix: Water** 

Analysis Batch: 357595

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

,	-	e Sample t Qualifier	Spike Added		MSD				%Rec. Limits	RPD	RPD
Analyte					Qualifier	Unit	D	%Rec			Limit
Carbon disulfide	ND		25.0	23.7		ug/L		95	49 - 140	0	20
Carbon tetrachloride	4.0		25.0	30.3		ug/L		105	60 - 150	2	25
Chlorobenzene	ND		25.0	25.5		ug/L		102	70 - 130	3	20
Bromochloromethane	ND		25.0	25.5		ug/L		102	70 - 130	2	25
Chloroethane	ND		25.0	24.7		ug/L		99	68 - 130	0	25
Chloroform	1.0		25.0	26.3		ug/L		101	70 - 130	2	20
Chloromethane	ND		25.0	20.8		ug/L		83	39 - 144	3	25
cis-1,2-Dichloroethene	ND		25.0	25.3		ug/L		101	70 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	27.9		ug/L		112	70 - 133	4	20
Dibromochloromethane	ND		25.0	26.7		ug/L		107	70 - 148	4	25
Dibromomethane	ND		25.0	25.4		ug/L		102	70 - 130	3	25
Bromodichloromethane	ND		25.0	25.7		ug/L		103	70 - 138	3	20
Dichlorodifluoromethane	ND		25.0	20.3		ug/L		81	25 - 142	0	30
Ethylbenzene	ND		25.0	26.2		ug/L		105	70 - 130	2	20
m,p-Xylene	ND		25.0	27.0		ug/L		108	70 - 133	2	25
Methylene Chloride	ND		25.0	24.9		ug/L		100	52 - 130	0	20
Methyl tert-butyl ether	ND		25.0	25.8		ug/L		103	70 - 130	4	25
Naphthalene	ND		25.0	30.4		ug/L		121	60 - 140	7	30
o-Xylene	ND		25.0	26.4		ug/L		105	70 - 133	3	20
Styrene	ND		25.0	27.5		ug/L		110	29 - 150	4	35
t-Butanol	ND		250	267		ug/L		107	70 - 130	1	25
Tetrachloroethene	2.1		25.0	29.7		ug/L		110	70 - 137	6	20
Toluene	ND		25.0	26.2		ug/L		105	70 - 130	5	20
trans-1,2-Dichloroethene	ND		25.0	25.9		ug/L		103	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	27.3		ug/L		109	70 - 138	7	25
Trichloroethene	14		25.0	38.5		ug/L		97	70 - 130	1	20
Trichlorofluoromethane	ND		25.0	25.1		ug/L		100	60 - 150	0	25
Vinyl acetate	ND		25.0	30.2		ug/L		121	23 - 150	4	30
Vinyl chloride	ND		25.0	19.8		ug/L		79	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	27.5		ug/L		110	70 - 131	4	25
2-Butanone (MEK)	ND		25.0	24.4		ug/L		98	48 - 140	5	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	30.7		ug/L		123	52 - 150	8	35
Acrylonitrile	ND		250	262		ug/L		105	38 - 144	6	40
Acrolein	ND		25.0	24.8		ug/L		99	10 - 147	4	40

MSD MSD

MB MB

ND

ND

ND

Result Qualifier

Surrogate	%Recovery Qu	ialifier Limits
Toluene-d8 (Surr)	110	80 - 128
4-Bromofluorobenzene (Surr)	102	80 - 120
Dibromofluoromethane (Surr)	105	76 - 132

Lab Sample ID: MB 440-358798/4

**Matrix: Water** 

1,2,3-Trichloropropane

1,1,1-Trichloroethane

1,1,1,2-Tetrachloroethane

Analyte

Analysis Batch: 358798

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

Prepared Analyzed Dil Fac 09/28/16 20:19 09/28/16 20:19 09/28/16 20:19

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RL

1.0

0.50

0.50

**MDL** Unit

0.40 ug/L

0.25 ug/L

0.25 ug/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: MB 440-358798/4

**Matrix: Water** 

**Analysis Batch: 358798** 

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA** 

Analyte	MB Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L	<u> </u>		09/28/16 20:19	1
1,1,2-Trichloroethane	ND		0.50		ug/L			09/28/16 20:19	1
1,1-Dichloroethane	ND		0.50		ug/L			09/28/16 20:19	1
1,1-Dichloroethene	ND		0.50		ug/L			09/28/16 20:19	1
1,1-Dichloropropene	ND		0.50		ug/L			09/28/16 20:19	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/28/16 20:19	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/28/16 20:19	1
1,2-Dichlorobenzene	ND		0.50		ug/L			09/28/16 20:19	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/28/16 20:19	1
1,2-Dichloropropane	ND		0.50		ug/L			09/28/16 20:19	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/28/16 20:19	1
1,3-Dichloropropane	ND		0.50	0.25	-			09/28/16 20:19	1
1,4-Dichlorobenzene	ND		0.50		ug/L			09/28/16 20:19	1
2,2-Dichloropropane	ND		1.0		ug/L			09/28/16 20:19	1
2-Chloro-1,3-butadiene	ND		1.0		ug/L			09/28/16 20:19	1
2-Hexanone	ND		5.0	2.5	ug/L			09/28/16 20:19	1
Acetone	ND		20		ug/L			09/28/16 20:19	1
Acetonitrile	ND		20		ug/L			09/28/16 20:19	1
Benzene	ND		0.50		ug/L			09/28/16 20:19	1
Allyl chloride	ND		1.0	0.50	-			09/28/16 20:19	1
Bromoform	ND		1.0	0.40	-			09/28/16 20:19	1
Bromomethane	ND		0.50	0.25	-			09/28/16 20:19	1
Carbon disulfide	ND		1.0		ug/L			09/28/16 20:19	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Chloroethane	ND		1.0	0.40	ug/L			09/28/16 20:19	1
Chloroform	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Chloromethane	ND		0.50	0.25	ug/L			09/28/16 20:19	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/28/16 20:19	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Dibromomethane	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/28/16 20:19	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/28/16 20:19	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/28/16 20:19	1
Iodomethane	ND		2.0		ug/L			09/28/16 20:19	1
Isobutyl alcohol	ND		25		ug/L			09/28/16 20:19	1
m,p-Xylene	ND		1.0		ug/L			09/28/16 20:19	1
Methylacrylonitrile	ND		5.0		ug/L			09/28/16 20:19	1
Methyl methacrylate	ND		2.0		ug/L			09/28/16 20:19	1
Methylene Chloride	ND		2.0		ug/L			09/28/16 20:19	1
Methyl tert-butyl ether	ND		0.50		ug/L			09/28/16 20:19	1
Naphthalene	ND		1.0		ug/L			09/28/16 20:19	1
o-Xylene	ND		0.50		ug/L			09/28/16 20:19	1
Propionitrile	ND		20		ug/L			09/28/16 20:19	1
Styrene	ND		0.50		ug/L			09/28/16 20:19	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

ND

ND

ND

Lab Sample ID: MB 440-358798/4 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 358798** Analyte t-Butanol Tetrachloroethene

МВ	МВ								
Result	Qualifier	RL	MDL	Unit	ı	D	Prepared	Analyzed	Dil Fac
ND		10	5.0	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		10	5.0	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		5.0	2.5	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		4.0	2.0	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1
ND		0.50	0.25	ug/L				09/28/16 20:19	1

2.5 ug/L

2.5 ug/L

1.0 ug/L

Acrolein	ND			5.0	2.5 ug/L			09/28/16 20:19	1
	МВ	МВ							
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.190	J	ug/L		16.25	91-57-6		09/28/16 20:19	1
Tentatively Identified Compound	None		ug/L					09/28/16 20:19	1

5.0

5.0

2.0

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 128		09/28/16 20:19	1
4-Bromofluorobenzene (Surr)	100		80 - 120		09/28/16 20:19	1
Dibromofluoromethane (Surr)	101		76 - 132		09/28/16 20:19	1

Lab Sample ID: LCS 440-358798/5

**Matrix: Water** 

Tetrahydrofuran Toluene

Trichloroethene Trichlorofluoromethane

Vinyl acetate Vinyl chloride

Acrylonitrile

trans-1,2-Dichloroethene trans-1,3-Dichloropropene trans-1,4-Dichloro-2-butene

1,2-Dibromoethane (EDB)

4-Methyl-2-pentanone (MIBK)

2-Butanone (MEK)

Analysis Batch: 259709

•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	24.6		ug/L		98	63 - 130
1,1,1,2-Tetrachloroethane	25.0	27.0		ug/L		108	60 - 141
1,1,1-Trichloroethane	25.0	26.5		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	25.0	23.1		ug/L		92	63 - 130
1,1,2-Trichloroethane	25.0	22.9		ug/L		92	70 - 130
1,1-Dichloroethane	25.0	25.2		ug/L		101	64 - 130
1,1-Dichloroethene	25.0	25.2		ug/L		101	70 - 130
1,1-Dichloropropene	25.0	25.3		ug/L		101	70 - 130
1,2,4-Trichlorobenzene	25.0	26.0		ug/L		104	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	25.0		ug/L		100	52 <sub>-</sub> 140
1,2-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
1,2-Dichloroethane	25.0	25.9		ug/L		104	57 - 138
1,2-Dichloropropane	25.0	27.8		ug/L		111	67 - 130
1,3-Dichlorobenzene	25.0	24.3		ug/L		97	70 - 130
1,3-Dichloropropane	25.0	22.1		ug/L		88	70 <sub>-</sub> 130
1,4-Dichlorobenzene	25.0	24.7		ug/L		99	70 - 130

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

09/28/16 20:19

09/28/16 20:19

09/28/16 20:19

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: LCS 440-358798/5

**Matrix: Water** 

Acrylonitrile

Acrolein

**Analysis Batch: 358798** 

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

2.2-Dichloropropane         25.0         27.3         ug/L         109         68.141           2-Hexanone         25.0         26.2         ug/L         105         10.150           Acetone         25.0         24.9         ug/L         100         10.150           Benzene         25.0         24.8         ug/L         199         68.130           Bromoform         25.0         25.5         ug/L         102         64.139           Carbon disulfide         25.0         25.5         ug/L         100         52.136           Carbon tetrachloride         25.0         26.6         ug/L         106         60.150           Chlorobenzene         25.0         25.9         ug/L         104         70.130           Bromochloromethane         25.0         25.5         ug/L         102         70.130           Chloroform         25.0         25.5         ug/L         102         70.130           Chloroform         25.0         25.5         ug/L         102         70.130           Chloroform         25.0         25.5         ug/L         108         70.133           chloroform         25.0         25.0         25.5         ug/L		Spike	LCS LCS			%Rec.
2-Hexanone	Analyte	Added	Result Qualifier	Unit	D %Rec	Limits
Acetone 25.0 24.9 ug/L 100 10.150 Benzene 25.0 24.8 ug/L 186 68.130 Bromoform 25.0 29.6 ug/L 118 60.148 Bromomethane 25.0 25.5 ug/L 102 64.139 Carbon disulfide 25.0 25.5 ug/L 102 64.139 Carbon disulfide 25.0 26.6 ug/L 106 52.136 Carbon tetrachloride 25.0 25.9 ug/L 100 52.136 Carbon tetrachloride 25.0 25.9 ug/L 104 70.130 Bromochloromethane 25.0 25.9 ug/L 104 70.130 Bromochloromethane 25.0 25.5 ug/L 102 70.130 Chlorobenzene 25.0 25.5 ug/L 102 70.130 Chlorothane 25.0 25.5 ug/L 102 70.130 Chloromethane 25.0 25.0 ug/L 102 70.130 Chloromethane 25.0 25.0 ug/L 102 70.130 Chloromethane 25.0 25.0 ug/L 102 70.130 Chloromethane 25.0 27.0 ug/L 108 70.133 cis-1.3-Dichloropropene 25.0 27.0 ug/L 108 70.133 cis-1.3-Dichloropropene 25.0 27.0 ug/L 108 70.133 cis-1.3-Dichloropropene 25.0 27.6 ug/L 111 69.145 Dibromochloromethane 25.0 27.6 ug/L 111 69.145 Dibromochloromethane 25.0 27.6 ug/L 111 69.145 Dibromochloromethane 25.0 27.2 ug/L 109 70.130 Bromodichloromethane 25.0 27.2 ug/L 109 70.130 Bromodichloromethane 25.0 22.2 ug/L 109 70.130 Bromodichloromethane 25.0 22.2 ug/L 109 70.130 Bromodichloromethane 25.0 25.5 ug/L 102 70.130 Methyl tetr-butyl ether 25.0 22.2 ug/L 102 63.131 Naphthalene 25.0 22.2 ug/L 107 70.130 Methyl tetr-butyl ether 25.0 26.8 ug/L 107 70.130 Methyl tetr-butyl ether 25.0 26.8 ug/L 107 70.130 Slyrene 25.0 26.8 ug/L 107 70.130 Formachine 25.0 26.8 ug/L 107 70.130 Trichlorothene 25.0 27.2 ug/L 109 70.130 Trichlorothene 25.0 26.8 ug/L 107 70.130	2,2-Dichloropropane	25.0	27.3	ug/L	109	68 - 141
Benzene         25.0         24.8         ug/l.         99         68-130           Bromoform         25.0         29.6         ug/l.         118         60-148           Bromomethane         25.0         25.5         ug/l.         102         64-149           Carbon disulfide         25.0         24.9         ug/l.         100         52-136           Carbon tetrachloride         25.0         26.6         ug/l.         106         60-150           Chloroberzene         25.0         25.9         ug/l.         102         70-130           Bromochloromethane         25.0         25.5         ug/l.         102         70-130           Chloroctehane         25.0         25.5         ug/l.         102         70-130           Chloroctehane         25.0         25.5         ug/l.         102         70-130           Chloroctehane         25.0         25.5         ug/l.         104         64-135           Chloroctehane         25.0         25.0         23.0         ug/l.         108         70-130           Chloroctehane         25.0         25.0         23.0         ug/l.         108         70-133           Elby Lorociticomethane	2-Hexanone	25.0	26.2	ug/L	105	10 - 150
Bromoform         25.0         29.6         ug/L         118         60 - 148           Bromomethane         25.0         25.5         ug/L         102         64 - 139           Carbon disulfide         25.0         24.9         ug/L         106         62 - 136           Carbon tetrachloride         25.0         25.9         ug/L         104         70 - 130           Chlorobenzene         25.0         25.5         ug/L         104         70 - 130           Bromochloromethane         25.0         25.5         ug/L         102         70 - 130           Chloroform         25.0         25.5         ug/L         102         70 - 130           Chloroform         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         23.0         ug/L         108         70 - 133           Chloromethane         25.0         27.0         ug/L         108         70 - 133           Dibromomethane         25.0         27.6         ug/L         106         70 - 133           Dibromomethane         25.0         26.6         ug/L         107         70 - 130           Bromodichloromethane         25.0         2	Acetone	25.0	24.9	ug/L	100	10 - 150
Bromomethane         25.0         25.5         ug/L         102         64 - 139           Carbon disulfide         25.0         24.9         ug/L         100         52 - 136           Carbon tetrachloride         25.0         26.6         ug/L         106         60 - 150           Chlorobenzene         25.0         25.9         ug/L         104         70 - 130           Bromochloromethane         25.0         25.5         ug/L         102         70 - 130           Chloroform         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         25.0         27.0         ug/L         102         70 - 130           Chloromethane         25.0         27.0         ug/L         108         70 - 133           Dibromomethane         25.0         27.0         ug/L         106         70 - 133           Dibromomethane         25.0         27.6         ug/L         111         69 - 145           Dibromomethane         25.0         27.2         ug/L         109         70 - 132           Bromodichloromethane	Benzene	25.0	24.8	ug/L	99	68 - 130
Carbon disulfide         25.0         24.9         ug/L         100         52.136           Carbon tetrachloride         25.0         26.6         ug/L         106         60.150           Chlorobenzene         25.0         25.9         ug/L         104         70.130           Bromochloromethane         25.0         25.5         ug/L         102         70.130           Chlorofethane         25.0         25.5         ug/L         104         64.135           Chloroform         25.0         25.5         ug/L         102         70.130           Chloromethane         25.0         23.0         ug/L         108         70.133           Chloromethane         25.0         27.0         ug/L         108         70.133           Dibromochloromethane         25.0         27.6         ug/L         111         69.145           Dibromochloromethane         25.0         27.6         ug/L         109         70.130           Bromodichloromethane         25.0         27.2         ug/L         109         70.130           Bromodichloromethane         25.0         27.2         ug/L         109         70.132           Dichlorodifluoromethane         25.0	Bromoform	25.0	29.6	ug/L	118	60 - 148
Carbon tetrachloride         25.0         26.6         ug/L         106         60 - 150           Chlorobenzene         25.0         25.9         ug/L         104         70 - 130           Bromochloromethane         25.0         25.5         ug/L         102         70 - 130           Chloroform         25.0         25.9         ug/L         102         70 - 130           Chloromethane         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         25.0         ug/L         102         70 - 130           Chloromethane         25.0         27.0         ug/L         108         70 - 133           cis-1,3-Dichloropropene         25.0         27.6         ug/L         111         69 - 145           Dibromomethane         25.0         27.6         ug/L         116         70 - 133           Bromodichloromethane         25.0         27.2         ug/L         109         70 - 132           Dibromomethane         25.0         27.2         ug/L         109         70 - 132           Ethylbenzere         25.0         28.6         ug/L         109         70 - 132           Ethylbenzere         25.0	Bromomethane	25.0	25.5	ug/L	102	64 - 139
Chlorobenzene         25.0         25.9         ug/L         104         70 - 130           Bromochloromethane         25.0         25.5         ug/L         102         70 - 130           Chlorotethane         25.0         25.9         ug/L         104         64 - 135           Chloroform         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         23.0         ug/L         192         47 - 140           cis-1,2-Dichloroghene         25.0         27.0         ug/L         108         70 - 133           cis-1,3-Dichloropropene         25.0         27.6         ug/L         111         69 - 145           Dibromochloromethane         25.0         27.6         ug/L         111         69 - 145           Dibromochloromethane         25.0         27.6         ug/L         109         70 - 133           Bromodichloromethane         25.0         27.2         ug/L         109         70 - 132           Dibromochlane         25.0         28.6         ug/L         109         70 - 132           Ethylbenzere         25.0         28.5         ug/L         109         70 - 130           Methylere Chloride	Carbon disulfide	25.0	24.9	ug/L	100	52 - 136
Bromochloromethane         25.0         25.5         ug/L         102         70 - 130           Chloroethane         25.0         25.9         ug/L         104         64 - 135           Chloroform         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         23.0         ug/L         192         47 - 140           cis-1,2-Dichloroethene         25.0         27.0         ug/L         108         70 - 133           cis-1,3-Dichloropropene         25.0         27.6         ug/L         111         69 - 145           Dibromomethane         25.0         27.6         ug/L         106         70 - 133           Dibromomethane         25.0         26.6         ug/L         106         70 - 133           Bromodichloromethane         25.0         26.6         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         28.2         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         28.2         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         28.5         ug/L         107         70 - 130           Hylane </td <td>Carbon tetrachloride</td> <td>25.0</td> <td>26.6</td> <td>ug/L</td> <td>106</td> <td>60 - 150</td>	Carbon tetrachloride	25.0	26.6	ug/L	106	60 - 150
Chloroethane         25.0         25.9         ug/L         104         64 - 135           Chloroform         25.0         25.5         ug/L         102         70 - 130           Chloromethane         25.0         25.0         23.0         ug/L         92         47 - 140           cis-1,2-Dichloroethene         25.0         27.0         ug/L         108         70 - 133           cis-1,3-Dichloropropene         25.0         23.9         ug/L         106         70 - 133           Dibromochloromethane         25.0         26.6         ug/L         106         70 - 133           Bromodichloromethane         25.0         26.6         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         26.6         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         26.5         ug/L         93         29 - 150           Ethylbenzene         25.0         26.5         ug/L         102         70 - 132           Dichlorodifluoromethane         25.0         26.8         ug/L         107         70 - 130           Methylene Chloride         25.0         26.8         ug/L         107         70 - 130      <	Chlorobenzene	25.0	25.9	ug/L	104	70 - 130
Chloroform         25.0         25.5         ug/L         102         70.130           Chloromethane         25.0         23.0         ug/L         92         47.140           cis-1,2-Dichloroethene         25.0         23.0         ug/L         108         70.133           cis-1,3-Dichloropropene         25.0         27.6         ug/L         111         69.145           Dibromochloromethane         25.0         27.6         ug/L         106         70.130           Bromodichloromethane         25.0         26.6         ug/L         109         70.130           Bromodichloromethane         25.0         27.2         ug/L         193         29.150           Ethylbenzene         25.0         23.2         ug/L         102         70.130           Bromodichloromethane         25.0         25.5         ug/L         102         70.130           Bromodichloromethane         25.0         25.5         ug/L         102         70.130           Bromodichloromethane         25.0         25.5         ug/L         107         70.130           Bthylenzene         25.0         26.8         ug/L         107         70.130           Methylenzene         25.0 <td>Bromochloromethane</td> <td>25.0</td> <td>25.5</td> <td>ug/L</td> <td>102</td> <td>70 - 130</td>	Bromochloromethane	25.0	25.5	ug/L	102	70 - 130
Chloromethane         25.0         23.0         ug/L         92         47 - 140           cis-1,2-Dichloroethene         25.0         27.0         ug/L         108         70 - 133           cis-1,3-Dichloroptopene         25.0         23.9         ug/L         111         69 - 145           Dibromochloromethane         25.0         27.6         ug/L         106         70 - 130           Bromodichloromethane         25.0         26.6         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         23.2         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         23.2         ug/L         102         70 - 130           Ethylbenzene         25.0         25.5         ug/L         107         70 - 130           Methylene Chloride         25.0         26.8         ug/L         107         70 - 130           Methylene Chloride         25.0         22.2         ug/L         89         52 - 130           Methyl tert-butyl ether         25.0         25.4         ug/L         102         63 - 131           Naphthalene         25.0         25.0         26.5         ug/L         10         70 - 130	Chloroethane	25.0	25.9	ug/L	104	64 - 135
cis-1,2-Dichloroethene         25.0         27.0         ug/L         108         70 - 133           cis-1,3-Dichloropropene         25.0         23.9         ug/L         96         70 - 133           Dibromochloromethane         25.0         27.6         ug/L         111         69 - 145           Dibromomethane         25.0         26.6         ug/L         106         70 - 130           Bromodichloromethane         25.0         27.2         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         23.2         ug/L         109         70 - 130           Bromodichloromethane         25.0         25.5         ug/L         102         70 - 130           Ethylbenzene         25.0         25.5         ug/L         102         70 - 130           Ethylbenzene         25.0         26.8         ug/L         107         70 - 130           Methylene Chloride         25.0         22.2         ug/L         89         52 - 130           Methylene Chloride         25.0         25.4         ug/L         102         63 - 131           Naphthalene         25.0         25.4         ug/L         106         70 - 130           Styrene	Chloroform	25.0	25.5	ug/L	102	70 - 130
cis-1,3-Dichloropropene         25.0         23.9         ug/L         96         70 - 133           Dibromochloromethane         25.0         27.6         ug/L         111         69 - 145           Dibromochloromethane         25.0         26.6         ug/L         106         70 - 130           Bromodichloromethane         25.0         27.2         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         23.2         ug/L         103         29 - 150           Ethylbenzene         25.0         25.5         ug/L         102         70 - 130           Methylene Chloride         25.0         26.8         ug/L         107         70 - 130           Methyl tert-butyl ether         25.0         25.4         ug/L         102         63 - 131           Naphthalene         25.0         25.4         ug/L         102         63 - 131           Naphthalene         25.0         26.5         ug/L         106         70 - 130           Styrene         25.0         26.5         ug/L         106         70 - 130           Styrene         25.0         26.8         ug/L         105         70 - 130           Tetrachloroethene	Chloromethane	25.0	23.0	ug/L	92	47 - 140
Dibromochloromethane         25.0         27.6         ug/L         111         69 - 145           Dibromomethane         25.0         26.6         ug/L         106         70 - 130           Bromodichloromethane         25.0         27.2         ug/L         109         70 - 132           Dichlorodifluoromethane         25.0         23.2         ug/L         193         29 - 150           Ethylbenzene         25.0         25.5         ug/L         102         70 - 130           m.p-Xylene         25.0         25.6         ug/L         107         70 - 130           Methylene Chloride         25.0         22.2         ug/L         89         52 - 130           Methyl tert-butyl ether         25.0         25.4         ug/L         102         63 - 131           Naphthalene         25.0         25.4         ug/L         102         63 - 131           Naphthalene         25.0         26.5         ug/L         106         70 - 130           Styrene         25.0         26.8         ug/L         107         70 - 130           Styrene         25.0         26.8         ug/L         105         70 - 130           Tetrachloroethene         25.0	cis-1,2-Dichloroethene	25.0	27.0	ug/L	108	70 - 133
Dibromomethane       25.0       26.6       ug/L       106       70 - 130         Bromodichloromethane       25.0       27.2       ug/L       109       70 - 132         Dichlorodifluoromethane       25.0       27.2       ug/L       93       29 - 150         Ethylbenzene       25.0       25.5       ug/L       102       70 - 130         Methylene       25.0       26.8       ug/L       107       70 - 130         Methylene Chloride       25.0       22.2       ug/L       89       52 - 130         Methyl tert-butyl ether       25.0       25.4       ug/L       102       63 - 131         Naphthalene       25.0       25.0       25.4       ug/L       102       63 - 131         Naphthalene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.5       ug/L       107       70 - 134         t-Butanol       25.0       26.8       ug/L       107       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Tolluene       25.0       27.5       ug/L       107       70 - 130         trans-1,2-Dichloroeth	cis-1,3-Dichloropropene	25.0	23.9	ug/L	96	70 - 133
Bromodichloromethane       25.0       27.2       ug/L       109       70 - 132         Dichlorodifluoromethane       25.0       23.2       ug/L       93       29 - 150         Ethylbenzene       25.0       25.5       ug/L       102       70 - 130         m,p-Xylene       25.0       26.8       ug/L       107       70 - 130         Methylene Chloride       25.0       22.2       ug/L       89       52 - 130         Methyl tert-butyl ether       25.0       25.4       ug/L       102       63 - 131         Naphthalene       25.0       25.0       23.9       ug/L       95       60 - 140         o-Xylene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.5       ug/L       107       70 - 134         t-Butanol       25.0       26.8       ug/L       107       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Tetrachloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,2-Di	Dibromochloromethane	25.0	27.6	ug/L	111	69 - 145
Dichlorodifluoromethane       25.0       23.2       ug/L       93       29 - 150         Ethylbenzene       25.0       25.5       ug/L       102       70 - 130         m,p-Xylene       25.0       26.8       ug/L       107       70 - 130         Methylene Chloride       25.0       22.2       ug/L       89       52 - 130         Methyl tert-butyl ether       25.0       22.2       ug/L       102       63 - 131         Naphthalene       25.0       23.9       ug/L       102       63 - 131         Naphthalene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.8       ug/L       107       70 - 134         t-Butanol       25.0       26.8       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       87       70 - 130         Tetrachloroethene       25.0       27.5       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       107       70 - 132         Trichloroethene       25.0<	Dibromomethane	25.0	26.6	ug/L	106	70 - 130
Ethylbenzene       25.0       25.5       ug/L       102       70 - 130         m,p-Xylene       25.0       26.8       ug/L       107       70 - 130         Methylene Chloride       25.0       22.2       ug/L       89       52 - 130         Methyl tert-butyl ether       25.0       25.4       ug/L       102       63 - 131         Naphthalene       25.0       23.9       ug/L       95       60 - 140         o-Xylene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.8       ug/L       107       70 - 134         t-Butanol       25.0       26.3       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Toluene       25.0       26.3       ug/L       105       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane	Bromodichloromethane	25.0	27.2	ug/L	109	70 - 132
m,p-Xylene       25.0       26.8       ug/L       107       70 - 130         Methylene Chloride       25.0       22.2       ug/L       89       52 - 130         Methyl tert-butyl ether       25.0       25.4       ug/L       102       63 - 131         Naphthalene       25.0       23.9       ug/L       95       60 - 140         o-Xylene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.8       ug/L       107       70 - 134         t-Butanol       25.0       26.3       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Toluene       25.0       26.3       ug/L       87       70 - 130         Toluene       25.0       21.8       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichlorofluoromethane       25.0       27.2       ug/L       109       70 - 130         Vinyl acetate       25.0	Dichlorodifluoromethane	25.0	23.2	ug/L	93	29 - 150
Methylene Chloride       25.0       22.2       ug/L       89       52.130         Methyl tert-butyl ether       25.0       25.4       ug/L       102       63.131         Naphthalene       25.0       23.9       ug/L       95       60.140         o-Xylene       25.0       26.5       ug/L       106       70.130         Styrene       25.0       26.8       ug/L       107       70.134         t-Butanol       250       263       ug/L       105       70.130         Tetrachloroethene       25.0       26.3       ug/L       105       70.130         Toluene       25.0       21.8       ug/L       87       70.130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70.130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70.132         Trichloroethene       25.0       27.2       ug/L       109       70.130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60.150         Vinyl acetate       25.0       25.2       ug/L       101       59.133         1,2-Dibromoethane (EDB)       25.0	Ethylbenzene	25.0	25.5	ug/L	102	70 - 130
Methylene Chloride       25.0       22.2       ug/L       89       52.130         Methyl tert-butyl ether       25.0       25.4       ug/L       102       63.131         Naphthalene       25.0       23.9       ug/L       95       60.140         o-Xylene       25.0       26.5       ug/L       106       70.130         Styrene       25.0       26.8       ug/L       107       70.134         t-Butanol       250       263       ug/L       105       70.130         Tetrachloroethene       25.0       26.3       ug/L       105       70.130         Toluene       25.0       21.8       ug/L       87       70.130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70.130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70.132         Trichloroethene       25.0       27.2       ug/L       109       70.130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60.150         Vinyl acetate       25.0       25.2       ug/L       101       59.133         1,2-Dibromoethane (EDB)       25.0	m,p-Xylene	25.0	26.8	ug/L	107	70 - 130
Naphthalene       25.0       23.9       ug/L       95       60 - 140         o-Xylene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.8       ug/L       107       70 - 134         t-Butanol       250       263       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       87       70 - 130         Toluene       25.0       21.8       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       2	Methylene Chloride	25.0	22.2	ug/L	89	52 - 130
co-Xylene       25.0       26.5       ug/L       106       70 - 130         Styrene       25.0       26.8       ug/L       107       70 - 134         t-Butanol       250       263       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Toluene       25.0       21.8       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Methyl tert-butyl ether	25.0	25.4	ug/L	102	63 - 131
Styrene       25.0       26.8       ug/L       107       70 - 134         t-Butanol       250       263       ug/L       105       70 - 130         Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Toluene       25.0       21.8       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Naphthalene	25.0	23.9	ug/L	95	60 - 140
t-Butanol 250 263 ug/L 105 70 - 130 Tetrachloroethene 25.0 26.3 ug/L 105 70 - 130 Toluene 25.0 21.8 ug/L 87 70 - 130 trans-1,2-Dichloroethene 25.0 27.5 ug/L 110 70 - 130 trans-1,3-Dichloropropene 25.0 23.7 ug/L 95 70 - 132 Trichloroethene 25.0 27.2 ug/L 109 70 - 130 Trichlorofluoromethane 25.0 27.2 ug/L 109 70 - 130 Trichlorofluoromethane 25.0 24.4 ug/L 97 60 - 150 Vinyl acetate 25.0 26.8 ug/L 107 48 - 140 Vinyl chloride 25.0 25.0 26.8 ug/L 101 59 - 133 1,2-Dibromoethane (EDB) 25.0 26.8 ug/L 107 70 - 130 2-Butanone (MEK) 25.0 23.1 ug/L 92 44 - 150	o-Xylene	25.0	26.5	ug/L	106	70 - 130
Tetrachloroethene       25.0       26.3       ug/L       105       70 - 130         Toluene       25.0       21.8       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Styrene	25.0	26.8	ug/L	107	70 - 134
Toluene       25.0       21.8       ug/L       87       70 - 130         trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	t-Butanol	250	263	ug/L	105	70 - 130
trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Tetrachloroethene	25.0	26.3	-	105	70 - 130
trans-1,2-Dichloroethene       25.0       27.5       ug/L       110       70 - 130         trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Toluene	25.0	21.8	-	87	70 - 130
trans-1,3-Dichloropropene       25.0       23.7       ug/L       95       70 - 132         Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	trans-1,2-Dichloroethene	25.0	27.5	-	110	70 - 130
Trichloroethene       25.0       27.2       ug/L       109       70 - 130         Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	trans-1,3-Dichloropropene	25.0	23.7		95	70 - 132
Trichlorofluoromethane       25.0       24.4       ug/L       97       60 - 150         Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Trichloroethene	25.0	27.2	-	109	70 - 130
Vinyl acetate       25.0       26.8       ug/L       107       48 - 140         Vinyl chloride       25.0       25.2       ug/L       101       59 - 133         1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Trichlorofluoromethane	25.0	24.4		97	60 - 150
Vinyl chloride     25.0     25.2     ug/L     101     59 - 133       1,2-Dibromoethane (EDB)     25.0     26.8     ug/L     107     70 - 130       2-Butanone (MEK)     25.0     23.1     ug/L     92     44 - 150	Vinyl acetate		26.8	_	107	48 - 140
1,2-Dibromoethane (EDB)       25.0       26.8       ug/L       107       70 - 130         2-Butanone (MEK)       25.0       23.1       ug/L       92       44 - 150	Vinyl chloride			ū		
2-Butanone (MEK) 25.0 23.1 ug/L 92 44 - 150						
· · ·	• • •			-		
	4-Methyl-2-pentanone (MIBK)	25.0	21.9	ug/L	88	59 <sub>-</sub> 149

•	CS	LCS	

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	90		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132

TestAmerica Irvine

250

25.0

257

19.1

ug/L

ug/L

103

76

48 - 140

10 - 145

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: 440-159395-B-3 MS

**Matrix: Water** 

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

Analysis Batch: 358798	Sample Sampl	e Spike	MS	MS				%Rec.
Analyte	Result Qualif		Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	ND	500	502		ug/L		100	60 - 130
1,1,1,2-Tetrachloroethane	ND	500	564		ug/L		113	60 - 149
1,1,1-Trichloroethane	47	500	588		ug/L		108	70 - 130
1,1,2,2-Tetrachloroethane	ND	500	483		ug/L		97	63 - 130
1,1,2-Trichloroethane	ND	500	538		ug/L		108	70 - 130
1,1-Dichloroethane	110	500	623		ug/L		102	65 - 130
1,1-Dichloroethene	1400 F1	500	1780		ug/L		85	70 - 130
1,1-Dichloropropene	ND	500	523		ug/L		105	64 - 130
1,2,4-Trichlorobenzene	ND	500	550		ug/L		110	60 - 140
1,2-Dibromo-3-Chloropropane	ND	500	484		ug/L		97	48 - 140
1,2-Dichlorobenzene	ND	500	523		ug/L		105	70 - 130
1,2-Dichloroethane	ND	500	545		ug/L		109	56 - 146
1,2-Dichloropropane	ND	500	581		ug/L		116	69 - 130
1,3-Dichlorobenzene	ND	500	511		ug/L		102	70 - 130
l,3-Dichloropropane	ND	500	533		ug/L		107	70 - 130
1,4-Dichlorobenzene	ND	500	515		ug/L		103	70 - 130
2,2-Dichloropropane	ND	500	547		ug/L		109	69 - 138
2-Hexanone	ND	500	506		ug/L		101	10 - 150
Acetone	ND	500	366	j	ug/L		73	10 - 150
Benzene	ND	500	509		ug/L		102	66 - 130
Bromoform	ND	500	608		ug/L		122	59 <sub>-</sub> 150
Bromomethane	ND	500	460		ug/L		92	62 - 131
Carbon disulfide	ND	500	499		ug/L		100	49 - 140
Carbon tetrachloride	ND	500	539		ug/L		108	60 - 150
Chlorobenzene	ND	500	542		ug/L		108	70 - 130
Bromochloromethane	ND	500	522		ug/L		104	70 - 130
Chloroethane	ND	500	477		ug/L		95	68 - 130
Chloroform	ND	500	524		ug/L		105	70 - 130
Chloromethane	ND	500	418		ug/L		84	39 - 144
cis-1,2-Dichloroethene	17	500	574		ug/L		111	70 - 130
cis-1,3-Dichloropropene	ND	500	567		ug/L		113	70 - 133
Dibromochloromethane	ND	500	575		ug/L		115	70 - 148
Dibromomethane	ND	500	536		ug/L		107	70 - 130
Bromodichloromethane	ND	500	561		ug/L		112	70 - 138
Dichlorodifluoromethane	ND	500	417		ug/L		83	25 - 142
Ethylbenzene	ND	500	528		ug/L		106	70 - 130
n,p-Xylene	ND	500	551		ug/L		110	70 - 133
Methylene Chloride	ND	500	451		ug/L		90	52 - 130
Methyl tert-butyl ether	ND	500	521		ug/L		104	70 - 130
Naphthalene	ND	500	499		ug/L		100	60 - 140
o-Xylene	ND	500	557		ug/L		111	70 - 133
Styrene	ND	500	549		ug/L		110	29 - 150
-Butanol	ND	5000	5980		ug/L		120	70 - 130
Fetrachloroethene	52	500	584		ug/L		106	70 - 137
Toluene	ND	500	524		ug/L		105	70 - 130
rans-1,2-Dichloroethene	ND	500	552		ug/L ug/L		110	70 - 130
rans-1,3-Dichloropropene	ND	500	555		ug/L ug/L		111	70 - 138
Trichloroethene	400	500	881		ug/L ug/L		96	70 - 130 70 - 130

TestAmerica Irvine

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: 440-159395-B-3 MS

**Matrix: Water** 

**Analysis Batch: 358798** 

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

_	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Trichlorofluoromethane	ND		500	441		ug/L		88	60 - 150	
Vinyl acetate	ND		500	581		ug/L		116	23 - 150	
Vinyl chloride	ND		500	452		ug/L		90	50 <sub>-</sub> 137	
1,2-Dibromoethane (EDB)	ND		500	549		ug/L		110	70 - 131	
2-Butanone (MEK)	ND		500	433		ug/L		87	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		500	503		ug/L		101	52 - 150	
Acrylonitrile	ND		5000	4870		ug/L		97	38 - 144	
Acrolein	ND		500	359		ug/L		72	10 - 147	

MS MS

ND

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132

Lab Sample ID: 440-159395-B-3 MSD

**Matrix: Water** 

Chloromethane

**Analysis Batch: 358798** 

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

MSD MSD **RPD** Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 1,2,3-Trichloropropane ND 500 515 ug/L 103 60 - 130 3 30 1,1,1,2-Tetrachloroethane ND 500 571 ug/L 114 60 - 149 20 1,1,1-Trichloroethane 47 500 608 ug/L 112 70 - 130 20 3 1,1,2,2-Tetrachloroethane ND 500 498 ug/L 100 63 - 130 3 30 1,1,2-Trichloroethane ND 500 552 70 - 130 2 25 ug/L 110 500 634 1,1-Dichloroethane 110 ug/L 105 65 - 1302 20 1,1-Dichloroethene 1400 500 1690 F1 ug/L 68 70 - 1305 20 1,1-Dichloropropene ND 500 534 ug/L 107 64 - 130 2 20 1,2,4-Trichlorobenzene ND 500 564 ug/L 113 60 - 140 2 20 ND 500 531 106 1,2-Dibromo-3-Chloropropane ug/L 48 - 140 30 1,2-Dichlorobenzene ND 500 109 70 - 130 20 543 ug/L ND 500 20 1,2-Dichloroethane 557 ug/L 111 56 - 146 2 1,2-Dichloropropane ND 500 596 ug/L 119 69 - 130 3 20 70 - 130 1,3-Dichlorobenzene ND 500 527 ug/L 105 20 1,3-Dichloropropane ND 500 545 ug/L 109 70 - 130 25 1,4-Dichlorobenzene ND 500 529 ug/L 106 70 - 130 3 20 2,2-Dichloropropane ND 500 558 ug/L 112 69 - 138 2 25 2-Hexanone ND 500 521 104 10 - 150 3 35 ug/L Acetone ND 500 410 ug/L 82 10 - 150 11 35 Benzene ND 500 518 ug/L 104 66 - 13020 Bromoform ND 500 614 ug/L 123 59 - 150 25 Bromomethane ND 500 486 ug/L 97 62 - 131 25 Carbon disulfide ND 500 517 ug/L 103 49 - 140 20 ND 500 552 60 - 150 25 Carbon tetrachloride ug/L 110 ND 500 543 109 20 Chlorobenzene ug/L 70 - 130 Bromochloromethane ND 500 530 ug/L 106 70 - 130 25 ND 500 494 99 25 Chloroethane ug/L 68 - 1303 Chloroform ND 500 535 ug/L 107 70 - 1302 20

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25

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468

ug/L

94

39 - 144

500

5

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12

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

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

Lab Sample ID: 440-159395-B-3 MSD

**Matrix: Water** 

Analysis Batch: 358798

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

Analysis Batch: 358798											
	•	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
cis-1,2-Dichloroethene	17		500	581		ug/L		113	70 - 130	1	20
cis-1,3-Dichloropropene	ND		500	571		ug/L		114	70 - 133	1	20
Dibromochloromethane	ND		500	586		ug/L		117	70 - 148	2	25
Dibromomethane	ND		500	546		ug/L		109	70 - 130	2	25
Bromodichloromethane	ND		500	573		ug/L		115	70 - 138	2	20
Dichlorodifluoromethane	ND		500	445		ug/L		89	25 - 142	6	30
Ethylbenzene	ND		500	531		ug/L		106	70 - 130	1	20
m,p-Xylene	ND		500	564		ug/L		113	70 - 133	2	25
Methylene Chloride	ND		500	468		ug/L		94	52 - 130	4	20
Methyl tert-butyl ether	ND		500	537		ug/L		107	70 - 130	3	25
Naphthalene	ND		500	524		ug/L		105	60 - 140	5	30
o-Xylene	ND		500	558		ug/L		112	70 - 133	0	20
Styrene	ND		500	550		ug/L		110	29 - 150	0	35
t-Butanol	ND		5000	6180		ug/L		124	70 - 130	3	25
Tetrachloroethene	52		500	601		ug/L		110	70 - 137	3	20
Toluene	ND		500	533		ug/L		107	70 - 130	2	20
trans-1,2-Dichloroethene	ND		500	565		ug/L		113	70 - 130	2	20
trans-1,3-Dichloropropene	ND		500	568		ug/L		114	70 - 138	2	25
Trichloroethene	400		500	886		ug/L		97	70 - 130	0	20
Trichlorofluoromethane	ND		500	456		ug/L		91	60 - 150	3	25
Vinyl acetate	ND		500	598		ug/L		120	23 - 150	3	30
Vinyl chloride	ND		500	469		ug/L		94	50 - 137	4	30
1,2-Dibromoethane (EDB)	ND		500	569		ug/L		114	70 - 131	4	25
2-Butanone (MEK)	ND		500	449		ug/L		90	48 - 140	4	40
4-Methyl-2-pentanone (MIBK)	ND		500	521		ug/L		104	52 <sub>-</sub> 150	4	35
Acrylonitrile	ND		5000	4810		ug/L		96	38 - 144	1	40
Acrolein	ND		500	364		ug/L		73	10 - 147	1	40
						-					

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132

Lab Sample ID: MB 440-358874/4

**Matrix: Water** 

**Analysis Batch: 358874** 

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

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/29/16 08:23	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/29/16 08:23	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/29/16 08:23	1

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: MB 440-358874/4

**Matrix: Water** 

Analysis Batch: 358874

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

	MB								
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.50		ug/L			09/29/16 08:23	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,2-Dichloropropane	ND		0.50		ug/L			09/29/16 08:23	1
1,3-Dichlorobenzene	ND		0.50		ug/L			09/29/16 08:23	1
1,3-Dichloropropane	ND		0.50		ug/L			09/29/16 08:23	1
1,4-Dichlorobenzene	ND		0.50		ug/L			09/29/16 08:23	1
2,2-Dichloropropane	ND		1.0		ug/L			09/29/16 08:23	1
2-Chloro-1,3-butadiene	ND		1.0		ug/L			09/29/16 08:23	1
2-Hexanone	ND		5.0	2.5	ug/L			09/29/16 08:23	1
Acetone	ND		20		ug/L			09/29/16 08:23	1
Acetonitrile	ND		20		ug/L			09/29/16 08:23	1
Benzene	ND		0.50		ug/L			09/29/16 08:23	1
Allyl chloride	ND		1.0		ug/L			09/29/16 08:23	1
Bromoform	ND		1.0	0.40	ug/L			09/29/16 08:23	1
Bromomethane	ND		0.50		ug/L			09/29/16 08:23	1
Carbon disulfide	ND		1.0		ug/L			09/29/16 08:23	1
Carbon tetrachloride	ND		0.50		ug/L			09/29/16 08:23	1
Chlorobenzene	ND		0.50		ug/L			09/29/16 08:23	1
Bromochloromethane	ND		0.50		ug/L			09/29/16 08:23	1
Chloroethane	ND		1.0	0.40	ug/L			09/29/16 08:23	1
Chloroform	ND		0.50		ug/L			09/29/16 08:23	1
Chloromethane	ND		0.50	0.25	-			09/29/16 08:23	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			09/29/16 08:23	1
Dibromochloromethane	ND		0.50		ug/L			09/29/16 08:23	1
Dibromomethane	ND		0.50		ug/L			09/29/16 08:23	1
Bromodichloromethane	ND		0.50		ug/L			09/29/16 08:23	1
Dichlorodifluoromethane	ND		1.0		ug/L			09/29/16 08:23	1
Ethyl methacrylate	ND		2.0		ug/L			09/29/16 08:23	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Iodomethane	ND		2.0	1.0	ug/L			09/29/16 08:23	1
Isobutyl alcohol	ND		25		ug/L			09/29/16 08:23	1
m,p-Xylene	ND		1.0		ug/L			09/29/16 08:23	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/29/16 08:23	1
Methyl methacrylate	ND		2.0		Ū			09/29/16 08:23	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/29/16 08:23	1
Methyl tert-butyl ether	ND		0.50		ug/L			09/29/16 08:23	1
Naphthalene	ND		1.0		ug/L			09/29/16 08:23	1
o-Xylene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Propionitrile	ND		20	10	ug/L			09/29/16 08:23	1
Styrene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
t-Butanol	ND		10		ug/L			09/29/16 08:23	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Tetrahydrofuran	ND		10		ug/L			09/29/16 08:23	1
Toluene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/29/16 08:23	1

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: MB 440-358874/4 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 358874

	MR	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.50	0.25	ug/L	<del></del> -		09/29/16 08:23	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/29/16 08:23	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/29/16 08:23	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/29/16 08:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/29/16 08:23	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/29/16 08:23	1
Acrolein	ND		5.0	2.5	ug/L			09/29/16 08:23	1

MB MB

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					09/29/16 08:23	1

MB MB

Surrogate	%Recovery 0	Qualifier	Limits		Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 128	<del>-</del>		09/29/16 08:23	1
4-Bromofluorobenzene (Surr)	99		80 - 120			09/29/16 08:23	1
Dibromofluoromethane (Surr)	96		76 - 132			09/29/16 08:23	1
<del>_</del>							

Lab Sample ID: LCS 440-358874/5

**Matrix: Water** 

Carbon tetrachloride

Analysis Batch: 358874

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	25.0	23.6		ug/L		94	63 - 130	
1,1,1,2-Tetrachloroethane	25.0	23.9		ug/L		96	60 - 141	
1,1,1-Trichloroethane	25.0	24.7		ug/L		99	70 - 130	
1,1,2,2-Tetrachloroethane	25.0	24.1		ug/L		96	63 - 130	
1,1,2-Trichloroethane	25.0	23.8		ug/L		95	70 - 130	
1,1-Dichloroethane	25.0	23.6		ug/L		94	64 - 130	
1,1-Dichloroethene	25.0	24.6		ug/L		98	70 - 130	
1,1-Dichloropropene	25.0	24.9		ug/L		100	70 - 130	
1,2,4-Trichlorobenzene	25.0	25.4		ug/L		101	60 - 140	
1,2-Dibromo-3-Chloropropane	25.0	24.1		ug/L		96	52 - 140	
1,2-Dichlorobenzene	25.0	23.3		ug/L		93	70 - 130	
1,2-Dichloroethane	25.0	25.1		ug/L		100	57 <sub>-</sub> 138	
1,2-Dichloropropane	25.0	24.6		ug/L		98	67 - 130	
1,3-Dichlorobenzene	25.0	23.7		ug/L		95	70 - 130	
1,3-Dichloropropane	25.0	23.3		ug/L		93	70 - 130	
1,4-Dichlorobenzene	25.0	23.4		ug/L		94	70 - 130	
2,2-Dichloropropane	25.0	26.0		ug/L		104	68 - 141	
2-Hexanone	25.0	24.8		ug/L		99	10 - 150	
Acetone	25.0	25.4		ug/L		101	10 - 150	
Benzene	25.0	23.5		ug/L		94	68 - 130	
Bromoform	25.0	26.0		ug/L		104	60 - 148	
Bromomethane	25.0	22.7		ug/L		91	64 - 139	
Carbon disulfide	25.0	24.6		ug/L		99	52 - 136	

TestAmerica Irvine

25.8

ug/L

103

60 - 150

25.0

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

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

Lab Sample ID: LCS 440-358874/5

**Matrix: Water** 

Analysis Batch: 358874

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

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier U	Jnit	D	%Rec	Limits	
Chlorobenzene	25.0	23.6		ıg/L		94	70 - 130	
Bromochloromethane	25.0	22.3	L	ıg/L		89	70 - 130	
Chloroethane	25.0	24.5	ι	ıg/L		98	64 - 135	
Chloroform	25.0	24.0	L	ıg/L		96	70 - 130	
Chloromethane	25.0	24.5	ι	ıg/L		98	47 - 140	
cis-1,2-Dichloroethene	25.0	24.0	ι	ıg/L		96	70 - 133	
cis-1,3-Dichloropropene	25.0	25.3	L	ıg/L		101	70 - 133	
Dibromochloromethane	25.0	24.3	ι	ıg/L		97	69 - 145	
Dibromomethane	25.0	24.0	ι	ıg/L		96	70 - 130	
Bromodichloromethane	25.0	24.4	L	ıg/L		98	70 - 132	
Dichlorodifluoromethane	25.0	25.2	ι	ıg/L		101	29 - 150	
Ethylbenzene	25.0	24.2	ι	ıg/L		97	70 - 130	
m,p-Xylene	25.0	24.9	ι	ıg/L		100	70 - 130	
Methylene Chloride	25.0	24.1	ι	ıg/L		96	52 - 130	
Methyl tert-butyl ether	25.0	23.7	ι	ıg/L		95	63 - 131	
Naphthalene	25.0	24.4	ι	ıg/L		98	60 - 140	
o-Xylene	25.0	24.0	ι	ıg/L		96	70 - 130	
Styrene	25.0	24.7	ι	ıg/L		99	70 - 134	
t-Butanol	250	249	ι	ıg/L		100	70 - 130	
Tetrachloroethene	25.0	24.7	ι	ıg/L		99	70 - 130	
Toluene	25.0	24.7	ι	ıg/L		99	70 - 130	
trans-1,2-Dichloroethene	25.0	25.0	ι	ıg/L		100	70 - 130	
trans-1,3-Dichloropropene	25.0	25.1	ι	ıg/L		100	70 - 132	
Trichloroethene	25.0	24.1	ι	ıg/L		97	70 - 130	
Trichlorofluoromethane	25.0	26.4	l	ıg/L		105	60 - 150	
Vinyl acetate	25.0	26.2	ι	ıg/L		105	48 - 140	
Vinyl chloride	25.0	24.5	ι	ıg/L		98	59 <sub>-</sub> 133	
1,2-Dibromoethane (EDB)	25.0	24.7	l	ıg/L		99	70 - 130	
2-Butanone (MEK)	25.0	24.6	ι	ıg/L		98	44 - 150	
4-Methyl-2-pentanone (MIBK)	25.0	26.2	ι	ıg/L		105	59 - 149	
Acrylonitrile	250	257	ι	ıg/L		103	48 - 140	
Acrolein	25.0	23.8		ıg/L		95	10 - 145	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

Lab Sample ID: 440-159494-A-5 MS

**Matrix: Water** 

Analysis Batch: 358874

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	ND		25.0	27.8		ug/L		111	60 - 130	
1,1,1,2-Tetrachloroethane	ND		25.0	27.0		ug/L		108	60 - 149	
1,1,1-Trichloroethane	ND		25.0	27.7		ug/L		111	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	27.5		ug/L		110	63 - 130	
1,1,2-Trichloroethane	ND		25.0	27.2		ug/L		109	70 - 130	

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: 440-159494-A-5 MS

**Matrix: Water** 

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

Analysis Batch: 358874	Sample S	Sample	Spike	MS	MS				%Rec.	
Analyte	Result (		Added		Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethane	ND		25.0	26.3		ug/L		105	65 - 130	
1,1-Dichloroethene	ND		25.0	27.2		ug/L		109	70 - 130	
1,1-Dichloropropene	ND		25.0	27.6		ug/L		110	64 - 130	
1,2,4-Trichlorobenzene	0.40 J	J	25.0	29.7		ug/L		119	60 - 140	
1,2-Dibromo-3-Chloropropane	ND		25.0	28.1		ug/L		112	48 - 140	
1,2-Dichlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130	
1,2-Dichloroethane	ND		25.0	28.3		ug/L		113	56 - 146	
1,2-Dichloropropane	ND		25.0	27.9		ug/L		112	69 - 130	
1,3-Dichlorobenzene	ND		25.0	26.1		ug/L		105	70 - 130	
1,3-Dichloropropane	ND		25.0	27.3		ug/L		109	70 - 130	
1,4-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130	
2,2-Dichloropropane	ND		25.0	29.6		ug/L		118	69 - 138	
2-Hexanone	ND		25.0	27.6		ug/L		111	10 - 150	
Acetone	ND		25.0	23.1		ug/L		92	10 - 150	
Benzene	ND		25.0	26.3		ug/L		105	66 - 130	
Bromoform	ND		25.0	29.3		ug/L		117	59 - 150	
Bromomethane	ND		25.0	25.9		ug/L		104	62 - 131	
Carbon disulfide	ND		25.0	27.4		ug/L		109	49 - 140	
Carbon tetrachloride	ND		25.0	28.6		ug/L		114	60 - 150	
Chlorobenzene	ND		25.0	26.1		ug/L		104	70 - 130	
Bromochloromethane	ND		25.0	25.5		ug/L		102	70 - 130	
Chloroethane	ND		25.0	27.7		ug/L		111	68 - 130	
Chloroform	ND		25.0	27.1		ug/L		108	70 - 130	
Chloromethane	ND		25.0	27.8		ug/L		111	39 - 144	
cis-1,2-Dichloroethene	ND		25.0	27.3		ug/L		109	70 - 130	
cis-1,3-Dichloropropene	ND		25.0	29.1		ug/L		116	70 - 133	
Dibromochloromethane	ND		25.0	27.6		ug/L		111	70 - 148	
Dibromomethane	ND		25.0	26.9		ug/L		108	70 - 130	
Bromodichloromethane	ND		25.0	27.7		ug/L		111	70 - 138	
Dichlorodifluoromethane	ND		25.0	28.4		ug/L		114	25 - 142	
Ethylbenzene	ND		25.0	26.8		ug/L		107	70 - 130	
m,p-Xylene	ND		25.0	27.6		ug/L		110	70 - 133	
Methylene Chloride	ND		25.0	26.9		ug/L		108	52 - 130	
Methyl tert-butyl ether	ND		25.0	27.3		ug/L		109	70 - 130	
Naphthalene	0.81	J	25.0	28.1		ug/L		109	60 - 140	
o-Xylene	ND		25.0	27.0		ug/L		108	70 - 133	
Styrene	ND		25.0	26.5		ug/L		106	29 - 150	
t-Butanol	ND		250	277		ug/L		111	70 - 130	
Tetrachloroethene	0.40 J	J	25.0	27.5		ug/L		109	70 - 137	
Toluene	ND	-	25.0	27.3		ug/L		109	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	27.6		ug/L		110	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	28.7		ug/L		115	70 - 138	
Trichloroethene	0.35 J	J	25.0	26.7		ug/L		105	70 - 130	
Trichlorofluoromethane	ND		25.0	28.9		ug/L		116	60 - 150	
Vinyl acetate	ND		25.0	32.7		ug/L		131	23 - 150	
Vinyl chloride	ND		25.0	28.1		ug/L		112	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	28.1		ug/L		112	70 - 131	
2-Butanone (MEK)	ND ND		25.0	27.2		ug/L		109	48 - 140	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: 440-159494-A-5 MS

**Matrix: Water** 

Analysis Batch: 358874

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

_	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.7		ug/L		119	52 - 150	
Acrylonitrile	ND		250	283		ug/L		113	38 - 144	
Acrolein	ND		25.0	27.2		ug/L		109	10 - 147	

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 101 80 - 128 4-Bromofluorobenzene (Surr) 96 80 - 120 Dibromofluoromethane (Surr) 98 76 - 132

Lab Sample ID: 440-159494-A-5 MSD

**Matrix: Water** 

Analysis Batch: 358874

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

Analysis Batch: 358874	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	28.4	-	ug/L		114	60 - 130	2	30
1,1,1,2-Tetrachloroethane	ND		25.0	27.6		ug/L		111	60 - 149	2	20
1,1,1-Trichloroethane	ND		25.0	28.1		ug/L		112	70 - 130	2	20
1,1,2,2-Tetrachloroethane	ND		25.0	28.5		ug/L		114	63 - 130	4	30
1,1,2-Trichloroethane	ND		25.0	28.1		ug/L		112	70 - 130	3	25
1,1-Dichloroethane	ND		25.0	26.9		ug/L		108	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	27.7		ug/L		111	70 - 130	2	20
1,1-Dichloropropene	ND		25.0	28.1		ug/L		112	64 - 130	2	20
1,2,4-Trichlorobenzene	0.40	J	25.0	30.5		ug/L		122	60 - 140	2	20
1,2-Dibromo-3-Chloropropane	ND		25.0	30.0		ug/L		120	48 - 140	6	30
1,2-Dichlorobenzene	ND		25.0	26.9		ug/L		108	70 - 130	2	20
1,2-Dichloroethane	ND		25.0	29.1		ug/L		116	56 - 146	3	20
1,2-Dichloropropane	ND		25.0	28.6		ug/L		114	69 - 130	2	20
1,3-Dichlorobenzene	ND		25.0	26.9		ug/L		108	70 - 130	3	20
1,3-Dichloropropane	ND		25.0	28.0		ug/L		112	70 - 130	3	25
1,4-Dichlorobenzene	ND		25.0	27.1		ug/L		108	70 - 130	3	20
2,2-Dichloropropane	ND		25.0	29.9		ug/L		120	69 - 138	1	25
2-Hexanone	ND		25.0	29.9		ug/L		120	10 - 150	8	35
Acetone	ND		25.0	24.9		ug/L		100	10 - 150	8	35
Benzene	ND		25.0	26.8		ug/L		107	66 - 130	2	20
Bromoform	ND		25.0	30.7		ug/L		123	59 <sub>-</sub> 150	5	25
Bromomethane	ND		25.0	26.1		ug/L		104	62 - 131	1	25
Carbon disulfide	ND		25.0	27.8		ug/L		111	49 - 140	1	20
Carbon tetrachloride	ND		25.0	29.7		ug/L		119	60 - 150	4	25
Chlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	2	20
Bromochloromethane	ND		25.0	26.0		ug/L		104	70 - 130	2	25
Chloroethane	ND		25.0	28.3		ug/L		113	68 - 130	2	25
Chloroform	ND		25.0	27.5		ug/L		110	70 - 130	2	20
Chloromethane	ND		25.0	28.6		ug/L		114	39 - 144	3	25
cis-1,2-Dichloroethene	ND		25.0	27.6		ug/L		111	70 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	29.4		ug/L		118	70 - 133	1	20
Dibromochloromethane	ND		25.0	28.3		ug/L		113	70 - 148	2	25
Dibromomethane	ND		25.0	28.3		ug/L		113	70 - 130	5	25
Bromodichloromethane	ND		25.0	28.4		ug/L		114	70 - 138	3	20

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

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

Lab Sample ID: 440-159494-A-5 MSD

**Matrix: Water** 

Analysis Batch: 358874

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	ND		25.0	28.7		ug/L		115	25 - 142	1	30
Ethylbenzene	ND		25.0	27.2		ug/L		109	70 - 130	1	20
m,p-Xylene	ND		25.0	27.9		ug/L		112	70 - 133	1	25
Methylene Chloride	ND		25.0	27.5		ug/L		110	52 - 130	2	20
Methyl tert-butyl ether	ND		25.0	28.4		ug/L		113	70 - 130	4	25
Naphthalene	0.81	J	25.0	30.0		ug/L		117	60 - 140	7	30
o-Xylene	ND		25.0	27.1		ug/L		108	70 - 133	0	20
Styrene	ND		25.0	27.6		ug/L		111	29 - 150	4	35
t-Butanol	ND		250	275		ug/L		110	70 - 130	1	25
Tetrachloroethene	0.40	J	25.0	28.2		ug/L		111	70 - 137	2	20
Toluene	ND		25.0	27.9		ug/L		111	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	28.2		ug/L		113	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	29.6		ug/L		119	70 - 138	3	25
Trichloroethene	0.35	J	25.0	27.9		ug/L		110	70 - 130	4	20
Trichlorofluoromethane	ND		25.0	30.0		ug/L		120	60 - 150	4	25
Vinyl acetate	ND		25.0	34.2		ug/L		137	23 - 150	4	30
Vinyl chloride	ND		25.0	28.7		ug/L		115	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	29.2		ug/L		117	70 - 131	4	25
2-Butanone (MEK)	ND		25.0	28.3		ug/L		113	48 - 140	4	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	32.2		ug/L		129	52 - 150	8	35
Acrylonitrile	ND		250	305		ug/L		122	38 - 144	8	40
Acrolein	ND		25.0	30.3		ug/L		121	10 - 147	11	40

MSD MSD

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

Lab Sample ID: MB 440-359136/4

**Matrix: Water** 

**Analysis Batch: 359136** 

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

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/29/16 20:02	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/29/16 20:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/29/16 20:02	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/29/16 20:02	1

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0.50

0.50

0.50

0.50

1.0

2.0

0.50

2.0

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0.25 ug/L

0.25 ug/L

0.25 ug/L

0.40 ug/L

0.25 ug/L

1.0 ug/L

13 ug/L

2.5 ug/L

0.40 ug/L

0.25 ug/L

0.25 ug/L

5.0 ug/L

0.25 ug/L

0.25 ug/L

2.5 ug/L

0.25 ug/L

0.25 ug/L

2.0 ug/L

0.25 ug/L

0.25 ug/L

ug/L

5.0

0.25 ug/L

0.25 ug/L

10 ug/L

ug/L

1.0 ug/L

0.50 ug/L

1.0 ug/L

0.88

0.25 ug/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

MB MB

Result Qualifi

 $\overline{\mathsf{ND}}$ 

ND

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Lab Sample ID: MB 440-359136/4

**Matrix: Water** 

1,4-Dichlorobenzene

2,2-Dichloropropane

2-Chloro-1,3-butadiene

Analyte

2-Hexanone

Acetonitrile

Allyl chloride

Bromomethane Carbon disulfide

Chlorobenzene

Chloroethane

Chloromethane

Dibromomethane

Ethyl methacrylate

Ethylbenzene

Iodomethane

m,p-Xylene

Naphthalene

Propionitrile

Tetrachloroethene

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

Trichlorofluoromethane

1,2-Dibromoethane (EDB)

trans-1,4-Dichloro-2-butene

Tetrahydrofuran

Trichloroethene

Vinyl acetate

Vinyl chloride

o-Xylene

Styrene

t-Butanol

Toluene

Isobutyl alcohol

Methylacrylonitrile

Methyl methacrylate

Methylene Chloride

Methyl tert-butyl ether

Chloroform

Carbon tetrachloride

Bromochloromethane

cis-1.2-Dichloroethene

cis-1,3-Dichloropropene

Dibromochloromethane

Bromodichloromethane

Dichlorodifluoromethane

**Bromoform** 

Acetone

Benzene

**Analysis Batch: 359136** 

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

09/29/16 20:02

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fier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	1.0	0.40	ug/L			09/29/16 20:02	1	
	1.0	0.50	ug/L			09/29/16 20:02	1	
	5.0	2.5	ug/L			09/29/16 20:02	1	
	20	10	ug/L			09/29/16 20:02	1	1
	20	10	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	1.0	0.50	ug/L			09/29/16 20:02	1	
	1.0	0.40	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	1.0	0.50	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	1.0	0.40	ug/L			09/29/16 20:02	1	4
	0.50	0.25	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	
	0.50	0.25	ug/L			09/29/16 20:02	1	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: MB 440-359136/4 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 359136

	MB	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/29/16 20:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/29/16 20:02	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/29/16 20:02	1
Acrolein	ND		5.0	2.5	ug/L			09/29/16 20:02	1
	MD	MD							

	MB	MB							
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.193	J	ug/L		16.25	91-57-6		09/29/16 20:02	1
Tentatively Identified Compound	None		ug/L					09/29/16 20:02	1

	MB MB				
Surrogate	%Recovery Qual	lifier Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106	80 - 128		09/29/16 20:02	1
4-Bromofluorobenzene (Surr)	99	80 - 120		09/29/16 20:02	1
Dibromofluoromethane (Surr)	100	76 - 132		09/29/16 20:02	1
	Toluene-d8 (Surr) 4-Bromofluorobenzene (Surr)	Surrogate         %Recovery         Quantification           Toluene-d8 (Surr)         106           4-Bromofluorobenzene (Surr)         99	Surrogate         %Recovery         Qualifier         Limits           Toluene-d8 (Surr)         106         80 - 128           4-Bromofluorobenzene (Surr)         99         80 - 120	Surrogate         %Recovery         Qualifier         Limits         Prepared           Toluene-d8 (Surr)         106         80 - 128           4-Bromofluorobenzene (Surr)         99         80 - 120	Surrogate         %Recovery Toluene-d8 (Surr)         Qualifier 2007         Limits 2007         Prepared 2007         Analyzed 2007           4-Bromofluorobenzene (Surr)         99         80 - 128         09/29/16 20:02           99/29/16 20:02         09/29/16 20:02

Lab Sample ID: LCS 440-359136/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 359136

-	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	24.4		ug/L		98	63 - 130
1,1,1,2-Tetrachloroethane	25.0	27.9		ug/L		111	60 - 141
1,1,1-Trichloroethane	25.0	26.8		ug/L		107	70 - 130
1,1,2,2-Tetrachloroethane	25.0	23.6		ug/L		94	63 - 130
1,1,2-Trichloroethane	25.0	26.4		ug/L		106	70 - 130
1,1-Dichloroethane	25.0	25.7		ug/L		103	64 - 130
1,1-Dichloroethene	25.0	25.5		ug/L		102	70 - 130
1,1-Dichloropropene	25.0	25.5		ug/L		102	70 - 130
1,2,4-Trichlorobenzene	25.0	27.2		ug/L		109	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	24.7		ug/L		99	52 - 140
1,2-Dichlorobenzene	25.0	25.9		ug/L		103	70 - 130
1,2-Dichloroethane	25.0	26.4		ug/L		106	57 <sub>-</sub> 138
1,2-Dichloropropane	25.0	28.1		ug/L		112	67 - 130
1,3-Dichlorobenzene	25.0	25.4		ug/L		102	70 - 130
1,3-Dichloropropane	25.0	25.7		ug/L		103	70 - 130
1,4-Dichlorobenzene	25.0	25.3		ug/L		101	70 - 130
2,2-Dichloropropane	25.0	29.0		ug/L		116	68 - 141
2-Hexanone	25.0	26.5		ug/L		106	10 - 150
Acetone	25.0	24.9		ug/L		100	10 - 150
Benzene	25.0	25.3		ug/L		101	68 - 130
Bromoform	25.0	30.6		ug/L		122	60 - 148
Bromomethane	25.0	25.3		ug/L		101	64 - 139
Carbon disulfide	25.0	24.2		ug/L		97	52 <sub>-</sub> 136
Carbon tetrachloride	25.0	26.5		ug/L		106	60 <sub>-</sub> 150
Chlorobenzene	25.0	26.4		ug/L		106	70 - 130
Bromochloromethane	25.0	26.3		ug/L		105	70 - 130
Chloroethane	25.0	26.3		ug/L		105	64 <sub>-</sub> 135
Chloroform	25.0	25.9		ug/L		104	70 - 130

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

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

Lab Sample ID: LCS 440-359136/5

**Matrix: Water** 

**Analysis Batch: 359136** 

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

7 maryoto Zatom 600 100	Spike	LCS LC	cs		%Rec.	
Analyte	Added	Result Q	ualifier Unit	D %Rec	Limits	
Chloromethane	25.0	23.2	ug/L	93	47 - 140	
cis-1,2-Dichloroethene	25.0	27.5	ug/L	110	70 - 133	
cis-1,3-Dichloropropene	25.0	28.2	ug/L	113	70 - 133	
Dibromochloromethane	25.0	28.6	ug/L	114	69 - 145	
Dibromomethane	25.0	26.7	ug/L	107	70 - 130	
Bromodichloromethane	25.0	27.6	ug/L	110	70 - 132	
Dichlorodifluoromethane	25.0	22.2	ug/L	89	29 - 150	
Ethylbenzene	25.0	25.3	ug/L	101	70 - 130	
m,p-Xylene	25.0	26.1	ug/L	105	70 - 130	
Methylene Chloride	25.0	22.7	ug/L	91	52 - 130	
Methyl tert-butyl ether	25.0	26.1	ug/L	104	63 - 131	
Naphthalene	25.0	25.0	ug/L	100	60 - 140	
o-Xylene	25.0	26.7	ug/L	107	70 - 130	
Styrene	25.0	26.3	ug/L	105	70 - 134	
t-Butanol	250	271	ug/L	109	70 - 130	
Tetrachloroethene	25.0	27.6	ug/L	110	70 - 130	
Toluene	25.0	25.2	ug/L	101	70 - 130	
trans-1,2-Dichloroethene	25.0	28.0	ug/L	112	70 - 130	
trans-1,3-Dichloropropene	25.0	27.3	ug/L	109	70 - 132	
Trichloroethene	25.0	27.0	ug/L	108	70 - 130	
Trichlorofluoromethane	25.0	23.7	ug/L	95	60 - 150	
Vinyl acetate	25.0	25.8	ug/L	103	48 - 140	
Vinyl chloride	25.0	24.6	ug/L	98	59 - 133	
1,2-Dibromoethane (EDB)	25.0	27.3	ug/L	109	70 - 130	
2-Butanone (MEK)	25.0	23.8	ug/L	95	44 - 150	
4-Methyl-2-pentanone (MIBK)	25.0	25.6	ug/L	103	59 - 149	
Acrylonitrile	250	262	ug/L	105	48 - 140	
Acrolein	25.0	19.5	ug/L	78	10 - 145	

 Surrogate
 %Recovery
 Qualifier
 Limits

 Toluene-d8 (Surr)
 102
 80 - 128

 4-Bromofluorobenzene (Surr)
 94
 80 - 120

 Dibromofluoromethane (Surr)
 97
 76 - 132

Lab Sample ID: 440-159873-D-1 MS

**Matrix: Water** 

**Analysis Batch: 359136** 

<b>Client Sam</b>	iple l	D: Mat	rix Spike	
	Prep	Type:	Total/NA	

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	ND		25.0	26.7		ug/L		107	60 - 130	
1,1,1,2-Tetrachloroethane	ND		25.0	27.9		ug/L		111	60 - 149	
1,1,1-Trichloroethane	ND		25.0	27.8		ug/L		111	70 - 130	
1,1,2,2-Tetrachloroethane	ND		25.0	25.0		ug/L		100	63 - 130	
1,1,2-Trichloroethane	ND		25.0	27.1		ug/L		108	70 - 130	
1,1-Dichloroethane	ND		25.0	25.8		ug/L		103	65 - 130	
1,1-Dichloroethene	0.90		25.0	25.3		ug/L		98	70 - 130	
1,1-Dichloropropene	ND		25.0	25.7		ug/L		103	64 - 130	
1,2,4-Trichlorobenzene	ND		25.0	27.8		ug/L		111	60 - 140	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: 440-159873-D-1 MS Matrix: Water

Client	Sample	ID:	Mat	rix	Spi	ke
	Prep	Ty	pe:	Tot	al/N	NΑ

Matrix: water Analysis Batch: 359136								Prep Type: Total/I
•	Sample	-	Spike		MS			%Rec.
Analyte		Qualifier	Added		Qualifier	Unit	D %Rec	Limits
1,2-Dibromo-3-Chloropropane	ND		25.0	27.4		ug/L	110	48 - 140
1,2-Dichlorobenzene	ND		25.0	26.1		ug/L	104	70 - 130
1,2-Dichloroethane	ND		25.0	27.3		ug/L	109	56 - 146
1,2-Dichloropropane	ND		25.0	28.5		ug/L	114	69 - 130
1,3-Dichlorobenzene	ND		25.0	25.3		ug/L	101	70 - 130
1,3-Dichloropropane	ND		25.0	26.7		ug/L	107	70 - 130
1,4-Dichlorobenzene	ND		25.0	25.6		ug/L	102	70 - 130
2,2-Dichloropropane	ND		25.0	28.9		ug/L	116	69 - 138
2-Hexanone	ND		25.0	28.2		ug/L	113	10 - 150
Acetone	ND		25.0	21.6		ug/L	86	10 - 150
Benzene	ND		25.0	25.1		ug/L	100	66 - 130
Bromoform	ND		25.0	31.6		ug/L	126	59 - 150
Bromomethane	ND		25.0	22.8		ug/L	91	62 - 131
Carbon disulfide	ND		25.0	24.6		ug/L	98	49 - 140
Carbon tetrachloride	ND		25.0	26.7		ug/L	107	60 - 150
Chlorobenzene	ND		25.0	26.7		ug/L	107	70 - 130
Bromochloromethane	ND		25.0	25.8		ug/L	103	70 - 130
Chloroethane	ND		25.0	23.4		ug/L	94	68 - 130
Chloroform	0.40	J	25.0	26.1		ug/L	103	70 - 130
Chloromethane	ND		25.0	20.4		ug/L	82	39 - 144
cis-1,2-Dichloroethene	2.6		25.0	29.9		ug/L	109	70 - 130
cis-1,3-Dichloropropene	ND		25.0	28.5		ug/L	114	70 - 133
Dibromochloromethane	ND		25.0	29.0		ug/L	116	70 - 148
Dibromomethane	ND		25.0	27.7		ug/L	111	70 - 130
Bromodichloromethane	ND		25.0	27.7		ug/L	111	70 - 138
Dichlorodifluoromethane	ND		25.0	19.1		ug/L	77	25 - 142
Ethylbenzene	ND		25.0	25.8		ug/L	103	70 - 130
m,p-Xylene	ND		25.0	26.9		ug/L	108	70 - 133
Methylene Chloride	ND		25.0	22.4		ug/L	90	52 - 130
Methyl tert-butyl ether	ND		25.0	26.8		ug/L	107	70 - 130
Naphthalene	ND		25.0	25.9		ug/L	104	60 - 140
o-Xylene	ND		25.0	27.0		ug/L	108	70 - 133
Styrene	ND		25.0	26.4		ug/L	106	29 - 150
t-Butanol	ND		250	274		ug/L	109	70 - 130
Tetrachloroethene	18		25.0	43.1		ug/L	102	70 <sub>-</sub> 137
Toluene	ND		25.0	25.5		ug/L	102	70 - 130
trans-1,2-Dichloroethene	ND		25.0	27.0		ug/L	108	70 - 130
trans-1,3-Dichloropropene	ND		25.0	28.3		ug/L	113	70 <sub>-</sub> 138
Trichloroethene	6.5		25.0	32.4		ug/L	104	70 - 130
Trichlorofluoromethane	ND		25.0	22.4		ug/L	90	60 - 150
Vinyl acetate	ND		25.0	30.0		ug/L	120	23 - 150
Vinyl chloride	ND		25.0	22.0		ug/L	88	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	28.2		ug/L	113	70 - 131
2-Butanone (MEK)	ND		25.0	25.0		ug/L	100	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.7		ug/L	111	52 - 150
Acrylonitrile	ND		250	281		ug/L	112	38 - 144
Acrolein	ND		25.0	19.7		ug/L	79	10 - 147

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

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

Lab Sample ID: 440-159873-D-1 MS

**Matrix: Water** 

Analysis Batch: 359136

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

MS MS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132

Lab Sample ID: 440-159873-D-1 MSD

**Matrix: Water** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Analysis Batch: 359136											
	•	Sample	Spike		MSD				%Rec.		RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	25.6		ug/L		103	60 - 130	4	30
1,1,1,2-Tetrachloroethane	ND		25.0	27.6		ug/L		111	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	25.3		ug/L		101	70 - 130	9	20
1,1,2,2-Tetrachloroethane	ND		25.0	24.9		ug/L		100	63 - 130	1	30
1,1,2-Trichloroethane	ND		25.0	26.6		ug/L		106	70 - 130	2	25
1,1-Dichloroethane	ND		25.0	23.0		ug/L		92	65 - 130	11	20
1,1-Dichloroethene	0.90		25.0	23.4		ug/L		90	70 - 130	8	20
1,1-Dichloropropene	ND		25.0	26.0		ug/L		104	64 - 130	1	20
1,2,4-Trichlorobenzene	ND		25.0	28.0		ug/L		112	60 - 140	1	20
1,2-Dibromo-3-Chloropropane	ND		25.0	27.1		ug/L		108	48 - 140	1	30
1,2-Dichlorobenzene	ND		25.0	25.9		ug/L		103	70 - 130	1	20
1,2-Dichloroethane	ND		25.0	23.9		ug/L		96	56 <sub>-</sub> 146	13	20
1,2-Dichloropropane	ND		25.0	28.8		ug/L		115	69 - 130	1	20
1,3-Dichlorobenzene	ND		25.0	25.5		ug/L		102	70 - 130	1	20
1,3-Dichloropropane	ND		25.0	26.5		ug/L		106	70 - 130	1	25
1,4-Dichlorobenzene	ND		25.0	26.1		ug/L		105	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	25.6		ug/L		102	69 - 138	12	25
2-Hexanone	ND		25.0	27.6		ug/L		110	10 - 150	2	35
Acetone	ND		25.0	21.6		ug/L		86	10 - 150	0	35
Benzene	ND		25.0	25.4		ug/L		102	66 - 130	1	20
Bromoform	ND		25.0	30.9		ug/L		124	59 <sub>-</sub> 150	2	25
Bromomethane	ND		25.0	23.2		ug/L		93	62 - 131	2	25
Carbon disulfide	ND		25.0	22.9		ug/L		92	49 - 140	7	20
Carbon tetrachloride	ND		25.0	27.5		ug/L		110	60 - 150	3	25
Chlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	0	20
Bromochloromethane	ND		25.0	23.4		ug/L		94	70 - 130	10	25
Chloroethane	ND		25.0	24.0		ug/L		96	68 - 130	3	25
Chloroform	0.40	J	25.0	23.5		ug/L		92	70 - 130	10	20
Chloromethane	ND		25.0	21.2		ug/L		85	39 - 144	4	25
cis-1,2-Dichloroethene	2.6		25.0	27.0		ug/L		97	70 <sub>-</sub> 130	10	20
cis-1,3-Dichloropropene	ND		25.0	27.8		ug/L		111	70 - 133	3	20
Dibromochloromethane	ND		25.0	29.0		ug/L		116	70 - 148	0	25
Dibromomethane	ND		25.0	26.7		ug/L		107	70 - 130	3	25
Bromodichloromethane	ND		25.0	27.7		ug/L		111	70 - 138	0	20
Dichlorodifluoromethane	ND		25.0	20.0		ug/L		80	25 - 142	5	30
Ethylbenzene	ND		25.0	25.9		ug/L		104	70 - 130	1	20
m,p-Xylene	ND		25.0	27.1		ug/L		108	70 - 133	1	25
Methylene Chloride	ND		25.0	20.0		ug/L		80	52 - 130	11	20
Methyl tert-butyl ether	ND		25.0	23.5		ug/L		94	70 - 130	13	25
Mounty to to butyl Guilei	IND		20.0	20.0		ug/L		34	70-130	13	23

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-159873-D-1 MSD

**Matrix: Water** 

**Analysis Batch: 359136** 

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	ND		25.0	27.1		ug/L		109	60 - 140	5	30
o-Xylene	ND		25.0	26.9		ug/L		108	70 - 133	0	20
Styrene	ND		25.0	26.3		ug/L		105	29 - 150	1	35
t-Butanol	ND		250	268		ug/L		107	70 - 130	2	25
Tetrachloroethene	18		25.0	43.6		ug/L		103	70 - 137	1	20
Toluene	ND		25.0	26.0		ug/L		104	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	25.1		ug/L		100	70 - 130	7	20
trans-1,3-Dichloropropene	ND		25.0	27.7		ug/L		111	70 - 138	2	25
Trichloroethene	6.5		25.0	32.8		ug/L		105	70 - 130	1	20
Trichlorofluoromethane	ND		25.0	22.9		ug/L		92	60 - 150	2	25
Vinyl acetate	ND		25.0	26.1		ug/L		104	23 - 150	14	30
Vinyl chloride	ND		25.0	21.6		ug/L		86	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	27.9		ug/L		112	70 - 131	1	25
2-Butanone (MEK)	ND		25.0	21.3		ug/L		85	48 - 140	16	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.2		ug/L		109	52 - 150	2	35
Acrylonitrile	ND		250	244		ug/L		98	38 - 144	14	40
Acrolein	ND		25.0	20.1		ug/L		81	10 - 147	2	40

MSD MSD

MB MB

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	87		76 - 132

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

Lab Sample ID: MB 440-358079/1-A

**Matrix: Water** 

**Analysis Batch: 359039** 

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

**Prep Batch: 358079** 

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,4-Dioxane 1.0 0.25 ug/L 09/26/16 10:51 09/30/16 03:52 ND

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 66 09/26/16 10:51 09/30/16 03:52 1,4-Dioxane-d8 (Surr) 30 - 120

LCS LCS

Lab Sample ID: LCS 440-358079/2-A

**Matrix: Water** 

**Analysis Batch: 359039** 

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

**Prep Batch: 358079** %Rec.

Spike Analyte Added Result Qualifier Unit D %Rec Limits 1,4-Dioxane 2.00 52 35 - 120 1.04 ug/L

LCS LCS

Surrogate %Recovery Qualifier Limits 1,4-Dioxane-d8 (Surr) 63 30 - 120

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 550-69885-C-4	-A MS					Client Sample ID: Matrix Spike
Matrix: Water						Prep Type: Total/NA
Analysis Batch: 359039						Prep Batch: 358079
	Sample	Sample	Spike	MS	MS	%Rec.

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 2.13 1,4-Dioxane ND 2.36 ug/L 35 - 120 111

MS MS Surrogate %Recovery Qualifier Limits 1,4-Dioxane-d8 (Surr) 30 - 120 78

Lab Sample ID: 550-69885-C-4-B MSD

**Matrix: Water** 

**Analysis Batch: 359039** 

**Prep Batch: 358079** Spike MSD MSD **RPD** Sample Sample %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 1,4-Dioxane 2.12 ND 1.99 ug/L 35 - 120

MSD MSD Surrogate %Recovery Qualifier Limits 1,4-Dioxane-d8 (Surr) 30 - 120 73

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-356765/47 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 356765

MR MR Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared Chloride 0.50 0.25 mg/L 09/20/16 23:53 ND

Lab Sample ID: LCS 440-356765/48 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 356765

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit Limits D %Rec 5.00 Chloride 4.64 mg/L 93 90 - 110

Lab Sample ID: 440-159012-F-3 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 356765** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit Limits %Rec Chloride 140 F1 50.0 171 F1 mg/L 70 80 - 120

Lab Sample ID: 440-159012-F-3 MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 356765											
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	140	F1	50.0	169	F1	ma/L		66	80 - 120		20

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

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 440-357058/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357058** 

MB MB Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac D Prepared 0.50 Chloride ND 0.25 mg/L 09/21/16 17:36

Lab Sample ID: LCS 440-357058/2 Client Sample ID: Lab Control Sample **Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 357058** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit D %Rec Chloride 5.00 5.12 mg/L 102 90 - 110

Lab Sample ID: 440-159066-9 MS Client Sample ID: MW-14 Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357058** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Chloride 24 50.0 69.2 mg/L 91 80 - 120

Client Sample ID: MW-14 Lab Sample ID: 440-159066-9 MSD **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357058** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 24 50.0 69.0 91 80 - 120 20 mg/L

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-358086/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total Recoverable Prep Batch: 358086** 

**Analysis Batch: 358309** 

MB MB Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed 0.50

09/26/16 10:58 09/26/16 22:24 Potassium  $\overline{\mathsf{ND}}$ 0.25 mg/L

Lab Sample ID: LCS 440-358086/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable** 

**Analysis Batch: 358309 Prep Batch: 358086** Spike LCS LCS %Rec.

Result Qualifier Added Analyte Unit %Rec Limits Potassium 10.0 8.96 mg/L 90 80 - 120

Lab Sample ID: 440-159247-G-1-B MS **Client Sample ID: Matrix Spike Matrix: Water Prep Type: Total Recoverable Analysis Batch: 358309 Prep Batch: 358086** 

Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Potassium 38 10.0 46.2 mg/L 83 75 - 125

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-159247-G-1-C MSD						Client Sample ID: Matrix Spike Duplicate						
Matrix: Water							P	rep Typ	e: Total I	Recove	rable	
Analysis Batch: 358309									Prep Ba	atch: 3!	58086	
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Potassium	38		10.0	45.6		mg/L		76	75 - 125	1	20	

**Client Sample ID: Method Blank** Lab Sample ID: MB 440-358091/1-A **Matrix: Water Prep Type: Total Recoverable Prep Batch: 358091** 

Analysis Batch: 358615 MB MB

Dil Fac Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed 0.50 Potassium  $\overline{\mathsf{ND}}$ 0.25 mg/L 09/26/16 11:03 09/27/16 22:21

Lab Sample ID: LCS 440-358091/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable** Analysis Batch: 358615 **Prep Batch: 358091** Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Potassium 10.0 10.9 mg/L 109 80 - 120

Lab Sample ID: 440-159066-7 MS Client Sample ID: MW-9 **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 358615 Prep Batch: 358091** Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Potassium 23 10.0 33.5 104 75 - 125 mg/L

Lab Sample ID: 440-159066-7 MSD Client Sample ID: MW-9 **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 358615 Prep Batch: 358091** Spike MSD MSD Sample Sample %Rec. **RPD** Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Potassium 10.0 75 - 125 23 31.0 mg/L

Lab Sample ID: MB 440-358354/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total Recoverable** 

Analysis Batch: 358612 MB MB

Result Qualifier RL MDL Unit Analyte Prepared Analyzed Dil Fac 09/27/16 10:35 09/27/16 21:22 Potassium 0.50 0.25 mg/L ND

Lab Sample ID: LCS 440-358354/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable** Analysis Batch: 358612 **Prep Batch: 358354** Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Potassium 10.0 9.43 mg/L 94 80 - 120

Lab Sample ID: 440-159066-4 MS **Client Sample ID: LY-7 Matrix: Water Prep Type: Total Recoverable** Analysis Batch: 358612 **Prep Batch: 358354** Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Potassium 130 10.0 151 4 191 75 - 125 mg/L

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**Prep Batch: 358354** 

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

> Client Sample ID: LY-7 **Prep Type: Total Recoverable**

**Prep Batch: 358354** 

%Rec. **RPD** 

Limits RPD Limit 20

Client Sample ID: DW-3

Client Sample ID: DW-3

**Client Sample ID: Method Blank** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

**Analysis Batch: 358612** Sample Sample Spike MSD MSD Analyte Result Qualifier Added Result Qualifier Unit %Rec 130 10.0 149 4 75 - 125 Potassium mg/L 173

Method: 410.4 - COD

**Matrix: Water** 

Lab Sample ID: 440-159066-4 MSD

Lab Sample ID: MB 440-358166/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 358166** MB MB

RL Analyte Result Qualifier **MDL** Unit Analyzed Dil Fac Prepared 20 Chemical Oxygen Demand  $\overline{\mathsf{ND}}$ 10 mg/L 09/26/16 15:25

Lab Sample ID: LCS 440-358166/4 **Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 358166

Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits **Chemical Oxygen Demand** 200 198 mg/L 99

Lab Sample ID: 440-159066-2 MS

**Matrix: Water** 

**Analysis Batch: 358166** 

Spike Sample Sample MS MS %Rec. Result Qualifier Added Result Qualifier Unit %Rec Limits Chemical Oxygen Demand 10 J 200 195 92 70 - 120 mg/L

Lab Sample ID: 440-159066-2 MSD

**Matrix: Water** 

**Analysis Batch: 358166** 

Spike MSD MSD %Rec. RPD Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits RPD Limit 200 Chemical Oxygen Demand 10 J 211 100 70 - 120 mg/L

Lab Sample ID: MB 440-358331/3

**Matrix: Water** 

Analysis Batch: 358331

MB MB

Result Qualifier RL MDL Unit Dil Fac Analyte D Prepared Analyzed 20 **Chemical Oxygen Demand**  $\overline{\mathsf{ND}}$ 10 mg/L 09/27/16 08:58

Lab Sample ID: LCS 440-358331/4

**Matrix: Water** 

Analysis Batch: 358331

Spike LCS LCS %Rec. Added Limits **Analyte** Result Qualifier Unit %Rec Chemical Oxygen Demand 200 190 mg/L 95 90 - 110

Client: Geo-Logic Associates

TestAmerica Job ID: 440-159066-1 Project/Site: Republic Sunshine Canyon

Method: 410.4 - COD (Continued)

Lab Sample ID: 440-159066-9 MS Client Sample ID: MW-14 **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 358331

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 200 Chemical Oxygen Demand 10 J 224 mg/L 107 70 - 120

Lab Sample ID: 440-159066-9 MSD Client Sample ID: MW-14 **Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 358331** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits Analyte Result Qualifier **RPD** Limit Unit %Rec 200 Chemical Oxygen Demand 10 J 224 mg/L 107 70 - 120

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-357558/30 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357558** 

MB MB Analyte Result Qualifier RL **RL Unit** Prepared Analyzed Dil Fac Alkalinity as CaCO3 4.0 4.0 mg/L 09/22/16 08:14  $\overline{\mathsf{ND}}$ 

Lab Sample ID: LCS 440-357558/29 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357558** 

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits Analyte Alkalinity as CaCO3 85.8 89.9 mg/L 105 80 - 120

Lab Sample ID: 440-158947-G-3 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357558** 

Sample Sample DII DII RPD Result Qualifier Result Qualifier Unit RPD Limit Analyte Alkalinity as CaCO3 140 138 0.3 mg/L

Lab Sample ID: MB 440-357824/3 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357824** 

MB MB Result Qualifier RL **RL** Unit Analyzed Analyte Dil Fac Prepared 4.0 mg/L Alkalinity as CaCO3 4.0 09/23/16 04:59 ND

Lab Sample ID: LCS 440-357824/2 **Client Sample ID: Lab Control Sample Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 357824** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Alkalinity as CaCO3 85.8 86.6 mg/L 101 80 - 120

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

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 440-159415-D-3 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357824** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit RPD Limit D Alkalinity as CaCO3 430 427 mg/L 0.2 20

Lab Sample ID: MB 440-357917/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357917** 

MB MB Analyte Result Qualifier RL **RL** Unit Analyzed Dil Fac Prepared Alkalinity as CaCO3  $\overline{\mathsf{ND}}$ 4.0 4.0 mg/L 09/24/16 06:28

Lab Sample ID: LCS 440-357917/2 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 357917

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Alkalinity as CaCO3 85.8 86.7 mg/L 101 80 - 120

Lab Sample ID: 440-159247-L-1 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357917** 

DU DU RPD Sample Sample Result Qualifier Result Qualifier Unit **RPD** Limit Alkalinity as CaCO3 290 291 0.4 20 mg/L

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

Lab Sample ID: MB 440-357869/1 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357869** 

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Dil Fac Analyzed 10 Total Dissolved Solids  $\overline{\mathsf{ND}}$ 5.0 mg/L 09/24/16 12:10

Lab Sample ID: LCS 440-357869/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357869** 

Spike LCS LCS %Rec. Result Qualifier Added Analyte Unit %Rec Limits **Total Dissolved Solids** 1000 988 90 - 110 mg/L 99

Lab Sample ID: 440-159096-D-3 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357869** 

DU DU **RPD** Sample Sample Result Qualifier Analyte Result Qualifier Unit D RPD Limit **Total Dissolved Solids** 710 706 mg/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

**Client Sample ID: Duplicate** 

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Method Blank** 

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

Lab Sample ID: MB 440-357870/1 Client Sample ID: Method Blank

**Matrix: Water** 

**Analysis Batch: 357870** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac **Prepared Total Dissolved Solids** 10 09/24/16 12:14 ND 5.0 mg/L

Lab Sample ID: LCS 440-357870/2

**Matrix: Water** 

**Analysis Batch: 357870** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec Total Dissolved Solids 1000 992 mg/L 99 90 - 110

Lab Sample ID: 720-74570-D-1 DU

**Matrix: Water** 

Analysis Batch: 357870

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier RPD Limit Analyte Unit Total Dissolved Solids 790 799 mg/L 5

Lab Sample ID: MB 440-358011/1

**Matrix: Water** 

**Analysis Batch: 358011** 

MR MR

Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids  $\overline{\mathsf{ND}}$ 10 5.0 mg/L 09/26/16 08:24

Lab Sample ID: LCS 440-358011/2

**Matrix: Water** 

**Analysis Batch: 358011** 

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Total Dissolved Solids 1000 992 mg/L 99 90 - 110

Lab Sample ID: 440-159247-K-1 DU

**Matrix: Water** 

**Analysis Batch: 358011** 

DU DU Sample Sample **RPD** Result Qualifier Result Qualifier Analyte Unit D Limit 1700 **Total Dissolved Solids** 1690 mg/L

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-356962/2-A

**Matrix: Water** 

**Analysis Batch: 357017** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Ammonia (as N) ND 0.50 0.10 mg/L 09/21/16 05:00 09/21/16 08:31

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Prep Type: Total/NA

**Prep Batch: 356962** 

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

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

Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: LCS 440-356962/1-A	Client Sample ID: Lab Control Samp						
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 357017							<b>Prep Batch: 356962</b>
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	2.50	2.24		mg/L		89	85 - 115

•	Lab Sample ID: 440-159104-A-1-C MS Matrix: Water							ient Sa	mple ID: Mat Prep Type:	•
Analysis Batch: 357017	Comple	Commis	Smiles	ме	ме				Prep Batcl	
Analyte	•	Sample Qualifier	Spike Added		MS Qualifier	Unit	D	%Rec	%Rec. Limits	
Ammonia (as N)	0.93		2 50	3 34		ma/L	— –	96	75 - 125	

Lab Sample ID: 440-159104-A-1-D MSD Matrix: Water Analysis Batch: 357017							Client	Samp	le ID: N	latrix Spil Prep Tyl Prep Ba	pe: Tot	al/NA 56962
		Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Ammonia (as N)	0.93		2.50	3.22		mg/L		92	75 - 125	4	15

Lab Sample ID: 440-159104-A-1-B DU Matrix: Water Analysis Batch: 357017					Client Sample I Prep Ty Prep B	pe: Tot	al/NA		
-	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Ammonia (as N)	0.93		 0.930		mg/L			0	15

Method	I. CM	E240/	~ Т	20
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Lab Sample ID: MB 440-357124/7	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 357124	

	MIR MIR						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	0.10	0.050 mg/L			09/21/16 06:48	1

Lab Sample ID: LCS 440-357124/6 Matrix: Water Analysis Batch: 357124				Clie	nt Sar	nple ID	: Lab Control S Prep Type: To	
Analysis Batch. 007 124	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Organic Carbon	10.0	10.1		mg/L		101	90 - 110	
Lab Sample ID: MRL 440-357124/5				Clie	nt Sar	nple ID	: Lab Control S	ample
Lab Sample ID: MRL 440-357124/5 Matrix: Water				Clie	nt Sar	nple ID	: Lab Control S Prep Type: To	•
·				Clie	nt Sar	nple ID		•
Matrix: Water	Spike	MRL	MRL	Clie	nt Sar	mple ID		•
Matrix: Water	Spike Added		MRL Qualifier	Clie	nt Sar	nple ID %Rec	Prep Type: To	•

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: SM 5310C - TOC (Continued)

Lab Sample ID: 440-159012-I-4 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357124** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 10.0 **Total Organic Carbon** 0.13 9.92 mg/L 98 80 - 120

Lab Sample ID: 440-159012-I-4 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357124** 

Sample Sample Spike MSD MSD %Rec. **RPD** Limits Result Qualifier Added Analyte Result Qualifier **RPD** Limit Unit %Rec 10.0 Total Organic Carbon 0.13 9.78 mg/L 97 80 - 120 20

Lab Sample ID: MB 440-357260/9 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 357260

MB MB

Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed Total Organic Carbon  $\overline{\mathsf{ND}}$ 0.10 0.050 mg/L 09/21/16 14:01

Lab Sample ID: LCS 440-357260/8 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357260** 

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

Lab Sample ID: MRL 440-357260/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357260** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 0.100 0.0869 J **Total Organic Carbon** mg/L 87 50 - 150

Lab Sample ID: 440-158897-AH-1 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 357260

Sample Sample Spike MS MS %Rec. Result Qualifier Result Qualifier Added Analyte Unit D %Rec Limits **Total Organic Carbon** 10.0 13.5 100 80 - 120 3.5 mg/L

Lab Sample ID: 440-158897-AH-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 357260

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits RPD **Analyte** Result Qualifier Unit %Rec Limit **Total Organic Carbon** 3.5 10.0 13.6 mg/L 101 80 - 120 20

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

#### **GC/MS VOA**

#### Analysis Batch: 357595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	8260B	
440-159066-2	DW-3	Total/NA	Water	8260B	
440-159066-3	PZ-4	Total/NA	Water	8260B	
440-159066-4	LY-7	Total/NA	Water	8260B	
440-159066-5	PZ-2	Total/NA	Water	8260B	
440-159066-6	MW-6	Total/NA	Water	8260B	
MB 440-357595/4	Method Blank	Total/NA	Water	8260B	
LCS 440-357595/5	Lab Control Sample	Total/NA	Water	8260B	
440-158812-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
440-158812-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

#### **Analysis Batch: 358798**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-10	QCAB	Total/NA	Water	8260B	
440-159066-11	QCTB	Total/NA	Water	8260B	
MB 440-358798/4	Method Blank	Total/NA	Water	8260B	
LCS 440-358798/5	Lab Control Sample	Total/NA	Water	8260B	
440-159395-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
440-159395-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## Analysis Batch: 358874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-7	MW-9	Total/NA	Water	8260B	_
440-159066-8	MW-13R	Total/NA	Water	8260B	
MB 440-358874/4	Method Blank	Total/NA	Water	8260B	
LCS 440-358874/5	Lab Control Sample	Total/NA	Water	8260B	
440-159494-A-5 MS	Matrix Spike	Total/NA	Water	8260B	
440-159494-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

#### **Analysis Batch: 359136**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-9	MW-14	Total/NA	Water	8260B	
MB 440-359136/4	Method Blank	Total/NA	Water	8260B	
LCS 440-359136/5	Lab Control Sample	Total/NA	Water	8260B	
440-159873-D-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-159873-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

## GC/MS Semi VOA

## **Prep Batch: 358079**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	3520C	
440-159066-2	DW-3	Total/NA	Water	3520C	
440-159066-3	PZ-4	Total/NA	Water	3520C	
440-159066-4	LY-7	Total/NA	Water	3520C	
440-159066-5	PZ-2	Total/NA	Water	3520C	
440-159066-6	MW-6	Total/NA	Water	3520C	
440-159066-7	MW-9	Total/NA	Water	3520C	
440-159066-8	MW-13R	Total/NA	Water	3520C	
440-159066-9	MW-14	Total/NA	Water	3520C	

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## GC/MS Semi VOA (Continued)

## Prep Batch: 358079 (Continued)

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	MB 440-358079/1-A	Method Blank	Total/NA	Water	3520C	
	LCS 440-358079/2-A	Lab Control Sample	Total/NA	Water	3520C	
١	550-69885-C-4-A MS	Matrix Spike	Total/NA	Water	3520C	
	550-69885-C-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

#### **Analysis Batch: 358730**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	8270C	358079
440-159066-2	DW-3	Total/NA	Water	8270C	358079
440-159066-3	PZ-4	Total/NA	Water	8270C	358079
440-159066-5	PZ-2	Total/NA	Water	8270C	358079
440-159066-6	MW-6	Total/NA	Water	8270C	358079
440-159066-7	MW-9	Total/NA	Water	8270C	358079
440-159066-8	MW-13R	Total/NA	Water	8270C	358079
440-159066-9	MW-14	Total/NA	Water	8270C	358079

#### **Analysis Batch: 359039**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-4	LY-7	Total/NA	Water	8270C	358079
MB 440-358079/1-A	Method Blank	Total/NA	Water	8270C	358079
LCS 440-358079/2-A	Lab Control Sample	Total/NA	Water	8270C	358079
550-69885-C-4-A MS	Matrix Spike	Total/NA	Water	8270C	358079
550-69885-C-4-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	358079

#### **HPLC/IC**

#### Analysis Batch: 356765

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-4	LY-7	Total/NA	Water	300.0	
440-159066-7	MW-9	Total/NA	Water	300.0	
440-159066-8	MW-13R	Total/NA	Water	300.0	
MB 440-356765/47	Method Blank	Total/NA	Water	300.0	
LCS 440-356765/48	Lab Control Sample	Total/NA	Water	300.0	
440-159012-F-3 MS	Matrix Spike	Total/NA	Water	300.0	
440-159012-F-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### **Analysis Batch: 357058**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	300.0	
440-159066-2	DW-3	Total/NA	Water	300.0	
440-159066-3	PZ-4	Total/NA	Water	300.0	
440-159066-5	PZ-2	Total/NA	Water	300.0	
440-159066-6	MW-6	Total/NA	Water	300.0	
440-159066-9	MW-14	Total/NA	Water	300.0	
MB 440-357058/6	Method Blank	Total/NA	Water	300.0	
LCS 440-357058/2	Lab Control Sample	Total/NA	Water	300.0	
440-159066-9 MS	MW-14	Total/NA	Water	300.0	
440-159066-9 MSD	MW-14	Total/NA	Water	300.0	

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#### **Metals**

#### **Prep Batch: 358086**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total Recoverable	Water	3005A	
440-159066-2	DW-3	Total Recoverable	Water	3005A	
440-159066-3	PZ-4	Total Recoverable	Water	3005A	
440-159066-5	PZ-2	Total Recoverable	Water	3005A	
440-159066-6	MW-6	Total Recoverable	Water	3005A	
MB 440-358086/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358086/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-159247-G-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-159247-G-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

#### **Prep Batch: 358091**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-7	MW-9	Total Recoverable	Water	3005A	
440-159066-8	MW-13R	Total Recoverable	Water	3005A	
440-159066-9	MW-14	Total Recoverable	Water	3005A	
MB 440-358091/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358091/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-159066-7 MS	MW-9	Total Recoverable	Water	3005A	
440-159066-7 MSD	MW-9	Total Recoverable	Water	3005A	

## Analysis Batch: 358309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total Recoverable	Water	6010B	358086
440-159066-2	DW-3	Total Recoverable	Water	6010B	358086
440-159066-3	PZ-4	Total Recoverable	Water	6010B	358086
440-159066-5	PZ-2	Total Recoverable	Water	6010B	358086
440-159066-6	MW-6	Total Recoverable	Water	6010B	358086
MB 440-358086/1-A	Method Blank	Total Recoverable	Water	6010B	358086
LCS 440-358086/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358086
440-159247-G-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	358086
440-159247-G-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	358086

#### **Prep Batch: 358354**

Lab Sample ID 440-159066-4	Client Sample ID	Prep Type Total Recoverable	Matrix Water	Method 3005A	Prep Batch
MB 440-358354/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358354/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-159066-4 MS	LY-7	Total Recoverable	Water	3005A	
440-159066-4 MSD	LY-7	Total Recoverable	Water	3005A	

#### **Analysis Batch: 358612**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-4	LY-7	Total Recoverable	Water	6010B	358354
MB 440-358354/1-A	Method Blank	Total Recoverable	Water	6010B	358354
LCS 440-358354/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358354
440-159066-4 MS	LY-7	Total Recoverable	Water	6010B	358354
440-159066-4 MSD	LY-7	Total Recoverable	Water	6010B	358354

#### Analysis Batch: 358615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-7	MW-9	Total Recoverable	Water	6010B	358091

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## **Metals (Continued)**

## **Analysis Batch: 358615 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-8	MW-13R	Total Recoverable	Water	6010B	358091
440-159066-9	MW-14	Total Recoverable	Water	6010B	358091
MB 440-358091/1-A	Method Blank	Total Recoverable	Water	6010B	358091
LCS 440-358091/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358091
440-159066-7 MS	MW-9	Total Recoverable	Water	6010B	358091
440-159066-7 MSD	MW-9	Total Recoverable	Water	6010B	358091

## **General Chemistry**

#### **Prep Batch: 356962**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	SM 4500 NH3 B	
440-159066-2	DW-3	Total/NA	Water	SM 4500 NH3 B	
440-159066-3	PZ-4	Total/NA	Water	SM 4500 NH3 B	
440-159066-4	LY-7	Total/NA	Water	SM 4500 NH3 B	
440-159066-5	PZ-2	Total/NA	Water	SM 4500 NH3 B	
440-159066-6	MW-6	Total/NA	Water	SM 4500 NH3 B	
440-159066-7	MW-9	Total/NA	Water	SM 4500 NH3 B	
440-159066-8	MW-13R	Total/NA	Water	SM 4500 NH3 B	
440-159066-9	MW-14	Total/NA	Water	SM 4500 NH3 B	
MB 440-356962/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-356962/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-159104-A-1-C MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-159104-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-159104-A-1-B DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

#### **Analysis Batch: 357017**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-2	DW-3	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-3	PZ-4	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-4	LY-7	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-5	PZ-2	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-6	MW-6	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-7	MW-9	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-8	MW-13R	Total/NA	Water	SM 4500 NH3 D	356962
440-159066-9	MW-14	Total/NA	Water	SM 4500 NH3 D	356962
MB 440-356962/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	356962
LCS 440-356962/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	356962
440-159104-A-1-C MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	356962
440-159104-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	356962
440-159104-A-1-B DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	356962

## **Analysis Batch: 357124**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	SM 5310C	<u> </u>
440-159066-5	PZ-2	Total/NA	Water	SM 5310C	
440-159066-6	MW-6	Total/NA	Water	SM 5310C	
440-159066-9	MW-14	Total/NA	Water	SM 5310C	
MB 440-357124/7	Method Blank	Total/NA	Water	SM 5310C	

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

## **General Chemistry (Continued)**

#### **Analysis Batch: 357124 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-357124/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-357124/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-159012-I-4 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-159012-I-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

#### Analysis Batch: 357260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-2	DW-3	Total/NA	Water	SM 5310C	
440-159066-3	PZ-4	Total/NA	Water	SM 5310C	
440-159066-4	LY-7	Total/NA	Water	SM 5310C	
440-159066-7	MW-9	Total/NA	Water	SM 5310C	
440-159066-8	MW-13R	Total/NA	Water	SM 5310C	
MB 440-357260/9	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-357260/8	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-357260/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-158897-AH-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-158897-AH-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

#### **Analysis Batch: 357558**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-4	LY-7	Total/NA	Water	SM 2320B	_
440-159066-5	PZ-2	Total/NA	Water	SM 2320B	
440-159066-6	MW-6	Total/NA	Water	SM 2320B	
440-159066-7	MW-9	Total/NA	Water	SM 2320B	
440-159066-8	MW-13R	Total/NA	Water	SM 2320B	
440-159066-9	MW-14	Total/NA	Water	SM 2320B	
MB 440-357558/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357558/29	Lab Control Sample	Total/NA	Water	SM 2320B	
440-158947-G-3 DU	Duplicate	Total/NA	Water	SM 2320B	

#### Analysis Batch: 357824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	SM 2320B	
440-159066-2	DW-3	Total/NA	Water	SM 2320B	
MB 440-357824/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357824/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-159415-D-3 DU	Duplicate	Total/NA	Water	SM 2320B	

#### **Analysis Batch: 357869**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	SM 2540C	
440-159066-2	DW-3	Total/NA	Water	SM 2540C	
440-159066-3	PZ-4	Total/NA	Water	SM 2540C	
MB 440-357869/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-357869/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-159096-D-3 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 357870**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-6	MW-6	Total/NA	Water	SM 2540C	
440-159066-7	MW-9	Total/NA	Water	SM 2540C	

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# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

## **General Chemistry (Continued)**

## **Analysis Batch: 357870 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-8	MW-13R	Total/NA	Water	SM 2540C	
440-159066-9	MW-14	Total/NA	Water	SM 2540C	
MB 440-357870/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-357870/2	Lab Control Sample	Total/NA	Water	SM 2540C	
720-74570-D-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 357917**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-3	PZ-4	Total/NA	Water	SM 2320B	
MB 440-357917/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357917/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-159247-L-1 DU	Duplicate	Total/NA	Water	SM 2320B	

#### **Analysis Batch: 358011**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-4	LY-7	Total/NA	Water	SM 2540C	
440-159066-5	PZ-2	Total/NA	Water	SM 2540C	
MB 440-358011/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-358011/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-159247-K-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Analysis Batch: 358166**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-2	DW-3	Total/NA	Water	410.4	
440-159066-3	PZ-4	Total/NA	Water	410.4	
440-159066-4	LY-7	Total/NA	Water	410.4	
MB 440-358166/3	Method Blank	Total/NA	Water	410.4	
LCS 440-358166/4	Lab Control Sample	Total/NA	Water	410.4	
440-159066-2 MS	DW-3	Total/NA	Water	410.4	
440-159066-2 MSD	DW-3	Total/NA	Water	410.4	

#### **Analysis Batch: 358331**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159066-1	DW-1	Total/NA	Water	410.4	_
440-159066-5	PZ-2	Total/NA	Water	410.4	
440-159066-6	MW-6	Total/NA	Water	410.4	
440-159066-7	MW-9	Total/NA	Water	410.4	
440-159066-8	MW-13R	Total/NA	Water	410.4	
440-159066-9	MW-14	Total/NA	Water	410.4	
MB 440-358331/3	Method Blank	Total/NA	Water	410.4	
LCS 440-358331/4	Lab Control Sample	Total/NA	Water	410.4	
440-159066-9 MS	MW-14	Total/NA	Water	410.4	
440-159066-9 MSD	MW-14	Total/NA	Water	410.4	

TestAmerica Irvine

9/30/2016

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## **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

#### **Qualifiers**

#### **GC/MS VOA**

Qualifier D	escription
	Qualifier D

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

F1 MS and/or MSD Recovery is outside acceptance limits.

#### **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.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **GC/MS Semi VOA**

Qualifier	<b>Qualifier Description</b>

X Surrogate is outside control limits

#### **HPLC/IC**

Qualifier Qualifier Description

F1 MS and/or MSD Recovery is outside acceptance limits.

#### **Metals**

#### 

4 MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

#### **General Chemistry**

#### 

<sup>^</sup> ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **Glossary**

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

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration
MDA Minimum detectable activity
EDL Estimated Detection Limit
MDC Minimum detectable concentration

William detectable concentration

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control
RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TestAmerica Irvine

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## **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159066-1

## **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-13-16 *
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17 *
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

<sup>\*</sup> Certification renewal pending - certification considered valid.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY FORM 17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.
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### **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-159066-1

Login Number: 159066 List Source: TestAmerica Irvine

List Number: 1

Creator: Soderblom, Tim

Creator. Soderbiom, Tim		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a surve meter.</td <td>ey True</td> <td></td>	ey True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-159268-1

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: 9/30/2016 10:09:43 AM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

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**Have a Question?** 



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

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

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

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# **Sample Summary**

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

TestAmerica Job ID: 440-159268-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-159268-1	DW-2	Water	09/21/16 09:28	09/21/16 19:00
440-159268-2	MW-5	Water	09/21/16 11:26	09/21/16 19:00
440-159268-3	Extraction Trench	Water	09/21/16 12:40	09/21/16 19:00
440-159268-4	MW-2A	Water	09/21/16 09:30	09/21/16 19:00
440-159268-5	MW-2B	Water	09/21/16 11:25	09/21/16 19:00
440-159268-6	DW-4	Water	09/21/16 13:35	09/21/16 19:00
440-159268-7	QCAB	Water	09/21/16 00:01	09/21/16 19:00
440-159268-8	QCTB	Water	09/21/16 00:01	09/21/16 19:00

#### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Job ID: 440-159268-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-159268-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/21/2016 7:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.1° C and 4.1° C.

#### **GC/MS VOA**

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

#### GC/MS Semi VOA

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

#### HPLC/IC

Method(s) 300.0: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 440-357366 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

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.

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Lab Sample ID: 440-159268-1

**Matrix: Water** 

Client Sample ID: DW-2
Date Collected: 09/21/16 09:28

Date Received: 09/21/16 19:00

Analyte	Result Qua	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND Qual	1.0			— <u>-</u> -	Troparou	09/30/16 01:35	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25				09/30/16 01:35	
1,1,1-Trichloroethane	ND	0.50	0.25	•			09/30/16 01:35	
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	-			09/30/16 01:35	
1,1,2-Trichloroethane	ND	0.50	0.25	-			09/30/16 01:35	
1,1-Dichloroethane	ND	0.50	0.25				09/30/16 01:35	
1,1-Dichloroethene	ND	0.50	0.25	-			09/30/16 01:35	
1,1-Dichloropropene	ND	0.50	0.25				09/30/16 01:35	
1,2,4-Trichlorobenzene	ND	1.0		-			09/30/16 01:35	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	Ū			09/30/16 01:35	
1,2-Dichlorobenzene	ND	0.50	0.25	-			09/30/16 01:35	
1,2-Dichloroethane	ND	0.50	0.25	-			09/30/16 01:35	
1,2-Dichloropropane	ND	0.50	0.25	-			09/30/16 01:35	
1,3-Dichlorobenzene	ND	0.50	0.25				09/30/16 01:35	
1,3-Dichloropropane	ND	0.50	0.25	-			09/30/16 01:35	
1,4-Dichlorobenzene	ND	0.50	0.25	-			09/30/16 01:35	
2,2-Dichloropropane	ND	1.0	0.40	-			09/30/16 01:35	
2-Chloro-1,3-butadiene	ND	1.0		-			09/30/16 01:35	
2-Hexanone	ND	5.0		ug/L			09/30/16 01:35	
Acetone	ND	20	10	ug/L			09/30/16 01:35	
Acetonitrile	ND	20		ug/L			09/30/16 01:35	
Benzene	ND	0.50	0.25	-			09/30/16 01:35	
Allyl chloride	ND	1.0	0.50	ug/L			09/30/16 01:35	
Bromoform	ND ND	1.0	0.30	-			09/30/16 01:35	
Bromomethane	ND	0.50	0.40	-			09/30/16 01:35	
Carbon disulfide	ND ND	1.0	0.23				09/30/16 01:35	
Carbon tetrachloride	ND ND	0.50	0.30	-			09/30/16 01:35	
Chlorobenzene	ND	0.50	0.25	-			09/30/16 01:35	
Bromochloromethane	ND ND	0.50	0.25	-			09/30/16 01:35	
Chloroethane	ND ND	1.0	0.23	-			09/30/16 01:35	
Chloroform	ND	0.50	0.40	-			09/30/16 01:35	
Chloromethane	ND ND	0.50					09/30/16 01:35	
	ND ND	0.50	0.25	-			09/30/16 01:35	
cis-1,2-Dichloroethene cis-1,3-Dichloropropene	ND	0.50	0.25 0.25				09/30/16 01:35	
Dibromochloromethane	ND ND	0.50		-			09/30/16 01:35	
			0.25	-				
Dibromomethane Bromodichloromethane	ND	0.50	0.25				09/30/16 01:35	
	ND	0.50	0.25				09/30/16 01:35	
Dichlorodifluoromethane	ND	1.0		ug/L			09/30/16 01:35	
Ethyl methacrylate	ND	2.0		ug/L			09/30/16 01:35	
Ethylbenzene	ND	0.50		ug/L			09/30/16 01:35	
odomethane	ND	2.0		ug/L			09/30/16 01:35	
Isobutyl alcohol	ND	25		ug/L			09/30/16 01:35	
m,p-Xylene	ND	1.0		ug/L			09/30/16 01:35	
Methylacrylonitrile	ND	5.0		ug/L			09/30/16 01:35	
Methyl methacrylate	ND	2.0		ug/L			09/30/16 01:35	
Methylene Chloride	ND	2.0		ug/L			09/30/16 01:35	
Methyl tert-butyl ether	ND	0.50	0.25				09/30/16 01:35	
Naphthalene o-Xylene	ND ND	1.0 0.50	0.40	ug/L ug/L			09/30/16 01:35 09/30/16 01:35	

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Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-159268-1

TestAmerica Job ID: 440-159268-1

Client Sample ID: DW-2 Date Collected: 09/21/16 09:28 **Matrix: Water** 

Date Received: 09/21/16 19:00

		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil F
Propionitrile	ND		20	10	-			09/30/16 01:35	
Styrene	ND		0.50		ug/L			09/30/16 01:35	
-Butanol	ND		10	5.0	ug/L			09/30/16 01:35	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/30/16 01:35	
Tetrahydrofuran	ND		10	5.0	ug/L			09/30/16 01:35	
Гoluene	ND		0.50	0.25	ug/L			09/30/16 01:35	
rans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 01:35	
rans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 01:35	
rans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/30/16 01:35	
Trichloroethene	ND		0.50	0.25	ug/L			09/30/16 01:35	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/30/16 01:35	
Vinyl acetate	ND		4.0	2.0	ug/L			09/30/16 01:35	
/inyl chloride	ND		0.50	0.25	ug/L			09/30/16 01:35	
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/30/16 01:35	
2-Butanone (MEK)	ND		5.0		ug/L			09/30/16 01:35	
I-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/30/16 01:35	
Acrylonitrile	ND		2.0		ug/L			09/30/16 01:35	
Acrolein	ND		5.0		ug/L			09/30/16 01:35	
entatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil
Jnknown .	4.8	TJ	ug/L		.57			09/30/16 01:35	
Inknown	13	TJ	ug/L	16.	.46			09/30/16 01:35	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil
Toluene-d8 (Surr)	105		80 - 128					09/30/16 01:35	
4-Bromofluorobenzene (Surr)	97		80 - 120					09/30/16 01:35	
JULULUOLOITIELLIANE (SUFF)			76 - 132					09/30/16 01:35	
, ,	102 Organic Co	mpounds	76 - 132 <b>(GC/MS)</b>					09/30/16 01:35	
Method: 8270C - Semivolatile	e Organic Co	mpounds Qualifier		MDL	Unit	D	Prepared	09/30/16 01:35 Analyzed	Dil I
Method: 8270C - Semivolatile	e Organic Co	•	s (GC/MS)		Unit ug/L	<u>D</u>	Prepared 09/28/16 10:40	Analyzed	Dil I
Dibromofluoromethane (Surr)  Method: 8270C - Semivolatile Analyte 1,4-Dioxane  Surrogate	e Organic Co Result	Qualifier	GC/MS)			<u>D</u>	<u> </u>	Analyzed	Dil I
Method: 8270C - Semivolatile Analyte 1,4-Dioxane	e Organic Co Result	Qualifier	G (GC/MS) RL 1.0			<u>D</u>	09/28/16 10:40	Analyzed 09/29/16 23:34  Analyzed	
Method: 8270C - Semivolatile Analyte 1,4-Dioxane 6,4-Dioxane-d8 (Surr)	e Organic Co Result ND **Recovery	Qualifier  Qualifier	G (GC/MS) RL 1.0 Limits			<u>D</u>	09/28/16 10:40  Prepared	Analyzed 09/29/16 23:34  Analyzed	
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C	e Organic Co Result ND %Recovery 79	Qualifier  Qualifier	G (GC/MS) RL 1.0 Limits	0.26 MDL	ug/L Unit		09/28/16 10:40  Prepared	Analyzed 09/29/16 23:34  Analyzed	
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C	e Organic Co Result ND %Recovery 79	Qualifier  Qualifier	(GC/MS) RL 1.0 Limits 30 - 120	0.26 MDL	ug/L		09/28/16 10:40  Prepared  09/28/16 10:40	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34	Dil
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion C Analyte Chloride	e Organic Co Result ND  %Recovery 79  Chromatogra Result 11	Qualifier  Qualifier  phy Qualifier	(GC/MS) RL 1.0  Limits 30 - 120  RL	0.26 MDL	ug/L Unit		09/28/16 10:40  Prepared  09/28/16 10:40	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed	Dil
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP)	e Organic Co Result ND  %Recovery 79  Chromatogra Result 11  - Total Reco	Qualifier  Qualifier  phy Qualifier	Company   Comp	0.26 MDL 1.3 MDL	ug/L  Unit mg/L  Unit		09/28/16 10:40  Prepared  09/28/16 10:40	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed	Dil
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte	e Organic Co Result ND  %Recovery 79  Chromatogra Result 11  - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	Company   Comp	0.26 MDL 1.3 MDL	ug/L  Unit mg/L	D	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45	Dil
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate	e Organic Co Result ND  %Recovery 79  Chromatogra Result 11  - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	Company   Comp	0.26 MDL 1.3 MDL	ug/L  Unit mg/L  Unit	D	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed	Dil I
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium General Chemistry	Chromatogra Result 11 - Total Reco	Qualifier  Qualifier  phy Qualifier  Qualifier	Company   Comp	MDL 1.3 MDL 0.25	Unit mg/L Unit unit	D	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed	Dil
Method: 8270C - Semivolatile Analyte 1,4-Dioxane Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium General Chemistry Analyte	Chromatogra Result 11 - Total Reco	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	Company   Comp	MDL 1.3 MDL 0.25	Unit mg/L Unit mg/L	D_	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared  09/27/16 13:24	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed 09/28/16 16:59	Dil I
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion Canalyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium General Chemistry Analyte Ammonia (as N)	Chromatogra Result 11  - Total Reco Result 4.9	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL	MDL 1.3 MDL 0.25 MDL 0.10	Unit mg/L Unit unit	D_	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared  09/27/16 13:24	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed 09/28/16 16:59  Analyzed	Dil I
Method: 8270C - Semivolatile Analyte  ,4-Dioxane  Surrogate  ,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Ammonia (as N) Chemical Oxygen Demand	Chromatogra Result 11  - Total Reco Result 4.9  Result 3.0	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL     0.50	MDL 1.3 MDL 0.25 MDL 0.10 10	Unit mg/L  Unit mg/L	D_	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared  09/27/16 13:24	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed 09/28/16 16:59  Analyzed 09/28/16 16:59	Dil I
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion Canalyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry Analyte Ammonia (as N) Chemical Oxygen Demand Fotal Dissolved Solids	Chromatogra Result 11 - Total Recoresult 4.9 - Result 3.0 28	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL	MDL 1.3 MDL 0.25 MDL 0.10 10	Unit mg/L Unit mg/L mg/L mg/L mg/L mg/L	D_	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared  09/27/16 13:24	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed 09/28/16 16:59  Analyzed 09/22/16 02:01 09/28/16 15:33	Dil I
Method: 8270C - Semivolatile Analyte I,4-Dioxane Surrogate I,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion C Analyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium	Chromatogra Result 11 1- Total Reco Result 4.9  Result 3.0 28 2000 1.4	Qualifier  Qualifier  phy Qualifier  Overable Qualifier	RL	MDL 1.3 MDL 0.25 MDL 0.10 10 10 0.050	Unit mg/L Unit mg/L mg/L mg/L mg/L mg/L	D_	09/28/16 10:40  Prepared  09/28/16 10:40  Prepared  Prepared  09/27/16 13:24	Analyzed 09/29/16 23:34  Analyzed 09/29/16 23:34  Analyzed 09/23/16 00:45  Analyzed 09/28/16 16:59  Analyzed 09/28/16 02:01 09/28/16 15:33 09/28/16 09:57	Dil I

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Lab Sample ID: 440-159268-2

**Matrix: Water** 

Client Sample ID: MW-5

Date Collected: 09/21/16 11:26 Date Received: 09/21/16 19:00

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND -	1.0	0.40	ug/L			09/30/16 02:05	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/30/16 02:05	
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/30/16 02:05	
I,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/30/16 02:05	
,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/30/16 02:05	
,1-Dichloroethane	ND	0.50	0.25	ug/L			09/30/16 02:05	
I,1-Dichloroethene	ND	0.50	0.25	ug/L			09/30/16 02:05	
I,1-Dichloropropene	ND	0.50	0.25	ug/L			09/30/16 02:05	
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/30/16 02:05	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/30/16 02:05	
,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 02:05	
I,2-Dichloroethane	ND	0.50	0.25	-			09/30/16 02:05	
1,2-Dichloropropane	ND	0.50		ug/L			09/30/16 02:05	
1,3-Dichlorobenzene	ND	0.50	0.25	-			09/30/16 02:05	
1,3-Dichloropropane	ND	0.50	0.25	-			09/30/16 02:05	
I,4-Dichlorobenzene	ND	0.50		ug/L			09/30/16 02:05	
2,2-Dichloropropane	ND	1.0	0.40	-			09/30/16 02:05	
2-Chloro-1,3-butadiene	ND	1.0	0.50	-			09/30/16 02:05	
2-Hexanone	ND	5.0		ug/L			09/30/16 02:05	
Acetone	ND	20		ug/L			09/30/16 02:05	
Acetonitrile	ND	20		ug/L			09/30/16 02:05	
Benzene	ND	0.50	0.25	-			09/30/16 02:05	
Allyl chloride	ND	1.0	0.50				09/30/16 02:05	
Bromoform	ND	1.0	0.40	-			09/30/16 02:05	
Bromomethane	ND	0.50	0.25				09/30/16 02:05	
Carbon disulfide	ND	1.0	0.50	-			09/30/16 02:05	
Carbon tetrachloride	ND	0.50	0.25	-			09/30/16 02:05	
Chlorobenzene	ND	0.50	0.25				09/30/16 02:05	
Bromochloromethane	ND	0.50	0.25				09/30/16 02:05	
Chloroethane	ND	1.0	0.40	-			09/30/16 02:05	
Chloroform	ND	0.50		ug/L			09/30/16 02:05	
Chloromethane	ND ND	0.50	0.25	-			09/30/16 02:05	
				-			09/30/16 02:05	
cis-1,2-Dichloroethene	ND ND	0.50	0.25	-				
cis-1,3-Dichloropropene	ND ND	0.50 0.50	0.25				09/30/16 02:05 09/30/16 02:05	
Dibromochloromethane			0.25	-				
Dibromomethane	ND ND	0.50		ug/L			09/30/16 02:05	
Bromodichloromethane	ND	0.50		ug/L			09/30/16 02:05	
Dichlorodifluoromethane	ND	1.0		ug/L			09/30/16 02:05	
Ethyl methacrylate	ND	2.0		ug/L			09/30/16 02:05	
Ethylbenzene	ND	0.50		ug/L			09/30/16 02:05	
odomethane	ND ND	2.0		ug/L			09/30/16 02:05	
sobutyl alcohol	ND	25		ug/L			09/30/16 02:05	
n,p-Xylene	ND ND	1.0		ug/L			09/30/16 02:05	
Methylacrylonitrile	ND	5.0		ug/L			09/30/16 02:05	
Methyl methacrylate	ND	2.0		ug/L			09/30/16 02:05	
Methylene Chloride	ND	2.0		ug/L			09/30/16 02:05	
Methyl tert-butyl ether	ND	0.50		ug/L			09/30/16 02:05	•
Naphthalene	ND ND	1.0 0.50		ug/L ug/L			09/30/16 02:05 09/30/16 02:05	

TestAmerica Irvine

2

6

8

4.0

11

Lab Sample ID: 440-159268-2

TestAmerica Job ID: 440-159268-1

**Matrix: Water** 

**Client Sample ID: MW-5** Date Collected: 09/21/16 11:26 Date Received: 09/21/16 19:00

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil F
Propionitrile	ND		20	10	ug/L			09/30/16 02:05	
Styrene	ND		0.50	0.25	•			09/30/16 02:05	
t-Butanol	ND		10	5.0	ug/L			09/30/16 02:05	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/30/16 02:05	
Tetrahydrofuran	ND		10	5.0	ug/L			09/30/16 02:05	
Toluene	ND		0.50	0.25	ug/L			09/30/16 02:05	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 02:05	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 02:05	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/30/16 02:05	
Trichloroethene	ND		0.50	0.25	ug/L			09/30/16 02:05	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/30/16 02:05	
Vinyl acetate	ND		4.0	2.0	ug/L			09/30/16 02:05	
Vinyl chloride	ND		0.50	0.25	ug/L			09/30/16 02:05	
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/30/16 02:05	
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/30/16 02:05	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/30/16 02:05	
Acrylonitrile	ND		2.0		ug/L			09/30/16 02:05	
Acrolein	ND		5.0		ug/L			09/30/16 02:05	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil I
Unknown	7.1	TJ	ug/L	_	.51			09/30/16 02:05	
Unknown	3.8	T J	ug/L		.57			09/30/16 02:05	
Unknown		T J	ug/L		.83			09/30/16 02:05	
	. –		9						
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Toluene-d8 (Surr)	105		80 - 128					09/30/16 02:05	
4-Bromofluorobenzene (Surr)	99		80 - 120					09/30/16 02:05	
Dibromofluoromethane (Surr)	102		76 - 132					09/30/16 02:05	
Method: 8270C - Semivolatile	organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
1,4-Dioxane	13		0.95	0.24	ug/L		09/28/16 10:40	09/29/16 23:56	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
	%Recovery	Qualifier	30 - 120				<b>Prepared</b> 09/28/16 10:40	Analyzed 09/29/16 23:56	Dil
1,4-Dioxane-d8 (Surr)	54								Dil I
1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (	- 54 Chromatogra	phy	30 - 120	MDL	Unit	D	09/28/16 10:40	09/29/16 23:56	
Surrogate 1,4-Dioxane-d8 (Surr) Method: 300.0 - Anions, Ion ( Analyte Chloride	- 54 Chromatogra				Unit mg/L	<u>D</u>			Dil I
1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion ( Analyte Chloride	54 Chromatogra Result 160	phy Qualifier	30 - 120 RL			<u>D</u>	09/28/16 10:40	09/29/16 23:56 Analyzed	Dil F
1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (Analyte Chloride  Method: 6010B - Metals (ICP)	Chromatogra Result 160  - Total Reco	phy Qualifier	30 - 120 RL 50	25	mg/L		09/28/16 10:40  Prepared	09/29/16 23:56  Analyzed 09/22/16 19:05	Dil F
Method: 300.0 - Anions, Ion (Analyte Chloride Method: 6010B - Metals (ICP) Analyte	Chromatogra Result 160  - Total Reco	phy Qualifier	30 - 120 RL 50	25	mg/L Unit	<u>D</u>	Prepared Prepared	09/29/16 23:56  Analyzed  09/22/16 19:05  Analyzed	Dill
Method: 300.0 - Anions, Ion (Analyte Chloride Method: 6010B - Metals (ICP) Analyte	Chromatogra Result 160  - Total Reco	phy Qualifier	30 - 120 RL 50	25	mg/L		09/28/16 10:40  Prepared	09/29/16 23:56  Analyzed 09/22/16 19:05	Dill
Method: 300.0 - Anions, Ion (Analyte Chloride Method: 6010B - Metals (ICP) Analyte Potassium	Chromatogra Result 160  - Total Reco	phy Qualifier	30 - 120 RL 50	25	mg/L Unit		Prepared Prepared	09/29/16 23:56  Analyzed  09/22/16 19:05  Analyzed	Dill
Method: 300.0 - Anions, Ion (Analyte Chloride  Method: 6010B - Metals (ICP) Analyte Potassium  General Chemistry	Chromatogra Result 160  - Total Reco Result 28	phy Qualifier	30 - 120 RL 50	MDL 0.25	mg/L Unit		Prepared Prepared	09/29/16 23:56  Analyzed  09/22/16 19:05  Analyzed	Dil I
1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion ( Analyte Chloride	Chromatogra Result 160  - Total Reco Result 28	Qualifier  Overable Qualifier	30 - 120 RL 50  RL 0.50	25  MDL 0.25	mg/L  Unit mg/L	<u>D</u>	Prepared  Prepared  09/27/16 13:24	09/29/16 23:56  Analyzed 09/22/16 19:05  Analyzed 09/28/16 17:00	Dil I
Method: 300.0 - Anions, Ion (Analyte Chloride  Method: 6010B - Metals (ICP)  Analyte  Potassium  General Chemistry  Analyte	Chromatogra Result 160 1 - Total Recc Result 28 Result	Qualifier  Overable Qualifier	30 - 120  RL 50  RL 0.50	MDL 0.10	mg/L  Unit mg/L  Unit	<u>D</u>	Prepared  Prepared  09/27/16 13:24	09/29/16 23:56  Analyzed 09/22/16 19:05  Analyzed 09/28/16 17:00  Analyzed	Dil F

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

**Client Sample ID: MW-5** 

Lab Sample ID: 440-159268-2 Date Collected: 09/21/16 11:26

**Matrix: Water** 

Date Received: 09/21/16 19:00

Analyte	Result Qualifier	RL	RL Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	630	4.0	4.0 mg/L			09/24/16 08:52	1

**Client Sample ID: Extraction Trench** Lab Sample ID: 440-159268-3

Date Collected: 09/21/16 12:40 **Matrix: Water** 

Date Received: 09/21/16 19:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/30/16 02:35	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/30/16 02:35	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/30/16 02:35	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			09/30/16 02:35	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			09/30/16 02:35	1
2-Hexanone	ND		5.0	2.5	ug/L			09/30/16 02:35	1
Acetone	ND		20	10	ug/L			09/30/16 02:35	1
Acetonitrile	ND		20	10	ug/L			09/30/16 02:35	1
Benzene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Allyl chloride	ND		1.0	0.50	ug/L			09/30/16 02:35	1
Bromoform	ND		1.0	0.40	ug/L			09/30/16 02:35	1
Bromomethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/30/16 02:35	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Chloroethane	ND		1.0	0.40	ug/L			09/30/16 02:35	1
Chloroform	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Chloromethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
cis-1,2-Dichloroethene	0.54		0.50	0.25	ug/L			09/30/16 02:35	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Dibromomethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/30/16 02:35	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/30/16 02:35	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/30/16 02:35	1
Ethylbenzene	ND		0.50	0.25				09/30/16 02:35	1
lodomethane	ND		2.0		ug/L			09/30/16 02:35	1
Isobutyl alcohol	ND		25	13	ug/L			09/30/16 02:35	1
m,p-Xylene	ND		1.0	0.50	ug/L			09/30/16 02:35	1

TestAmerica Irvine

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Project/Site: Republic Sunshine Canyon

Client Sample ID: Extraction Trench

Lab Sample ID: 440-159268-3

Date Collected: 09/21/16 12:40 Date Received: 09/21/16 19:00 Matrix: Water

Water

Analyte		Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fa
Methylacrylonitrile	ND		5.0		2.5	ug/L			09/30/16 02:35	
Methyl methacrylate	ND		2.0		1.0	ug/L			09/30/16 02:35	
Methylene Chloride	ND		2.0		0.88	ug/L			09/30/16 02:35	
Methyl tert-butyl ether	ND		0.50		0.25	ug/L			09/30/16 02:35	
Naphthalene	ND		1.0		0.40	ug/L			09/30/16 02:35	
o-Xylene	ND		0.50		0.25	ug/L			09/30/16 02:35	
Propionitrile	ND		20		10	ug/L			09/30/16 02:35	
Styrene	ND		0.50		0.25	ug/L			09/30/16 02:35	
t-Butanol	57		10		5.0	ug/L			09/30/16 02:35	
Tetrachloroethene	ND		0.50		0.25	ug/L			09/30/16 02:35	
Tetrahydrofuran	9.0	J	10		5.0	ug/L			09/30/16 02:35	
Toluene	ND		0.50		0.25	ug/L			09/30/16 02:35	
trans-1,2-Dichloroethene	ND		0.50		0.25	ug/L			09/30/16 02:35	
trans-1,3-Dichloropropene	ND		0.50		0.25	-			09/30/16 02:35	
trans-1,4-Dichloro-2-butene	ND		5.0		2.5	ug/L			09/30/16 02:35	
Trichloroethene	ND		0.50		0.25	ug/L			09/30/16 02:35	
Trichlorofluoromethane	ND		0.50		0.25	ug/L			09/30/16 02:35	
Vinyl acetate	ND		4.0		2.0	ug/L			09/30/16 02:35	
Vinyl chloride	ND		0.50		0.25	ug/L			09/30/16 02:35	
1,2-Dibromoethane (EDB)	ND		0.50		0.25	ug/L			09/30/16 02:35	
2-Butanone (MEK)	ND		5.0		2.5	ug/L			09/30/16 02:35	
4-Methyl-2-pentanone (MIBK)	ND		5.0		2.5	ug/L			09/30/16 02:35	
Acrylonitrile	ND		2.0		1.0	ug/L			09/30/16 02:35	
Acrolein	ND		5.0		2.5	ug/L			09/30/16 02:35	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	1	RT	CAS No.	Prepared	Analyzed	Dil F
Unknown	9.7	TJ	ug/L		3.	40			09/30/16 02:35	
Unknown	10	TJ	ug/L		5.	57			09/30/16 02:35	
Unknown	11	TJ	ug/L		16.	34			09/30/16 02:35	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil F
Toluene-d8 (Surr)	107		80 - 128						09/30/16 02:35	
4-Bromofluorobenzene (Surr)	98		80 - 120						09/30/16 02:35	
Dibromofluoromethane (Surr)	101		76 - 132						09/30/16 02:35	
Method: 8270C - Semivolatile	Organic Co	mnounds	(GC/MS)							
Analyte		Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil F
1,4-Dioxane	27		0.98		0.25	ug/L		09/28/16 10:40	09/30/16 00:17	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil F
1,4-Dioxane-d8 (Surr)	58		30 - 120					09/28/16 10:40	09/30/16 00:17	
Method: 300.0 - Anions, Ion C	hromatogra	vha								
Analyte		Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	320		50		25	mg/L			09/22/16 19:23	1
Market CodeD Market (IOD)	- Total Roce	vorable								
Method, POJOR - Metale UCA										
Method: 6010B - Metals (ICP) Analyte		Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil F

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

**Client Sample ID: Extraction Trench** 

Date Collected: 09/21/16 12:40 Date Received: 09/21/16 19:00 Lab Sample ID: 440-159268-3

**Matrix: Water** 

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	9.9		0.20	0.10	mg/L			09/22/16 02:11	1
Chemical Oxygen Demand	220		20	10	mg/L			09/28/16 15:33	1
Total Dissolved Solids	3700		50	25	mg/L			09/28/16 09:57	1
Total Organic Carbon	96		1.0	0.50	mg/L			09/23/16 09:56	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	860		4.0	4.0	mg/L			09/24/16 09:09	1

Client Sample ID: MW-2A Lab Sample ID: 440-159268-4

Date Collected: 09/21/16 09:30 Matrix: Water
Date Received: 09/21/16 19:00

Method: 8260B - Volatile Organic Compounds (GC/MS) Result Qualifier RL **MDL** Unit D Dil Fac Analyte Prepared Analyzed 1,2,3-Trichloropropane  $\overline{\mathsf{ND}}$ 1.0 0.40 ug/L 09/30/16 03:04 1.1.1.2-Tetrachloroethane ND 0.50 0.25 ug/L 09/30/16 03:04 1,1,1-Trichloroethane ND 0.50 0.25 ug/L 09/30/16 03:04 1,1,2,2-Tetrachloroethane ND 0.50 0.25 ug/L 09/30/16 03:04 1,1,2-Trichloroethane ND 0.50 0.25 ug/L 09/30/16 03:04 1.1-Dichloroethane ND 0.50 0.25 ug/L 09/30/16 03:04 1,1-Dichloroethene ND 0.50 0.25 ug/L 09/30/16 03:04 09/30/16 03:04 1,1-Dichloropropene ND 0.50 0.25 ug/L 1,2,4-Trichlorobenzene ND 1.0 0.40 ug/L 09/30/16 03:04 1,2-Dibromo-3-Chloropropane ND 1.0 0.50 ug/L 09/30/16 03:04 1,2-Dichlorobenzene ND 0.50 0.25 ug/L 09/30/16 03:04 1,2-Dichloroethane ND 0.50 0.25 ug/L 09/30/16 03:04 1,2-Dichloropropane ND 0.50 0.25 ug/L 09/30/16 03:04 1,3-Dichlorobenzene ND 0.50 0.25 ug/L 09/30/16 03:04 1,3-Dichloropropane ND 0.50 0.25 ug/L 09/30/16 03:04 1,4-Dichlorobenzene ND 0.50 0.25 ug/L 09/30/16 03:04 ND 1.0 0.40 ug/L 09/30/16 03:04 2,2-Dichloropropane 2-Chloro-1,3-butadiene ND 1.0 0.50 ug/L 09/30/16 03:04 2-Hexanone ND 5.0 2.5 ug/L 09/30/16 03:04 ND 20 Acetone 10 ug/L 09/30/16 03:04 Acetonitrile ND 20 10 ug/L 09/30/16 03:04 Benzene ND 0.50 0.25 ug/L 09/30/16 03:04 Allyl chloride ND 1.0 0.50 ug/L 09/30/16 03:04 **Bromoform** ND 1.0 0.40 ug/L 09/30/16 03:04 Bromomethane 0.50 0.25 ug/L ND 09/30/16 03:04 Carbon disulfide ND 1.0 0.50 ug/L 09/30/16 03:04 Carbon tetrachloride ND 0.50 0.25 ug/L 09/30/16 03:04 Chlorobenzene ND 0.50 0.25 ug/L 09/30/16 03:04 Bromochloromethane ND 0.50 0.25 ug/L 09/30/16 03:04 Chloroethane ND 1.0 0.40 ug/L 09/30/16 03:04 Chloroform ND 0.50 0.25 ug/L 09/30/16 03:04 Chloromethane ND 0.50 0.25 09/30/16 03:04 ug/L cis-1,2-Dichloroethene ND 0.50 0.25 ug/L 09/30/16 03:04 cis-1,3-Dichloropropene ND 0.50 0.25 ug/L 09/30/16 03:04 Dibromochloromethane ND 0.25 ug/L 0.50 09/30/16 03:04 Dibromomethane ND 0.50 0.25 ug/L 09/30/16 03:04

TestAmerica Irvine

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9/30/2016

Method: 300.0 - Anions, Ion Chromatography

Analyte

Chloride

TestAmerica Job ID: 440-159268-1

Client Sample ID: MW-2A

Date Collected: 09/21/16 09:30 Date Received: 09/21/16 19:00 Lab Sample ID: 440-159268-4

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Bromodichloromethane	ND		0.50	0.25	ug/L			09/30/16 03:04	
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/30/16 03:04	
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/30/16 03:04	
Ethylbenzene	ND		0.50	0.25	ug/L			09/30/16 03:04	
lodomethane	ND		2.0	1.0	ug/L			09/30/16 03:04	
Isobutyl alcohol	ND		25	13	ug/L			09/30/16 03:04	
m,p-Xylene	ND		1.0	0.50	ug/L			09/30/16 03:04	
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/30/16 03:04	
Methyl methacrylate	ND		2.0	1.0	ug/L			09/30/16 03:04	
Methylene Chloride	ND		2.0	0.88	ug/L			09/30/16 03:04	
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/30/16 03:04	
Naphthalene	ND		1.0	0.40	ug/L			09/30/16 03:04	
o-Xylene	ND		0.50	0.25	ug/L			09/30/16 03:04	
Propionitrile	ND		20	10	ug/L			09/30/16 03:04	
Styrene	ND		0.50	0.25	ug/L			09/30/16 03:04	
t-Butanol	ND		10	5.0	ug/L			09/30/16 03:04	
Tetrachloroethene	ND		0.50	0.25	ug/L			09/30/16 03:04	
Tetrahydrofuran	ND		10		ug/L			09/30/16 03:04	
Toluene	ND		0.50		ug/L			09/30/16 03:04	
trans-1,2-Dichloroethene	ND		0.50		ug/L			09/30/16 03:04	
trans-1,3-Dichloropropene	ND		0.50		ug/L			09/30/16 03:04	
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/30/16 03:04	
Trichloroethene	ND		0.50		ug/L			09/30/16 03:04	
Trichlorofluoromethane	ND		0.50		ug/L			09/30/16 03:04	
Vinyl acetate	ND		4.0		ug/L			09/30/16 03:04	
Vinyl chloride	ND		0.50		ug/L			09/30/16 03:04	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			09/30/16 03:04	
2-Butanone (MEK)	ND		5.0		ug/L			09/30/16 03:04	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/30/16 03:04	
Acrylonitrile	ND		2.0		ug/L			09/30/16 03:04	
Acrolein	ND		5.0		ug/L			09/30/16 03:04	
7.67.676.11	112		0.0	2.0	ug/ L			00/00/10 00:01	
Tentatively Identified Compound	Est. Result		Unit		RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	2.6	TJ	ug/L	5	.57			09/30/16 03:04	
Unknown	13	ΤJ	ug/L	16	.45			09/30/16 03:04	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	104		80 - 128					09/30/16 03:04	
4-Bromofluorobenzene (Surr)	98		80 - 120					09/30/16 03:04	
Dibromofluoromethane (Surr)	102		76 - 132					09/30/16 03:04	
Method: 8270C - Semivolatile	Organic Co	mnounde	(GC/MS)						
Analyte		Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	ND		0.96		ug/L		•	09/30/16 00:39	Diria
Surrogata	9/ Danassa	Ouglifier	l incite				Dronovad	Analyzad	- חיי
Surrogate	%Recovery	Quaimer	Limits				Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	81		30 - 120				09/28/16 10:40	09/30/16 00:39	•

TestAmerica Irvine

Dil Fac

Analyzed

09/23/16 01:03

Prepared

RL

2.5

MDL Unit

1.3 mg/L

Result Qualifier

Client: Geo-Logic Associates

Alkalinity as CaCO3

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

09/24/16 09:18

Method: 6010B - Metals (ICP) Analyte	•	overable Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	5.0		0.50	0.25	mg/L		09/27/16 13:27	09/28/16 12:29	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.9		0.20	0.10	mg/L			09/22/16 02:17	1
Chemical Oxygen Demand	37		20	10	mg/L			09/28/16 15:33	1
Total Dissolved Solids	2600		20	10	mg/L			09/28/16 09:57	1
Total Organic Carbon	3.5		0.10	0.050	mg/L			09/23/16 10:10	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: MW-2B Lab Sample ID: 440-159268-5 Matrix: Water

4.0

4.0 mg/L

Date Collected: 09/21/16 11:25 Date Received: 09/21/16 19:00

380

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/30/16 03:34	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/30/16 03:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/30/16 03:34	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			09/30/16 03:34	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			09/30/16 03:34	1
2-Hexanone	ND		5.0	2.5	ug/L			09/30/16 03:34	1
Acetone	ND		20	10	ug/L			09/30/16 03:34	1
Acetonitrile	ND		20	10	ug/L			09/30/16 03:34	1
Benzene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
Allyl chloride	ND		1.0	0.50	ug/L			09/30/16 03:34	1
Bromoform	ND		1.0	0.40	ug/L			09/30/16 03:34	1
Bromomethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/30/16 03:34	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/30/16 03:34	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/30/16 03:34	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
Chloroethane	ND		1.0	0.40	ug/L			09/30/16 03:34	1
Chloroform	ND		0.50	0.25	ug/L			09/30/16 03:34	1
Chloromethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1
cis-1,2-Dichloroethene	ND		0.50	0.25				09/30/16 03:34	1
cis-1,3-Dichloropropene	ND		0.50	0.25	-			09/30/16 03:34	1
Dibromochloromethane	ND		0.50	0.25	-			09/30/16 03:34	1
Dibromomethane	ND		0.50	0.25	ug/L			09/30/16 03:34	1

TestAmerica Irvine

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TestAmerica Job ID: 440-159268-1

Client Sample ID: MW-2B

Lab Sample ID: 440-159268-5

**Matrix: Water** 

Date Collected: 09/21/16 11:25 Date Received: 09/21/16 19:00

Chloride

Analyte	Result	Qualifier	RL		MDL		D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	ND		0.50		0.25	ug/L			09/30/16 03:34	
Dichlorodifluoromethane	ND		1.0		0.40	ug/L			09/30/16 03:34	
Ethyl methacrylate	ND		2.0		1.0	ug/L			09/30/16 03:34	
Ethylbenzene	ND		0.50		0.25	ug/L			09/30/16 03:34	
lodomethane	ND		2.0		1.0	ug/L			09/30/16 03:34	
Isobutyl alcohol	ND		25		13	ug/L			09/30/16 03:34	
m,p-Xylene	ND		1.0		0.50	_			09/30/16 03:34	
Methylacrylonitrile	ND		5.0			ug/L			09/30/16 03:34	
Methyl methacrylate	ND		2.0			ug/L			09/30/16 03:34	
Methylene Chloride	ND		2.0		0.88	_			09/30/16 03:34	
Methyl tert-butyl ether	ND		0.50		0.25	-			09/30/16 03:34	
Naphthalene	ND		1.0		0.40	-			09/30/16 03:34	
o-Xylene	ND		0.50		0.25	-			09/30/16 03:34	
Propionitrile	ND		20			ug/L			09/30/16 03:34	
Styrene	ND		0.50		0.25	_			09/30/16 03:34	
t-Butanol	ND		10			ug/L ug/L			09/30/16 03:34	
Tetrachloroethene	ND ND		0.50		0.25	_			09/30/16 03:34	
	ND ND		10			ug/L ug/L			09/30/16 03:34	
Tetrahydrofuran						_			09/30/16 03:34	
Toluene	ND		0.50		0.25	_				
trans-1,2-Dichloroethene	ND		0.50		0.25	-			09/30/16 03:34	
trans-1,3-Dichloropropene	ND		0.50		0.25	_			09/30/16 03:34	
trans-1,4-Dichloro-2-butene	ND		5.0			ug/L			09/30/16 03:34	
Trichloroethene	ND		0.50		0.25	_			09/30/16 03:34	
Trichlorofluoromethane	ND		0.50		0.25	-			09/30/16 03:34	
Vinyl acetate	ND		4.0			ug/L			09/30/16 03:34	
Vinyl chloride	ND		0.50		0.25	-			09/30/16 03:34	
1,2-Dibromoethane (EDB)	ND		0.50		0.25	-			09/30/16 03:34	
2-Butanone (MEK)	ND		5.0			ug/L			09/30/16 03:34	
4-Methyl-2-pentanone (MIBK)	ND		5.0			ug/L			09/30/16 03:34	
Acrylonitrile	ND		2.0		1.0	ug/L			09/30/16 03:34	
Acrolein	ND		5.0		2.5	ug/L			09/30/16 03:34	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown		TJ	ug/L		13.				09/30/16 03:34	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	104	***************************************	80 - 128						09/30/16 03:34	
4-Bromofluorobenzene (Surr)	99		80 - 120						09/30/16 03:34	
Dibromofluoromethane (Surr)	106		76 - 132						09/30/16 03:34	
Sistemenas emerinane (earr)	,,,,		70-702						00,00,1000.01	
Mathadi 0070C Cambralatil	_	mpounds Qualifier	(GC/MS)		MDL	Unit	D	Prepared	Analyzed	Dil Fa
	Regult	- Luuilli Ci			0.24			09/28/16 10:40	09/30/16 01:00	Dilla
Analyte			0.96			~9'L				
Analyte 1,4-Dioxane	ND		0.96					_		
Analyte 1,4-Dioxane Surrogate	ND %Recovery		Limits					Prepared 10.40.40	Analyzed	
Analyte 1,4-Dioxane Surrogate	ND								Analyzed	Dil Fa
Method: 8270C - Semivolatile Analyte  1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)  Method: 300.0 - Anions, Ion (Analyte)	%Recovery 67 Chromatogra	Qualifier	Limits		MDL				Analyzed	

TestAmerica Irvine

09/23/16 01:21

2.5

14

1.3 mg/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Client Sample ID: MW-2B Lab Sample ID: 440-159268-5

Date Collected: 09/21/16 11:25

Date Received: 09/21/16 19:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	4.0		0.50	0.25	mg/L		09/27/16 13:27	09/28/16 12:20	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	3.2		0.20	0.10	mg/L			09/22/16 02:22	1
Chemical Oxygen Demand	34		20	10	mg/L			09/28/16 15:33	1
Total Dissolved Solids	2600		20	10	mg/L			09/28/16 09:57	1
Total Organic Carbon	1.8		0.10	0.050	mg/L			09/23/16 11:10	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	350		4.0	4.0	mg/L			09/24/16 09:27	1

Client Sample ID: DW-4

Lab Sample ID: 440-159268-6

Date Collected: 09/21/16 13:35

Date Received: 09/21/16 19:00

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/30/16 04:03	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/30/16 04:03	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/30/16 04:03	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			09/30/16 04:03	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			09/30/16 04:03	1
2-Hexanone	ND		5.0	2.5	ug/L			09/30/16 04:03	1
Acetone	ND		20	10	ug/L			09/30/16 04:03	1
Acetonitrile	ND		20	10	ug/L			09/30/16 04:03	1
Benzene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Allyl chloride	ND		1.0	0.50	ug/L			09/30/16 04:03	1
Bromoform	ND		1.0	0.40	ug/L			09/30/16 04:03	1
Bromomethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/30/16 04:03	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Bromochloromethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Chloroethane	ND		1.0	0.40	ug/L			09/30/16 04:03	1
Chloroform	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Chloromethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 04:03	1

TestAmerica Irvine

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Client: Geo-Logic Associates

Client Sample ID: DW-4

Date Collected: 09/21/16 13:35

Date Received: 09/21/16 19:00

Project/Site: Republic Sunshine Canyon

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

TestAmerica Job ID: 440-159268-1

Lab Sample ID: 440-159268-6

Metric Mater

Matrix: Water

Analyte	Result	Qualifier	, RL	MDL	. Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Dibromomethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			09/30/16 04:03	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/30/16 04:03	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
lodomethane	ND		2.0	1.0	ug/L			09/30/16 04:03	1
Isobutyl alcohol	ND		25	13	3 ug/L			09/30/16 04:03	1
m,p-Xylene	ND		1.0	0.50	ug/L			09/30/16 04:03	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/30/16 04:03	1
Methyl methacrylate	ND		2.0	1.0	ug/L			09/30/16 04:03	1
Methylene Chloride	ND		2.0	0.88	3 ug/L			09/30/16 04:03	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Naphthalene	ND		1.0	0.40	ug/L			09/30/16 04:03	1
o-Xylene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Propionitrile	ND		20	10	ug/L			09/30/16 04:03	1
Styrene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
t-Butanol	ND		10	5.0	ug/L			09/30/16 04:03	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/30/16 04:03	1
Toluene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/30/16 04:03	1
Trichloroethene	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/30/16 04:03	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/30/16 04:03	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/30/16 04:03	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/30/16 04:03	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/30/16 04:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/30/16 04:03	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/30/16 04:03	1
Acrolein	ND		5.0	2.5	ug/L			09/30/16 04:03	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	11	TJ	ug/L		2.77			09/30/16 04:03	1
Unknown	5.8	ΤJ	ug/L		5.57			09/30/16 04:03	1
Unknown	15	ΤJ	ug/L		13.83			09/30/16 04:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 128		09/30/16 04:03	1
4-Bromofluorobenzene (Surr)	98		80 - 120		09/30/16 04:03	1
Dibromofluoromethane (Surr)	105		76 - 132		09/30/16 04:03	1

Method: 8270C -	<b>Semivolatile</b>	Organic (	Compounds	(GC/MS)
		_		

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND —	0.95	0.24 ug/L		09/28/16 10:40	09/30/16 01:22	1

TestAmerica Irvine

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40

Client: Geo-Logic Associates

Client Sample ID: DW-4

Date Collected: 09/21/16 13:35

Date Received: 09/21/16 19:00

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

09/22/16 02:27

09/28/16 15:33

Lab Sample ID: 440-159268-6

**Matrix: Water** 

Prepared Surrogate %Recovery Qualifier Limits Analyzed Dil Fac 09/28/16 10:40 09/30/16 01:22 1,4-Dioxane-d8 (Surr) 66 30 - 120 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac 2.5 Chloride 1.3 mg/L 09/23/16 01:39 Method: 6010B - Metals (ICP) - Total Recoverable **MDL** Unit **Analyte** Result Qualifier RL D Prepared Analyzed Dil Fac Potassium 4.2 0.50 0.25 mg/L 09/27/16 13:27 09/28/16 12:28 **General Chemistry** Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac

20 09/28/16 09:57 **Total Dissolved Solids** 2800 10 mg/L 1.7 0.10 0.050 mg/L 09/23/16 11:22 **Total Organic Carbon** Analyte RL **RL** Unit Result Qualifier D Prepared Analyzed Dil Fac 4.0 mg/L 4.0 09/24/16 09:35 **Alkalinity as CaCO3** 350

0.20

20

0.10 mg/L

10 mg/L

3.9

26

**Client Sample ID: QCAB** Lab Sample ID: 440-159268-7 Date Collected: 09/21/16 00:01 **Matrix: Water** 

Date Received: 09/21/16 19:00

Ammonia (as N)

**Chemical Oxygen Demand** 

Analyte	Result Q	ualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/30/16 04:33	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/30/16 04:33	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/30/16 04:33	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 04:33	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/30/16 04:33	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/30/16 04:33	1
2-Hexanone	ND	5.0	2.5	ug/L			09/30/16 04:33	1
Acetone	ND	20	10	ug/L			09/30/16 04:33	1
Acetonitrile	ND	20	10	ug/L			09/30/16 04:33	1
Benzene	ND	0.50	0.25	ug/L			09/30/16 04:33	1
Allyl chloride	ND	1.0	0.50	ug/L			09/30/16 04:33	1
Bromoform	ND	1.0	0.40	ug/L			09/30/16 04:33	1
Bromomethane	ND	0.50	0.25	ug/L			09/30/16 04:33	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/30/16 04:33	1

TestAmerica Irvine

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9/30/2016

Client: Geo-Logic Associates

**Client Sample ID: QCAB** 

Date Collected: 09/21/16 00:01

Date Received: 09/21/16 19:00

Surrogate

Toluene-d8 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Lab Sample ID: 440-159268-7

Metric Mater

**Matrix: Water** 

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

Analyte	Result	Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Chlorobenzene	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Bromochloromethane	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Chloroethane	ND		1.0		0.40	ug/L			09/30/16 04:33	1
Chloroform	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Chloromethane	ND		0.50		0.25	ug/L			09/30/16 04:33	1
cis-1,2-Dichloroethene	ND		0.50		0.25	ug/L			09/30/16 04:33	1
cis-1,3-Dichloropropene	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Dibromochloromethane	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Dibromomethane	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Bromodichloromethane	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Dichlorodifluoromethane	ND		1.0		0.40	ug/L			09/30/16 04:33	1
Ethyl methacrylate	ND		2.0		1.0	ug/L			09/30/16 04:33	1
Ethylbenzene	ND		0.50		0.25	ug/L			09/30/16 04:33	1
Iodomethane	ND		2.0		1.0	ug/L			09/30/16 04:33	1
Isobutyl alcohol	ND		25		13	ug/L			09/30/16 04:33	1
m,p-Xylene	ND		1.0		0.50	ug/L			09/30/16 04:33	1
Methylacrylonitrile	ND		5.0		2.5	ug/L			09/30/16 04:33	1
Methyl methacrylate	ND		2.0			ug/L			09/30/16 04:33	1
Methylene Chloride	ND		2.0		0.88	-			09/30/16 04:33	1
Methyl tert-butyl ether	ND		0.50		0.25	-			09/30/16 04:33	1
Naphthalene	ND		1.0		0.40	_			09/30/16 04:33	1
o-Xylene	ND		0.50		0.25	-			09/30/16 04:33	1
Propionitrile	ND		20			ug/L			09/30/16 04:33	1
Styrene	ND		0.50		0.25	-			09/30/16 04:33	1
t-Butanol	ND		10			ug/L			09/30/16 04:33	1
Tetrachloroethene	ND		0.50		0.25	-			09/30/16 04:33	1
Tetrahydrofuran	ND		10		5.0	ug/L			09/30/16 04:33	1
Toluene	ND		0.50		0.25	_			09/30/16 04:33	1
trans-1,2-Dichloroethene	ND		0.50		0.25	-			09/30/16 04:33	1
trans-1,3-Dichloropropene	ND		0.50		0.25	-			09/30/16 04:33	1
trans-1,4-Dichloro-2-butene	ND		5.0			ug/L			09/30/16 04:33	1
Trichloroethene	ND		0.50		0.25	-			09/30/16 04:33	1
Trichlorofluoromethane	ND		0.50		0.25	-			09/30/16 04:33	1
Vinyl acetate	ND		4.0			ug/L			09/30/16 04:33	1
Vinyl chloride	ND		0.50		0.25	_			09/30/16 04:33	1
1,2-Dibromoethane (EDB)	ND		0.50		0.25	_			09/30/16 04:33	1
2-Butanone (MEK)	ND		5.0			ug/L			09/30/16 04:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0			ug/L			09/30/16 04:33	1
Acrylonitrile	ND		2.0			ug/L			09/30/16 04:33	1
Acrolein	ND		5.0			ug/L			09/30/16 04:33	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown		TJ	ug/L		13.				09/30/16 04:33	1

09/30/16 04:33 1

Analyzed

09/30/16 04:33

09/30/16 04:33

Prepared

Limits

80 - 128

80 - 120

76 - 132

%Recovery Qualifier

105

99

105

10

12

Dil Fac

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Client Sample ID: QCTB Lab Sample ID: 440-159268-8

Date Collected: 09/21/16 00:01 Matrix: Water Date Received: 09/21/16 19:00

Analyte	Result Qualifi		MDL		D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND	1.0	0.40	-			09/30/16 05:02	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	-			09/30/16 05:02	
1,1,1-Trichloroethane	ND	0.50	0.25	-			09/30/16 05:02	
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	-			09/30/16 05:02	
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/30/16 05:02	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/30/16 05:02	
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/30/16 05:02	
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/30/16 05:02	
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/30/16 05:02	
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/30/16 05:02	
2-Hexanone	ND	5.0	2.5	ug/L			09/30/16 05:02	
Acetone	ND	20	10	ug/L			09/30/16 05:02	
Acetonitrile	ND	20	10	ug/L			09/30/16 05:02	
Benzene	ND	0.50	0.25	ug/L			09/30/16 05:02	
Allyl chloride	ND	1.0	0.50	-			09/30/16 05:02	
Bromoform	ND	1.0	0.40	-			09/30/16 05:02	
Bromomethane	ND	0.50	0.25	-			09/30/16 05:02	
Carbon disulfide	ND	1.0	0.50	-			09/30/16 05:02	
Carbon tetrachloride	ND	0.50	0.25	-			09/30/16 05:02	
Chlorobenzene	ND	0.50	0.25	-			09/30/16 05:02	
Bromochloromethane	ND	0.50	0.25	-			09/30/16 05:02	
Chloroethane	ND	1.0	0.40	_			09/30/16 05:02	
Chloroform	ND	0.50	0.25	-			09/30/16 05:02	
Chloromethane	ND	0.50	0.25	-			09/30/16 05:02	
cis-1,2-Dichloroethene	ND	0.50	0.25	•			09/30/16 05:02	
cis-1,3-Dichloropropene	ND	0.50	0.25				09/30/16 05:02	
Dibromochloromethane	ND	0.50	0.25	-			09/30/16 05:02	
Dibromomethane	ND	0.50	0.25	-			09/30/16 05:02	
Bromodichloromethane	ND	0.50	0.25				09/30/16 05:02	
Dichlorodifluoromethane	ND	1.0	0.40				09/30/16 05:02	
Ethyl methacrylate	ND	2.0		ug/L			09/30/16 05:02	
Ethylbenzene	ND	0.50	0.25				09/30/16 05:02	
Iodomethane	ND	2.0		ug/L			09/30/16 05:02	
Isobutyl alcohol	ND	25		ug/L			09/30/16 05:02	
m,p-Xylene	ND	1.0	0.50				09/30/16 05:02	
Methylacrylonitrile	ND	5.0		ug/L			09/30/16 05:02	
Methyl methacrylate	ND	2.0		ug/L			09/30/16 05:02	
Methylene Chloride	ND	2.0	0.88	-			09/30/16 05:02	
Methyl tert-butyl ether	ND ND	0.50	0.85				09/30/16 05:02	
	ND ND	1.0		_			09/30/16 05:02	
Naphthalene o-Xylene	ND	0.50		ug/L ug/L			09/30/16 05:02	

TestAmerica Irvine

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Client: Geo-Logic Associates

**Client Sample ID: QCTB** 

Date Collected: 09/21/16 00:01

Date Received: 09/21/16 19:00

Unknown

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Lab Sample ID: 440-159268-8

09/30/16 05:02

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			09/30/16 05:02	1
Styrene	ND		0.50	0.25	ug/L			09/30/16 05:02	1
t-Butanol	ND		10	5.0	ug/L			09/30/16 05:02	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/30/16 05:02	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/30/16 05:02	1
Toluene	ND		0.50	0.25	ug/L			09/30/16 05:02	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/30/16 05:02	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/30/16 05:02	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/30/16 05:02	1
Trichloroethene	ND		0.50	0.25	ug/L			09/30/16 05:02	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/30/16 05:02	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/30/16 05:02	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/30/16 05:02	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/30/16 05:02	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/30/16 05:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/30/16 05:02	1
Acrylonitrile	ND		2.0	1.0	ug/L			09/30/16 05:02	1
Acrolein	ND		5.0	2.5	ug/L			09/30/16 05:02	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac

	Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
	Toluene-d8 (Surr)	104		80 - 128	09/30/16 05:02	1
	4-Bromofluorobenzene (Surr)	97		80 - 120	09/30/16 05:02	1
Į	Dibromofluoromethane (Surr)	103		76 - 132	09/30/16 05:02	1

ug/L

<u> 14</u> TJ

13.83

## **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
350.1	Nitrogen, Ammonia	MCAWW	TAL IRV
410.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 5310C	TOC	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:**

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

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Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-159268-1

**Matrix: Water** 

Client Sample ID: DW-2
Date Collected: 09/21/16 09:28
Date Received: 09/21/16 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 01:35	WC	TAL IRV
Total/NA	Prep	3520C			965 mL	1 mL	358645	09/28/16 10:40	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359039	09/29/16 23:34	Al	TAL IRV
Total/NA	Analysis	300.0		5			357366	09/23/16 00:45	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358766	09/28/16 16:59	EN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	357430	09/22/16 02:01	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 08:42	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	358633	09/28/16 09:57	XL	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357823	09/23/16 09:28	YZ	TAL IRV

Client Sample ID: MW-5

Lab Sample ID: 440-159268-2

Date Collected: 09/21/16 11:26 Matrix: Water Date Received: 09/21/16 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 02:05	WC	TAL IR
Total/NA	Prep	3520C			1050 mL	1 mL	358645	09/28/16 10:40	BMN	TAL IR
Total/NA	Analysis	8270C		1			359039	09/29/16 23:56	Al	TAL IR
Total/NA	Analysis	300.0		100			357366	09/22/16 19:05	NTN	TAL IR
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IR
Total Recoverable	Analysis	6010B		1			358766	09/28/16 17:00	EN	TAL IR
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	357430	09/22/16 02:06	EN	TAL IR
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IR
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 08:52	YZ	TAL IR
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	358633	09/28/16 09:57	XL	TAL IR
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357823	09/23/16 09:40	YZ	TAL IR

Client Sample ID: Extraction Trench

Lab Sample ID: 440-159268-3

Date Collected: 09/21/16 12:40

Date Received: 09/21/16 19:00

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 02:35	WC	TAL IRV
Total/NA	Prep	3520C			1020 mL	1 mL	358645	09/28/16 10:40	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359039	09/30/16 00:17	Al	TAL IRV
Total/NA	Analysis	300.0		100			357366	09/22/16 19:23	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358428	09/27/16 13:24	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358766	09/28/16 17:02	EN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	357430	09/22/16 02:11	EN	TAL IRV

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Project/Site: Republic Sunshine Canyon

**Client Sample ID: Extraction Trench** Lab Sample ID: 440-159268-3 **Matrix: Water** 

Date Collected: 09/21/16 12:40 Date Received: 09/21/16 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 09:09	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	358633	09/28/16 09:57	XL	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357823	09/23/16 09:56	YZ	TAL IRV

Client Sample ID: MW-2A Lab Sample ID: 440-159268-4

Date Collected: 09/21/16 09:30 Date Received: 09/21/16 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 03:04	WC	TAL IRV
Total/NA	Prep	3520C			1045 mL	1 mL	358645	09/28/16 10:40	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359039	09/30/16 00:39	Al	TAL IRV
Total/NA	Analysis	300.0		5			357366	09/23/16 01:03	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358429	09/27/16 13:27	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358759	09/28/16 12:29	EN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	357430	09/22/16 02:17	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 09:18	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	358633	09/28/16 09:57	XL	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357823	09/23/16 10:10	YZ	TAL IRV

**Client Sample ID: MW-2B** Lab Sample ID: 440-159268-5 Date Collected: 09/21/16 11:25 **Matrix: Water** 

Date Received: 09/21/16 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 03:34	WC	TAL IRV
Total/NA	Prep	3520C			1040 mL	1 mL	358645	09/28/16 10:40	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359039	09/30/16 01:00	Al	TAL IRV
Total/NA	Analysis	300.0		5			357366	09/23/16 01:21	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358429	09/27/16 13:27	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358759	09/28/16 12:20	EN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	357430	09/22/16 02:22	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 09:27	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	358633	09/28/16 09:57	XL	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357823	09/23/16 11:10	YZ	TAL IRV

TestAmerica Irvine

**Matrix: Water** 

Project/Site: Republic Sunshine Canyon

Client Sample ID: DW-4

Date Collected: 09/21/16 13:35 Date Received: 09/21/16 19:00

Lab Sample ID: 440-159268-6

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 04:03	WC	TAL IRV
Total/NA	Prep	3520C			1050 mL	1 mL	358645	09/28/16 10:40	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359039	09/30/16 01:22	Al	TAL IRV
Total/NA	Analysis	300.0		5			357366	09/23/16 01:39	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358429	09/27/16 13:27	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			358759	09/28/16 12:28	EN	TAL IRV
Total/NA	Analysis	350.1		1	0.8 mL	8 mL	357430	09/22/16 02:27	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 09:35	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	358633	09/28/16 09:57	XL	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	357823	09/23/16 11:22	YZ	TAL IRV

**Client Sample ID: QCAB** Lab Sample ID: 440-159268-7

Date Collected: 09/21/16 00:01

Date Received: 09/21/16 19:00

**Matrix: Water** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 04:33	WC	TAL IRV

**Client Sample ID: QCTB** Lab Sample ID: 440-159268-8 Date Collected: 09/21/16 00:01 **Matrix: Water** 

Date Received: 09/21/16 19:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	359136	09/30/16 05:02	WC	TAL IRV

#### **Laboratory References:**

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

# **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

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

Lab Sample ID: MB 440-359136/4

**Matrix: Water** 

**Analysis Batch: 359136** 

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Acceleda		MB			1114	_	<b>D</b>	A 1	D.: -
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0		ug/L			09/29/16 20:02	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			09/29/16 20:02	1
1,1,1-Trichloroethane	ND		0.50		ug/L			09/29/16 20:02	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			09/29/16 20:02	1
1,1,2-Trichloroethane	ND		0.50		ug/L			09/29/16 20:02	1
1,1-Dichloroethane	ND		0.50		ug/L			09/29/16 20:02	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/29/16 20:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/29/16 20:02	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/29/16 20:02	1
1,4-Dichlorobenzene	ND		0.50		ug/L			09/29/16 20:02	1
2,2-Dichloropropane	ND		1.0		ug/L			09/29/16 20:02	1
2-Chloro-1,3-butadiene	ND		1.0		ug/L			09/29/16 20:02	1
2-Hexanone	ND		5.0		ug/L			09/29/16 20:02	1
Acetone	ND		20		ug/L			09/29/16 20:02	1
Acetonitrile	ND		20		ug/L			09/29/16 20:02	1
Benzene	ND		0.50		ug/L			09/29/16 20:02	· · · · · · · · · · · · · · · · · · ·
Allyl chloride	ND		1.0		ug/L			09/29/16 20:02	1
Bromoform	ND		1.0		ug/L			09/29/16 20:02	1
Bromomethane	ND		0.50		ug/L			09/29/16 20:02	· · · · · · · · · · · · · · · · · · ·
Carbon disulfide	ND		1.0		ug/L			09/29/16 20:02	1
Carbon tetrachloride	ND		0.50		ug/L			09/29/16 20:02	1
Chlorobenzene			0.50		ug/L			09/29/16 20:02	· · · · · · · · · · · · · · · · · · ·
Bromochloromethane	ND ND		0.50		-			09/29/16 20:02	
					ug/L				1
Chloroethane	ND		1.0		ug/L			09/29/16 20:02	1
Chloroform	ND		0.50		ug/L			09/29/16 20:02	1
Chloromethane	ND		0.50		ug/L			09/29/16 20:02	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			09/29/16 20:02	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			09/29/16 20:02	1
Dibromochloromethane	ND		0.50		ug/L			09/29/16 20:02	1
Dibromomethane	ND		0.50	0.25				09/29/16 20:02	1
Bromodichloromethane	ND		0.50		ug/L			09/29/16 20:02	1
Dichlorodifluoromethane	ND		1.0		ug/L			09/29/16 20:02	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			09/29/16 20:02	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/29/16 20:02	1
lodomethane	ND		2.0	1.0	ug/L			09/29/16 20:02	1
Isobutyl alcohol	ND		25	13	ug/L			09/29/16 20:02	1
m,p-Xylene	ND		1.0	0.50	ug/L			09/29/16 20:02	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/29/16 20:02	1
Methyl methacrylate	ND		2.0	1.0	ug/L			09/29/16 20:02	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/29/16 20:02	1
Methyl tert-butyl ether	ND		0.50		ug/L			09/29/16 20:02	1
Naphthalene	ND		1.0	0.40	-			09/29/16 20:02	1

TestAmerica Job ID: 440-159268-1

09/29/16 20:02

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

ND

Lab Sample ID: MB 440-359136/4 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 359136** MB MB Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac o-Xylene  $\overline{\mathsf{ND}}$ 0.50 0.25 ug/L 09/29/16 20:02 Propionitrile ND 20 10 ug/L 09/29/16 20:02 Styrene ND 0.50 0.25 ug/L 09/29/16 20:02 t-Butanol ND 10 5.0 ug/L 09/29/16 20:02 Tetrachloroethene ND 0.50 0.25 ug/L 09/29/16 20:02 Tetrahydrofuran ND 10 5.0 ug/L 09/29/16 20:02 ND 0.50 Toluene 0.25 ug/L 09/29/16 20:02 trans-1,2-Dichloroethene ND 0.50 0.25 ug/L 09/29/16 20:02 trans-1,3-Dichloropropene ND 0.50 0.25 ug/L 09/29/16 20:02 ND 5.0 trans-1,4-Dichloro-2-butene 2.5 ug/L 09/29/16 20:02 Trichloroethene ND 0.50 0.25 ug/L 09/29/16 20:02 Trichlorofluoromethane ND 0.50 0.25 ug/L 09/29/16 20:02 ND 4.0 Vinyl acetate 2.0 ug/L 09/29/16 20:02 Vinyl chloride ND 0.50 0.25 ug/L 09/29/16 20:02 1,2-Dibromoethane (EDB) ND 0.50 0.25 ug/L 09/29/16 20:02 09/29/16 20:02 2-Butanone (MEK) ND 5.0 2.5 ug/L 4-Methyl-2-pentanone (MIBK) ND 5.0 2.5 ug/L 09/29/16 20:02 Acrylonitrile ND 2.0 1.0 ug/L 09/29/16 20:02

MB MB Tentatively Identified Compound Est. Result Qualifier Unit RT CAS No. Prepared Analyzed Dil Fac 2-Methylnaphthalene 0.193 J ug/L 16.25 91-57-6 09/29/16 20:02 Tentatively Identified Compound None ug/L 09/29/16 20:02

5.0

2.5 ug/L

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 106 80 - 128 09/29/16 20:02 4-Bromofluorobenzene (Surr) 99 80 - 120 09/29/16 20:02 Dibromofluoromethane (Surr) 100 76 - 132 09/29/16 20:02

Lab Sample ID: LCS 440-359136/5

**Matrix: Water** 

Acrolein

Analysis Ratch: 359136

Analysis Batch: 359136							
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	24.4		ug/L		98	63 - 130
1,1,1,2-Tetrachloroethane	25.0	27.9		ug/L		111	60 - 141
1,1,1-Trichloroethane	25.0	26.8		ug/L		107	70 - 130
1,1,2,2-Tetrachloroethane	25.0	23.6		ug/L		94	63 - 130
1,1,2-Trichloroethane	25.0	26.4		ug/L		106	70 - 130
1,1-Dichloroethane	25.0	25.7		ug/L		103	64 - 130
1,1-Dichloroethene	25.0	25.5		ug/L		102	70 - 130
1,1-Dichloropropene	25.0	25.5		ug/L		102	70 - 130
1,2,4-Trichlorobenzene	25.0	27.2		ug/L		109	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	24.7		ug/L		99	52 - 140
1,2-Dichlorobenzene	25.0	25.9		ug/L		103	70 - 130
1,2-Dichloroethane	25.0	26.4		ug/L		106	57 - 138
1,2-Dichloropropane	25.0	28.1		ug/L		112	67 - 130

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TestAmerica Job ID: 440-159268-1

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

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

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

Lab Sam	ple	ID:	LCS	440	-3591	136/5

**Matrix: Water** 

Analysis Batch: 359136

•	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits	
1,3-Dichlorobenzene	25.0	25.4		ug/L	102	70 - 130	
1,3-Dichloropropane	25.0	25.7		ug/L	103	70 - 130	
1,4-Dichlorobenzene	25.0	25.3		ug/L	101	70 - 130	
2,2-Dichloropropane	25.0	29.0		ug/L	116	68 - 141	
2-Hexanone	25.0	26.5		ug/L	106	10 - 150	
Acetone	25.0	24.9		ug/L	100	10 - 150	
Benzene	25.0	25.3		ug/L	101	68 - 130	
Bromoform	25.0	30.6		ug/L	122	60 - 148	
Bromomethane	25.0	25.3		ug/L	101	64 - 139	
Carbon disulfide	25.0	24.2		ug/L	97	52 - 136	
Carbon tetrachloride	25.0	26.5		ug/L	106	60 <sub>-</sub> 150	
Chlorobenzene	25.0	26.4		ug/L	106	70 - 130	
Bromochloromethane	25.0	26.3		ug/L	105	70 - 130	
Chloroethane	25.0	26.3		ug/L	105	64 - 135	
Chloroform	25.0	25.9		ug/L	104	70 - 130	
Chloromethane	25.0	23.2		ug/L	93	47 - 140	
cis-1,2-Dichloroethene	25.0	27.5		ug/L	110	70 - 133	
cis-1,3-Dichloropropene	25.0	28.2		ug/L	113	70 - 133	
Dibromochloromethane	25.0	28.6		ug/L	114	69 - 145	
Dibromomethane	25.0	26.7		ug/L	107	70 - 130	
Bromodichloromethane	25.0	27.6		ug/L	110	70 - 132	
Dichlorodifluoromethane	25.0	22.2		ug/L	89	29 - 150	
Ethylbenzene	25.0	25.3		ug/L	101	70 - 130	
m,p-Xylene	25.0	26.1		ug/L	105	70 - 130	
Methylene Chloride	25.0	22.7		ug/L	91	52 - 130	
Methyl tert-butyl ether	25.0	26.1		ug/L	104	63 - 131	
Naphthalene	25.0	25.0		ug/L	100	60 - 140	
o-Xylene	25.0	26.7		ug/L	107	70 - 130	
Styrene	25.0	26.3		ug/L	105	70 - 134	
t-Butanol	250	271		ug/L	109	70 - 130	
Tetrachloroethene	25.0	27.6		ug/L	110	70 - 130	
Toluene	25.0	25.2		ug/L	101	70 - 130	
trans-1,2-Dichloroethene	25.0	28.0		ug/L	112	70 - 130	
trans-1,3-Dichloropropene	25.0	27.3		ug/L	109	70 - 132	
Trichloroethene	25.0	27.0		ug/L	108	70 - 130	
Trichlorofluoromethane	25.0	23.7		ug/L	95	60 - 150	
Vinyl acetate	25.0	25.8		ug/L	103	48 - 140	
Vinyl chloride	25.0	24.6		ug/L	98	59 - 133	
1,2-Dibromoethane (EDB)	25.0	27.3		ug/L	109	70 - 130	
2-Butanone (MEK)	25.0	23.8		ug/L	95	44 - 150	
4-Methyl-2-pentanone (MIBK)	25.0	25.6		ug/L	103	59 - 149	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132

# **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

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

Lab Sample ID: 440-159873-D-1 MS

**Matrix: Water** 

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

Analysis Batch: 359136	Sample Sample	Spike	MS	MS			%Rec.
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D %Rec	Limits
1,2,3-Trichloropropane	ND	25.0	26.7		ug/L		60 - 130
1,1,1,2-Tetrachloroethane	ND	25.0	27.9		ug/L	111	60 - 149
1,1,1-Trichloroethane	ND	25.0	27.8		ug/L	111	70 - 130
1,1,2,2-Tetrachloroethane	ND	25.0	25.0		ug/L	100	63 - 130
1,1,2-Trichloroethane	ND	25.0	27.1		ug/L	108	70 - 130
1,1-Dichloroethane	ND	25.0	25.8		ug/L	103	65 - 130
1,1-Dichloroethene	0.90	25.0	25.3		ug/L	98	70 - 130
1,1-Dichloropropene	ND	25.0	25.7		ug/L	103	64 - 130
1,2,4-Trichlorobenzene	ND	25.0	27.8		ug/L	111	60 - 140
1,2-Dibromo-3-Chloropropane	ND	25.0	27.4		ug/L	110	48 - 140
1,2-Dichlorobenzene	ND	25.0	26.1		ug/L	104	70 - 130
1,2-Dichloroethane	ND	25.0	27.3		ug/L	109	56 - 146
1,2-Dichloropropane	ND	25.0	28.5		ug/L	114	69 - 130
1,3-Dichlorobenzene	ND	25.0	25.3		ug/L	101	70 - 130
1,3-Dichloropropane	ND	25.0	26.7		ug/L	107	70 - 130
1,4-Dichlorobenzene	ND	25.0	25.6		ug/L	102	70 - 130
2,2-Dichloropropane	ND	25.0	28.9		ug/L	116	69 - 138
2-Hexanone	ND	25.0	28.2		ug/L	113	10 - 150
Acetone	ND	25.0	21.6		ug/L	86	10 - 150
Benzene	ND	25.0	25.1		ug/L	100	66 - 130
Bromoform	ND	25.0	31.6		ug/L	126	59 <sub>-</sub> 150
Bromomethane	ND	25.0	22.8		ug/L	91	62 - 131
Carbon disulfide	ND	25.0	24.6		ug/L	98	49 - 140
Carbon tetrachloride	ND	25.0	26.7		ug/L	107	60 <sub>-</sub> 150
Chlorobenzene	ND	25.0	26.7		ug/L	107	70 - 130
Bromochloromethane	ND	25.0	25.8		ug/L	103	70 - 130
Chloroethane	ND	25.0	23.4		ug/L	94	68 - 130
Chloroform	0.40 J	25.0	26.1		ug/L	103	70 - 130
Chloromethane	ND	25.0	20.4		ug/L	82	39 - 144
cis-1,2-Dichloroethene	2.6	25.0	29.9		ug/L	109	70 - 130
cis-1,3-Dichloropropene	ND	25.0	28.5		ug/L	114	70 - 133
Dibromochloromethane	ND	25.0	29.0		ug/L	116	70 - 148
Dibromomethane	ND	25.0	27.7		ug/L	111	70 <sub>-</sub> 130
Bromodichloromethane	ND	25.0	27.7		ug/L	111	70 - 138
Dichlorodifluoromethane	ND	25.0	19.1		ug/L	77	25 - 142
Ethylbenzene	ND	25.0	25.8		ug/L	103	70 <sub>-</sub> 130
m,p-Xylene	ND	25.0	26.9		ug/L	108	70 - 133
Methylene Chloride	ND	25.0	22.4		ug/L	90	52 <sub>-</sub> 130
Methyl tert-butyl ether	ND	25.0	26.8		ug/L	107	70 - 130
Naphthalene	ND	25.0	25.9		ug/L	104	60 - 140
o-Xylene	ND	25.0	27.0		ug/L	108	70 <sub>-</sub> 133
Styrene	ND	25.0	26.4		ug/L	106	29 - 150
t-Butanol	ND	250	274		ug/L	109	70 - 130
Tetrachloroethene	18	25.0	43.1		ug/L	102	70 - 137
Toluene	ND	25.0	25.5		ug/L	102	70 - 130
trans-1,2-Dichloroethene	ND	25.0	27.0		ug/L	108	70 - 130
trans-1,3-Dichloropropene	ND	25.0	28.3		ug/L	113	70 - 138
Trichloroethene	6.5	25.0	32.4		ug/L	104	70 - 130

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3

4

6

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**3** 

11

# **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

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

Lab Sample ID: 440-159873-D-1 MS

**Matrix: Water** 

Analysis Batch: 359136

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

7 maryone Batom coores	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Trichlorofluoromethane	ND		25.0	22.4		ug/L		90	60 - 150	
Vinyl acetate	ND		25.0	30.0		ug/L		120	23 - 150	
Vinyl chloride	ND		25.0	22.0		ug/L		88	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	28.2		ug/L		113	70 - 131	
2-Butanone (MEK)	ND		25.0	25.0		ug/L		100	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.7		ug/L		111	52 - 150	

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 102 80 - 128 80 - 120 4-Bromofluorobenzene (Surr) 97 76 - 132 Dibromofluoromethane (Surr) 99

Lab Sample ID: 440-159873-D-1 MSD

**Matrix: Water** 

Analysis Batch: 359136

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

			<b>-</b>						~ -		
	•	Sample	Spike		MSD		_		%Rec.		RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	25.6		ug/L		103	60 - 130	4	30
1,1,1,2-Tetrachloroethane	ND		25.0	27.6		ug/L		111	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	25.3		ug/L		101	70 - 130	9	20
1,1,2,2-Tetrachloroethane	ND		25.0	24.9		ug/L		100	63 - 130	1	30
1,1,2-Trichloroethane	ND		25.0	26.6		ug/L		106	70 - 130	2	25
1,1-Dichloroethane	ND		25.0	23.0		ug/L		92	65 - 130	11	20
1,1-Dichloroethene	0.90		25.0	23.4		ug/L		90	70 - 130	8	20
1,1-Dichloropropene	ND		25.0	26.0		ug/L		104	64 - 130	1	20
1,2,4-Trichlorobenzene	ND		25.0	28.0		ug/L		112	60 - 140	1	20
1,2-Dibromo-3-Chloropropane	ND		25.0	27.1		ug/L		108	48 - 140	1	30
1,2-Dichlorobenzene	ND		25.0	25.9		ug/L		103	70 - 130	1	20
1,2-Dichloroethane	ND		25.0	23.9		ug/L		96	56 - 146	13	20
1,2-Dichloropropane	ND		25.0	28.8		ug/L		115	69 - 130	1	20
1,3-Dichlorobenzene	ND		25.0	25.5		ug/L		102	70 - 130	1	20
1,3-Dichloropropane	ND		25.0	26.5		ug/L		106	70 - 130	1	25
1,4-Dichlorobenzene	ND		25.0	26.1		ug/L		105	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	25.6		ug/L		102	69 - 138	12	25
2-Hexanone	ND		25.0	27.6		ug/L		110	10 - 150	2	35
Acetone	ND		25.0	21.6		ug/L		86	10 - 150	0	35
Benzene	ND		25.0	25.4		ug/L		102	66 - 130	1	20
Bromoform	ND		25.0	30.9		ug/L		124	59 - 150	2	25
Bromomethane	ND		25.0	23.2		ug/L		93	62 - 131	2	25
Carbon disulfide	ND		25.0	22.9		ug/L		92	49 - 140	7	20
Carbon tetrachloride	ND		25.0	27.5		ug/L		110	60 - 150	3	25
Chlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	0	20
Bromochloromethane	ND		25.0	23.4		ug/L		94	70 - 130	10	25
Chloroethane	ND		25.0	24.0		ug/L		96	68 - 130	3	25
Chloroform	0.40	J	25.0	23.5		ug/L		92	70 - 130	10	20
Chloromethane	ND		25.0	21.2		ug/L		85	39 - 144	4	25
cis-1,2-Dichloroethene	2.6		25.0	27.0		ug/L		97	70 - 130	10	20
cis-1,3-Dichloropropene	ND		25.0	27.8		ug/L		111	70 - 133	3	20

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TestAmerica Job ID: 440-159268-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-159873-D-1 MSD

**Matrix: Water** 

**Analysis Batch: 359136** 

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

Analysis Baton. 000100	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dibromochloromethane	ND		25.0	29.0		ug/L		116	70 - 148	0	25
Dibromomethane	ND		25.0	26.7		ug/L		107	70 - 130	3	25
Bromodichloromethane	ND		25.0	27.7		ug/L		111	70 - 138	0	20
Dichlorodifluoromethane	ND		25.0	20.0		ug/L		80	25 - 142	5	30
Ethylbenzene	ND		25.0	25.9		ug/L		104	70 - 130	1	20
m,p-Xylene	ND		25.0	27.1		ug/L		108	70 - 133	1	25
Methylene Chloride	ND		25.0	20.0		ug/L		80	52 - 130	11	20
Methyl tert-butyl ether	ND		25.0	23.5		ug/L		94	70 - 130	13	25
Naphthalene	ND		25.0	27.1		ug/L		109	60 - 140	5	30
o-Xylene	ND		25.0	26.9		ug/L		108	70 - 133	0	20
Styrene	ND		25.0	26.3		ug/L		105	29 - 150	1	35
t-Butanol	ND		250	268		ug/L		107	70 - 130	2	25
Tetrachloroethene	18		25.0	43.6		ug/L		103	70 - 137	1	20
Toluene	ND		25.0	26.0		ug/L		104	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	25.1		ug/L		100	70 - 130	7	20
trans-1,3-Dichloropropene	ND		25.0	27.7		ug/L		111	70 - 138	2	25
Trichloroethene	6.5		25.0	32.8		ug/L		105	70 - 130	1	20
Trichlorofluoromethane	ND		25.0	22.9		ug/L		92	60 - 150	2	25
Vinyl acetate	ND		25.0	26.1		ug/L		104	23 - 150	14	30
Vinyl chloride	ND		25.0	21.6		ug/L		86	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	27.9		ug/L		112	70 - 131	1	25
2-Butanone (MEK)	ND		25.0	21.3		ug/L		85	48 - 140	16	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.2		ug/L		109	52 - 150	2	35

MSD MSD

Surrogate	%Recovery Qualifier	Limits
Toluene-d8 (Surr)	103	80 - 128
4-Bromofluorobenzene (Surr)	97	80 - 120
Dibromofluoromethane (Surr)	87	76 - 132

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

Lab Sample ID: MB 440-358645/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Prep Batch: 358645 Analysis Batch: 359039** 

MB MB

Analyte	Result Qualifie	er RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	1.0	0.25	ug/L		09/28/16 10:40	09/29/16 21:46	1
	MB MB							

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	75	30 - 120	09/28/16 10:40	09/29/16 21:46	1

Lab Sample ID: LCS 440-358645/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 359039** Prep Batch: 358645 LCS LCS

%Rec. Spike Analyte Added Result Qualifier Unit D %Rec Limits 1,4-Dioxane 2.00 1.09 35 - 120 ug/L

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Spike

Added

Limits

30 - 120

Spike

Added

Limits

30 - 120

Spike

Added

5.00

RL

0.50

1.90

1.92

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

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

Lab Sample ID: LCS 440-358645/2-A **Matrix: Water** 

**Analysis Batch: 359039** 

LCS LCS

Sample Sample

MS MS

0.48 J

%Recovery Qualifier

75

Result Qualifier

Surrogate %Recovery Qualifier Limits 1,4-Dioxane-d8 (Surr) 30 - 120 64

Lab Sample ID: 440-159394-A-3-A MS

**Matrix: Water** 

Analysis Batch: 359039

**Analyte** 

1,4-Dioxane

Surrogate

1,4-Dioxane-d8 (Surr)

Lab Sample ID: 440-159394-A-3-B MSD

**Matrix: Water** 

**Analysis Batch: 359039** 

Analyte

1,4-Dioxane

Surrogate 1,4-Dioxane-d8 (Surr)

0.48 J MSD MSD

%Recovery Qualifier 61

Sample Sample

Result Qualifier

MB MB

MB MB

ND

Result Qualifier

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-357366/4

**Matrix: Water** 

**Analysis Batch: 357366** 

Analyte Chloride

Lab Sample ID: LCS 440-357366/2

**Matrix: Water** 

Analyte

**Analysis Batch: 357366** 

Chloride

Method: 6010B - Metals (ICP) Lab Sample ID: MB 440-358428/1-A

**Matrix: Water** 

**Analysis Batch: 358766** 

Analyte Potassium

Result Qualifier ND

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RL

0.50

TestAmerica Job ID: 440-159268-1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

**Prep Batch: 358645** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA **Prep Batch: 358645** 

%Rec.

Limits Unit D %Rec

ug/L 105 35 - 120

MS MS

MSD MSD

Result Qualifier

2.50

Result Qualifier

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

**Prep Batch: 358645** %Rec. **RPD** 

Limits RPD

%Rec Limit 35 - 120 24 25

1.98 79 ug/L

Unit

Unit

mg/L

D

Prepared

**MDL** Unit

0.25 mg/L

LCS LCS

5.00

Result Qualifier

**MDL** Unit

0.25 mg/L

Client Sample ID: Method Blank

Prep Type: Total/NA

D

**Prepared** Analyzed

Dil Fac 09/22/16 13:21

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

%Rec.

%Rec Limits 100

90 - 110

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

Prep Batch: 358428

Analyzed Dil Fac 09/27/16 13:24 09/28/16 15:45

TestAmerica Job ID: 440-159268-1

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

Method: 6010B - Metals	(ICP)	(Continued)
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Lab Sample ID: LCS 440-358428/2-A				Client	Sai	mple ID	: Lab Control Sample
Matrix: Water					P	rep Typ	e: Total Recoverable
Analysis Batch: 358766							Prep Batch: 358428
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Potassium	10.0	9.47		mg/L	_	95	80 - 120

Lab Sample ID: 440-158947-H-1-B MS Matrix: Water							Client Sample ID: Matrix Sp Prep Type: Total Recovera				
Analysis Batch: 358766									Prep Bat	tch: 358428	
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Potassium	7.9		10.0	17.8		ma/L		99	75 - 125		

Lab Sample ID: 440-158947 Matrix: Water	7-H-1-C MS	D				Client			latrix Spi pe: Total		
Analysis Batch: 358766									Prep Ba	atch: 3	58428
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Potassium	7.9	-	10.0	17.9		mg/L		101	75 - 125	1	20

Lab Sample ID: MB 440-358429/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total Recoverable
Analysis Batch: 358759	<b>Prep Batch: 358429</b>
MB MB	

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND	0.50	0.25	mg/L	 _	09/27/16 13:27	09/28/16 12:16	1

Lab Sample ID. LCS 440-330429/2-A				Cilei	it Sai	lible in	. Lab Control Samp	שונ
Matrix: Water					P	rep Ty	pe: Total Recoverab	əlc
Analysis Batch: 358759							Prep Batch: 3584	29
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Potassium	10.0	9.61		mg/L		96	80 - 120	_

Lab Sample ID: 440-159268	8-5 MS							Clie	nt Sampl	e ID: MW-2B
Matrix: Water							P	rep Typ	oe: Total	Recoverable
Analysis Batch: 358759									Prep Ba	atch: 358429
_	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Potassium	4.0		10.0	14.9		mg/L		108	75 - 125	

Lab Sample ID: 440-159268-	5 MSD							Clie	nt Sample	D: M	W-2B
Matrix: Water						P	Prep Type: Total Recoverable				
Analysis Batch: 358759									Prep Ba	tch: 3	8429
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Potassium	4.0		10.0	15.4		mg/L		113	75 - 125	3	20

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Matrix Spike Duplicate** 

**Client Sample ID: Matrix Spike** 

**Client Sample ID: Method Blank** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

TestAmerica Job ID: 440-159268-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 440-357430/12

Matrix: Water

**Analysis Batch: 357430** 

MB MB

AnalyteResult Ammonia (as N)Result NQualifier NRL NMDL 0.20Unit ND 0.20D mg/LPrepared 0.9/22/16 00:52Analyzed 0.11 Fac 0.20

Lab Sample ID: LCS 440-357430/13

Matrix: Water

**Analysis Batch: 357430** 

 Analyte
 Added Ammonia (as N)
 Spike
 LCS LCS
 %Rec.

 4.99
 Unit mg/L
 D %Rec Limits

 100
 90 - 110

Lab Sample ID: MRL 440-357430/11

**Matrix: Water** 

Analysis Batch: 357430

 Analyte
 Added Ammonia (as N)
 Spike MRL MRL
 MRL MRL
 WRec.
 %Rec.

 0.200
 0.200
 0.207
 mg/L
 D MRc Limits
 104 10 - 200

Lab Sample ID: 440-159247-I-1 MS

**Matrix: Water** 

**Analysis Batch: 357430** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits ND 5.00 4.71 90 - 110 Ammonia (as N) mg/L

Lab Sample ID: 440-159247-I-1 MSD

**Matrix: Water** 

Analysis Batch: 357430

Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit ND 5.00 4.74 95 Ammonia (as N) mg/L 90 - 110

Method: 410.4 - COD

Lab Sample ID: MB 440-358727/3

**Matrix: Water** 

**Analysis Batch: 358727** 

 Analyte
 Result Chemical Oxygen Demand
 Result ND
 Qualifier
 RL Result ND
 MDL VInit VINIT
 D VINIT
 Prepared VINIT
 Analyzed VINIT
 D VINIT
 Prepared VINIT
 Analyzed VINIT
 D VINIT
 <t

Lab Sample ID: LCS 440-358727/4

Matrix: Water

**Analysis Batch: 358727** 

 Analyte
 Added Chemical Oxygen Demand
 Result 200
 Unit 199
 Unit mg/L
 D 99
 %Rec Ulmits

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

Client Sample ID: DW-2

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

**Client Sample ID: Duplicate** 

Method: 410.4 - COD (Continued)

Lab Sample ID: 440-159268-1 MS

Client Sample ID: DW-2 **Matrix: Water** Prep Type: Total/NA Analysis Batch: 358727

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 200 **Chemical Oxygen Demand** 28 221 96 70 - 120 mg/L

Lab Sample ID: 440-159268-1 MSD

**Matrix: Water** 

**Analysis Batch: 358727** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits Analyte Result Qualifier **RPD** Unit %Rec Limit Chemical Oxygen Demand 28 200 219 mg/L 95 70 - 120

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-357917/3

**Matrix: Water** 

**Analysis Batch: 357917** 

MB MB Analyte Result Qualifier RL **RL Unit** Prepared Analyzed Dil Fac Alkalinity as CaCO3 4.0 4.0 mg/L 09/24/16 06:28  $\overline{\mathsf{ND}}$ 

Lab Sample ID: LCS 440-357917/2

**Matrix: Water** 

**Analysis Batch: 357917** 

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits Analyte Alkalinity as CaCO3 85.8 86.7 mg/L 101 80 - 120

Lab Sample ID: 440-159591-J-1 DU

**Matrix: Water** 

**Analysis Batch: 357917** 

Sample Sample חם חם RPD Result Qualifier Result Qualifier RPD Limit Analyte Unit D ND Alkalinity as CaCO3 ND NC mg/L 20

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

Lab Sample ID: MB 440-358633/1 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 358633** 

MB MB

RL Analyte Result Qualifier **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids 10  $\overline{\mathsf{ND}}$ 5.0 mg/L 09/28/16 09:57

Lab Sample ID: LCS 440-358633/2

**Matrix: Water** 

**Analysis Batch: 358633** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits **Total Dissolved Solids** 1000 972 mg/L 97 90 - 110

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Prep Type: Total/NA

TestAmerica Job ID: 440-159268-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-159234-D-1 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 358633** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit **Total Dissolved Solids** 1200 1220 mg/L 0.7

Method: SM 5310C - TOC

Lab Sample ID: MB 440-357823/7 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357823** 

MB MB RL Analyte Result Qualifier **MDL** Unit Dil Fac D Prepared Analyzed **Total Organic Carbon**  $\overline{\mathsf{ND}}$ 0.10 0.050 mg/L 09/23/16 08:23

Lab Sample ID: LCS 440-357823/6 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357823** 

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

Lab Sample ID: MRL 440-357823/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357823** 

Spike MRL MRL %Rec. Added Result Qualifier Unit Limits %Rec Total Organic Carbon 0.100 0.0787 J mg/L 79 50 - 150

Lab Sample ID: 440-159304-B-20 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357823** 

MS MS Sample Sample Spike %Rec. Result Qualifier Added Result Qualifier %Rec Limits Analyte Unit 10.0 **Total Organic Carbon** 0.46 10.9 104 80 - 120 mg/L

Lab Sample ID: 440-159304-B-20 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357823** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec **Total Organic Carbon** 10.0 0.46 10.8 mg/L 103 80 - 120 20

TestAmerica Job ID: 440-159268-1

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

# **GC/MS VOA**

# Analysis Batch: 359136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	8260B	
440-159268-2	MW-5	Total/NA	Water	8260B	
440-159268-3	Extraction Trench	Total/NA	Water	8260B	
440-159268-4	MW-2A	Total/NA	Water	8260B	
440-159268-5	MW-2B	Total/NA	Water	8260B	
440-159268-6	DW-4	Total/NA	Water	8260B	
440-159268-7	QCAB	Total/NA	Water	8260B	
440-159268-8	QCTB	Total/NA	Water	8260B	
MB 440-359136/4	Method Blank	Total/NA	Water	8260B	
LCS 440-359136/5	Lab Control Sample	Total/NA	Water	8260B	
440-159873-D-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-159873-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# **GC/MS Semi VOA**

# **Prep Batch: 358645**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	3520C	
440-159268-2	MW-5	Total/NA	Water	3520C	
440-159268-3	Extraction Trench	Total/NA	Water	3520C	
440-159268-4	MW-2A	Total/NA	Water	3520C	
440-159268-5	MW-2B	Total/NA	Water	3520C	
440-159268-6	DW-4	Total/NA	Water	3520C	
MB 440-358645/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-358645/2-A	Lab Control Sample	Total/NA	Water	3520C	
440-159394-A-3-A MS	Matrix Spike	Total/NA	Water	3520C	
440-159394-A-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

# **Analysis Batch: 359039**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	8270C	358645
440-159268-2	MW-5	Total/NA	Water	8270C	358645
440-159268-3	Extraction Trench	Total/NA	Water	8270C	358645
440-159268-4	MW-2A	Total/NA	Water	8270C	358645
440-159268-5	MW-2B	Total/NA	Water	8270C	358645
440-159268-6	DW-4	Total/NA	Water	8270C	358645
MB 440-358645/1-A	Method Blank	Total/NA	Water	8270C	358645
LCS 440-358645/2-A	Lab Control Sample	Total/NA	Water	8270C	358645
440-159394-A-3-A MS	Matrix Spike	Total/NA	Water	8270C	358645
440-159394-A-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	358645

# HPLC/IC

# **Analysis Batch: 357366**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	300.0	
440-159268-2	MW-5	Total/NA	Water	300.0	
440-159268-3	Extraction Trench	Total/NA	Water	300.0	
440-159268-4	MW-2A	Total/NA	Water	300.0	
440-159268-5	MW-2B	Total/NA	Water	300.0	

# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

# **HPLC/IC (Continued)**

### **Analysis Batch: 357366 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-6	DW-4	Total/NA	Water	300.0	
MB 440-357366/4	Method Blank	Total/NA	Water	300.0	
LCS 440-357366/2	Lab Control Sample	Total/NA	Water	300.0	

### **Metals**

# Prep Batch: 358428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total Recoverable	Water	3005A	
440-159268-2	MW-5	Total Recoverable	Water	3005A	
440-159268-3	Extraction Trench	Total Recoverable	Water	3005A	
MB 440-358428/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358428/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-158947-H-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-158947-H-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

### **Prep Batch: 358429**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-4	MW-2A	Total Recoverable	Water	3005A	
440-159268-5	MW-2B	Total Recoverable	Water	3005A	
440-159268-6	DW-4	Total Recoverable	Water	3005A	
MB 440-358429/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358429/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-159268-5 MS	MW-2B	Total Recoverable	Water	3005A	
440-159268-5 MSD	MW-2B	Total Recoverable	Water	3005A	

# **Analysis Batch: 358759**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-4	MW-2A	Total Recoverable	Water	6010B	358429
440-159268-5	MW-2B	Total Recoverable	Water	6010B	358429
440-159268-6	DW-4	Total Recoverable	Water	6010B	358429
MB 440-358429/1-A	Method Blank	Total Recoverable	Water	6010B	358429
LCS 440-358429/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358429
440-159268-5 MS	MW-2B	Total Recoverable	Water	6010B	358429
440-159268-5 MSD	MW-2B	Total Recoverable	Water	6010B	358429

# **Analysis Batch: 358766**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total Recoverable	Water	6010B	358428
440-159268-2	MW-5	Total Recoverable	Water	6010B	358428
440-159268-3	Extraction Trench	Total Recoverable	Water	6010B	358428
MB 440-358428/1-A	Method Blank	Total Recoverable	Water	6010B	358428
LCS 440-358428/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358428
440-158947-H-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	358428
440-158947-H-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	358428

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TestAmerica Job ID: 440-159268-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

# **General Chemistry**

# Analysis Batch: 357430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	350.1	_
440-159268-2	MW-5	Total/NA	Water	350.1	
440-159268-3	Extraction Trench	Total/NA	Water	350.1	
440-159268-4	MW-2A	Total/NA	Water	350.1	
440-159268-5	MW-2B	Total/NA	Water	350.1	
440-159268-6	DW-4	Total/NA	Water	350.1	
MB 440-357430/12	Method Blank	Total/NA	Water	350.1	
LCS 440-357430/13	Lab Control Sample	Total/NA	Water	350.1	
MRL 440-357430/11	Lab Control Sample	Total/NA	Water	350.1	
440-159247-I-1 MS	Matrix Spike	Total/NA	Water	350.1	
440-159247-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

# **Analysis Batch: 357823**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	SM 5310C	_
440-159268-2	MW-5	Total/NA	Water	SM 5310C	
440-159268-3	Extraction Trench	Total/NA	Water	SM 5310C	
440-159268-4	MW-2A	Total/NA	Water	SM 5310C	
440-159268-5	MW-2B	Total/NA	Water	SM 5310C	
440-159268-6	DW-4	Total/NA	Water	SM 5310C	
MB 440-357823/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-357823/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-357823/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-159304-B-20 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-159304-B-20 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

# **Analysis Batch: 357917**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	SM 2320B	_
440-159268-2	MW-5	Total/NA	Water	SM 2320B	
440-159268-3	Extraction Trench	Total/NA	Water	SM 2320B	
440-159268-4	MW-2A	Total/NA	Water	SM 2320B	
440-159268-5	MW-2B	Total/NA	Water	SM 2320B	
440-159268-6	DW-4	Total/NA	Water	SM 2320B	
MB 440-357917/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357917/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-159591-J-1 DU	Duplicate	Total/NA	Water	SM 2320B	

# **Analysis Batch: 358633**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	SM 2540C	
440-159268-2	MW-5	Total/NA	Water	SM 2540C	
440-159268-3	Extraction Trench	Total/NA	Water	SM 2540C	
440-159268-4	MW-2A	Total/NA	Water	SM 2540C	
440-159268-5	MW-2B	Total/NA	Water	SM 2540C	
440-159268-6	DW-4	Total/NA	Water	SM 2540C	
MB 440-358633/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-358633/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-159234-D-1 DU	Duplicate	Total/NA	Water	SM 2540C	

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# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

# **General Chemistry (Continued)**

# Analysis Batch: 358727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-1	DW-2	Total/NA	Water	410.4	_
440-159268-2	MW-5	Total/NA	Water	410.4	
440-159268-3	Extraction Trench	Total/NA	Water	410.4	
440-159268-4	MW-2A	Total/NA	Water	410.4	
440-159268-5	MW-2B	Total/NA	Water	410.4	
440-159268-6	DW-4	Total/NA	Water	410.4	
MB 440-358727/3	Method Blank	Total/NA	Water	410.4	
LCS 440-358727/4	Lab Control Sample	Total/NA	Water	410.4	
440-159268-1 MS	DW-2	Total/NA	Water	410.4	
440-159268-1 MSD	DW-2	Total/NA	Water	410.4	

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# **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

### **Qualifiers**

### **GC/MS VOA**

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **GC/MS VOA TICs**

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
T	Result is a tentatively identified compound (TIC) and an estimated value.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### **General Chemistry**

Quaimer	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

# Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration

MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDI	Method Detection Limit

MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Coloulated

NC Not Calculated

Not detected at the reporting limit (or MDL or EDL if shown) ND

**PQL** Practical Quantitation Limit

QC **Quality Control** RER Relative error ratio

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

# **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-159268-1

# **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-13-16 *
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17 *
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

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<sup>\*</sup> Certification renewal pending - certification considered valid.

TestAmerica Irvine

# <u>TestAmerica</u>

CHAIN OF CUSTODY FORM

17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297

THE LEADER IN ENVIRONMENTAL TESTING

TAL-0013 (0513)								i	Page of
Glient Name/Address: Geo-Wort Assoc./Republic 11415 W. Bernardo	Project/PO Num	ber:				, <b>^</b> An	alysis Requ	uired	
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San Digo, y, 92127 Project Manager:  Lyle welchang	Phone Number:		8260 C.S 8230	310.1	977	र मेर्	- 1-		
Sampler:		1-1087	## 8260 VCCS 31A 8230	1 310.	W 22	23.0	i S F		
Sample Description Sample Container Matrix Type	<del> </del>	Sampling Time Preservative	S T S T	7 362	832	E PA S			Special Instructions
DW-2 GW P.V.G	13 9/21/16	6978 yes	$\times$ $\times$		X	X.	X		
MW-5 GW	13	1726	$\times$	< X	X	$\times$	<		
Extraction Trends 19450	13	1240	XX		X		×		
MWZA aw	13	0930	XX	< ×	X	$\lambda$	r		
MW-2B 1	13	1125			×	× /	$\frac{1}{\kappa}$		
DW-4 VV	13	1335		X X	X		x		
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	_			9121		19:00			· · · · · · · · · · · · · · · · · · ·

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

# **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-159268-1

Login Number: 159268 List Source: TestAmerica Irvine

List Number: 1

Creator: Soderblom, Tim

Creator. Soderbiom, Tim		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a surve meter.</td <td>ey True</td> <td></td>	ey True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	

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# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-159360-1

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: 10/5/2016 4:51:05 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

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**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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# **Sample Summary**

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

TestAmerica Job ID: 440-159360-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-159360-1	MW-1	Water	09/22/16 09:35	09/22/16 16:20
440-159360-2	DW-5	Water	09/22/16 08:25	09/22/16 16:20
440-159360-3	QCAB	Water	09/22/16 00:01	09/22/16 16:20
440-159360-4	QCTB	Water	09/22/16 00:01	09/22/16 16:20

### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Job ID: 440-159360-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-159360-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/22/2016 4:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

#### GC/MS VOA

Method(s) 8260B: The following volatile samples were received and analyzed with significant headspace in the sample vial(s): DW-5 (440-159360-2). Significant headspace is defined as a bubble greater than 6 mm in diameter. All VOA vials provided had headspace.

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

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.

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-1

**Matrix: Water** 

Client Sample ID: MW-1

Date Collected: 09/22/16 09:35 Date Received: 09/22/16 16:20

Method: 8260B - Volatile Orga				1114	_	D	A	D:: -
Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
,2,3-Trichloropropane	ND	1.0	0.40	-			09/29/16 12:46	
,1,1,2-Tetrachloroethane	ND	0.50	0.25	-			09/29/16 12:46	
Acrolein	ND	50		ug/L			09/29/16 12:46	
Acrylonitrile	ND	50		ug/L			09/29/16 12:46	
,1,1-Trichloroethane	ND	0.50	0.25	-			09/29/16 12:46	
,1,2,2-Tetrachloroethane	ND	0.50	0.25	-			09/29/16 12:46	
,1,2-Trichloroethane	ND	0.50	0.25	-			09/29/16 12:46	
,1-Dichloroethane	ND	0.50	0.25	-			09/29/16 12:46	
,1-Dichloroethene	ND	0.50	0.25	-			09/29/16 12:46	
,1-Dichloropropene	ND	0.50	0.25	-			09/29/16 12:46	
,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/29/16 12:46	
,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/29/16 12:46	
,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 12:46	
,2-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 12:46	
,2-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 12:46	
,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 12:46	
,3-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 12:46	
,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 12:46	
,2-Dichloropropane	ND	1.0	0.40	ug/L			09/29/16 12:46	
-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/29/16 12:46	
-Hexanone	ND	5.0	2.5	ug/L			09/29/16 12:46	
cetone	ND	20		ug/L			09/29/16 12:46	
cetonitrile	ND	20		ug/L			09/29/16 12:46	
Benzene	ND	0.50	0.25	_			09/29/16 12:46	
Allyl chloride	ND	1.0	0.50	ug/L			09/29/16 12:46	
Bromoform	ND	1.0	0.40	-			09/29/16 12:46	
Bromomethane	ND	0.50	0.25	-			09/29/16 12:46	
Carbon disulfide	ND	1.0	0.50	-			09/29/16 12:46	
Carbon tetrachloride	ND	0.50	0.25	-			09/29/16 12:46	
Chlorobenzene	ND	0.50	0.25	-			09/29/16 12:46	
Bromochloromethane	ND	0.50	0.25	-			09/29/16 12:46	
Chloroethane	ND	1.0	0.40	-			09/29/16 12:46	
Chloroform	ND	0.50	0.25	_			09/29/16 12:46	
Chloromethane	ND	0.50	0.25	•			09/29/16 12:46	
is-1,2-Dichloroethene	ND	0.50	0.25	-			09/29/16 12:46	
is-1,3-Dichloropropene	ND	0.50	0.25	•			09/29/16 12:46	
Dibromochloromethane	ND	0.50	0.25				09/29/16 12:46	
Dibromomethane	ND	0.50	0.25				09/29/16 12:46	
Bromodichloromethane	ND	0.50	0.25				09/29/16 12:46	
Dichlorodifluoromethane	ND	1.0	0.40				09/29/16 12:46	
Ethyl methacrylate	ND ND	2.0		ug/L ug/L			09/29/16 12:46	
Ethylbenzene	ND ND						09/29/16 12:46	
		0.50	0.25	-				
odomethane	ND ND	2.0		ug/L			09/29/16 12:46	
sobutyl alcohol	ND ND	25		ug/L			09/29/16 12:46	
n,p-Xylene	ND	1.0	0.50				09/29/16 12:46	
Methylacrylonitrile	ND	5.0		ug/L			09/29/16 12:46	
/lethyl methacrylate /lethylene Chloride	ND ND	2.0 2.0		ug/L			09/29/16 12:46 09/29/16 12:46	
			0.88					

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TestAmerica Job ID: 440-159360-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

Client Sample ID: MW-1 Lab Sample ID: 440-159360-1

Date Collected: 09/22/16 09:35

Date Received: 09/22/16 16:20

Method: 8260B - Volatile Org Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Naphthalene	ND		1.0	0.40	ug/L			09/29/16 12:46	
o-Xylene	ND		0.50		ug/L			09/29/16 12:46	
Propionitrile	ND		20		ug/L			09/29/16 12:46	· · · · · · .
Styrene	ND		0.50		ug/L			09/29/16 12:46	
t-Butanol	22		10		ug/L			09/29/16 12:46	
Tetrachloroethene	ND		0.50		ug/L			09/29/16 12:46	· · · · · · .
Tetrahydrofuran	5.2	J	10		ug/L			09/29/16 12:46	
Toluene	ND		0.50		ug/L			09/29/16 12:46	
trans-1,2-Dichloroethene	ND		0.50		ug/L			09/29/16 12:46	
trans-1,3-Dichloropropene	ND		0.50		ug/L			09/29/16 12:46	
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			09/29/16 12:46	
Trichloroethene	ND		0.50		ug/L			09/29/16 12:46	
Trichlorofluoromethane	ND		0.50		ug/L			09/29/16 12:46	
Vinyl acetate	ND		4.0		ug/L			09/29/16 12:46	
Vinyl chloride	ND		0.50		ug/L ug/L			09/29/16 12:46	
1,2-Dibromoethane (EDB)	ND ND		0.50		ug/L ug/L			09/29/16 12:46	
2-Butanone (MEK)	ND ND		5.0		ug/L ug/L			09/29/16 12:46	
4-Methyl-2-pentanone (MIBK)					-				
4-Methyl-2-pentanone (MBK)	ND		5.0	2.0	ug/L			09/29/16 12:46	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown		TJ	ug/L	_	1.73			09/29/16 12:46	
			3						
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	105		80 - 128					09/29/16 12:46	
4-Bromofluorobenzene (Surr)	97		80 - 120					09/29/16 12:46	
Toluene-d8 (Surr)	105		80 - 128					09/29/16 12:46	
4-Bromofluorobenzene (Surr)	97		80 - 120					09/29/16 12:46	
Dibromofluoromethane (Surr)	97		76 - 132					09/29/16 12:46	
Dibromofluoromethane (Surr)	97		76 - 132					09/29/16 12:46	
Method: 8270C - Semivolatile	Organic Co	mnounde	(CC/MS)						
Analyte		Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	19	Qualifier	0.98		ug/L		09/29/16 09:00	09/30/16 21:53	Diria
1,4-Dioxane	13		0.50	0.20	ug/L		03/23/10 03.00	03/30/10 21:33	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	46		30 - 120				09/29/16 09:00	09/30/16 21:53	
	<b></b>								
Method: 300.0 - Anions, Ion( Analyte	_	iphy Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	290	Qualifier	100		mg/L		Frepareu	09/23/16 08:39	20
Chloride	290		100	50	illy/L			09/23/10 00.39	20
Method: 6010B - Metals (ICP)	- Total Reco	overable							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Potassium	27		0.50		mg/L	=	09/29/16 09:34	10/02/16 20:00	
- Cacolani	21		0.50	0.20	9, =		10.20.10 00.04	12.32.1020.00	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
	150	-	20	10	mg/L			09/28/16 15:33	
Chemical Oxygen Demand									
Chemical Oxygen Demand Total Dissolved Solids	3700		50	25	mg/L			09/29/16 08:52	
			50 0.50		mg/L mg/L		09/26/16 03:00	09/29/16 08:52 09/26/16 06:50	

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Client: Geo-Logic Associates

**Client Sample ID: MW-1** 

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-1

**Matrix: Water** 

Date Collected: 09/22/16 09:35 Date Received: 09/22/16 16:20

Result Qualifier RL **RL** Unit Prepared Analyzed Alkalinity as CaCO3 680 4.0 4.0 mg/L 09/24/16 07:22

**Client Sample ID: DW-5** Lab Sample ID: 440-159360-2

Date Collected: 09/22/16 08:25 **Matrix: Water** 

Date Received: 09/22/16 16:20

Analyte	Result Qu	alifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			09/29/16 13:16	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Acrolein	ND	50	2.5	ug/L			09/29/16 13:16	1
Acrylonitrile	ND	50	1.0	ug/L			09/29/16 13:16	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			09/29/16 13:16	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			09/29/16 13:16	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			09/29/16 13:16	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			09/29/16 13:16	1
2-Hexanone	ND	5.0	2.5	ug/L			09/29/16 13:16	1
Acetone	ND	20	10	ug/L			09/29/16 13:16	1
Acetonitrile	ND	20	10	ug/L			09/29/16 13:16	1
Benzene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Allyl chloride	ND	1.0	0.50	ug/L			09/29/16 13:16	1
Bromoform	ND	1.0	0.40	ug/L			09/29/16 13:16	1
Bromomethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Carbon disulfide	ND	1.0	0.50	ug/L			09/29/16 13:16	1
Carbon tetrachloride	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Chlorobenzene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Bromochloromethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Chloroethane	ND	1.0	0.40	ug/L			09/29/16 13:16	1
Chloroform	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Chloromethane	ND	0.50	0.25	ug/L			09/29/16 13:16	1
cis-1,2-Dichloroethene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			09/29/16 13:16	1
Dibromochloromethane	ND	0.50	0.25				09/29/16 13:16	1
Dibromomethane	ND	0.50	0.25				09/29/16 13:16	1
Bromodichloromethane	ND	0.50	0.25	-			09/29/16 13:16	1
Dichlorodifluoromethane	ND	1.0	0.40				09/29/16 13:16	1
Ethyl methacrylate	ND	2.0		ug/L			09/29/16 13:16	1
Ethylbenzene	ND	0.50	0.25	-			09/29/16 13:16	1
Iodomethane	ND	2.0		ug/L			09/29/16 13:16	1

Project/Site: Republic Sunshine canyon

Lab Sample ID: 440-159360-2

TestAmerica Job ID: 440-159360-1

**Matrix: Water** 

Client Sample ID: DW-5

Date Collected: 09/22/16 08:25 Date Received: 09/22/16 16:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isobutyl alcohol	ND		25	13	ug/L			09/29/16 13:16	1
m,p-Xylene	ND		1.0	0.50	ug/L			09/29/16 13:16	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			09/29/16 13:16	1
Methyl methacrylate	ND		2.0	1.0	ug/L			09/29/16 13:16	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/29/16 13:16	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			09/29/16 13:16	1
Naphthalene	ND		1.0	0.40	ug/L			09/29/16 13:16	1
o-Xylene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
Propionitrile	ND		20	10	ug/L			09/29/16 13:16	1
Styrene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
t-Butanol	ND		10	5.0	ug/L			09/29/16 13:16	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/29/16 13:16	1
Toluene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/29/16 13:16	1
Trichloroethene	ND		0.50	0.25	ug/L			09/29/16 13:16	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/29/16 13:16	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/29/16 13:16	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/29/16 13:16	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/29/16 13:16	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/29/16 13:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/29/16 13:16	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	6.9	TJ	ug/L		.67			09/29/16 13:16	1
Unknown	5.6	TJ	ug/L	4	.25			09/29/16 13:16	1
Butane, 2,3-dimethyl-	14	TJN	ug/L	4	.76	79-29-8		09/29/16 13:16	1
Benzene, (2-methylpropyl)-	9.6	TJN	ug/L	11	.77	538-93-2		09/29/16 13:16	1
1H-Indene, 2,3-dihydro-1,1-dimethyl-	6.9	TJN	ug/L	13	.11	4912-92-9		09/29/16 13:16	1
Benzene, 1-ethyl-2,4-dimethyl-	21	TJN	ug/L	13	.30	874-41-9		09/29/16 13:16	1
Benzene, pentamethyl-	12	TJN	ug/L	14	.00	700-12-9		09/29/16 13:16	1
Benzene, pentamethyl-	6.9	TJN	ug/L	14	.38	700-12-9		09/29/16 13:16	1
1H-Indene, 2,3-dihydro-4,7-dimethyl-	6.8	TJN	ug/L	14	.71	6682-71-9		09/29/16 13:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 128			-		09/29/16 13:16	

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
Toluene-d8 (Surr)	104	80 - 128	09/29/16 13:10	5 1
4-Bromofluorobenzene (Surr)	97	80 - 120	09/29/16 13:10	5 1
Toluene-d8 (Surr)	104	80 - 128	09/29/16 13:10	5 1
4-Bromofluorobenzene (Surr)	97	80 - 120	09/29/16 13:10	5 1
Dibromofluoromethane (Surr)	96	76 - 132	09/29/16 13:10	5 1
Dibromofluoromethane (Surr)	96	76 - 132	09/29/16 13:10	5 1

Method: 8270C - Semivola	tile Organic Compoun	ds (GC/MS)						
Analyte	Result Qualifier	r RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND ND	0.97	0.24	ug/L		09/29/16 09:00	09/30/16 22:14	1
Surrogate	%Recovery Qualifier					Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	63	30 - 120				09/29/16 09:00	09/30/16 22:14	1

Client: Geo-Logic Associates

Client Sample ID: DW-5

Date Collected: 09/22/16 08:25

Date Received: 09/22/16 16:20

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-2

**Matrix: Water** 

Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 25 09/23/16 08:52 Chloride 35 13 mg/L Method: 6010B - Metals (ICP) - Total Recoverable Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac 0.50 0.25 mg/L 09/29/16 09:34 10/02/16 20:02 Potassium 0.82 **General Chemistry** 

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac **Chemical Oxygen Demand** 45 20 10 mg/L 09/28/16 15:34 **Total Dissolved Solids** 1100 10 5.0 mg/L 09/29/16 08:52 0.50 0.10 mg/L 0.35 J 09/26/16 03:00 09/26/16 06:50 Ammonia (as N) 1 1.0 0.50 mg/L 09/23/16 12:04 **Total Organic Carbon** 12 10 Result Qualifier RL **RL** Unit D Analyte Prepared Dil Fac Analyzed **Alkalinity as CaCO3** 4.0 4.0 mg/L 09/24/16 07:37 980

**Client Sample ID: QCAB** Lab Sample ID: 440-159360-3

Date Collected: 09/22/16 00:01 **Matrix: Water** Date Received: 09/22/16 16:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/29/16 13:45	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
Acrolein	ND		50	2.5	ug/L			09/29/16 13:45	1
Acrylonitrile	ND		50	1.0	ug/L			09/29/16 13:45	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			09/29/16 13:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			09/29/16 13:45	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/29/16 13:45	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			09/29/16 13:45	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			09/29/16 13:45	1
2-Hexanone	ND		5.0	2.5	ug/L			09/29/16 13:45	1
Acetone	ND		20	10	ug/L			09/29/16 13:45	1
Acetonitrile	ND		20	10	ug/L			09/29/16 13:45	1
Benzene	ND		0.50	0.25	ug/L			09/29/16 13:45	1
Allyl chloride	ND		1.0	0.50	ug/L			09/29/16 13:45	1
Bromoform	ND		1.0	0.40	ug/L			09/29/16 13:45	1
Bromomethane	ND		0.50	0.25	ug/L			09/29/16 13:45	1
Carbon disulfide	ND		1.0		ug/L			09/29/16 13:45	1
Carbon tetrachloride	ND		0.50		ug/L			09/29/16 13:45	1

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Client: Geo-Logic Associates

**Client Sample ID: QCAB** Date Collected: 09/22/16 00:01

Date Received: 09/22/16 16:20

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-3

**Matrix: Water** 

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

Analyte	Result Qualifie	er RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Bromochloromethane	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Chloroethane	ND	1.0	0.40	ug/L			09/29/16 13:45	1
Chloroform	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Chloromethane	ND	0.50	0.25	ug/L			09/29/16 13:45	1
cis-1,2-Dichloroethene	ND	0.50	0.25	ug/L			09/29/16 13:45	1
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Dibromochloromethane	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Dibromomethane	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Bromodichloromethane	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Dichlorodifluoromethane	ND	1.0	0.40	ug/L			09/29/16 13:45	1
Ethyl methacrylate	ND	2.0	1.0	ug/L			09/29/16 13:45	1
Ethylbenzene	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Iodomethane	ND	2.0	1.0	ug/L			09/29/16 13:45	1
Isobutyl alcohol	ND	25	13	ug/L			09/29/16 13:45	1
m,p-Xylene	ND	1.0	0.50	ug/L			09/29/16 13:45	1
Methylacrylonitrile	ND	5.0	2.5	ug/L			09/29/16 13:45	1
Methyl methacrylate	ND	2.0	1.0	ug/L			09/29/16 13:45	1
Methylene Chloride	ND	2.0	0.88	-			09/29/16 13:45	1
Methyl tert-butyl ether	ND	0.50	0.25				09/29/16 13:45	1
Naphthalene	ND	1.0	0.40	ug/L			09/29/16 13:45	1
o-Xylene	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Propionitrile	ND	20		ug/L			09/29/16 13:45	1
Styrene	ND	0.50	0.25	-			09/29/16 13:45	1
t-Butanol	ND	10	5.0	ug/L			09/29/16 13:45	1
Tetrachloroethene	ND	0.50	0.25	ug/L			09/29/16 13:45	1
Tetrahydrofuran	ND	10		ug/L			09/29/16 13:45	1
Toluene	ND	0.50	0.25				09/29/16 13:45	1
trans-1,2-Dichloroethene	ND	0.50	0.25				09/29/16 13:45	1
trans-1,3-Dichloropropene	ND	0.50	0.25	-			09/29/16 13:45	1
trans-1,4-Dichloro-2-butene	ND	5.0		ug/L			09/29/16 13:45	1
Trichloroethene	ND	0.50	0.25	-			09/29/16 13:45	1
Trichlorofluoromethane	ND	0.50	0.25				09/29/16 13:45	1
Vinyl acetate	ND	4.0		ug/L			09/29/16 13:45	1
Vinyl chloride	ND	0.50	0.25				09/29/16 13:45	1
1,2-Dibromoethane (EDB)	ND	0.50	0.25				09/29/16 13:45	1
2-Butanone (MEK)	ND	5.0		ug/L			09/29/16 13:45	1
4-Methyl-2-pentanone (MIBK)	ND	5.0		ug/L			09/29/16 13:45	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					09/29/16 13:45	1

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
Toluene-d8 (Surr)	104	80 - 128	09/29/16 13:45	1
4-Bromofluorobenzene (Surr)	97	80 - 120	09/29/16 13:45	1
Toluene-d8 (Surr)	104	80 - 128	09/29/16 13:45	1
4-Bromofluorobenzene (Surr)	97	80 - 120	09/29/16 13:45	1
Dibromofluoromethane (Surr)	98	76 - 132	09/29/16 13:45	1
Dibromofluoromethane (Surr)	98	76 - 132	09/29/16 13:45	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-4

**Matrix: Water** 

**Client Sample ID: QCTB** 

Date Collected: 09/22/16 00:01 Date Received: 09/22/16 16:20

Analyte	Result (	Qualifier	RL M	IDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			09/29/16 14:15	1
1,1,1,2-Tetrachloroethane	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
Acrolein	ND		50	2.5	ug/L			09/29/16 14:15	1
Acrylonitrile	ND		50	1.0	ug/L			09/29/16 14:15	1
1,1,1-Trichloroethane	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
1,1,2,2-Tetrachloroethane	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
1,1,2-Trichloroethane	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
1,1-Dichloroethane	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
1,1-Dichloroethene	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
1,1-Dichloropropene	ND	0	.50 (	).25	ug/L			09/29/16 14:15	1
1,2,4-Trichlorobenzene	ND		1.0 (	0.40	ug/L			09/29/16 14:15	1
1,2-Dibromo-3-Chloropropane	ND		1.0 (	0.50	ug/L			09/29/16 14:15	1
1,2-Dichlorobenzene	ND	0			ug/L			09/29/16 14:15	1
1,2-Dichloroethane	ND	0			ug/L			09/29/16 14:15	1
1,2-Dichloropropane	ND	0			ug/L			09/29/16 14:15	1
1,3-Dichlorobenzene	ND				ug/L			09/29/16 14:15	1
1,3-Dichloropropane	ND	0			ug/L			09/29/16 14:15	1
1,4-Dichlorobenzene	ND	0			ug/L			09/29/16 14:15	1
2,2-Dichloropropane	ND				ug/L			09/29/16 14:15	1
2-Chloro-1,3-butadiene	ND				ug/L			09/29/16 14:15	1
2-Hexanone	ND				ug/L			09/29/16 14:15	1
Acetone	ND		20		ug/L			09/29/16 14:15	1
Acetonitrile	ND		20		ug/L			09/29/16 14:15	1
Benzene	ND	0	.50 (		ug/L			09/29/16 14:15	1
Allyl chloride	ND				ug/L			09/29/16 14:15	1
Bromoform	ND				ug/L			09/29/16 14:15	1
Bromomethane	ND				ug/L			09/29/16 14:15	1
Carbon disulfide	ND				ug/L			09/29/16 14:15	1
Carbon tetrachloride	ND				ug/L			09/29/16 14:15	1
Chlorobenzene	ND				ug/L			09/29/16 14:15	1
Bromochloromethane	ND				ug/L			09/29/16 14:15	
Chloroethane	ND				ug/L			09/29/16 14:15	1
Chloroform	ND				ug/L			09/29/16 14:15	1
Chloromethane	ND				ug/L			09/29/16 14:15	1
cis-1,2-Dichloroethene	ND				ug/L			09/29/16 14:15	1
cis-1,3-Dichloropropene	ND				ug/L			09/29/16 14:15	1
Dibromochloromethane	ND				ug/L			09/29/16 14:15	
Dibromomethane	ND				ug/L			09/29/16 14:15	1
Bromodichloromethane	ND				ug/L			09/29/16 14:15	1
Dichlorodifluoromethane	ND				ug/L			09/29/16 14:15	· · · · · · · · · · · · · · · · · · ·
Ethyl methacrylate	ND		2.0		ug/L			09/29/16 14:15	
Ethylbenzene	ND				ug/L			09/29/16 14:15	
lodomethane	ND		2.0		ug/L			09/29/16 14:15	
Isobutyl alcohol	ND ND		2.0 25		ug/L ug/L			09/29/16 14:15	1
m,p-Xylene	ND ND				ug/L ug/L			09/29/16 14:15	1
Methylacrylonitrile	ND				ug/L ug/L			09/29/16 14:15	· · · · · · · · · · · · · · · · · · ·
• •	ND ND		5.0 2.0					09/29/16 14:15	
Methyl methacrylate					ug/L				1
Methylene Chloride Methyl tert-butyl ether	ND ND				ug/L ug/L			09/29/16 14:15 09/29/16 14:15	1 

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-4

Matrix: Water

Client Sample ID: QCTB

Date Collected: 09/22/16 00:01 Date Received: 09/22/16 16:20

Analyte	Result	Qualifier	RL	ME	L U	nit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.4	IO uç	g/L			09/29/16 14:15	1
o-Xylene	ND		0.50	0.2	25 ug	g/L			09/29/16 14:15	1
Propionitrile	ND		20		0 uç	g/L			09/29/16 14:15	1
Styrene	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
t-Butanol	ND		10	5	.0 uç	g/L			09/29/16 14:15	1
Tetrachloroethene	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
Tetrahydrofuran	ND		10	5	.0 uç	g/L			09/29/16 14:15	1
Toluene	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
trans-1,2-Dichloroethene	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
trans-1,3-Dichloropropene	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
trans-1,4-Dichloro-2-butene	ND		5.0	2	.5 uç	g/L			09/29/16 14:15	1
Trichloroethene	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
Trichlorofluoromethane	ND		0.50	0.2	25 ug	g/L			09/29/16 14:15	1
Vinyl acetate	ND		4.0	2	.0 uç	g/L			09/29/16 14:15	1
Vinyl chloride	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
1,2-Dibromoethane (EDB)	ND		0.50	0.2	25 uç	g/L			09/29/16 14:15	1
2-Butanone (MEK)	ND		5.0	2	.5 uç	g/L			09/29/16 14:15	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2	.5 uç	g/L			09/29/16 14:15	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	. (	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L						09/29/16 14:15	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 128				-		09/29/16 14:15	1
4-Bromofluorobenzene (Surr)	98		80 - 120						09/29/16 14:15	1
Toluene-d8 (Surr)	104		80 - 128						09/29/16 14:15	1
4-Bromofluorobenzene (Surr)	98		80 - 120						09/29/16 14:15	1
Dibromofluoromethane (Surr)	98		76 - 132						09/29/16 14:15	1
Dibromofluoromethane (Surr)	98		76 <sub>-</sub> 132						09/29/16 14:15	1

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# **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
110.4	COD	MCAWW	TAL IRV
SM 2320B	Alkalinity	SM	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
SM 5310C	TOC	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:**

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

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Lab Sample ID: 440-159360-1

**Matrix: Water** 

**Client Sample ID: MW-1** Date Collected: 09/22/16 09:35

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

Date Received: 09/22/16 16:20

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	358874	09/29/16 12:46	AYL	TAL IRV
Total/NA	Prep	3520C			1020 mL	1 mL	358922	09/29/16 09:00	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359428	09/30/16 21:53	DF	TAL IRV
Total/NA	Analysis	300.0		200			357378	09/23/16 08:39	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358929	09/29/16 09:34	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			359649	10/02/16 20:00	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:33	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 07:22	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	358896	09/29/16 08:52	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	357959	09/26/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357968	09/26/16 06:50	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357823	09/23/16 12:17	YZ	TAL IRV

**Client Sample ID: DW-5** Lab Sample ID: 440-159360-2

Date Collected: 09/22/16 08:25 **Matrix: Water** Date Received: 09/22/16 16:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	358874	09/29/16 13:16	AYL	TAL IRV
Total/NA	Prep	3520C			1035 mL	1 mL	358922	09/29/16 09:00	BMN	TAL IRV
Total/NA	Analysis	8270C		1			359428	09/30/16 22:14	DF	TAL IRV
Total/NA	Analysis	300.0		50			357378	09/23/16 08:52	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	358929	09/29/16 09:34	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			359649	10/02/16 20:02	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	358727	09/28/16 15:34	MMP	TAL IRV
Total/NA	Analysis	SM 2320B		1			357917	09/24/16 07:37	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	358896	09/29/16 08:52	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	357959	09/26/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			357968	09/26/16 06:50	YZ	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	357823	09/23/16 12:04	YZ	TAL IR\

**Client Sample ID: QCAB** Lab Sample ID: 440-159360-3 Date Collected: 09/22/16 00:01 **Matrix: Water** 

Date Received: 09/22/16 16:20

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	358874	09/29/16 13:45	AYL	TAL IRV

TestAmerica Irvine

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# **Lab Chronicle**

Client: Geo-Logic Associates

**Client Sample ID: QCTB** 

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Lab Sample ID: 440-159360-4

Date Collected: 09/22/16 00:01 Matrix: Water

Date Received: 09/22/16 00:01

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Туре Method Run **Factor Amount Amount** Number or Analyzed Analyst Total/NA Analysis 8260B 10 mL 10 mL 358874 09/29/16 14:15 AYL TAL IRV

**Laboratory References:** 

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

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

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

MB MB

Lab Sample ID: MB 440-358874/4

**Matrix: Water** 

Methylacrylonitrile

Methyl methacrylate

Methylene Chloride

Naphthalene

Methyl tert-butyl ether

**Analysis Batch: 358874** 

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

Result Qualifier RL **MDL** Unit D Dil Fac **Analyte** Prepared Analyzed 1.0 0.40 1,2,3-Trichloropropane ND ug/L 09/29/16 08:23 ND 1,1,1,2-Tetrachloroethane 0.50 0.25 ug/L 09/29/16 08:23 ND 0.50 0.25 1,1,1-Trichloroethane ug/L 09/29/16 08:23 1,1,2,2-Tetrachloroethane ND 0.50 0.25 ug/L 09/29/16 08:23 1,1,2-Trichloroethane ND 0.50 0.25 ug/L 09/29/16 08:23 1,1-Dichloroethane ND 0.50 0.25 ug/L 09/29/16 08:23 ND 0.50 0.25 ug/L 09/29/16 08:23 1.1-Dichloroethene 1,1-Dichloropropene ND 0.50 0.25 ug/L 09/29/16 08:23 ND 0.40 ug/L 09/29/16 08:23 1,2,4-Trichlorobenzene 1.0 1 1,2-Dibromo-3-Chloropropane ND 1.0 0.50 ug/L 09/29/16 08:23 ND 09/29/16 08:23 1,2-Dichlorobenzene 0.50 0.25 ug/L 1 1,2-Dichloroethane ND 0.50 0.25 ug/L 09/29/16 08:23 1,2-Dichloropropane ND 0.50 0.25 ug/L 09/29/16 08:23 1,3-Dichlorobenzene ND 0.50 0.25 ug/L 09/29/16 08:23 ND 0.50 09/29/16 08:23 1,3-Dichloropropane 0.25 ug/L 1 ND 1,4-Dichlorobenzene 0.50 0.25 ug/L 09/29/16 08:23 2,2-Dichloropropane ND 1.0 0.40 ug/L 09/29/16 08:23 2-Chloro-1,3-butadiene ND 1.0 0.50 ug/L 09/29/16 08:23 2-Hexanone ND 5.0 2.5 ug/L 09/29/16 08:23 Acetone ND 20 10 09/29/16 08:23 ug/L 20 Acetonitrile ND 10 ug/L 09/29/16 08:23 Benzene ND 0.50 0.25 ug/L 09/29/16 08:23 Allyl chloride ND 1.0 0.50 ug/L 09/29/16 08:23 ND Bromoform 1.0 0.40 ug/L 09/29/16 08:23 Bromomethane ND 0.50 0.25 ug/L 09/29/16 08:23 Carbon disulfide ND 1.0 0.50 ug/L 09/29/16 08:23 Carbon tetrachloride ND 0.50 0.25 ug/L 09/29/16 08:23 Chlorobenzene ND 0.50 0.25 ug/L 09/29/16 08:23 Bromochloromethane ND 0.25 0.50 ug/L 09/29/16 08:23 Chloroethane ND 1.0 0.40 ug/L 09/29/16 08:23 Chloroform ND 0.50 0.25 ug/L 09/29/16 08:23 Chloromethane ND 0.50 0.25 ug/L 09/29/16 08:23 cis-1,2-Dichloroethene ND 0.50 0.25 ug/L 09/29/16 08:23 cis-1,3-Dichloropropene ND 0.50 0.25 ug/L 09/29/16 08:23 Dibromochloromethane ND 0.50 0.25 ug/L 09/29/16 08:23 Dibromomethane ND 0.50 0.25 ug/L 09/29/16 08:23 ND 0.25 ug/L Bromodichloromethane 0.50 09/29/16 08:23 Dichlorodifluoromethane ND 1.0 0.40 09/29/16 08:23 ug/L Ethyl methacrylate ND 2.0 09/29/16 08:23 1.0 ug/L Ethylbenzene ND 0.50 0.25 ug/L 09/29/16 08:23 Iodomethane ND 2.0 1.0 ug/L 09/29/16 08:23 Isobutyl alcohol ND 25 13 ug/L 09/29/16 08:23 m,p-Xylene ND 1.0 0.50 ug/L 09/29/16 08:23

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09/29/16 08:23

09/29/16 08:23

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09/29/16 08:23

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5.0

2.0

20

0.50

1.0

2.5 ug/L

0.88 ug/L

0.25 ug/L

0.40 ug/L

1.0 ug/L

ND

ND

ND

ND

ND

3

5

6

8

1.0

10

TestAmerica Job ID: 440-159360-1

**Client Sample ID: Lab Control Sample** 

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Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

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

MR MR

Lab Sample ID: MB 440-358874/4 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 358874** 

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Propionitrile	ND		20	10	ug/L			09/29/16 08:23	1
Styrene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
t-Butanol	ND		10	5.0	ug/L			09/29/16 08:23	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Tetrahydrofuran	ND		10	5.0	ug/L			09/29/16 08:23	1
Toluene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			09/29/16 08:23	1
Trichloroethene	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/29/16 08:23	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/29/16 08:23	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/29/16 08:23	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			09/29/16 08:23	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/29/16 08:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/29/16 08:23	1
	МВ	MB							

Tentatively Identified Compound Est. Result Qualifier RT CAS No. Dil Fac Unit Prepared Analyzed Tentatively Identified Compound 09/29/16 08:23 None ug/L

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 107 80 - 128 09/29/16 08:23 99 80 - 120 09/29/16 08:23 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) 96 76 - 132 09/29/16 08:23

Lab Sample ID: LCS 440-358874/5

**Matrix: Water** 

1,3-Dichloropropane

1,4-Dichlorobenzene

Analysis Batch: 358874

7							
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	23.6		ug/L		94	63 - 130
1,1,1,2-Tetrachloroethane	25.0	23.9		ug/L		96	60 - 141
1,1,1-Trichloroethane	25.0	24.7		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	25.0	24.1		ug/L		96	63 - 130
1,1,2-Trichloroethane	25.0	23.8		ug/L		95	70 - 130
1,1-Dichloroethane	25.0	23.6		ug/L		94	64 - 130
1,1-Dichloroethene	25.0	24.6		ug/L		98	70 - 130
1,1-Dichloropropene	25.0	24.9		ug/L		100	70 - 130
1,2,4-Trichlorobenzene	25.0	25.4		ug/L		101	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	24.1		ug/L		96	52 - 140
1,2-Dichlorobenzene	25.0	23.3		ug/L		93	70 - 130
1,2-Dichloroethane	25.0	25.1		ug/L		100	57 - 138
1,2-Dichloropropane	25.0	24.6		ug/L		98	67 - 130
1,3-Dichlorobenzene	25.0	23.7		ug/L		95	70 - 130

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23.3

23.4

ug/L

ug/L

25.0

25.0

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

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

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Lab Sample ID: LCS 440-358874/5

**Matrix: Water** 

Analysis Batch: 358874

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

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,2-Dichloropropane	25.0	26.0		ug/L		104	68 - 141	
2-Hexanone	25.0	24.8		ug/L		99	10 - 150	
Acetone	25.0	25.4		ug/L		101	10 - 150	
Benzene	25.0	23.5		ug/L		94	68 - 130	
Bromoform	25.0	26.0		ug/L		104	60 - 148	
Bromomethane	25.0	22.7		ug/L		91	64 - 139	
Carbon disulfide	25.0	24.6		ug/L		99	52 - 136	
Carbon tetrachloride	25.0	25.8		ug/L		103	60 - 150	
Chlorobenzene	25.0	23.6		ug/L		94	70 - 130	
Bromochloromethane	25.0	22.3		ug/L		89	70 - 130	
Chloroethane	25.0	24.5		ug/L		98	64 - 135	
Chloroform	25.0	24.0		ug/L		96	70 - 130	
Chloromethane	25.0	24.5		ug/L		98	47 - 140	
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	70 - 133	
cis-1,3-Dichloropropene	25.0	25.3		ug/L		101	70 - 133	
Dibromochloromethane	25.0	24.3		ug/L		97	69 - 145	
Dibromomethane	25.0	24.0		ug/L		96	70 - 130	
Bromodichloromethane	25.0	24.4		ug/L		98	70 - 132	
Dichlorodifluoromethane	25.0	25.2		ug/L		101	29 - 150	
Ethylbenzene	25.0	24.2		ug/L		97	70 - 130	
m,p-Xylene	25.0	24.9		ug/L		100	70 - 130	
Methylene Chloride	25.0	24.1		ug/L		96	52 - 130	
Methyl tert-butyl ether	25.0	23.7		ug/L		95	63 - 131	
Naphthalene	25.0	24.4		ug/L		98	60 - 140	
o-Xylene	25.0	24.0		ug/L		96	70 - 130	
Styrene	25.0	24.7		ug/L		99	70 - 134	
t-Butanol	250	249		ug/L		100	70 - 130	
Tetrachloroethene	25.0	24.7		ug/L		99	70 - 130	
Toluene	25.0	24.7		ug/L		99	70 - 130	
trans-1,2-Dichloroethene	25.0	25.0		ug/L		100	70 - 130	
trans-1,3-Dichloropropene	25.0	25.1		ug/L		100	70 - 132	
Trichloroethene	25.0	24.1		ug/L		97	70 - 130	
Trichlorofluoromethane	25.0	26.4		ug/L		105	60 - 150	
Vinyl acetate	25.0	26.2		ug/L		105	48 - 140	
Vinyl chloride	25.0	24.5		ug/L		98	59 - 133	
1,2-Dibromoethane (EDB)	25.0	24.7		ug/L		99	70 - 130	
2-Butanone (MEK)	25.0	24.6		ug/L		98	44 - 150	
4-Methyl-2-pentanone (MIBK)	25.0	26.2		ug/L		105	59 - 149	

LCS LCS

Surrogate	%Recovery G	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

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

Lab Sample ID: 440-159494-A-5 MS

**Matrix: Water** 

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

Analysis Batch: 358874	Sample Sample	Spike	MS	MS				%Rec.
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	ND —	25.0	27.8		ug/L		111	60 - 130
1,1,1,2-Tetrachloroethane	ND	25.0	27.0		ug/L		108	60 - 149
1,1,1-Trichloroethane	ND	25.0	27.7		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	ND	25.0	27.5		ug/L		110	63 - 130
1,1,2-Trichloroethane	ND	25.0	27.2		ug/L		109	70 - 130
1,1-Dichloroethane	ND	25.0	26.3		ug/L		105	65 - 130
1,1-Dichloroethene	ND	25.0	27.2		ug/L		109	70 - 130
1,1-Dichloropropene	ND	25.0	27.6		ug/L		110	64 - 130
1,2,4-Trichlorobenzene	0.40 J	25.0	29.7		ug/L		119	60 - 140
1,2-Dibromo-3-Chloropropane	ND	25.0	28.1		ug/L		112	48 - 140
1,2-Dichlorobenzene	ND	25.0	26.5		ug/L		106	70 - 130
1,2-Dichloroethane	ND	25.0	28.3		ug/L		113	56 - 146
1,2-Dichloropropane	ND	25.0	27.9		ug/L		112	69 - 130
1,3-Dichlorobenzene	ND	25.0	26.1		ug/L		105	70 - 130
1,3-Dichloropropane	ND	25.0	27.3		ug/L		109	70 - 130
1,4-Dichlorobenzene	ND	25.0	26.2		ug/L		105	70 - 130
2,2-Dichloropropane	ND	25.0	29.6		ug/L		118	69 - 138
2-Hexanone	ND	25.0	27.6		ug/L		111	10 - 150
Acetone	ND	25.0	23.1		ug/L		92	10 - 150
Benzene	ND	25.0	26.3		ug/L		105	66 - 130
Bromoform	ND	25.0	29.3		ug/L		117	59 <sub>-</sub> 150
Bromomethane	ND	25.0	25.9		ug/L		104	62 - 131
Carbon disulfide	ND	25.0	27.4		ug/L		109	49 - 140
Carbon tetrachloride	ND	25.0	28.6		ug/L		114	60 <sub>-</sub> 150
Chlorobenzene	ND	25.0	26.1		ug/L		104	70 - 130
Bromochloromethane	ND	25.0	25.5		ug/L		102	70 - 130
Chloroethane	ND	25.0	27.7		ug/L		111	68 - 130
Chloroform	ND	25.0	27.1		ug/L		108	70 - 130
Chloromethane	ND	25.0	27.8		ug/L		111	39 - 144
cis-1,2-Dichloroethene	ND	25.0	27.3		ug/L		109	70 - 130
cis-1,3-Dichloropropene	ND	25.0	29.1		ug/L		116	70 - 133
Dibromochloromethane	ND	25.0	27.6		ug/L		111	70 - 148
Dibromomethane	ND	25.0	26.9		ug/L		108	70 - 130
Bromodichloromethane	ND	25.0	27.7		ug/L		111	70 - 138
Dichlorodifluoromethane	ND	25.0	28.4		ug/L		114	25 - 142
Ethylbenzene	ND	25.0	26.8		ug/L		107	70 - 130
n,p-Xylene	ND	25.0	27.6		ug/L		110	70 - 133
Methylene Chloride	ND	25.0	26.9		ug/L		108	52 <sub>-</sub> 130
Methyl tert-butyl ether	ND	25.0	27.3		ug/L		109	70 - 130
Naphthalene	0.81 J	25.0	28.1		ug/L		109	60 - 140
o-Xylene	ND	25.0	27.0		ug/L		108	70 - 133
Styrene	ND	25.0	26.5		ug/L		106	29 - 150
-Butanol	ND	250	277		ug/L		111	70 - 130
Tetrachloroethene	0.40 J	25.0	27.5		ug/L		109	70 - 137
Foluene	ND	25.0	27.3		ug/L		109	70 - 130
rans-1,2-Dichloroethene	ND	25.0	27.6		ug/L		110	70 - 130
trans-1,3-Dichloropropene	ND	25.0	28.7		ug/L		115	70 - 138
Trichloroethene	0.35 J	25.0	26.7		ug/L		105	70 - 130

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

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

Lab Sample ID: 440-159494-A-5 MS

**Matrix: Water** 

Analysis Batch: 358874

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

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Trichlorofluoromethane	ND		25.0	28.9		ug/L		116	60 - 150	
Vinyl acetate	ND		25.0	32.7		ug/L		131	23 - 150	
Vinyl chloride	ND		25.0	28.1		ug/L		112	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	28.1		ug/L		112	70 - 131	
2-Butanone (MEK)	ND		25.0	27.2		ug/L		109	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.7		ug/L		119	52 - 150	

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 101 80 - 128 80 - 120 4-Bromofluorobenzene (Surr) 96 76 - 132 Dibromofluoromethane (Surr) 98

Lab Sample ID: 440-159494-A-5 MSD

**Matrix: Water** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analysis Batch: 358874	Comple	Sample	Spike	Med	MSD				%Rec.		RPD
Analyte	-	Qualifier	Added	_	Qualifier	Unit	D	%Rec	MRec.	RPD	Limit
1,2,3-Trichloropropane	ND	- Qualifier	25.0	28.4	Qualifier	ug/L		114	60 - 130	2	30
1,1,1,2-Tetrachloroethane	ND		25.0	27.6		ug/L		111	60 - 149	2	20
1,1,1-Trichloroethane	ND		25.0	28.1		ug/L		112	70 - 130	2	20
1,1,2,2-Tetrachloroethane	ND		25.0	28.5		ug/L		114	63 - 130	4	30
1,1,2-Trichloroethane	ND		25.0	28.1		ug/L		112	70 <sub>-</sub> 130	3	25
1,1-Dichloroethane	ND		25.0	26.9		ug/L		108	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	27.7		ug/L		111	70 <sub>-</sub> 130	2	20
1,1-Dichloropropene	ND		25.0	28.1		ug/L		112	64 <sub>-</sub> 130	2	20
1,2,4-Trichlorobenzene	0.40	1	25.0	30.5		ug/L		122	60 - 140	2	20
1,2-Dibromo-3-Chloropropane	ND		25.0	30.0		ug/L		120	48 - 140	6	30
1,2-Dichlorobenzene	ND		25.0	26.9		ug/L		108	70 - 130	2	20
1,2-Dichloroethane	ND		25.0	29.1		ug/L		116	76 - 136 56 - 146	3	20
1,2-Dichloropropane	ND		25.0	28.6		ug/L		114	69 - 130	2	20
1,3-Dichlorobenzene	ND		25.0	26.9		ug/L		108	70 <sub>-</sub> 130	3	20
1,3-Dichloropropane	ND		25.0	28.0		ug/L		112	70 - 130 70 - 130	3	25
1,4-Dichlorobenzene	ND		25.0	27.1		ug/L		108	70 - 130	3	20
2,2-Dichloropropane	ND		25.0	29.9		ug/L		120	69 <sub>-</sub> 138	1	25
2-Hexanone	ND		25.0	29.9		ug/L		120	10 - 150	8	35
Acetone	ND		25.0	24.9		ug/L		100	10 - 150	8	35
Benzene	ND		25.0	26.8		ug/L		107	66 - 130	2	20
Bromoform	ND		25.0	30.7		ug/L		123	59 - 150	5	25
Bromomethane	ND		25.0	26.1		ug/L		104	62 - 131	1	25
Carbon disulfide	ND		25.0	27.8		ug/L		111	49 - 140	1	20
Carbon tetrachloride	ND		25.0	29.7		ug/L		119	60 - 150	4	25
Chlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	2	20
Bromochloromethane	ND		25.0	26.0		ug/L		104	70 - 130 70 - 130	2	25
Chloroethane	ND		25.0	28.3		ug/L		113	68 - 130	2	25
Chloroform	ND		25.0	27.5		ug/L		110	70 - 130	2	20
Chloromethane	ND		25.0	28.6		ug/L		114	39 <sub>-</sub> 144	3	25
cis-1,2-Dichloroethene	ND		25.0	27.6		ug/L		111	70 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	29.4		ug/L		118	70 - 133		20
ois-1,5-Dictilotoproperie	ND		25.0	23.4		ug/L		110	70-133	'	20

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10/5/2016

TestAmerica Job ID: 440-159360-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

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

Lab Sample ID: 440-159494-A-5 MSD

**Matrix: Water** 

**Analysis Batch: 358874** 

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dibromochloromethane	ND		25.0	28.3		ug/L		113	70 - 148	2	25
Dibromomethane	ND		25.0	28.3		ug/L		113	70 - 130	5	25
Bromodichloromethane	ND		25.0	28.4		ug/L		114	70 - 138	3	20
Dichlorodifluoromethane	ND		25.0	28.7		ug/L		115	25 - 142	1	30
Ethylbenzene	ND		25.0	27.2		ug/L		109	70 - 130	1	20
m,p-Xylene	ND		25.0	27.9		ug/L		112	70 - 133	1	25
Methylene Chloride	ND		25.0	27.5		ug/L		110	52 - 130	2	20
Methyl tert-butyl ether	ND		25.0	28.4		ug/L		113	70 - 130	4	25
Naphthalene	0.81	J	25.0	30.0		ug/L		117	60 - 140	7	30
o-Xylene	ND		25.0	27.1		ug/L		108	70 - 133	0	20
Styrene	ND		25.0	27.6		ug/L		111	29 - 150	4	35
t-Butanol	ND		250	275		ug/L		110	70 - 130	1	25
Tetrachloroethene	0.40	J	25.0	28.2		ug/L		111	70 - 137	2	20
Toluene	ND		25.0	27.9		ug/L		111	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	28.2		ug/L		113	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	29.6		ug/L		119	70 - 138	3	25
Trichloroethene	0.35	J	25.0	27.9		ug/L		110	70 - 130	4	20
Trichlorofluoromethane	ND		25.0	30.0		ug/L		120	60 - 150	4	25
Vinyl acetate	ND		25.0	34.2		ug/L		137	23 - 150	4	30
Vinyl chloride	ND		25.0	28.7		ug/L		115	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	29.2		ug/L		117	70 - 131	4	25
2-Butanone (MEK)	ND		25.0	28.3		ug/L		113	48 - 140	4	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	32.2		ug/L		129	52 - 150	8	35

MSD MSD

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

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

Lab Sample ID: MB 440-358922/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 359428 Prep Batch: 358922** 

MB MB

Analyte **Result Qualifier** RL **MDL** Unit Analyzed Prepared Dil Fac 1,4-Dioxane ND 1.0 0.25 ug/L 09/29/16 09:00 09/30/16 19:20

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,4-Dioxane-d8 (Surr) 58 30 - 120 09/29/16 09:00 09/30/16 19:20

Lab Sample ID: LCS 440-358922/2-A

Matrix: Water							Prep Type: Total/NA	
Analysis Batch: 359428							<b>Prep Batch: 358922</b>	
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	2.00	0.862	J	ug/L		43	35 - 120	

TestAmerica Irvine

**Client Sample ID: Lab Control Sample** 

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Spike

Added

Limits

30 - 120

Spike

Added

2.12

RL

0.50

2.15

MS MS

MSD MSD

1.15

Result Qualifier

1.17

Result Qualifier

Unit

ug/L

Unit

ug/L

TestAmerica Job ID: 440-159360-1

Client Sample ID: Matrix Spike

%Rec.

Limits

35 - 120

D %Rec

54

%Rec

**Prepared** 

%Rec

96

55

**Client Sample ID: Matrix Spike Duplicate** 

%Rec.

Limits

35 - 120

Client Sample ID: Method Blank

Prep Type: Total/NA

**Prep Batch: 358922** 

Prep Type: Total/NA

**Prep Batch: 358922** 

Prep Type: Total/NA

**Prep Batch: 358922** 

RPD

**Client Sample ID: Lab Control Sample** 

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

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

Lab Sample ID: LCS 440-358922/2-A

**Matrix: Water** 

**Analysis Batch: 359428** 

LCS LCS

Sample Sample

MS MS

%Recovery Qualifier

63

ND

Result Qualifier

%Recovery Qualifier Surrogate Limits 1,4-Dioxane-d8 (Surr) 30 - 120 54

Lab Sample ID: 440-159396-E-2-A MS

**Matrix: Water** 

1,4-Dioxane

**Analysis Batch: 359428** 

**Analyte** 

Surrogate

1,4-Dioxane-d8 (Surr)

Lab Sample ID: 440-159396-E-2-B MSD **Matrix: Water** 

**Analysis Batch: 359428** 

Analyte 1,4-Dioxane

Surrogate

1,4-Dioxane-d8 (Surr)

ND MSD MSD

63

Sample Sample

Result Qualifier

%Recovery Qualifier

MR MR

ND

Result Qualifier

Limits 30 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-357378/54

**Matrix: Water** 

**Analysis Batch: 357378** 

Analyte Chloride

Lab Sample ID: LCS 440-357378/55

**Matrix: Water** 

**Analysis Batch: 357378** 

Chloride

Lab Sample ID: 440-159416-E-6 MS **Matrix: Water** 

Analyte

**Analysis Batch: 357378** 

Sample Sample Result Qualifier Analyte Chloride 160

Spike Added 1000

Spike

Added

5.00

MS MS Result Qualifier 1110

LCS LCS

4.80

Result Qualifier

**MDL** Unit

0.25 mg/L

Unit mg/L

Unit

mg/L

D

%Rec 95

Limits 80 - 120

90 - 110

TestAmerica Irvine

10/5/2016

**RPD** 

Limit

25

Prep Type: Total/NA

09/23/16 02:46

Dil Fac Analyzed

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

TestAmerica Job ID: 440-159360-1

**Prep Batch: 358929** 

**Prep Batch: 358929** 

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 440-159416-E-6 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 357378** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 1000 Chloride 160 1130 mg/L 97 80 - 120 20

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-358929/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total Recoverable** 

**Analysis Batch: 359649** 

MB MB Result Qualifier RL Analyte MDL Unit Analyzed Dil Fac D Prepared Potassium  $\overline{\mathsf{ND}}$ 0.50 0.25 mg/L 09/29/16 09:34 10/02/16 18:34

Lab Sample ID: LCS 440-358929/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable Analysis Batch: 359649 Prep Batch: 358929** Spike LCS LCS %Rec.

Analyte Added Result Qualifier Unit Limits Potassium 10.0 103 80 - 120 10.3 mg/L

Lab Sample ID: 440-159323-E-3-B MS Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 359649 Prep Batch: 358929** Spike MS MS %Rec. Sample Sample

Result Qualifier Added Result Qualifier Limits Analyte Unit %Rec Potassium 45 10.0 52.8 4 73 75 - 125 mg/L

Lab Sample ID: 440-159323-E-3-C MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total Recoverable** 

**Analysis Batch: 359649** 

Sample Sample Spike MSD MSD

%Rec. **RPD** Result Qualifier Added Result Qualifier Unit Limits RPD Limit Analyte D %Rec 10.0 52.7 4 Potassium 45 72 0 20 mg/L 75 - 125

Method: 410.4 - COD

Lab Sample ID: MB 440-358727/3 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 358727** 

MB MB RL Result Qualifier **MDL** Unit Prepared Analyzed Dil Fac 20 Chemical Oxygen Demand  $\overline{\mathsf{ND}}$ 10 mg/L 09/28/16 15:33

Lab Sample ID: LCS 440-358727/4 Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 358727** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chemical Oxygen Demand 200 199 mg/L 99 90 - 110

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

Client Sample ID: Matrix Spike

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

Method: 410.4 - COD (Continued)

Lab Sample ID: 440-159268-I-1 MS

**Matrix: Water** Prep Type: Total/NA Analysis Batch: 358727 Sample Sample Spike MS MS %Rec.

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 200 **Chemical Oxygen Demand** 28 221 mg/L 96 70 - 120

Lab Sample ID: 440-159268-I-1 MSD

**Matrix: Water** 

**Analysis Batch: 358727** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits Analyte Result Qualifier **RPD** Unit %Rec Limit Chemical Oxygen Demand 28 200 219 mg/L 95 70 - 120

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-357917/3

**Matrix: Water** 

**Analysis Batch: 357917** 

MB MB

Analyte Result Qualifier RL **RL Unit** Prepared Analyzed Dil Fac Alkalinity as CaCO3 4.0 4.0 mg/L 09/24/16 06:28  $\overline{\mathsf{ND}}$ 

Lab Sample ID: LCS 440-357917/2

**Matrix: Water** 

**Analysis Batch: 357917** 

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits Analyte Alkalinity as CaCO3 85.8 86.7 mg/L 101 80 - 120

Lab Sample ID: 440-159247-L-1 DU

**Matrix: Water** 

**Analysis Batch: 357917** 

Sample Sample חם חם RPD Result Qualifier Result Qualifier RPD Limit Analyte Unit D 290 Alkalinity as CaCO3 291 mg/L 0.4 20

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

Lab Sample ID: MB 440-358896/1

**Matrix: Water** 

**Analysis Batch: 358896** 

MB MB

RL Analyte Result Qualifier **MDL** Unit Prepared Analyzed Dil Fac Total Dissolved Solids 10  $\overline{\mathsf{ND}}$ 5.0 mg/L 09/29/16 08:52

Lab Sample ID: LCS 440-358896/2

**Matrix: Water** 

Analysis Batch: 358896

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits **Total Dissolved Solids** 1000 978 mg/L 98 90 - 110

TestAmerica Irvine

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

TestAmerica Job ID: 440-159360-1

**Prep Batch: 357959** 

95

85 - 115

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

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

Lab Sample ID: 440-159686-A-1 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 358896

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit **Total Dissolved Solids** 2 7300 7180 mg/L

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-357959/2-A **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

Ammonia (as N)

**Analysis Batch: 357968** 

MB MB

Result Qualifier RL Analyte MDL Unit Analyzed Dil Fac Prepared Ammonia (as N)  $\overline{\mathsf{ND}}$ 0.50 0.10 mg/L 09/26/16 03:00 09/26/16 06:50

Lab Sample ID: LCS 440-357959/1-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357968 Prep Batch: 357959** Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits

2.37

mg/L

Lab Sample ID: 440-159623-B-1-B MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357968 Prep Batch: 357959** Sample Sample Spike MS MS %Rec.

Result Qualifier Added Result Qualifier Limits Analyte Unit %Rec Ammonia (as N) ND 2.50 2.37 95 75 - 125 mg/L

2.50

Lab Sample ID: 440-159623-B-1-C MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357968 Prep Batch: 357959** Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Analyte 2.50 Ammonia (as N) ND 2.28 mg/L 91 75 - 125 4

Lab Sample ID: 440-159413-B-2-C DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA **Analysis Batch: 357968 Prep Batch: 357959** Sample Sample DU DU **RPD** 

Result Qualifier RPD Analyte Result Qualifier Unit D Limit Ammonia (as N) 64 61.7 mg/L 15

Method: SM 5310C - TOC

Lab Sample ID: MB 440-357823/7 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 357823** 

MB MB Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Total Organic Carbon ND 0.10 0.050 mg/L 09/23/16 08:23

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

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Method: SM 5310C - TOC (Continued)

Lab Sample ID: LCS 440-357823/6

Matrix: Water

Prep Type: Total/NA

**Analysis Batch: 357823** 

 Analyte
 Added Organic Carbon
 Result 10.0
 Qualifier 10.0
 Unit 10.0
 D mg/L
 %Rec Limits 10.0
 Limits 10.0
 Possible 10.0

Lab Sample ID: MRL 440-357823/5

Matrix: Water

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

**Analysis Batch: 357823** 

 Spike
 MRL
 MRL
 %Rec.

 Analyte
 Added
 Result Organic Carbon
 Qualifier Unit One
 D mg/L
 %Rec Limits One

Lab Sample ID: 440-159304-B-20 MS

Matrix: Water

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

Analysis Batch: 357823

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Total Organic Carbon 0.46 10.0 10.9 mg/L 104 80 - 120

Lab Sample ID: 440-159304-B-20 MSD

Matrix: Water

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

**Analysis Batch: 357823** 

%Rec. RPD Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Total Organic Carbon 0.46 10.0 10.8 103 80 - 120 20 mg/L

10/5/2016

Client: Geo-Logic Associates Project/Site: Republic Sunshine canyon TestAmerica Job ID: 440-159360-1

# **GC/MS VOA**

# Analysis Batch: 358874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	8260B	
440-159360-2	DW-5	Total/NA	Water	8260B	
440-159360-3	QCAB	Total/NA	Water	8260B	
440-159360-4	QCTB	Total/NA	Water	8260B	
MB 440-358874/4	Method Blank	Total/NA	Water	8260B	
LCS 440-358874/5	Lab Control Sample	Total/NA	Water	8260B	
440-159494-A-5 MS	Matrix Spike	Total/NA	Water	8260B	
440-159494-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# GC/MS Semi VOA

### **Prep Batch: 358922**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	3520C	_
440-159360-2	DW-5	Total/NA	Water	3520C	
MB 440-358922/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-358922/2-A	Lab Control Sample	Total/NA	Water	3520C	
440-159396-E-2-A MS	Matrix Spike	Total/NA	Water	3520C	
440-159396-E-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

# **Analysis Batch: 359428**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	8270C	358922
440-159360-2	DW-5	Total/NA	Water	8270C	358922
MB 440-358922/1-A	Method Blank	Total/NA	Water	8270C	358922
LCS 440-358922/2-A	Lab Control Sample	Total/NA	Water	8270C	358922
440-159396-E-2-A MS	Matrix Spike	Total/NA	Water	8270C	358922
440-159396-E-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	358922

# HPLC/IC

# **Analysis Batch: 357378**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	300.0	
440-159360-2	DW-5	Total/NA	Water	300.0	
MB 440-357378/54	Method Blank	Total/NA	Water	300.0	
LCS 440-357378/55	Lab Control Sample	Total/NA	Water	300.0	
440-159416-E-6 MS	Matrix Spike	Total/NA	Water	300.0	
440-159416-E-6 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

### **Metals**

# **Prep Batch: 358929**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total Recoverable	Water	3005A	
440-159360-2	DW-5	Total Recoverable	Water	3005A	
MB 440-358929/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-358929/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-159323-E-3-B MS	Matrix Spike	Total Recoverable	Water	3005A	
440-159323-E-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

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# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

# Analysis Batch: 359649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total Recoverable	Water	6010B	358929
440-159360-2	DW-5	Total Recoverable	Water	6010B	358929
MB 440-358929/1-A	Method Blank	Total Recoverable	Water	6010B	358929
LCS 440-358929/2-A	Lab Control Sample	Total Recoverable	Water	6010B	358929
440-159323-E-3-B MS	Matrix Spike	Total Recoverable	Water	6010B	358929
440-159323-E-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	358929

# **General Chemistry**

# **Analysis Batch: 357823**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	SM 5310C	
440-159360-2	DW-5	Total/NA	Water	SM 5310C	
MB 440-357823/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-357823/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-357823/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-159304-B-20 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-159304-B-20 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

# **Analysis Batch: 357917**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	SM 2320B	<del></del>
440-159360-2	DW-5	Total/NA	Water	SM 2320B	
MB 440-357917/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-357917/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-159247-L-1 DU	Duplicate	Total/NA	Water	SM 2320B	

# **Prep Batch: 357959**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	SM 4500 NH3 B	
440-159360-2	DW-5	Total/NA	Water	SM 4500 NH3 B	
MB 440-357959/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-357959/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-159623-B-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-159623-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-159413-B-2-C DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

# Analysis Batch: 357968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	SM 4500 NH3 D	357959
440-159360-2	DW-5	Total/NA	Water	SM 4500 NH3 D	357959
MB 440-357959/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	357959
LCS 440-357959/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	357959
440-159623-B-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	357959
440-159623-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	357959
440-159413-B-2-C DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	357959

# **Analysis Batch: 358727**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	410.4	
440-159360-2	DW-5	Total/NA	Water	410.4	
MB 440-358727/3	Method Blank	Total/NA	Water	410.4	
LCS 440-358727/4	Lab Control Sample	Total/NA	Water	410.4	

## **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

## **General Chemistry (Continued)**

## **Analysis Batch: 358727 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159268-I-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-159268-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

#### **Analysis Batch: 358896**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-159360-1	MW-1	Total/NA	Water	SM 2540C	
440-159360-2	DW-5	Total/NA	Water	SM 2540C	
MB 440-358896/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-358896/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-159686-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

## **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

#### **Qualifiers**

#### **GC/MS VOA**

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **GC/MS VOA TICs**

Qualifier Qualifier Description

J Indicates an Estimated Value for TICs

T Result is a tentatively identified compound (TIC) and an estimated value.

N Presumptive evidence of material.

#### **GC/MS Semi VOA**

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

MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

applicable.

#### **General Chemistry**

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 ma	y or may not be	present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration
MDA Minimum detectable activity
EDL Estimated Detection Limit
MDC Minimum detectable concentration

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control
RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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## **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine canyon

TestAmerica Job ID: 440-159360-1

## **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-13-16 *
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17 *
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

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<sup>\*</sup> Certification renewal pending - certification considered valid.

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THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc. TestAmerico

THE LEADER IN ENVIRONMENTAL TESTING  TestAmerica Laboratories, Inc.  TAL-8210 (0713)	COC No:	ALM SICCO OF COCS	Sampler: A Sut A.	For Lab Use Only:	Walk-in Client:	Lab Sampling:	Job / SDG No.:			Sample Specific Notes:					Ápoq	Distance of the control of the contr	) (I) (I) (I) (I) (I) (I) (I) (I) (I) (I	Charles of the control of the contro	998669		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	Tarchive for Months		'd:Therm ID No.:	1946/194/16 1043	034) June: 1/6 1620	Date/Time:
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□ RCRA □ Other:	Site Contact:	70000			1000円であるという。	いからいいない。	800 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	いないというないできません。	とうなっている。	शतिव ३०राव भवे	******* **	ナナイイイイイイス									Sample Disposal ( A fee may be ass	Return to Client		Cooler Temp. (°C): Obs'd:_	Received by:	Received by:	Received in Laboratory by:
DW NPDES	SIT SALCING		maround Time	WORKING DAYS		( N: /	¥) a			np, # of 章 b) Matrix Cont. 正	SW 13 1	GW 13	T CONT								odes for the sample in the	] Unknown			Date/Time: 4/22/ty 1045	Date/Time: 9/24/6 (620	Date/Time:
Regulatory Program:	Project Manager X	וְל	s Tu	CALENDAR DAYS	TAT if different from Below	2 weeks	1 week	1 day		Sample Sample (Cacomp.  Date Time G=Grab)	4.22.16 DR357 G	1 2825	1	1						5=NaOH; 6= Other	Please List any EPA Waste Codes	Poison B		Custody Seal No.:	Company:	Company: 74	Company:
Irvine, CA 92614 Phone: 949,261,1022 Fax:	Client Contact	Company Name 1 A ( Republic	Address IMIS (1) Resugged Ct.	City/State/Zip Sov Neg a OA 92123	 [ig	Project Name	Site:	PO# GLA KIN "ZWIN . 003 12		Sample Identification	) - MM	V	ZC KR	ROTA		of 3	The state of the s			Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3;	Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Pleas	Non-Hazard Hammable Skin Irritant	Special Instructions/QC Requirements & Comments:	Custody Seals Intact:	777	Relinquishearby:	Relinquished by:

Client: Geo-Logic Associates Job Number: 440-159360-1

Login Number: 159360 List Source: TestAmerica Irvine

List Number: 1

Creator: Avila, Stephanie 1

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	



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## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-166208-1

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: 11/29/2016 12:02:42 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

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**Have a Question?** 



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

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

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## **Sample Summary**

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

TestAmerica Job ID: 440-166208-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-166208-1	DW-3(A)	Water	11/15/16 11:25	11/16/16 17:00
440-166208-2	DW-3(B)	Water	11/15/16 11:25	11/16/16 17:00
440-166208-3	DW-5(A)	Water	11/15/16 12:32	11/16/16 17:00
440-166208-4	DW-5(B)	Water	11/15/16 12:32	11/16/16 17:00

#### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-166208-1

Job ID: 440-166208-1

Laboratory: TestAmerica Irvine

**Narrative** 

Job Narrative 440-166208-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/16/2016 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

#### **General Chemistry**

Method(s) SM 5310C: The closing calibration blank (CCB) for analytical batch 440-370192 contained Total Organic Carbon above the reporting limit (RL). All reported samples associated with this CCB contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, 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.

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## **Client Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-166208-1

Client Sample ID: DW-3(A) Lab Sample ID: 440-166208-1 Date Collected: 11/15/16 11:25

**Matrix: Water** 

Date Received: 11/16/16 17:00

**General Chemistry** RL Unit Analyte Result Qualifier RL Analyzed Dil Fac D Prepared 11/19/16 11:52 **Alkalinity as CaCO3** 170 4.0 4.0 mg/L

Client Sample ID: DW-3(B) Lab Sample ID: 440-166208-2

Date Collected: 11/15/16 11:25 **Matrix: Water** 

Date Received: 11/16/16 17:00

**General Chemistry** Analyte Result Qualifier RL **RL** Unit D Prepared Analyzed Dil Fac 4.0 4.0 mg/L 11/19/16 12:07 **Alkalinity as CaCO3** 170

Client Sample ID: DW-5(A) Lab Sample ID: 440-166208-3

Date Collected: 11/15/16 12:32 Date Received: 11/16/16 17:00

**General Chemistry** Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac **Total Organic Carbon** 7.5 0.10 0.050 mg/L 11/18/16 10:53

Client Sample ID: DW-5(B) Lab Sample ID: 440-166208-4

Date Collected: 11/15/16 12:32

Date Received: 11/16/16 17:00

**General Chemistry** Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 0.10 11/18/16 11:09 0.050 mg/L **Total Organic Carbon** 7.8

**Matrix: Water** 

**Matrix: Water** 

## **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-166208-1

Method	Method Description	Protocol	Laboratory
SM 2320B	Alkalinity	SM	TAL IRV
SM 5310C	TOC	SM	TAL IRV

#### **Protocol References:**

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

#### Laboratory References:

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

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### **Lab Chronicle**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-166208-1

Lab Sample ID: 440-166208-1

**Matrix: Water** 

Date Collected: 11/15/16 11:25 Date Received: 11/16/16 17:00

Client Sample ID: DW-3(A)

Batch Dil Batch Batch Initial Final Prepared Method **Prep Type** Type Run **Factor Amount Amount** Number or Analyzed Analyst Lab Total/NA Analysis **SM 2320B** 370444 11/19/16 11:52  $\overline{\mathsf{YZ}}$ TAL IRV

Client Sample ID: DW-3(B) Lab Sample ID: 440-166208-2

Date Collected: 11/15/16 11:25 **Matrix: Water** 

Date Received: 11/16/16 17:00

Batch Batch Dil Initial Final **Batch** Prepared **Prep Type** Туре Method Run Factor Amount **Amount** Number or Analyzed Analyst Lab SM 2320B 370444 11/19/16 12:07  $\overline{YZ}$ TAL IRV Total/NA Analysis

Client Sample ID: DW-5(A) Lab Sample ID: 440-166208-3

Date Collected: 11/15/16 12:32

Date Received: 11/16/16 17:00

Dil Batch Batch Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount Amount** Number or Analyzed **Analyst** Lab Analysis SM 5310C 100 mL 100 mL 370192 11/18/16 10:53 TAL IRV Total/NA

Lab Sample ID: 440-166208-4 Client Sample ID: DW-5(B)

Date Collected: 11/15/16 12:32

Date Received: 11/16/16 17:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	370192	11/18/16 11:09	YZ	TAL IRV

**Laboratory References:** 

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

TestAmerica Irvine

**Matrix: Water** 

**Matrix: Water** 

TestAmerica Job ID: 440-166208-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-370444/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 370444** 

MB MB Analyte Result Qualifier RL **RL** Unit Analyzed Dil Fac D Prepared 4.0 11/19/16 10:33 Alkalinity as CaCO3  $\overline{\mathsf{ND}}$ 4.0 mg/L

Lab Sample ID: LCS 440-370444/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 370444** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec Alkalinity as CaCO3 85.8 86.2 mg/L 101 80 - 120

Lab Sample ID: 440-166208-1 DU Client Sample ID: DW-3(A) **Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 370444

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier RPD Limit Analyte Unit D Alkalinity as CaCO3 170 169 mg/L 0.05

Method: SM 5310C - TOC

Lab Sample ID: MB 440-370192/7 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 370192** 

MB MB Result Qualifier RL **MDL** Unit Prepared Analyzed Total Organic Carbon ND 0.10 0.050 ma/L 11/18/16 08:19

Lab Sample ID: LCS 440-370192/6 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 370192** 

LCS LCS Spike %Rec. Added Result Qualifier %Rec Limits Analyte Unit 10.0 100 **Total Organic Carbon** 9.98 mg/L 90 - 110

Lab Sample ID: MRL 440-370192/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 370192** 

Spike MRL MRL %Rec. Added Result Qualifier Analyte Unit D %Rec Limits **Total Organic Carbon** 0.100 0.0713 J 50 - 150 mg/L

Lab Sample ID: 440-166149-G-1 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 370192** 

Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits **Total Organic Carbon** 0.26 10.0 11.4 mg/L 112 80 - 120

TestAmerica Irvine

## **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-166149-G-1 MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 370192

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Organic Carbon	0.26		10.0	9.67		mg/L		94	80 - 120	17	20

TestAmerica Job ID: 440-166208-1

## **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-166208-1

## **General Chemistry**

## **Analysis Batch: 370192**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-166208-3	DW-5(A)	Total/NA	Water	SM 5310C	
440-166208-4	DW-5(B)	Total/NA	Water	SM 5310C	
MB 440-370192/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-370192/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-370192/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-166149-G-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-166149-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

## Analysis Batch: 370444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-166208-1	DW-3(A)	Total/NA	Water	SM 2320B	
440-166208-2	DW-3(B)	Total/NA	Water	SM 2320B	
MB 440-370444/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-370444/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-166208-1 DU	DW-3(A)	Total/NA	Water	SM 2320B	

## **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Not Calculated

**Quality Control** 

Relative error ratio

**Practical Quantitation Limit** 

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Not detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

TestAmerica Job ID: 440-166208-1

### **Qualifiers**

### **General Chemistry**

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## **Glossary**

NC

ND

**PQL** 

QC

RL

**RER** 

RPD

TEF

**TEQ** 

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)

## **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-166208-1

## **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

TestAmerica Irvine

<sup>\*</sup> Certification renewal pending - certification considered valid.

estAmerica	THE LEADER IN ENVIRONMENTAL TESTING	restAmerica Laboratories, inc. TAL-8210 (0713)	COC No:	of COCs	Sampler: (R. Calina) For Lab Use Only:	Walk-in Client: Lab Samoling:	Job / SDG No.:		Sample Specific Notes:											d longer than 1 month)	Months		Therm ID No.:	Date/Time:	Date/Time:	Date/Time:	+
Chain of Custody Record	01600	.RA Other:	M. Master	9	77	775	(1.2	i// <del>10</del> -2	73	XX	X bols	×	X UIEU	3 80	7991					Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	Return to Client Archive for Archive for		794 Cooler Temp. (°C): Obs'd: Corr'd:	Received by: Ringary TAI	Company:	Mary aporation of Company:	
	* Octor *			1510	ysis Turnaround Time	from Below (	M / A ) ejc	Sample Sample Type	matrix Cont. Filtere	11/15/16 1125 G GW 1 X	)	7821	1 1/2 1/2 1/1								Doison B Gunknown	-	eal No.:	Company: Date/Time:   Rece	Date/Time: 1 (NE/NG 1760)	Date/Time:	77# .0 0/.01
	Suite 100 Truite 100	Phone: 949.261.1022 Fax:	nt Contact	ASSOC.	Bernarde Gr	251-13	Schraffing Con	#Od	Sample Identification	7	DW-3(8)	(A8-WC)	BW~5(B)						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	Special Instructions/QC Requirements & Comments:	s Intact: / 🗌 /Yes 📋 No	Refine wished by:	Zina	Relinquished by:	

Client: Geo-Logic Associates

Job Number: 440-166208-1

Login Number: 166208 List Source: TestAmerica Irvine

List Number: 1

Creator: Escalante, Maria I

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	



THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-170251-1 Client Project/Site: Sunshine Landfill

#### For:

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

Attn: Kyle Welchans

Authorized for release by: 1/12/2017 12:49:27 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

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Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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## **Sample Summary**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

TestAmerica Job ID: 440-170251-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-170251-1	Subdrain (N)	Water	12/20/16 10:08	12/20/16 16:00
440-170251-2	Combined Subdrains	Water	12/20/16 10:40	12/20/16 16:00
440-170251-3	Extraction Trench	Water	12/20/16 11:20	12/20/16 16:00
440-170251-4	DW-1	Water	12/20/16 14:00	12/20/16 16:00
440-170251-5	DW-2	Water	12/20/16 13:15	12/20/16 16:00
440-170251-6	PZ-2	Water	12/20/16 11:55	12/20/16 16:00
440-170251-7	MW-6	Water	12/20/16 10:50	12/20/16 16:00
440-170251-8	MW-14	Water	12/20/16 09:13	12/20/16 16:00
440-170251-9	CM-9R3	Water	12/20/16 08:50	12/20/16 16:00
440-170251-10	CM-11R	Water	12/20/16 10:45	12/20/16 16:00
440-170251-11	PZ-4	Water	12/20/16 14:35	12/20/16 16:00
440-170251-12	CM-10R	Water	12/20/16 13:00	12/20/16 16:00
440-170251-13	QCAB	Water	12/20/16 00:01	12/20/16 16:00
440-170251-14	QCTB	Water	12/20/16 00:01	12/20/16 16:00

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#### **Case Narrative**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Job ID: 440-170251-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-170251-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/20/2016 4:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.9° C, 1.3° C, 1.8° C and 2.0° C.

#### Receipt Exceptions

The following sample was received at the laboratory without a sample collection time documented on the chain of custody: QCAB (440-170251-13) and QCTB (440-170251-14). The laboratory was instructed to use a sample collection time of 00:01.

#### GC/MS VOA

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

#### GC/MS Semi VOA

Method(s) 8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-377944 and analytical batch 440-378155. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-378304 and analytical batch 440-378647. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

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

#### HPLC/IC

Method(s) 300.0: The following samples was diluted for Bromide and Fluoride due to the nature of the sample matrix: Subdrain (N) (440-170251-1), DW-1 (440-170251-4), PZ-2 (440-170251-6), MW-6 (440-170251-7), MW-14 (440-170251-8), CM-9R3 (440-170251-9), CM-11R (440-170251-10) and CM10R (440-170251-12). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 440-377105 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 300.0: The following samples was diluted for Nitrate as N due to the nature of the sample matrix: Subdrain (N) (440-170251-1), Combined Subdrains (440-170251-2), Extraction Trench (440-170251-3), DW-1 (440-170251-4), PZ-2 (440-170251-6), MW-6 (440-170251-7), MW-14 (440-170251-8), CM-9R3 (440-170251-9) and CM10R (440-170251-12). 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**

Method(s) 3520C: Elevated reporting limits are provided for the following sample due to insufficient sample provided for 3520C preparation/analysis: CM-11R (440-170251-10).

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

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### **Case Narrative**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

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Job ID: 440-170251-1 (Continued)

Laboratory: TestAmerica 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: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-1

Matrix: Water

Client Sample ID: Subdrain (N)

Date Collected: 12/20/16 10:08 Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L		•	12/23/16 12:21	
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	-			12/23/16 12:21	
1,1,1-Trichloroethane	ND		0.50	0.25	-			12/23/16 12:21	
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	-			12/23/16 12:21	· · · · · · .
1,1,2-Trichloroethane	ND		0.50	0.25	-			12/23/16 12:21	
1.1-Dichloroethane	ND		0.50	0.25	-			12/23/16 12:21	
1,1-Dichloroethene	ND		0.50	0.25	-			12/23/16 12:21	
1,1-Dichloropropene	ND		0.50	0.25				12/23/16 12:21	
1,2,4-Trichlorobenzene	ND		1.0	0.40	-			12/23/16 12:21	
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	-			12/23/16 12:21	
1,2-Dichlorobenzene	ND		0.50	0.25				12/23/16 12:21	
1,2-Dichloroethane	ND		0.50	0.25	-			12/23/16 12:21	
1,2-Dichloropropane	ND		0.50	0.25	-			12/23/16 12:21	
1,3-Dichlorobenzene	ND		0.50	0.25	-			12/23/16 12:21	
1,3-Dichloropropane	ND		0.50	0.25	-			12/23/16 12:21	
			0.50	0.25	-			12/23/16 12:21	
<b>1,4-Dichlorobenzene</b> 2,2-Dichloropropane	<b>0.68</b> ND		1.0	0.40	-			12/23/16 12:21	
	ND ND		1.0		-			12/23/16 12:21	
2-Chloro-1,3-butadiene				0.50	-				
2-Hexanone	ND		5.0		ug/L			12/23/16 12:21	
Acetone	ND		20		ug/L			12/23/16 12:21	
Acetonitrile	ND		20		ug/L			12/23/16 12:21	
Benzene	ND		0.50	0.25				12/23/16 12:21	
Allyl chloride	ND		1.0	0.50	-			12/23/16 12:21	
Bromoform	ND		1.0	0.40	-			12/23/16 12:21	
Bromomethane	ND		0.50	0.25	-			12/23/16 12:21	
Carbon disulfide	ND		1.0	0.50	-			12/23/16 12:21	
Carbon tetrachloride	ND		0.50	0.25	-			12/23/16 12:21	
Chlorobenzene	ND		0.50	0.25	-			12/23/16 12:21	
Bromochloromethane	ND		0.50	0.25	-			12/23/16 12:21	
Chloroethane	ND		1.0	0.40	-			12/23/16 12:21	
Chloroform	ND		0.50	0.25	-			12/23/16 12:21	
Chloromethane	ND		0.50	0.25	ug/L			12/23/16 12:21	
cis-1,2-Dichloroethene	0.48	J	0.50	0.25	ug/L			12/23/16 12:21	
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 12:21	
Dibromochloromethane	ND		0.50	0.25	ug/L			12/23/16 12:21	
Dibromomethane	ND		0.50	0.25	ug/L			12/23/16 12:21	
Bromodichloromethane	ND		0.50	0.25	ug/L			12/23/16 12:21	
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/23/16 12:21	
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 12:21	
Ethylbenzene	ND		0.50	0.25	ug/L			12/23/16 12:21	
lodomethane	ND		2.0	1.0	ug/L			12/23/16 12:21	
Isobutyl alcohol	ND		25	13	ug/L			12/23/16 12:21	
m,p-Xylene	ND		1.0		ug/L			12/23/16 12:21	
Methylacrylonitrile	ND		5.0		ug/L			12/23/16 12:21	
Methyl methacrylate	ND		2.0		ug/L			12/23/16 12:21	
Methylene Chloride	ND		2.0		ug/L			12/23/16 12:21	
Methyl tert-butyl ether	0.45	J	0.50		ug/L			12/23/16 12:21	
Naphthalene	ND	-	1.0		ug/L			12/23/16 12:21	
o-Xylene	ND		0.50		ug/L			12/23/16 12:21	

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Client: Geo-Logic Associates

Project/Site: Sunshine Landfill

Client Sample ID: Subdrain (N)

Date Collected: 12/20/16 10:08 Date Received: 12/20/16 16:00

Lab Sample ID: 440-170251-1

**Matrix: Water** 

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Propionitrile	ND		20	10	ug/L			12/23/16 12:21	
Styrene	ND		0.50	0.25	ug/L			12/23/16 12:21	
t-Butanol	19	ID	10	5.0	ug/L			12/23/16 12:21	
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 12:21	
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 12:21	
Toluene	ND		0.50	0.25	ug/L			12/23/16 12:21	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 12:21	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 12:21	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 12:21	
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 12:21	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 12:21	
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 12:21	
Vinyl chloride	ND		0.50	0.25	ug/L			12/23/16 12:21	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/23/16 12:21	
2-Butanone (MEK)	ND		5.0		ug/L			12/23/16 12:21	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			12/23/16 12:21	
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 12:21	
Acrolein	ND		5.0	2.5	ug/L			12/23/16 12:21	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	5.1	TJ	ug/L	4	1.74			12/23/16 12:21	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	102		80 - 128					12/23/16 12:21	
4-Bromofluorobenzene (Surr)	102		80 - 120					12/23/16 12:21	
Dibromofluoromethane (Surr)	115		76 - 132					12/23/16 12:21	
Method: 8270C - Semivolatile	_	•				_			
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	15		0.97	0.24	ug/L		12/23/16 11:23	12/24/16 14:38	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	53		30 - 120				12/23/16 11:23	12/24/16 14:38	
Method: 300.0 - Anions, Ion C									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Bromide	1.6	J	2.5		mg/L			12/20/16 20:29	
Nitrate as N	ND		0.55		mg/L			12/20/16 20:29	
Chloride	120		2.5		mg/L			12/20/16 20:29	
Fluoride	ND		2.5		mg/L			12/20/16 20:29	
Sulfate	1300		100	50	mg/L			12/20/16 20:40	20
Method: 6010B - Metals (ICP)									
Analyte		Qualifier	RL_		Unit	D	Prepared	Analyzed	Dil Fa
Potassium	7.6		0.50		mg/L			01/09/17 13:25	
Manganese	3.1		0.020		mg/L			01/09/17 13:25	
Magnesium	180		0.020		mg/L		01/01/17 09:48	01/09/17 13:25	
	13	D	0.040	0.010	mg/L		01/01/17 00:48	01/09/17 13:25	
Iron	13	D	0.040	0.010	mg/L		01/01/17 09.40	01/09/17 13.23	

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01/01/17 09:48 01/09/17 13:25

01/01/17 09:48 01/09/17 13:25

01/01/17 09:48 01/09/17 13:25

0.50

0.10

0.050

0.25 mg/L

0.050 mg/L

0.010 mg/L

250

260

0.51

Sodium

Calcium

**Boron** 

## **Client Sample Results**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	59		20	10	mg/L			01/04/17 09:32	1
Total Dissolved Solids	3000		50	25	mg/L			12/25/16 10:08	1
Ammonia (as N)	3.9		1.0	0.20	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:23	1
Total Organic Carbon	24		1.0	0.50	mg/L			01/05/17 11:12	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	920		4.0	4.0	mg/L			12/21/16 05:35	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/21/16 05:35	1
Carbon Dioxide, Free	250		2.0	2.0	mg/L			01/10/17 14:22	1

Client Sample ID: Combined Subdrains Lab Sample ID: 440-170251-2

Date Collected: 12/20/16 10:40 Matrix: Water

Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/23/16 12:48	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/23/16 12:48	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/23/16 12:48	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
1,4-Dichlorobenzene	0.80		0.50	0.25	ug/L			12/23/16 12:48	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/23/16 12:48	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/23/16 12:48	1
2-Hexanone	ND		5.0	2.5	ug/L			12/23/16 12:48	1
Acetone	ND		20	10	ug/L			12/23/16 12:48	1
Acetonitrile	ND		20	10	ug/L			12/23/16 12:48	1
Benzene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Allyl chloride	ND		1.0	0.50	ug/L			12/23/16 12:48	1
Bromoform	ND		1.0	0.40	ug/L			12/23/16 12:48	1
Bromomethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/23/16 12:48	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Chloroethane	ND		1.0	0.40	ug/L			12/23/16 12:48	1
Chloroform	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Chloromethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
cis-1,2-Dichloroethene	2.3		0.50	0.25	ug/L			12/23/16 12:48	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Dibromochloromethane	ND		0.50		ug/L			12/23/16 12:48	1
Dibromomethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/23/16 12:48	1

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1 4

TestAmerica Job ID: 440-170251-1

**Client Sample ID: Combined Subdrains** 

Date Collected: 12/20/16 10:40 Date Received: 12/20/16 16:00

1,4-Dioxane-d8 (Surr)

Analyte

**Bromide** 

**Chloride** 

Nitrate as N

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 440-170251-2

Matrix: Water

Method: 8260B - Volatile Org Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/23/16 12:48	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 12:48	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
lodomethane	ND		2.0	1.0	ug/L			12/23/16 12:48	1
Isobutyl alcohol	ND		25	13	ug/L			12/23/16 12:48	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/23/16 12:48	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/23/16 12:48	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 12:48	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/23/16 12:48	1
Methyl tert-butyl ether	1.3		0.50	0.25	ug/L			12/23/16 12:48	1
Naphthalene	ND		1.0	0.40	ug/L			12/23/16 12:48	1
o-Xylene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Propionitrile	ND		20	10	ug/L			12/23/16 12:48	1
Styrene	ND		0.50		ug/L			12/23/16 12:48	1
t-Butanol	36		10	5.0	ug/L			12/23/16 12:48	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
Tetrahydrofuran	7.2	J	10		ug/L			12/23/16 12:48	1
Toluene	ND		0.50	0.25	ug/L			12/23/16 12:48	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			12/23/16 12:48	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			12/23/16 12:48	1
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			12/23/16 12:48	1
Trichloroethene	ND		0.50		ug/L			12/23/16 12:48	1
Trichlorofluoromethane	ND		0.50		ug/L			12/23/16 12:48	1
Vinyl acetate	ND		4.0		ug/L			12/23/16 12:48	1
Vinyl chloride	ND		0.50		ug/L			12/23/16 12:48	1
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/23/16 12:48	1
2-Butanone (MEK)	ND		5.0		ug/L			12/23/16 12:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			12/23/16 12:48	1
Acrylonitrile	ND		2.0		ug/L			12/23/16 12:48	1
Acrolein	ND		5.0		ug/L			12/23/16 12:48	1
To the Control of the	F-4 D#	0	1114	_	DT	0404	D		D'/ E
Tentatively Identified Compound	Est. Result		Unit		RT _	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	8.9	TJ	ug/L	4	.74			12/23/16 12:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128					12/23/16 12:48	1
4-Bromofluorobenzene (Surr)	101		80 - 120					12/23/16 12:48	1
Dibromofluoromethane (Surr)	115		76 - 132					12/23/16 12:48	1
Mothod: 9270C Somissoletile	o Organia Ca	mnounda	(CC/MS)						
Method: 8270C - Semivolatile Analyte		mpounds Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	19		1.0		ug/L		12/23/16 11:23	12/24/16 14:59	1
Surrogato	% Paggyam:	Ouglifier	Limits				Droporod	Analyzad	Dil Eco
Surrogate	%Recovery	Quaillier	Limits				Prepared	Analyzed	Dil Fac

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Dil Fac

2

2

100

Analyzed

12/20/16 20:51

12/20/16 20:51

12/20/16 21:01

12/23/16 11:23 12/24/16 14:59

Prepared

30 - 120

RL

1.0

0.22

50

MDL Unit

0.50 mg/L

0.11 mg/L

25 mg/L

47

2.5

ND

130

Result Qualifier

2

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

**Client Sample ID: Combined Subdrains** 

Date Collected: 12/20/16 10:40 Date Received: 12/20/16 16:00 Lab Sample ID: 440-170251-2

Matrix: Water

Method: 300.0 - Anions, Ion Ch	าromatography (Continเ	neq)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.5	1.0	0.50 mg/L			12/20/16 20:51	2
Sulfate	1700	50	25 mg/L			12/20/16 21:01	100

Analyte	s (ICP) - Total Recoverable Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	17	0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:34	1
Manganese	4.7	0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:34	1
Magnesium	210	0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:34	1
Iron	53 B	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 13:34	1
Sodium	360	0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:34	1
Calcium	390	0.10	0.050	mg/L		01/01/17 09:48	01/09/17 13:34	1
Boron	1.0	0.050	0.010	mg/L		01/01/17 09:48	01/09/17 13:34	1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	81		20	10	mg/L			01/04/17 09:32	1
Total Dissolved Solids	3500		50	25	mg/L			12/25/16 10:08	1
Ammonia (as N)	4.6		1.0	0.20	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:23	1
<b>Total Organic Carbon</b>	29		1.0	0.50	mg/L			01/06/17 06:55	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	830		4.0	4.0	mg/L			12/21/16 06:03	1
Bicarbonate Alkalinity as CaCO3	830		4.0	4.0	mg/L			12/21/16 06:03	1
Carbon Dioxide, Free	380		2.0	2.0	mg/L			12/22/16 15:56	1

Client Sample ID: Extraction Trench

Date Collected: 12/20/16 11:20

Lab Sample ID: 440-170251-3

Matrix: Water

Date Collected: 12/20/16 11:20 Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/23/16 13:16	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/23/16 13:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/23/16 13:16	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
1,4-Dichlorobenzene	0.41	J	0.50	0.25	ug/L			12/23/16 13:16	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/23/16 13:16	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/23/16 13:16	1
2-Hexanone	ND		5.0	2.5	ug/L			12/23/16 13:16	1

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## **Client Sample Results**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-3

. Matrix: Water

**Client Sample ID: Extraction Trench** 

Date Collected: 12/20/16 11:20 Date Received: 12/20/16 16:00

Iodomethane

m,p-Xylene

Naphthalene

Propionitrile

o-Xylene

Styrene

Toluene

t-Butanol

Tetrachloroethene

Tetrahydrofuran

Trichloroethene

Vinyl acetate

Vinyl chloride

Acrylonitrile

Acrolein

2-Butanone (MEK)

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

Trichlorofluoromethane

1,2-Dibromoethane (EDB)

4-Methyl-2-pentanone (MIBK)

trans-1,4-Dichloro-2-butene

Isobutyl alcohol

Methylacrylonitrile

Methyl methacrylate

Methylene Chloride

Methyl tert-butyl ether

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	18	J	20	10	ug/L			12/23/16 13:16	1
Acetonitrile	ND		20	10	ug/L			12/23/16 13:16	1
Benzene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Allyl chloride	ND		1.0	0.50	ug/L			12/23/16 13:16	1
Bromoform	ND		1.0	0.40	ug/L			12/23/16 13:16	1
Bromomethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/23/16 13:16	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Chloroethane	ND		1.0	0.40	ug/L			12/23/16 13:16	1
Chloroform	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Chloromethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
cis-1,2-Dichloroethene	1.4		0.50	0.25	ug/L			12/23/16 13:16	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Dibromomethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/23/16 13:16	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/23/16 13:16	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 13:16	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/23/16 13:16	1

2.0

25

1.0

5.0

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2.0

0.50

1.0

20

10

10

0.50

0.50

0.50

0.50

0.50

0.50

5.0

0.50

0.50

4.0

0.50

0.50

5.0

5.0

2.0

5.0

1.0 ug/L

13 ug/L

0.50 ug/L

2.5 ug/L

1.0 ug/L

0.88 ug/L

0.25 ug/L

0.40 ug/L

0.25 ug/L

0.25 ug/L

5.0 ug/L

0.25 ug/L

5.0 ug/L

0.25 ug/L

0.25 ug/L

0.25 ug/L

2.5 ug/L

0.25 ug/L

0.25 ug/L

2.0 ug/L

0.25 ug/L

0.25 ug/L

2.5 ug/L

2.5 ug/L

1.0 ug/L

2.5 ug/L

10 ug/L

ND

ND

ND

ND

ND

ND

0.78

ND

ND

ND

ND

46

ND

7.8

ND

12/23/16 13:16

12/23/16 13:16

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TestAmerica Job ID: 440-170251-1

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**Client Sample ID: Extraction Trench** 

Date Collected: 12/20/16 11:20 Date Received: 12/20/16 16:00

Nitrate as N

Chloride

**Fluoride** 

**Sulfate** 

Lab Sample ID: 440-170251-3

Matrix: Water

12/20/16 21:11

12/20/16 21:22

12/20/16 21:11

12/20/16 21:22

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L	_				12/23/16 13:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128					12/23/16 13:16	1
4-Bromofluorobenzene (Surr)	104		80 - 120					12/23/16 13:16	1
Dibromofluoromethane (Surr)	115		76 - 132					12/23/16 13:16	1
Method: 8270C - Semivolatile Analyte	•	mpounds Qualifier	(GC/MS)	MDI	_ Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	•	ŘL			<u>D</u>	Prepared 12/23/16 11:23	Analyzed 12/24/16 15:21	Dil Fac
	•	•				<u>D</u>	Prepared 12/23/16 11:23	Analyzed 12/24/16 15:21	Dil Fac
Analyte	Result	Qualifier	ŘL			<u>D</u>			Dil Fac
Analyte 1,4-Dioxane	Result 20	Qualifier	0.98			<u>D</u>	12/23/16 11:23	12/24/16 15:21  Analyzed	1
Analyte 1,4-Dioxane Surrogate	Result 20 %Recovery 44	Qualifier  Qualifier	0.98 <i>Limits</i>			<u>D</u>	12/23/16 11:23  Prepared	12/24/16 15:21  Analyzed	1
Analyte 1,4-Dioxane  Surrogate 1,4-Dioxane-d8 (Surr)	Result 20  %Recovery 44  Chromatogra	Qualifier  Qualifier	0.98 <i>Limits</i>	0.2		<u>D</u>	12/23/16 11:23  Prepared	12/24/16 15:21  Analyzed	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	37		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:36	1
Manganese	3.4		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:36	1
Magnesium	200		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:36	1
Iron	34	В	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 13:36	1
Sodium	440		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:36	1
Calcium	410		0.10	0.050	mg/L		01/01/17 09:48	01/09/17 13:36	1
Boron	1.6		0.050	0.010	mg/L		01/01/17 09:48	01/09/17 13:36	1

0.22

50

1.0

50

0.11 mg/L

0.50 mg/L

25 mg/L

25 mg/L

ND

180

2.2

1800

_									
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	130		20	10	mg/L			01/04/17 09:32	1
Total Dissolved Solids	3500		50	25	mg/L			12/25/16 10:08	1
Ammonia (as N)	8.8		2.5	0.50	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:23	1
Total Organic Carbon	31		1.0	0.50	mg/L			01/05/17 17:04	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	810		4.0	4.0	mg/L			12/21/16 06:16	1
Bicarbonate Alkalinity as CaCO3	810		4.0	4.0	mg/L			12/21/16 06:16	1
Carbon Dioxide, Free	250		2.0	2.0	mg/L			12/22/16 15:56	1

Client Sample ID: DW-1

Date Collected: 12/20/16 14:00

Lab Sample ID: 440-170251-4

Matrix: Water

Date Received: 12/20/16 16:00

Method: 8260B - Volatile Orga	nic Compounds (GC/MS	3)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND —	1.0	0.40 ug/L			12/23/16 13:44	1

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100

100

## **Client Sample Results**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-4

**Matrix: Water** 

Client Sample ID: DW-1 Date Collected: 12/20/16 14:00

Date Received: 12/20/16 16:00

Method: 8260B - Volatile Orga

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND	0.50		ug/L			12/23/16 13:44	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,1,2,2-Tetrachloroethane	ND	0.50		ug/L			12/23/16 13:44	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 13:44	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/23/16 13:44	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/23/16 13:44	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/23/16 13:44	1
2-Hexanone	ND	5.0	2.5	ug/L			12/23/16 13:44	1
Acetone	ND	20	10	ug/L			12/23/16 13:44	1
Acetonitrile	ND	20	10	ug/L			12/23/16 13:44	1
Benzene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Allyl chloride	ND	1.0	0.50	ug/L			12/23/16 13:44	1
Bromoform	ND	1.0	0.40	ug/L			12/23/16 13:44	1
Bromomethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Carbon disulfide	ND	1.0	0.50	ug/L			12/23/16 13:44	1
Carbon tetrachloride	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Chlorobenzene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Bromochloromethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Chloroethane	ND	1.0		ug/L			12/23/16 13:44	1
Chloroform	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Chloromethane	ND	0.50	0.25	ug/L			12/23/16 13:44	1
cis-1,2-Dichloroethene	ND	0.50		ug/L			12/23/16 13:44	1
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 13:44	1
Dibromochloromethane	ND	0.50		ug/L			12/23/16 13:44	1
Dibromomethane	ND	0.50		ug/L			12/23/16 13:44	1
Bromodichloromethane	ND	0.50	0.25	_			12/23/16 13:44	1
Dichlorodifluoromethane	ND	1.0		ug/L			12/23/16 13:44	1
Ethyl methacrylate	ND	2.0	1.0	ug/L			12/23/16 13:44	1
Ethylbenzene	ND	0.50		ug/L			12/23/16 13:44	1
lodomethane	ND	2.0		ug/L			12/23/16 13:44	1
Isobutyl alcohol	ND	25		ug/L			12/23/16 13:44	1
m,p-Xylene	ND	1.0		ug/L			12/23/16 13:44	1
Methylacrylonitrile	ND	5.0		ug/L			12/23/16 13:44	1
Methyl methacrylate	ND	2.0		ug/L			12/23/16 13:44	1
Methylene Chloride	ND	2.0		ug/L			12/23/16 13:44	1
Methyl tert-butyl ether	ND	0.50		ug/L			12/23/16 13:44	1
Naphthalene	ND	1.0		ug/L			12/23/16 13:44	1
o-Xylene	ND	0.50		ug/L			12/23/16 13:44	1
Propionitrile	ND	20		ug/L			12/23/16 13:44	,

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**Client Sample ID: DW-1** 

Chloride

**Fluoride** 

Sulfate

Date Collected: 12/20/16 14:00

Date Received: 12/20/16 16:00

Lab Sample ID: 440-170251-4

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		0.50	0.25	ug/L			12/23/16 13:44	1
t-Butanol	ND		10	5.0	ug/L			12/23/16 13:44	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 13:44	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 13:44	1
Toluene	ND		0.50	0.25	ug/L			12/23/16 13:44	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 13:44	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 13:44	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 13:44	1
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 13:44	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 13:44	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 13:44	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/23/16 13:44	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/23/16 13:44	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/23/16 13:44	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/23/16 13:44	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 13:44	1
Acrolein	ND		5.0	2.5	ug/L			12/23/16 13:44	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/23/16 13:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128					12/23/16 13:44	1
4-Bromofluorobenzene (Surr)	105		80 - 120					12/23/16 13:44	1
Dibromofluoromethane (Surr)	120		76 - 132					12/23/16 13:44	1
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	` ŔĹ	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.94	0.24	ug/L		12/23/16 11:23	12/24/16 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	57		30 - 120				12/23/16 11:23	12/24/16 15:43	1
-									
Method: 300.0 - Anions, Ion (	Chromatogra	phy							
		phy Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 300.0 - Anions, Ion (Analyte Bromide			RL 2.5		Unit mg/L	<u>D</u>	Prepared	Analyzed 12/20/16 21:32	Dil Fac
Analyte	Result			1.3		<u>D</u>	Prepared	•	

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	1.3	0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:38	1
Manganese	ND	0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:38	1
Magnesium	1.7	0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:38	1
Iron	0.062 B	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 13:38	1
Sodium	1000	2.5	1.3	mg/L		01/01/17 09:48	01/09/17 18:31	5
Calcium	3.0	0.10	0.050	mg/L		01/01/17 09:48	01/09/17 13:38	1
Boron	2.0	0.050	0.010	mg/L		01/01/17 09:48	01/09/17 13:38	1

2.5

2.5

100

13

3.5

1800

1.3 mg/L

1.3 mg/L

50 mg/L

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12/20/16 21:32

12/20/16 21:32

12/20/16 22:03

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## **Client Sample Results**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Client Sample ID: DW-1 Lab Sample ID: 440-170251-4

Date Collected: 12/20/16 14:00 Date Received: 12/20/16 16:00 Matrix: Water

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/04/17 15:36	1
Total Dissolved Solids	3200		50	25	mg/L			12/25/16 10:08	1
Ammonia (as N)	2.1		0.50	0.10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	0.82		0.10	0.040	mg/L			12/21/16 22:23	2
Total Organic Carbon	3.0		0.10	0.050	mg/L			01/06/17 09:07	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	560		4.0	4.0	mg/L			12/21/16 06:27	1
Bicarbonate Alkalinity as CaCO3	450		4.0	4.0	mg/L			12/21/16 06:27	1
Carbon Dioxide, Free	ND		2.0	2.0	mg/L			12/22/16 15:56	1

Client Sample ID: DW-2 Lab Sample ID: 440-170251-5

Date Collected: 12/20/16 13:15 Matrix: Water

Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/23/16 14:12	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/23/16 14:12	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/23/16 14:12	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/23/16 14:12	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/23/16 14:12	1
2-Hexanone	ND		5.0	2.5	ug/L			12/23/16 14:12	1
Acetone	ND		20	10	ug/L			12/23/16 14:12	1
Acetonitrile	ND		20	10	ug/L			12/23/16 14:12	1
Benzene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Allyl chloride	ND		1.0	0.50	ug/L			12/23/16 14:12	1
Bromoform	ND		1.0	0.40	ug/L			12/23/16 14:12	1
Bromomethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/23/16 14:12	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Chloroethane	ND		1.0	0.40	ug/L			12/23/16 14:12	1
Chloroform	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Chloromethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 14:12	1

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**Client Sample ID: DW-2** 

Date Collected: 12/20/16 13:15

Lab Sample ID: 440-170251-5

**Matrix: Water** 

Date Received: 12/20/16 16:00
Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Dibromomethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/23/16 14:12	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 14:12	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Iodomethane	ND		2.0	1.0	ug/L			12/23/16 14:12	1
Isobutyl alcohol	ND		25	13	ug/L			12/23/16 14:12	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/23/16 14:12	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/23/16 14:12	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 14:12	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/23/16 14:12	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Naphthalene	ND		1.0	0.40	ug/L			12/23/16 14:12	1
o-Xylene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Propionitrile	ND		20	10	ug/L			12/23/16 14:12	1
Styrene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
t-Butanol	ND		10	5.0	ug/L			12/23/16 14:12	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 14:12	1
Toluene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 14:12	1
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 14:12	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 14:12	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/23/16 14:12	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/23/16 14:12	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/23/16 14:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/23/16 14:12	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 14:12	1
Acrolein	ND		5.0	2.5	ug/L			12/23/16 14:12	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	4.1	TJ	ug/L		.75			12/23/16 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128					12/23/16 14:12	
4-Bromofluorobenzene (Surr)	108		80 - 120					12/23/16 14:12	1
Dibromofluoromethane (Surr)	121		76 <sub>-</sub> 132					12/23/16 14:12	1

Method: 8270C - Semivolatile	<b>Organic Compounds</b>	(GC/MS)
Analyto	Popult Qualifier	DI

Allalyte	ixesuit	Qualifier	114	IVIDE	Oilit	 rrepared	Allalyzea	Diriac	
1,4-Dioxane	ND		0.96	0.24	ug/L	 12/23/16 11:23	12/24/16 16:05	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1.4-Dioxane-d8 (Surr)	50		30 - 120			12/23/16 11:23	12/24/16 16:05		

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Dil Fac

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Client Sample ID: DW-2

Lab Sample ID: 440-170251-5

Matrix: Water

Date Collected: 12/20/16 13:15 Date Received: 12/20/16 16:00

Method: 300.0 - Anions Analyte	,	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.36	J	0.50	0.25	mg/L			12/20/16 22:39	1
Nitrate as N	ND		0.11	0.055	mg/L			12/20/16 22:39	1
Chloride	11		0.50	0.25	mg/L			12/24/16 07:34	1
Fluoride	ND		0.50	0.25	mg/L			12/20/16 22:39	1
Sulfate	1100		25	13	mg/L			12/20/16 22:49	50
- Method: 6010B - Metal	s (ICP) - Total Reco	verable							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	4.4		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:52	1
Managanaga	0.46		0.020	0.010	ma/l		01/01/17 00:40	01/00/17 12:52	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	4.4		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:52	1
Manganese	0.16		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:52	1
Magnesium	72		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:52	1
Iron	1.3	В	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 13:52	1
Sodium	460		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:52	1
Calcium	110		0.10	0.050	mg/L		01/01/17 09:48	01/09/17 13:52	1
Boron	0.61		0.050	0.010	mg/L		01/01/17 09:48	01/09/17 13:52	1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/04/17 09:32	1
Total Dissolved Solids	1900		20	10	mg/L			12/25/16 10:08	1
Ammonia (as N)	3.3		0.50	0.10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:23	1
Total Organic Carbon	1.6		0.10	0.050	mg/L			01/05/17 09:52	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	370		4.0	4.0	mg/L			12/21/16 06:36	1
Bicarbonate Alkalinity as CaCO3	370		4.0	4.0	mg/L			12/21/16 06:36	1
Carbon Dioxide, Free	28		2.0	2.0	mg/L			12/22/16 15:56	1

**Client Sample ID: PZ-2** Lab Sample ID: 440-170251-6 Date Collected: 12/20/16 11:55 **Matrix: Water** 

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND —	1.0	0.40	ug/L			12/23/16 14:39	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 14:39	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/23/16 14:39	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 14:39	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 14:39	1

TestAmerica Irvine

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-6

Matrix: Water

Client Sample ID: PZ-2 Date Collected: 12/20/16 11:55

Date Received: 12/20/16 16:00

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Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/23/16 14:39	
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/23/16 14:39	
2-Hexanone	ND	5.0	2.5	ug/L			12/23/16 14:39	
Acetone	ND	20	10	ug/L			12/23/16 14:39	
Acetonitrile	ND	20	10	ug/L			12/23/16 14:39	
Benzene	ND	0.50	0.25	ug/L			12/23/16 14:39	
Allyl chloride	ND	1.0	0.50	ug/L			12/23/16 14:39	
Bromoform	ND	1.0	0.40	ug/L			12/23/16 14:39	
Bromomethane	ND	0.50	0.25	ug/L			12/23/16 14:39	
Carbon disulfide	ND	1.0	0.50	ug/L			12/23/16 14:39	
Carbon tetrachloride	ND	0.50		ug/L			12/23/16 14:39	
Chlorobenzene	ND	0.50		ug/L			12/23/16 14:39	
Bromochloromethane	ND	0.50		ug/L			12/23/16 14:39	
Chloroethane	ND	1.0		ug/L			12/23/16 14:39	
Chloroform	ND	0.50		ug/L			12/23/16 14:39	
Chloromethane	ND	0.50		ug/L			12/23/16 14:39	
cis-1,2-Dichloroethene	ND	0.50		ug/L			12/23/16 14:39	
cis-1,3-Dichloropropene	ND	0.50		ug/L			12/23/16 14:39	
Dibromochloromethane	ND	0.50		ug/L			12/23/16 14:39	
Dibromomethane	ND	0.50		ug/L			12/23/16 14:39	
Bromodichloromethane	ND	0.50		ug/L			12/23/16 14:39	
Dichlorodifluoromethane	ND	1.0		ug/L			12/23/16 14:39	
Ethyl methacrylate	ND	2.0		ug/L			12/23/16 14:39	
Ethylbenzene	ND	0.50		ug/L			12/23/16 14:39	
Iodomethane	ND	2.0		ug/L			12/23/16 14:39	
Isobutyl alcohol	ND	25		ug/L			12/23/16 14:39	
m,p-Xylene	ND	1.0		ug/L			12/23/16 14:39	
Methylacrylonitrile	ND	5.0		ug/L			12/23/16 14:39	
Methyl methacrylate	ND	2.0		ug/L ug/L			12/23/16 14:39	
Methylene Chloride	ND	2.0		ug/L			12/23/16 14:39	
Methyl tert-butyl ether	ND ND	0.50		ug/L ug/L			12/23/16 14:39	
Naphthalene	ND ND	1.0		ug/L ug/L			12/23/16 14:39	
				-			12/23/16 14:39	
o-Xylene	ND ND	0.50 20		ug/L			12/23/16 14:39	
Propionitrile	ND ND	0.50		ug/L			12/23/16 14:39	
Styrene			0.25					
t-Butanol	ND ND	10		ug/L			12/23/16 14:39	
Tetrachloroethene	ND	0.50		ug/L			12/23/16 14:39	
Tetrahydrofuran	ND	10		ug/L			12/23/16 14:39	
Toluene	ND	0.50		ug/L			12/23/16 14:39	
trans-1,2-Dichloroethene	ND	0.50		ug/L			12/23/16 14:39	
trans-1,3-Dichloropropene	ND	0.50		ug/L			12/23/16 14:39	
trans-1,4-Dichloro-2-butene	ND	5.0		ug/L			12/23/16 14:39	
Trichloroethene	ND	0.50		ug/L			12/23/16 14:39	
Trichlorofluoromethane	ND	0.50		ug/L			12/23/16 14:39	
Vinyl acetate	ND	4.0		ug/L			12/23/16 14:39	
Vinyl chloride	ND	0.50		ug/L			12/23/16 14:39	
1,2-Dibromoethane (EDB)	ND	0.50		ug/L			12/23/16 14:39	
2-Butanone (MEK)	ND	5.0	2.5	ug/L			12/23/16 14:39	

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**Client Sample ID: PZ-2** 

Date Collected: 12/20/16 11:55

Date Received: 12/20/16 16:00

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

TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-6

**Matrix: Water** 

Analyte	Result	Qualifier	RL	M	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		2.0	•	1.0	ug/L			12/23/16 14:39	1
Acrolein	ND		5.0	2	2.5	ug/L			12/23/16 14:39	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.7	TJ	ug/L	_	4.	75			12/23/16 14:39	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128						12/23/16 14:39	1
4-Bromofluorobenzene (Surr)	105		80 - 120						12/23/16 14:39	1
Dibromofluoromethane (Surr)	121		76 - 132						12/23/16 14:39	1
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)							
Analyte		Qualifier	ŘL	M	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.	26	ug/L		12/23/16 11:23	12/24/16 16:27	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	58		30 - 120					12/23/16 11:23	12/24/16 16:27	1
Method: 300.0 - Anions, Ion C	hromatogra	phy								
Analyte	Result	Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		5.0	2	2.5	mg/L			12/20/16 23:00	10
Nitrate as N	ND		1.1			mg/L			12/20/16 23:00	10
Chloride	11		5.0			mg/L			12/24/16 07:54	10
Fluoride	ND		5.0	2	2.5	mg/L			12/20/16 23:00	10
Sulfate	2700		100		50	mg/L			12/20/16 23:10	200
Method: 6010B - Metals (ICP)	- Total Reco	overable								
Analyte	Result	Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fac
Potassium	2.7		0.50	0.	25	mg/L		01/01/17 09:48	01/09/17 13:55	1
Manganese	0.026		0.020	0.0	10	mg/L		01/01/17 09:48	01/09/17 13:55	1
Magnesium	11		0.020	0.0	10	mg/L		01/01/17 09:48	01/09/17 13:55	1
Iron	0.050	В	0.040	0.0	10	mg/L		01/01/17 09:48	01/09/17 13:55	1
Sodium	1300		2.5	•	1.3	mg/L		01/01/17 09:48	01/09/17 18:33	5
Calcium	13		0.10	0.0	50	mg/L		01/01/17 09:48	01/09/17 13:55	1
Boron	1.4		0.050	0.0	10	mg/L		01/01/17 09:48	01/09/17 13:55	1
- General Chemistry										
Analyte	Result	Qualifier	RL	M	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20		10	mg/L			01/04/17 09:32	1
<b>Total Dissolved Solids</b>	4000		100		50	mg/L			12/25/16 10:08	1
Ammonia (as N)	3.3		0.50	0.	10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	0.037	J	0.050	0.0	20	mg/L			12/21/16 22:23	1
<b>Total Organic Carbon</b>	2.7		0.10	0.0	50	mg/L			01/05/17 10:04	1
Analyte	Result	Qualifier	RL	I	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	370		4.0		4.0	mg/L			12/21/16 06:45	1
Bicarbonate Alkalinity as CaCO3	350		4.0	4	4.0	mg/L			12/21/16 06:45	1
Carbon Dioxide, Free	ND		2.0	2	2.0	mg/L			12/22/16 16:00	1

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-7

**Matrix: Water** 

Client Sample ID: MW-6
Date Collected: 12/20/16 10:50

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
,2,3-Trichloropropane	ND -	1.0	0.40	ug/L			12/23/16 15:07	
,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 15:07	
,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:07	
,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 15:07	
,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:07	
,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:07	
,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 15:07	
,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 15:07	
,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 15:07	
,2-Dibromo-3-Chloropropane	ND	1.0		ug/L			12/23/16 15:07	
,2-Dichlorobenzene	ND	0.50		ug/L			12/23/16 15:07	
,2-Dichloroethane	ND	0.50	0.25	-			12/23/16 15:07	
,2-Dichloropropane	ND	0.50		ug/L			12/23/16 15:07	
,3-Dichlorobenzene	ND	0.50		ug/L			12/23/16 15:07	
,3-Dichloropropane	ND	0.50		ug/L			12/23/16 15:07	
,4-Dichlorobenzene	ND	0.50		ug/L			12/23/16 15:07	
2.2-Dichloropropane	ND	1.0	0.40	-			12/23/16 15:07	
?-Chloro-1,3-butadiene	ND	1.0	0.50	-			12/23/16 15:07	
2-Hexanone	ND	5.0		ug/L			12/23/16 15:07	
Acetone	ND	20		ug/L			12/23/16 15:07	
Acetonitrile	ND	20		ug/L			12/23/16 15:07	
Benzene	ND	0.50	0.25	-			12/23/16 15:07	
Allyl chloride	ND	1.0	0.50				12/23/16 15:07	
Bromoform	ND	1.0	0.40	-			12/23/16 15:07	
Bromomethane	ND	0.50					12/23/16 15:07	
Carbon disulfide	ND ND	1.0	0.25 0.50	-			12/23/16 15:07	
Carbon distillide	ND ND	0.50	0.30	-			12/23/16 15:07	
Chlorobenzene	ND ND	0.50	0.25				12/23/16 15:07	
Bromochloromethane		0.50	0.25	-			12/23/16 15:07	
Chloroethane	ND	1.0	0.40	-			12/23/16 15:07	
Chloroform	ND	0.50		ug/L			12/23/16 15:07	
Chloromethane	ND	0.50	0.25	-			12/23/16 15:07	
sis-1,2-Dichloroethene	ND	0.50	0.25	-			12/23/16 15:07	
is-1,3-Dichloropropene	ND	0.50	0.25				12/23/16 15:07	
Dibromochloromethane	ND	0.50	0.25	-			12/23/16 15:07	
Dibromomethane	ND	0.50		ug/L			12/23/16 15:07	
Bromodichloromethane	ND	0.50		ug/L			12/23/16 15:07	
Dichlorodifluoromethane	ND	1.0		ug/L			12/23/16 15:07	
Ethyl methacrylate	ND	2.0		ug/L			12/23/16 15:07	
Ethylbenzene	ND	0.50		ug/L			12/23/16 15:07	
odomethane	ND	2.0		ug/L			12/23/16 15:07	
sobutyl alcohol	ND	25		ug/L			12/23/16 15:07	
n,p-Xylene	ND	1.0		ug/L			12/23/16 15:07	
Methylacrylonitrile	ND	5.0	2.5	ug/L			12/23/16 15:07	
Nethyl methacrylate	ND	2.0		ug/L			12/23/16 15:07	
Methylene Chloride	ND	2.0	0.88	ug/L			12/23/16 15:07	
Methyl tert-butyl ether	ND	0.50	0.25	ug/L			12/23/16 15:07	
laphthalene	ND	1.0	0.40	ug/L			12/23/16 15:07	

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: MW-6 Date Collected: 12/20/16 10:50 Lab Sample ID: 440-170251-7

**Matrix: Water** 

Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL	MD	L Unit	D	Prepared	Analyzed	Dil F
Propionitrile	ND		20		0 ug/L			12/23/16 15:07	
Styrene	ND		0.50	0.2	25 ug/L			12/23/16 15:07	
t-Butanol	ND		10	5	.0 ug/L			12/23/16 15:07	
Tetrachloroethene	ND		0.50	0.2	25 ug/L			12/23/16 15:07	
Tetrahydrofuran	ND		10	5	.0 ug/L			12/23/16 15:07	
Toluene	ND		0.50	0.2	25 ug/L			12/23/16 15:07	
trans-1,2-Dichloroethene	ND		0.50	0.2	25 ug/L			12/23/16 15:07	
trans-1,3-Dichloropropene	ND		0.50		25 ug/L			12/23/16 15:07	
trans-1,4-Dichloro-2-butene	ND		5.0		.5 ug/L			12/23/16 15:07	
Trichloroethene	ND		0.50		25 ug/L			12/23/16 15:07	
Trichlorofluoromethane	ND		0.50		25 ug/L			12/23/16 15:07	
Vinyl acetate	ND		4.0		.0 ug/L			12/23/16 15:07	
Vinyl chloride	ND		0.50		25 ug/L			12/23/16 15:07	
1,2-Dibromoethane (EDB)	ND		0.50		25 ug/L			12/23/16 15:07	
2-Butanone (MEK)	ND		5.0		.5 ug/L			12/23/16 15:07	
4-Methyl-2-pentanone (MIBK)	ND		5.0		.5 ug/L			12/23/16 15:07	
Acrylonitrile	ND.		2.0		.0 ug/L			12/23/16 15:07	
Acrolein	ND		5.0		.5 ug/L			12/23/16 15:07	
, to oten	110		0.0	_	.o ug/L			12/20/10 10:07	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil F
Unknown	2.5	TJ	ug/L		4.75			12/23/16 15:07	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Toluene-d8 (Surr)	101		80 - 128					12/23/16 15:07	
4-Bromofluorobenzene (Surr)	105		80 - 120					12/23/16 15:07	
Dibromofluoromethane (Surr)	120		76 - 132					12/23/16 15:07	
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)						
Analyte	Result	Qualifier	RL	MC	L Unit	D	Prepared	Analyzed	Dil F
1,4-Dioxane	ND		0.98	0.2	25 ug/L		12/23/16 11:23	12/24/16 16:49	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
1,4-Dioxane-d8 (Surr)	69	_	30 - 120				12/23/16 11:23	12/24/16 16:49	
Mathadi 200 0 Aniana Ian C	hyanata aya	m la v							
Method: 300.0 - Anions, Ion C Analyte		ipny Qualifier	RL	МЕ	L Unit	D	Prepared	Analyzed	Dil F
Bromide	0.81		1.0		0 mg/L			12/20/16 23:20	
Nitrate as N	ND		0.22		1 mg/L			12/20/16 23:20	
Chloride	28		1.0		i0 mg/L			12/24/16 08:15	
Fluoride	1.9		1.0		io mg/L			12/20/16 23:20	
Sulfate	1700		50		25 mg/L			12/20/16 23:31	1
Sunate	1700		30	2	.o mg/L			12/20/10 25.51	
Method: 6010B - Metals (ICP)						_			<b></b>
Analyte		Qualifier	RL .		L Unit	D	Prepared	Analyzed	Dil F
D - 4 i	6.6		0.50		25 mg/L			01/09/17 13:57	
			0.020		0 mg/L			01/09/17 13:57	
	0.86			0.04	0 mg/L		01/01/17 09:48	01/09/17 13:57	
Manganese	0.86 170		0.020						
Manganese Magnesium		В	0.020 0.040		0 mg/L			01/09/17 13:57	
Potassium Manganese Magnesium Iron Sodium	170	В		0.01			01/01/17 09:48		
Manganese Magnesium Iron	170 8.3	В	0.040	0.01 0.2	0 mg/L		01/01/17 09:48 01/01/17 09:48	01/09/17 13:57	

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	17		20	10	mg/L		<u> </u>	01/04/17 09:32	1
Total Dissolved Solids	2700		20	10	mg/L			12/27/16 08:22	1
Ammonia (as N)	1.4		0.50	0.10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	1.2		0.10	0.040	mg/L			12/21/16 22:23	2
<b>Total Organic Carbon</b>	4.8		0.10	0.050	mg/L			01/05/17 10:18	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	400		4.0	4.0	mg/L			12/21/16 06:54	1
Bicarbonate Alkalinity as CaCO3	400		4.0	4.0	mg/L			12/21/16 06:54	1
Carbon Dioxide, Free	97		2.0	2.0	mg/L			12/22/16 16:00	1

Client Sample ID: MW-14 Lab Sample ID: 440-170251-8

Date Collected: 12/20/16 09:13 Matrix: Water

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/23/16 15:35	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 15:35	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/23/16 15:35	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/23/16 15:35	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/23/16 15:35	1
2-Hexanone	ND	5.0	2.5	ug/L			12/23/16 15:35	1
Acetone	ND	20	10	ug/L			12/23/16 15:35	1
Acetonitrile	ND	20	10	ug/L			12/23/16 15:35	1
Benzene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Allyl chloride	ND	1.0	0.50	ug/L			12/23/16 15:35	1
Bromoform	ND	1.0	0.40	ug/L			12/23/16 15:35	1
Bromomethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Carbon disulfide	ND	1.0	0.50	ug/L			12/23/16 15:35	1
Carbon tetrachloride	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Chlorobenzene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Bromochloromethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Chloroethane	ND	1.0	0.40	ug/L			12/23/16 15:35	1
Chloroform	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Chloromethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
cis-1,2-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Dibromochloromethane	ND	0.50	0.25	_			12/23/16 15:35	1
Dibromomethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1
Bromodichloromethane	ND	0.50	0.25	ug/L			12/23/16 15:35	1

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: MW-14

Lab Sample ID: 440-170251-8

Matrix: Water

Date Collected: 12/20/16 09:13 Date Received: 12/20/16 16:00

Chloride

Method: 8260B - Volatile Org Analyte	Result	Qualifier	RL	MDI	Unit		Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.4	0			12/23/16 15:35	•
Ethyl methacrylate	ND		2.0		ug/L			12/23/16 15:35	· · · · · · · · · ·
Ethylbenzene	ND		0.50		5 ug/L			12/23/16 15:35	•
lodomethane	ND		2.0		ug/L			12/23/16 15:35	•
Isobutyl alcohol	ND		25	1:	3 ug/L			12/23/16 15:35	•
m,p-Xylene	ND		1.0	0.5	ug/L			12/23/16 15:35	,
Methylacrylonitrile	ND		5.0	2.	5 ug/L			12/23/16 15:35	•
Methyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 15:35	•
Methylene Chloride	ND		2.0	0.8	3 ug/L			12/23/16 15:35	
Methyl tert-butyl ether	ND		0.50	0.2	5 ug/L			12/23/16 15:35	•
Naphthalene	ND		1.0	0.4	ug/L			12/23/16 15:35	
o-Xylene	ND		0.50	0.2	5 ug/L			12/23/16 15:35	• • • • • • • •
Propionitrile	ND		20		ug/L			12/23/16 15:35	
Styrene	ND		0.50		5 ug/L			12/23/16 15:35	
t-Butanol	ND		10		) ug/L			12/23/16 15:35	,
Tetrachloroethene	ND		0.50		5 ug/L			12/23/16 15:35	
Tetrahydrofuran	ND		10		o ug/L			12/23/16 15:35	
Toluene	ND		0.50		5 ug/L			12/23/16 15:35	
trans-1,2-Dichloroethene	ND		0.50		5 ug/L			12/23/16 15:35	
trans-1,3-Dichloropropene	ND		0.50		5 ug/L			12/23/16 15:35	,
trans-1,4-Dichloro-2-butene	ND		5.0		5 ug/L			12/23/16 15:35	· · · · · .
Trichloroethene	ND ND		0.50		5 ug/L 5 ug/L			12/23/16 15:35	
					-				
Trichlorofluoromethane	ND ND		0.50		5 ug/L			12/23/16 15:35	
Vinyl acetate			4.0		ug/L			12/23/16 15:35	•
Vinyl chloride	ND		0.50		5 ug/L			12/23/16 15:35	•
1,2-Dibromoethane (EDB)	ND		0.50		5 ug/L			12/23/16 15:35	
2-Butanone (MEK)	ND		5.0		5 ug/L			12/23/16 15:35	•
4-Methyl-2-pentanone (MIBK)	ND		5.0		5 ug/L			12/23/16 15:35	ŕ
Acrylonitrile	ND		2.0		0 ug/L			12/23/16 15:35	
Acrolein	ND		5.0	2.	5 ug/L			12/23/16 15:35	•
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Ethane, 1-chloro-1-fluoro-	2.7	TJN	ug/L		2.81	1615-75-4		12/23/16 15:35	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	101		80 - 128					12/23/16 15:35	
4-Bromofluorobenzene (Surr)	104		80 - 120					12/23/16 15:35	:
Dibromofluoromethane (Surr)	123		76 - 132					12/23/16 15:35	•
Method: 8270C - Semivolatile Analyte		mpounds Qualifier	s (GC/MS)	MDI	_ Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	-	1.0		5 ug/L			12/24/16 17:11	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	42	-	30 - 120				-	12/24/16 17:11	
Method: 300.0 - Anions, Ion (			<b>.</b>		111		Duantered	Analysis	D:: 5
Analyte		Qualifier	RL		_ Unit		Prepared	Analyzed	Dil Fa
Bromide	0.73	J	1.0		mg/l	-		12/20/16 23:41	2
Nitrate as N	ND		0.22		1 mg/l			12/20/16 23:41	:

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12/24/16 08:35

1.0

25

0.50 mg/L

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

**Client Sample ID: MW-14** 

Lab Sample ID: 440-170251-8

Date Collected: 12/20/16 09:13 **Matrix: Water** Date Received: 12/20/16 16:00

Method: 300.0 - Anions, Ion Chromatography (Continued)

l	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
l	Fluoride	2.2		1.0	0.50	mg/L			12/20/16 23:41	2
l	Sulfate	1500		50	25	mg/L			12/20/16 23:52	100

Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	7.9	0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:59	1
Manganese	3.0	0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:59	1
Magnesium	140	0.020	0.010	mg/L		01/01/17 09:48	01/09/17 13:59	1
Iron	0.60 B	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 13:59	1
Sodium	280	0.50	0.25	mg/L		01/01/17 09:48	01/09/17 13:59	1
Calcium	350	0.10	0.050	mg/L		01/01/17 09:48	01/09/17 13:59	1
Boron	0.43	0.050	0.010	mg/L		01/01/17 09:48	01/09/17 13:59	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/04/17 09:32	1
Total Dissolved Solids	2600		20	10	mg/L			12/27/16 08:22	1
Ammonia (as N)	0.24	J	0.50	0.10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:23	1
Total Organic Carbon	4.0		0.10	0.050	mg/L			01/05/17 10:33	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	380		4.0	4.0	mg/L			12/21/16 07:07	1
Bicarbonate Alkalinity as CaCO3	380		4.0	4.0	mg/L			12/21/16 07:07	1
Carbon Dioxide, Free	62		2.0	2.0	mg/L			12/22/16 16:00	1

Lab Sample ID: 440-170251-9 **Client Sample ID: CM-9R3** Date Collected: 12/20/16 08:50 **Matrix: Water** 

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND —	1.0	0.40	ug/L			12/23/16 16:03	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 16:03	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/23/16 16:03	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 16:03	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 16:03	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/23/16 16:03	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/23/16 16:03	1
2-Hexanone	ND	5.0	2.5	ug/L			12/23/16 16:03	1

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-9

Matrix: Water

Client Sample ID: CM-9R3

Date Collected: 12/20/16 08:50 Date Received: 12/20/16 16:00

Acrolein

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	10	ug/L			12/23/16 16:03	1
Acetonitrile	ND		20	10	ug/L			12/23/16 16:03	1
Benzene	ND		0.50	0.25	ug/L			12/23/16 16:03	1
Allyl chloride	ND		1.0	0.50	ug/L			12/23/16 16:03	1
Bromoform	ND		1.0	0.40	ug/L			12/23/16 16:03	1
Bromomethane	ND		0.50	0.25	ug/L			12/23/16 16:03	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/23/16 16:03	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/23/16 16:03	•
Chlorobenzene	ND		0.50	0.25	ug/L			12/23/16 16:03	
Bromochloromethane	ND		0.50	0.25	ug/L			12/23/16 16:03	•
Chloroethane	ND		1.0	0.40	ug/L			12/23/16 16:03	
Chloroform	ND		0.50	0.25	ug/L			12/23/16 16:03	
Chloromethane	ND		0.50	0.25	ug/L			12/23/16 16:03	•
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:03	
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 16:03	
Dibromochloromethane	ND		0.50	0.25	ug/L			12/23/16 16:03	
Dibromomethane	ND		0.50	0.25	ug/L			12/23/16 16:03	
Bromodichloromethane	ND		0.50	0.25	ug/L			12/23/16 16:03	
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/23/16 16:03	
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 16:03	
Ethylbenzene	ND		0.50	0.25	ug/L			12/23/16 16:03	· · · · · · · · ·
lodomethane	ND		2.0	1.0	ug/L			12/23/16 16:03	
Isobutyl alcohol	ND		25	13	ug/L			12/23/16 16:03	
m,p-Xylene	ND		1.0	0.50	ug/L			12/23/16 16:03	· · · · · · · · ·
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/23/16 16:03	
Methyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 16:03	
Methylene Chloride	ND		2.0	0.88	ug/L			12/23/16 16:03	
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/23/16 16:03	
Naphthalene	ND		1.0	0.40	ug/L			12/23/16 16:03	
o-Xylene	ND		0.50	0.25	ug/L			12/23/16 16:03	
Propionitrile	ND		20	10	ug/L			12/23/16 16:03	
Styrene	ND		0.50	0.25	ug/L			12/23/16 16:03	
t-Butanol	ND		10	5.0	ug/L			12/23/16 16:03	
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 16:03	
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 16:03	
Toluene	ND		0.50	0.25	ug/L			12/23/16 16:03	· · · · · · · · ·
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:03	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 16:03	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 16:03	• • • • • • • •
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:03	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 16:03	
Vinyl acetate	ND		4.0		ug/L			12/23/16 16:03	
Vinyl chloride	ND		0.50		ug/L			12/23/16 16:03	
1,2-Dibromoethane (EDB)	ND		0.50	0.25	-			12/23/16 16:03	
2-Butanone (MEK)	ND		5.0		ug/L			12/23/16 16:03	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			12/23/16 16:03	
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 16:03	
, ,			<u>.</u> . <u>.</u>		<del>.</del>				

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12/23/16 16:03

5.0

2.5 ug/L

ND

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**Client Sample ID: CM-9R3** 

Date Collected: 12/20/16 08:50 Date Received: 12/20/16 16:00

Lab Sample ID: 440-170251-9

**Matrix: Water** 

Tentatively Identified Compound Unknown	Est. Result		Unit ug/L	<b>D</b>	<b>RT</b> 4.75	CAS No.	Prepared	<b>Analyzed</b> 12/23/16 16:03	Dil Fac
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128					12/23/16 16:03	1
4-Bromofluorobenzene (Surr)	107		80 - 120					12/23/16 16:03	1
Dibromofluoromethane (Surr)	124		76 - 132					12/23/16 16:03	1
Method: 8270C - Semivolatile Analyte 1,4-Dioxane	_	mpounds Qualifier	(GC/MS) RL 0.98	_	MDL Uni		Prepared 12/23/16 11:23	Analyzed 12/24/16 17:33	Dil Fac
Surrogate 1,4-Dioxane-d8 (Surr)	%Recovery	Qualifier	Limits 30 - 120				Prepared 12/23/16 11:23	Analyzed 12/24/16 17:33	Dil Fac

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND ND		2.5	1.3	mg/L			12/21/16 00:02	5
Nitrate as N	ND		0.55	0.28	mg/L			12/21/16 00:02	5
Chloride	14		2.5	1.3	mg/L			12/24/16 08:55	5
Fluoride	3.7		2.5	1.3	mg/L			12/21/16 00:02	5
Sulfate	3200		100	50	mg/L			12/21/16 00:12	200

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	15		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 14:01	1
Manganese	3.9		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 14:01	1
Magnesium	260		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 14:01	1
Iron	19	В	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 14:01	1
Sodium	600		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 14:01	1
Calcium	390		0.10	0.050	mg/L		01/01/17 09:48	01/09/17 14:01	1
Boron	2.2		0.050	0.010	mg/L		01/01/17 09:48	01/09/17 14:01	1

General Chemistry Analyte	Pecult	Qualifier	RL	MDL	l Init	D	Droporod	Analyzad	Dil Fac
							Prepared	Analyzed	DII Fac
Chemical Oxygen Demand	11	J	20	10	mg/L			01/04/17 09:33	1
<b>Total Dissolved Solids</b>	4700		100	50	mg/L			12/27/16 08:22	1
Ammonia (as N)	7.3		2.5	0.50	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	0.020	J	0.050	0.020	mg/L			12/21/16 22:24	1
<b>Total Organic Carbon</b>	5.8		0.10	0.050	mg/L			01/05/17 10:47	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	180		4.0	4.0	mg/L			12/21/16 07:24	1
Bicarbonate Alkalinity as CaCO3	180		4.0	4.0	mg/L			12/21/16 07:24	1
Carbon Dioxide, Free	88		2.0	2.0	mg/L			12/22/16 16:00	1

Lab Sample ID: 440-170251-10 **Client Sample ID: CM-11R Matrix: Water** Date Collected: 12/20/16 10:45

Date Received: 12/20/16 16:00

Method: 8260B - Volatile Orgai	nic Compounds (GC/N	NS)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND ND	1.0	0.40 ug/L			12/23/16 16:30	1

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-10

Matrix: Water

Client Sample ID: CM-11R

Date Collected: 12/20/16 10:45 Date Received: 12/20/16 16:00

Naphthalene

Propionitrile

o-Xylene

Analyte		Qualifier R		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND	0.5		ug/L			12/23/16 16:30	1
1,1,1-Trichloroethane	ND	0.5		ug/L			12/23/16 16:30	1
1,1,2,2-Tetrachloroethane	ND	0.5		ug/L			12/23/16 16:30	1
1,1,2-Trichloroethane	ND	0.5		ug/L			12/23/16 16:30	1
1,1-Dichloroethane	ND	0.5		ug/L			12/23/16 16:30	1
1,1-Dichloroethene	ND	0.5		ug/L			12/23/16 16:30	1
1,1-Dichloropropene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
1,2,4-Trichlorobenzene	ND	1.	0.40	ug/L			12/23/16 16:30	1
1,2-Dibromo-3-Chloropropane	ND	1.	0.50	ug/L			12/23/16 16:30	1
1,2-Dichlorobenzene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
1,2-Dichloroethane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
1,2-Dichloropropane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
1,3-Dichlorobenzene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
1,3-Dichloropropane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
1,4-Dichlorobenzene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
2,2-Dichloropropane	ND	1.	0.40	ug/L			12/23/16 16:30	1
2-Chloro-1,3-butadiene	ND	1.	0.50	ug/L			12/23/16 16:30	1
2-Hexanone	ND	5.	2.5	ug/L			12/23/16 16:30	1
Acetone	ND	2	0 10	ug/L			12/23/16 16:30	1
Acetonitrile	ND	2	0 10	ug/L			12/23/16 16:30	1
Benzene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Allyl chloride	ND	1.	0.50	ug/L			12/23/16 16:30	1
Bromoform	ND	1.	0.40	ug/L			12/23/16 16:30	1
Bromomethane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Carbon disulfide	ND	1.	0.50	ug/L			12/23/16 16:30	1
Carbon tetrachloride	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Chlorobenzene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Bromochloromethane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Chloroethane	ND	1.	0.40	ug/L			12/23/16 16:30	1
Chloroform	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Chloromethane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
cis-1,2-Dichloroethene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
cis-1,3-Dichloropropene	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Dibromochloromethane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Dibromomethane	ND	0.5		ug/L			12/23/16 16:30	1
Bromodichloromethane	ND	0.5	0.25	ug/L			12/23/16 16:30	1
Dichlorodifluoromethane	ND	1.		ug/L			12/23/16 16:30	1
Ethyl methacrylate	ND	2.	0 1.0	ug/L			12/23/16 16:30	1
Ethylbenzene	ND	0.5		ug/L			12/23/16 16:30	1
Iodomethane	ND	2.		ug/L			12/23/16 16:30	1
Isobutyl alcohol	ND	2		ug/L			12/23/16 16:30	1
m,p-Xylene	ND	1.		ug/L			12/23/16 16:30	1
Methylacrylonitrile	ND	5.		ug/L			12/23/16 16:30	1
Methyl methacrylate	ND	2.		ug/L			12/23/16 16:30	1
Methylene Chloride	ND			ug/L			12/23/16 16:30	1
Methyl tert-butyl ether	ND	0.5		ug/L			12/23/16 16:30	1
	5	0.0		-3			10/00/10 10:00	

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12/23/16 16:30

12/23/16 16:30

12/23/16 16:30

1.0

0.50

20

0.40 ug/L

0.25 ug/L

10 ug/L

ND

ND

ND

3

5

7

9

11

12

L

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: CM-11R

Lab Sample ID: 440-170251-10

Matrix: Water

Date Collected: 12/20/16 10:45 Date Received: 12/20/16 16:00

**Sodium** 

**Calcium** 

**Boron** 

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
Styrene	ND		0.50	0.25	ug/L			12/23/16 16:30	
t-Butanol	ND		10	5.0	ug/L			12/23/16 16:30	
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 16:30	
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 16:30	
Toluene	ND		0.50	0.25	ug/L			12/23/16 16:30	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:30	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 16:30	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 16:30	
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:30	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 16:30	
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 16:30	
Vinyl chloride	ND		0.50	0.25	ug/L			12/23/16 16:30	
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/23/16 16:30	
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/23/16 16:30	
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/23/16 16:30	
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 16:30	
Acrolein	ND		5.0	2.5	ug/L			12/23/16 16:30	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	2.8	TJ	ug/L	4	.76			12/23/16 16:30	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
Toluene-d8 (Surr)	102		80 - 128					12/23/16 16:30	
4-Bromofluorobenzene (Surr)	105		80 - 120					12/23/16 16:30	
Dibromofluoromethane (Surr)	123		76 - 132					12/23/16 16:30	
: Method: 8270C - Semivolatile	o Organic Co	mpounde	(GC/MS)						
Analyte		Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	- ND	Qualifier	1.1		ug/L			12/29/16 12:33	
1,4 Dioxane	145			0.20	ug/L		12/2//10 00:40	12/20/10 12:00	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	71		30 - 120				12/27/16 08:45	12/29/16 12:33	
Method: 300.0 - Anions, Ion (	Chromatogra	nhv							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Bromide	ND		2.5	1.3	mg/L			12/21/16 00:43	
Nitrate as N	0.79		0.55		mg/L			12/21/16 00:43	
Chloride	11		2.5		mg/L			12/24/16 09:16	
Fluoride	2.3		2.5		mg/L			12/21/16 00:43	
Sulfate	2400		100		mg/L			12/21/16 00:54	20
·	2400		100	00	mg/L			12/21/10 00:04	
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil F
Analyte Potassium	Result 9.1		0.50	0.25	mg/L	<u>D</u>	01/01/17 09:48	01/09/17 14:03	Dil F
Analyte Potassium Manganese	9.1 1.1		0.50 0.020	0.25 0.010	mg/L mg/L	<u>D</u>	01/01/17 09:48 01/01/17 09:48	01/09/17 14:03 01/09/17 14:03	Dil Fa
Method: 6010B - Metals (ICP) Analyte Potassium Manganese Magnesium	Result 9.1 1.1 99	Qualifier	0.50 0.020 0.020	0.25 0.010 0.010	mg/L mg/L mg/L	<u>D</u>	01/01/17 09:48 01/01/17 09:48 01/01/17 09:48	01/09/17 14:03 01/09/17 14:03 01/09/17 14:03	Dil Fa
Analyte Potassium Manganese	9.1 1.1	Qualifier	0.50 0.020	0.25 0.010 0.010	mg/L mg/L	<u>D</u>	01/01/17 09:48 01/01/17 09:48 01/01/17 09:48	01/09/17 14:03 01/09/17 14:03	Dil F

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01/01/17 09:48 01/09/17 14:03

01/01/17 09:48 01/09/17 14:03

01/01/17 09:48 01/09/17 14:03

0.50

0.10

0.050

840

160

1.8

0.25 mg/L

0.050 mg/L

0.010 mg/L

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-10

**Matrix: Water** 

Date Collected: 12/20/16 10:45 Date Received: 12/20/16 16:00

**Client Sample ID: CM-11R** 

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/04/17 09:33	1
<b>Total Dissolved Solids</b>	3600		50	25	mg/L			12/27/16 08:22	1
Ammonia (as N)	2.2		0.50	0.10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:24	1
<b>Total Organic Carbon</b>	4.3		0.10	0.050	mg/L			01/05/17 11:00	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	100		4.0	4.0	mg/L			12/21/16 07:30	1
Bicarbonate Alkalinity as CaCO3	100		4.0	4.0	mg/L			12/21/16 07:30	1
Carbon Dioxide, Free	48		2.0	2.0	mg/L			12/22/16 16:00	1

Client Sample ID: PZ-4 Lab Sample ID: 440-170251-11

Date Collected: 12/20/16 14:35 Matrix: Water

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL (	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND —	1.0	0.40 ι	ug/L			12/23/16 16:58	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,1,1-Trichloroethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,1,2-Trichloroethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,1-Dichloroethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,1-Dichloroethene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,1-Dichloropropene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,2,4-Trichlorobenzene	ND	1.0	0.40 ι	ug/L			12/23/16 16:58	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50 ι	ug/L			12/23/16 16:58	1
1,2-Dichlorobenzene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,2-Dichloroethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,2-Dichloropropane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,3-Dichlorobenzene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,3-Dichloropropane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
1,4-Dichlorobenzene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
2,2-Dichloropropane	ND	1.0	0.40 ι	ug/L			12/23/16 16:58	1
2-Chloro-1,3-butadiene	ND	1.0	0.50 ι	ug/L			12/23/16 16:58	1
2-Hexanone	ND	5.0	2.5 ι	ug/L			12/23/16 16:58	1
Acetone	ND	20	10 ι	ug/L			12/23/16 16:58	1
Acetonitrile	ND	20	10 ι	ug/L			12/23/16 16:58	1
Benzene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
Allyl chloride	ND	1.0	0.50 ι	ug/L			12/23/16 16:58	1
Bromoform	ND	1.0	0.40 ι	ug/L			12/23/16 16:58	1
Bromomethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
Carbon disulfide	ND	1.0	0.50 ι	ug/L			12/23/16 16:58	1
Carbon tetrachloride	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
Chlorobenzene	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
Bromochloromethane	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
Chloroethane	ND	1.0	0.40 ι	ug/L			12/23/16 16:58	1
Chloroform	ND	0.50	0.25 ι	ug/L			12/23/16 16:58	1
Chloromethane	ND	0.50	0.25 ι	-			12/23/16 16:58	1
cis-1,2-Dichloroethene	ND	0.50	0.25 ι	-			12/23/16 16:58	1

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Date Collected: 12/20/16 14:35

**Client Sample ID: PZ-4** 

Lab Sample ID: 440-170251-11

**Matrix: Water** 

Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Dibromomethane	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/23/16 16:58	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 16:58	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
lodomethane	ND		2.0	1.0	ug/L			12/23/16 16:58	1
Isobutyl alcohol	ND		25	13	ug/L			12/23/16 16:58	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/23/16 16:58	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/23/16 16:58	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/23/16 16:58	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/23/16 16:58	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Naphthalene	ND		1.0	0.40	ug/L			12/23/16 16:58	1
o-Xylene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Propionitrile	ND		20	10	ug/L			12/23/16 16:58	1
Styrene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
t-Butanol	ND		10	5.0	ug/L			12/23/16 16:58	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 16:58	1
Toluene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 16:58	1
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 16:58	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 16:58	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/23/16 16:58	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/23/16 16:58	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/23/16 16:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/23/16 16:58	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 16:58	1
Acrolein	ND		5.0	2.5	ug/L			12/23/16 16:58	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L	_				12/23/16 16:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128				•	12/23/16 16:58	
4-Bromofluorobenzene (Surr)	105		80 - 120					12/23/16 16:58	1
Dibromofluoromethane (Surr)	123		76 - 132					12/23/16 16:58	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101	80 - 128		12/23/16 16:58	1
4-Bromofluorobenzene (Surr)	105	80 - 120		12/23/16 16:58	1
Dibromofluoromethane (Surr)	123	76 - 132		12/23/16 16:58	1

L	-	,20		70-702					12/20/10 10:00	
ſ	Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)						
	Analyte	Result	Qualifier	ŘL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	1,4-Dioxane	ND		1.0	0.25	ug/L		12/27/16 08:45	12/29/16 12:55	1
	Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	1,4-Dioxane-d8 (Surr)	58	-	30 - 120				12/27/16 08:45	12/29/16 12:55	1

2

TestAmerica Job ID: 440-170251-1

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: PZ-4

Lab Sample ID: 440-170251-11

**Matrix: Water** 

Date Collected: 12/20/16 14:35 Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND ND	0.50	0.25	mg/L			12/21/16 01:04	1
Nitrate as N	ND	0.11	0.055	mg/L			12/21/16 01:04	1
Chloride	9.1	0.50	0.25	mg/L			12/24/16 09:36	1
Fluoride	1.3	0.50	0.25	mg/L			12/21/16 01:04	1
Sulfate	510	25	13	mg/L			12/21/16 01:14	50

Method: 6010B - Meta Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	4.5		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 14:06	1
Manganese	0.12		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 14:06	1
Magnesium	76		0.020	0.010	mg/L		01/01/17 09:48	01/09/17 14:06	1
Iron	0.95	В	0.040	0.010	mg/L		01/01/17 09:48	01/09/17 14:06	1
Sodium	110		0.50	0.25	mg/L		01/01/17 09:48	01/09/17 14:06	1
Calcium	130		0.10	0.050	mg/L		01/01/17 09:48	01/09/17 14:06	1
Boron	0.18		0.050	0.010	mg/L		01/01/17 09:48	01/09/17 14:06	1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/04/17 09:33	1
Total Dissolved Solids	1100		10	5.0	mg/L			12/27/16 08:22	1
Ammonia (as N)	2.5		0.50	0.10	mg/L		12/27/16 06:00	12/27/16 06:30	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:24	1
Total Organic Carbon	1.2		0.10	0.050	mg/L			01/05/17 12:11	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	350		4.0	4.0	mg/L			12/21/16 07:39	1
Bicarbonate Alkalinity as CaCO3	350		4.0	4.0	mg/L			12/21/16 07:39	1
Carbon Dioxide, Free	44		2.0	2.0	mg/L			12/22/16 16:00	1

Client Sample ID: CM-10R

Date Collected: 12/20/16 13:00

Lab Sample ID: 440-170251-12

Matrix: Water

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/23/16 17:26	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 17:26	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/23/16 17:26	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 17:26	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 17:26	1

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12

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-12

Matrix: Water

Client Sample ID: CM-10R

Date Collected: 12/20/16 13:00 Date Received: 12/20/16 16:00

4-Methyl-2-pentanone (MIBK)

Method: 8260B - Volatile Org Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/23/16 17:26	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/23/16 17:26	1
2-Hexanone	ND		5.0	2.5	ug/L			12/23/16 17:26	1
Acetone	ND		20	10	ug/L			12/23/16 17:26	1
Acetonitrile	ND		20	10	ug/L			12/23/16 17:26	1
Benzene	ND		0.50	0.25	ug/L			12/23/16 17:26	1
Allyl chloride	ND		1.0	0.50	-			12/23/16 17:26	1
Bromoform	ND		1.0	0.40	-			12/23/16 17:26	1
Bromomethane	ND		0.50		ug/L			12/23/16 17:26	1
Carbon disulfide	ND		1.0	0.50	-			12/23/16 17:26	1
Carbon tetrachloride	ND		0.50	0.25	-			12/23/16 17:26	1
Chlorobenzene	ND		0.50	0.25	-			12/23/16 17:26	
Bromochloromethane	ND		0.50		ug/L			12/23/16 17:26	1
Chloroethane	ND		1.0	0.40	-			12/23/16 17:26	1
Chloroform	ND		0.50		ug/L			12/23/16 17:26	· · · · · · · · · · · · · · · · · · ·
Chloromethane	ND		0.50		ug/L			12/23/16 17:26	1
cis-1,2-Dichloroethene	ND		0.50	0.25	-			12/23/16 17:26	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			12/23/16 17:26	
Dibromochloromethane	ND		0.50		ug/L			12/23/16 17:26	1
Dibromomethane	ND		0.50	0.25	-			12/23/16 17:26	1
Bromodichloromethane	ND		0.50		ug/L			12/23/16 17:26	
Dichlorodifluoromethane	ND ND		1.0		ug/L ug/L			12/23/16 17:26	1
	ND ND		2.0		•				
Ethyl methacrylate					ug/L			12/23/16 17:26	
Ethylbenzene	ND		0.50		ug/L			12/23/16 17:26	1
Iodomethane	ND		2.0		ug/L			12/23/16 17:26	1
Isobutyl alcohol	ND		25		ug/L			12/23/16 17:26	1 
m,p-Xylene	ND		1.0	0.50	-			12/23/16 17:26	1
Methylacrylonitrile	ND		5.0		ug/L			12/23/16 17:26	1
Methyl methacrylate	ND		2.0		ug/L			12/23/16 17:26	
Methylene Chloride	ND		2.0	0.88	-			12/23/16 17:26	1
Methyl tert-butyl ether	ND		0.50	0.25	•			12/23/16 17:26	1
Naphthalene	ND		1.0	0.40				12/23/16 17:26	1
o-Xylene	ND		0.50	0.25				12/23/16 17:26	1
Propionitrile	ND		20		ug/L			12/23/16 17:26	1
Styrene	ND		0.50	0.25	ug/L			12/23/16 17:26	1
t-Butanol	ND		10		ug/L			12/23/16 17:26	1
Tetrachloroethene	ND		0.50		ug/L			12/23/16 17:26	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 17:26	1
Toluene	ND		0.50	0.25	ug/L			12/23/16 17:26	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 17:26	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 17:26	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 17:26	1
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 17:26	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 17:26	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 17:26	1
Vinyl chloride	ND		0.50		ug/L			12/23/16 17:26	1
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/23/16 17:26	1
2-Butanone (MEK)	ND		5.0		ug/L			12/23/16 17:26	1
4 Mathed Operations (MIDIO)				2 -	·			40/00/40 47 00	

TestAmerica Irvine

12/23/16 17:26

5.0

2.5 ug/L

ND

2

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0

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: CM-10R Date Collected: 12/20/16 13:00

Date Received: 12/20/16 16:00

TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-12

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**Matrix: Water** 

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Analyte		Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		2.0		1.0	ug/L			12/23/16 17:26	
Acrolein	ND		5.0		2.5	ug/L			12/23/16 17:26	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	3.0	TJ	ug/L		2.	12			12/23/16 17:26	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	100		80 - 128						12/23/16 17:26	-
4-Bromofluorobenzene (Surr)	106		80 - 120						12/23/16 17:26	
Dibromofluoromethane (Surr)	123		76 - 132						12/23/16 17:26	
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)							
Analyte	Result	Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.98		0.24	ug/L		12/27/16 08:45	12/29/16 13:17	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	52		30 - 120					12/27/16 08:45	12/29/16 13:17	
Method: 300.0 - Anions, Ion C										
Analyte		Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0			mg/L			12/21/16 01:25	2
Nitrate as N	ND		0.22			mg/L			12/21/16 01:25	2
Chloride	11		1.0		0.50	mg/L			12/24/16 07:22	2
Fluoride	1.8		1.0			mg/L			12/21/16 01:25	2
Sulfate	1800		50		25	mg/L			12/21/16 01:35	100
Method: 6010B - Metals (ICP)										
Analyte		Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fac
Potassium	13		0.50			mg/L		01/01/17 09:48	01/09/17 14:08	•
Manganese	0.56		0.020			mg/L		01/01/17 09:48	01/09/17 14:08	•
Magnesium	210		0.020	O	.010	mg/L		01/01/17 09:48	01/09/17 14:08	
Iron	0.53	В	0.040	0	.010	mg/L		01/01/17 09:48	01/09/17 14:08	•
Sodium	270		0.50			mg/L		01/01/17 09:48	01/09/17 14:08	•
Calcium	320		0.10	0	.050	mg/L		01/01/17 09:48	01/09/17 14:08	•
Boron	1.1		0.050	C	.010	mg/L		01/01/17 09:48	01/09/17 14:08	,
General Chemistry										
Analyte		Qualifier	RL_			Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	18	J	20			mg/L			01/04/17 09:33	•
Total Dissolved Solids	3000		20			mg/L			12/27/16 08:22	•
Ammonia (as N)	15		5.0			mg/L		12/27/16 06:00	12/27/16 06:30	· · · · · · · · · · · · · · ·
Total Sulfide	4.1		0.25			mg/L			12/21/16 22:24	į
Total Organic Carbon	3.6		0.10	O		mg/L			01/05/17 12:24	,
Analyte		Qualifier	RL			Unit	D	Prepared	Analyzed	Dil Fa
Alkalinity as CaCO3	420		4.0		4.0	mg/L			12/21/16 07:49	•
Ricarbonato Alkalinity as CaCO3	420		4.0		4()	mg/L			12/21/16 07:49	•
Bicarbonate Alkalinity as CaCO3 Carbon Dioxide, Free	110		2.0			mg/L			12/22/16 16:00	

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-13

**Matrix: Water** 

**Client Sample ID: QCAB** Date Collected: 12/20/16 00:01

Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/23/16 17:53	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/23/16 17:53	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/23/16 17:53	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/23/16 17:53	1
1,3-Dichlorobenzene	ND	0.50		ug/L			12/23/16 17:53	1
1,3-Dichloropropane	ND	0.50		ug/L			12/23/16 17:53	1
1,4-Dichlorobenzene	ND	0.50		ug/L			12/23/16 17:53	1
2,2-Dichloropropane	ND	1.0		ug/L			12/23/16 17:53	1
2-Chloro-1,3-butadiene	ND	1.0		ug/L			12/23/16 17:53	
2-Hexanone	ND	5.0		ug/L			12/23/16 17:53	
Acetone	ND	20		ug/L			12/23/16 17:53	1
Acetonitrile	ND	20		ug/L			12/23/16 17:53	
Benzene	ND	0.50		ug/L			12/23/16 17:53	
Allyl chloride	ND	1.0		ug/L			12/23/16 17:53	
Bromoform	ND	1.0		ug/L			12/23/16 17:53	1
Bromomethane	ND	0.50		ug/L			12/23/16 17:53	
Carbon disulfide	ND	1.0		ug/L			12/23/16 17:53	
Carbon tetrachloride	ND	0.50		ug/L			12/23/16 17:53	
Chlorobenzene	ND	0.50		ug/L			12/23/16 17:53	
Bromochloromethane	ND	0.50		ug/L ug/L			12/23/16 17:53	,
Chloroethane	ND	1.0		ug/L			12/23/16 17:53	,
Chloroform	ND	0.50		ug/L			12/23/16 17:53	
Chloromethane	ND ND	0.50		ug/L ug/L			12/23/16 17:53	,
				-				
cis-1,2-Dichloroethene	ND ND	0.50		ug/L			12/23/16 17:53 12/23/16 17:53	
cis-1,3-Dichloropropene	ND	0.50		ug/L				1
Dibromochloromethane	ND	0.50		ug/L			12/23/16 17:53	1
Dibromomethane	ND ND	0.50		ug/L			12/23/16 17:53	1
Bromodichloromethane	ND	0.50		ug/L			12/23/16 17:53	1
Dichlorodifluoromethane	ND	1.0		ug/L			12/23/16 17:53	1
Ethyl methacrylate	ND	2.0		ug/L			12/23/16 17:53	1
Ethylbenzene	ND	0.50		ug/L			12/23/16 17:53	1
lodomethane	ND	2.0		ug/L			12/23/16 17:53	1
Isobutyl alcohol	ND	25		ug/L			12/23/16 17:53	1
m,p-Xylene	ND	1.0		ug/L			12/23/16 17:53	1
Methylacrylonitrile	ND	5.0		ug/L			12/23/16 17:53	1
Methyl methacrylate	ND	2.0		ug/L			12/23/16 17:53	1
Methylene Chloride	ND	2.0		ug/L			12/23/16 17:53	1
Methyl tert-butyl ether	ND	0.50		ug/L			12/23/16 17:53	1
Naphthalene	ND	1.0		ug/L ug/L			12/23/16 17:53	1

Project/Site: Sunshine Landfill

Client: Geo-Logic Associates

**Client Sample ID: QCAB** 

Date Collected: 12/20/16 00:01 Date Received: 12/20/16 16:00

Lab Sample ID: 440-170251-13

**Matrix: Water** 

12/23/16 17:53

12/23/16 17:53

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			12/23/16 17:53	1
Styrene	ND		0.50	0.25	ug/L			12/23/16 17:53	1
t-Butanol	ND		10	5.0	ug/L			12/23/16 17:53	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/23/16 17:53	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/23/16 17:53	1
Toluene	ND		0.50	0.25	ug/L			12/23/16 17:53	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 17:53	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 17:53	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/23/16 17:53	1
Trichloroethene	ND		0.50	0.25	ug/L			12/23/16 17:53	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/23/16 17:53	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/23/16 17:53	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/23/16 17:53	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/23/16 17:53	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/23/16 17:53	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/23/16 17:53	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/23/16 17:53	1
Acrolein	ND		5.0	2.5	ug/L			12/23/16 17:53	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.5	TJ	ug/L		.75			12/23/16 17:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128					12/23/16 17:53	1

**Client Sample ID: QCTB** Lab Sample ID: 440-170251-14 Date Collected: 12/20/16 00:01 **Matrix: Water** 

80 - 120

76 - 132

107

123

Date Received: 12/20/16 16:00

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/23/16 18:21	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/23/16 18:21	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/23/16 18:21	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 18:21	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/23/16 18:21	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/23/16 18:21	1

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

Lab Sample ID: 440-170251-14

Matrix: Water

Client Sample ID: QCTB
Date Collected: 12/20/16 00:01
Date Received: 12/20/16 16:00

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
2-Chloro-1,3-butadiene	ND ND	1.0	0.50	ug/L			12/23/16 18:21	
2-Hexanone	ND	5.0	2.5	ug/L			12/23/16 18:21	
Acetone	ND	20	10	ug/L			12/23/16 18:21	
Acetonitrile	ND	20	10	ug/L			12/23/16 18:21	
Benzene	ND	0.50	0.25	ug/L			12/23/16 18:21	
Allyl chloride	ND	1.0	0.50	ug/L			12/23/16 18:21	
Bromoform	ND	1.0	0.40	ug/L			12/23/16 18:21	
Bromomethane	ND	0.50	0.25	ug/L			12/23/16 18:21	
Carbon disulfide	ND	1.0		ug/L			12/23/16 18:21	
Carbon tetrachloride	ND	0.50	0.25	ug/L			12/23/16 18:21	
Chlorobenzene	ND	0.50		ug/L			12/23/16 18:21	
Bromochloromethane	ND	0.50		ug/L			12/23/16 18:21	
Chloroethane	ND	1.0		ug/L			12/23/16 18:21	
Chloroform	ND	0.50		ug/L			12/23/16 18:21	
Chloromethane	ND	0.50		ug/L			12/23/16 18:21	
cis-1,2-Dichloroethene	ND	0.50		ug/L			12/23/16 18:21	
cis-1,3-Dichloropropene	ND	0.50		ug/L			12/23/16 18:21	
Dibromochloromethane	ND	0.50		ug/L			12/23/16 18:21	
Dibromomethane	ND	0.50		ug/L			12/23/16 18:21	
Bromodichloromethane	ND	0.50		ug/L			12/23/16 18:21	
Dichlorodifluoromethane	ND	1.0		ug/L			12/23/16 18:21	
Ethyl methacrylate	ND	2.0		ug/L			12/23/16 18:21	
	ND ND	0.50		ug/L			12/23/16 18:21	
Ethylbenzene lodomethane	ND ND	2.0		ug/L ug/L			12/23/16 18:21	
	ND ND	2.0 25		_			12/23/16 18:21	
Isobutyl alcohol	ND			ug/L				
m,p-Xylene	ND ND	1.0 5.0		ug/L			12/23/16 18:21	
Methylacrylonitrile				ug/L			12/23/16 18:21	
Methyl methacrylate	ND	2.0		ug/L			12/23/16 18:21	
Methylene Chloride	ND ND	2.0		ug/L			12/23/16 18:21	
Methyl tert-butyl ether	ND	0.50		ug/L			12/23/16 18:21	
Naphthalene	ND	1.0		ug/L			12/23/16 18:21	
o-Xylene	ND	0.50		ug/L			12/23/16 18:21	
Propionitrile	ND	20		ug/L			12/23/16 18:21	
Styrene	ND	0.50		ug/L			12/23/16 18:21	
t-Butanol	ND	10	5.0	ug/L			12/23/16 18:21	
Tetrachloroethene	ND	0.50		ug/L			12/23/16 18:21	
Tetrahydrofuran	ND	10		ug/L			12/23/16 18:21	
Toluene	ND	0.50	0.25	ug/L			12/23/16 18:21	
trans-1,2-Dichloroethene	ND	0.50		ug/L			12/23/16 18:21	
trans-1,3-Dichloropropene	ND	0.50	0.25	ug/L			12/23/16 18:21	
trans-1,4-Dichloro-2-butene	ND	5.0	2.5	ug/L			12/23/16 18:21	
Trichloroethene	ND	0.50	0.25	ug/L			12/23/16 18:21	
Trichlorofluoromethane	ND	0.50	0.25	ug/L			12/23/16 18:21	
Vinyl acetate	ND	4.0	2.0	ug/L			12/23/16 18:21	
Vinyl chloride	ND	0.50	0.25	ug/L			12/23/16 18:21	
1,2-Dibromoethane (EDB)	ND	0.50	0.25	ug/L			12/23/16 18:21	
2-Butanone (MEK)	ND	5.0	2.5	ug/L			12/23/16 18:21	
4-Methyl-2-pentanone (MIBK)	ND	5.0		ug/L			12/23/16 18:21	
Acrylonitrile	ND	2.0		ug/L			12/23/16 18:21	

TestAmerica Irvine

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

**Client Sample ID: QCTB** 

Lab Sample ID: 440-170251-14

**Matrix: Water** 

Date Collected: 12/20/16 00:01 Date Received: 12/20/16 16:00

Analyte	Result	Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		5.0		2.5	ug/L			12/23/16 18:21	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L						12/23/16 18:21	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128						12/23/16 18:21	1
4-Bromofluorobenzene (Surr)	108		80 - 120						12/23/16 18:21	1
Dibromofluoromethane (Surr)	121		76 <b>-</b> 132						12/23/16 18:21	1

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### **Method Summary**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

lethod	Method Description	Protocol	Laboratory
260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
00.0	Anions, Ion Chromatography	MCAWW	TAL IRV
010B	Metals (ICP)	SW846	TAL IRV
10.4	COD	MCAWW	TAL IRV
M 2320B	Alkalinity	SM	TAL IRV
M 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
M 4500 CO2 C	Free Carbon Dioxide	SM	TAL IRV
M 4500 NH3 D	Ammonia	SM	TAL IRV
M 4500 S2 D	Sulfide, Total	SM	TAL IRV
M 5310C	TOC	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:**

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

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Lab Sample ID: 440-170251-1

Lab Sample ID: 440-170251-2

**Matrix: Water** 

Matrix: Water

Client Sample ID: Subdrain (N)

Date Collected: 12/20/16 10:08 Date Received: 12/20/16 16:00

Pron Type	Batch	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared	Analyst	Lab
Prep Type Total/NA	Type Analysis	8260B	Kuii		10 mL	10 mL	377848	or Analyzed 12/23/16 12:21	Analyst TCN	TAL IRV
	•			ı						
Total/NA	Prep	3520C			1030 mL	1 mL	377944	12/23/16 11:23	AP	TAL IRV
Total/NA	Analysis	8270C		1			378155	12/24/16 14:38	DF	TAL IRV
Total/NA	Analysis	300.0		5			377104	12/20/16 20:29	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377105	12/20/16 20:29	NN	TAL IRV
Total/NA	Analysis	300.0		200			377105	12/20/16 20:40	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:25	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:32	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 05:35	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	378207	12/25/16 10:08	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	381044	01/10/17 14:22	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			25 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	380231	01/05/17 11:12	YZ	TAL IRV

**Client Sample ID: Combined Subdrains** 

Date Collected: 12/20/16 10:40 Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 12:48	TCN	TAL IR\
Total/NA	Prep	3520C			965 mL	1 mL	377944	12/23/16 11:23	AP	TAL IR\
Total/NA	Analysis	8270C		1			378155	12/24/16 14:59	DF	TAL IR\
Total/NA	Analysis	300.0		2			377104	12/20/16 20:51	NTN	TAL IR\
Total/NA	Analysis	300.0		2			377105	12/20/16 20:51	NN	TAL IR\
Total/NA	Analysis	300.0		100			377105	12/20/16 21:01	NN	TAL IR\
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IR
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:34	EN	TAL IR
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:32	KYP	TAL IR
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 06:03	YZ	TAL IR
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	378207	12/25/16 10:08	XL	TAL IR
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IR
Total/NA	Prep	SM 4500 NH3 B			25 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IR
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IR
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IR
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	380347	01/06/17 06:55	YZ	TAL IR

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**Client Sample ID: Extraction Trench** 

Lab Sample ID: 440-170251-3 Date Collected: 12/20/16 11:20 Date Received: 12/20/16 16:00

Batch Dil Initial Batch Batch Final Prepared **Prep Type** Type Method Run **Factor Amount Amount** Number or Analyzed Analyst Lab Total/NA Analysis 8260B 10 mL 10 mL 377848 12/23/16 13:16 TCN TAL IRV Total/NA Prep 3520C 1020 mL 12/23/16 11:23 AP TAL IRV 1 mL 377944 Total/NA Analysis 8270C 1 378155 12/24/16 15:21 DF TAL IRV Total/NA Analysis 300.0 2 377104 12/20/16 21:11 NTN TAL IRV Total/NA 2 Analysis 300.0 377105 12/20/16 21:11 NN TAL IRV Total/NA Analysis 300.0 100 377105 12/20/16 21:22 NN TAL IRV Total Recoverable Prep 3005A 25 mL 25 mL 379355 01/01/17 09:48 Q1N TAL IRV Total Recoverable Analysis 6010B 1 380783 01/09/17 13:36 EN TAL IRV Total/NA 410.4 0.625 mL 2.5 mL 379704 01/04/17 09:32 KYP TAL IRV Analysis 1 Total/NA Analysis SM 2320B 377319 12/21/16 06:16 YZ TAL IRV 1 Total/NA 20 mL Analysis SM 2540C 1 100 mL 378207 12/25/16 10:08 XL TAL IRV Total/NA SM 4500 CO2 C 25 mL 25 mL 377746 12/22/16 15:56 SN TAL IRV Analysis 10 mL TAL IRV Total/NA Prep SM 4500 NH3 B 50 mL 378257 12/27/16 06:00 YZ Total/NA SM 4500 NH3 D 378263 12/27/16 06:30 YZ TAL IRV Analysis 1 Total/NA Analysis SM 4500 S2 D 1 7.5 mL 7.5 mL 377512 12/21/16 22:23 EN TAL IRV

Client Sample ID: DW-1 Lab Sample ID: 440-170251-4 Date Collected: 12/20/16 14:00 **Matrix: Water** 

100 mL

100 mL

380232

01/05/17 17:04 YZ

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Date Received: 12/20/16 16:00

Analysis

SM 5310C

Total/NA

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 13:44	TCN	TAL IRV
Total/NA	Prep	3520C			1060 mL	1 mL	377944	12/23/16 11:23	AP	TAL IRV
Total/NA	Analysis	8270C		1			378155	12/24/16 15:43	DF	TAL IRV
Total/NA	Analysis	300.0		5			377104	12/20/16 21:32	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377105	12/20/16 21:32	NN	TAL IRV
Total/NA	Analysis	300.0		200			377105	12/20/16 22:03	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:38	EN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		5			380859	01/09/17 18:31	B1H	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379832	01/04/17 15:36	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 06:27	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	378207	12/25/16 10:08	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		2	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380347	01/06/17 09:07	YZ	TAL IRV

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1/12/2017

**Matrix: Water** 

TAL IRV

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: DW-2 Lab Sample ID: 440-170251-5 **Matrix: Water** 

Date Collected: 12/20/16 13:15 Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 14:12	TCN	TAL IRV
Total/NA	Prep	3520C			1045 mL	1 mL	377944	12/23/16 11:23	AP	TAL IRV
Total/NA	Analysis	8270C		1			378155	12/24/16 16:05	DF	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	377956	12/24/16 07:34	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	377104	12/20/16 22:39	NTN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL	1.0 mL	377105	12/20/16 22:39	NN	TAL IRV
Total/NA	Analysis	300.0		50			377105	12/20/16 22:49	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:52	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:32	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 06:36	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378207	12/25/16 10:08	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380231	01/05/17 09:52	YZ	TAL IRV

**Client Sample ID: PZ-2** Lab Sample ID: 440-170251-6

Date Collected: 12/20/16 11:55 **Matrix: Water** Date Received: 12/20/16 16:00

D T	Batch	Batch	D	Dil	Initial	Final	Batch	Prepared	A I 4	
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 14:39	TCN	TAL IR
Total/NA	Prep	3520C			960 mL	1 mL	377944	12/23/16 11:23	AP	TAL IR
Total/NA	Analysis	8270C		1			378155	12/24/16 16:27	DF	TAL IR
Total/NA	Analysis	300.0		10			377956	12/24/16 07:54	NTN	TAL IR
Total/NA	Analysis	300.0		10			377104	12/20/16 23:00	NTN	TAL IR
Total/NA	Analysis	300.0		10			377105	12/20/16 23:00	NN	TAL IR
Total/NA	Analysis	300.0		200			377105	12/20/16 23:10	NN	TAL IR
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IR
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:55	EN	TAL IR
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IR
Total Recoverable	Analysis	6010B		5			380859	01/09/17 18:33	B1H	TAL IR
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:32	KYP	TAL IR
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 06:45	YZ	TAL IR
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	378207	12/25/16 10:08	XL	TAL IR
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 16:00	SN	TAL IR
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IR
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IR
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IR

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Client: Geo-Logic Associates

Project/Site: Sunshine Landfill

**Client Sample ID: PZ-2** Lab Sample ID: 440-170251-6 **Matrix: Water** 

Date Collected: 12/20/16 11:55 Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5310C			100 mL	100 mL	380231	01/05/17 10:04	YZ	TAL IRV

**Client Sample ID: MW-6** Lab Sample ID: 440-170251-7 **Matrix: Water** 

Date Collected: 12/20/16 10:50

Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 15:07	TCN	TAL IRV
Total/NA	Prep	3520C			1020 mL	1 mL	377944	12/23/16 11:23	AP	TAL IRV
Total/NA	Analysis	8270C		1			378155	12/24/16 16:49	DF	TAL IRV
Total/NA	Analysis	300.0		2			377956	12/24/16 08:15	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	377104	12/20/16 23:20	NTN	TAL IRV
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	377105	12/20/16 23:20	NN	TAL IRV
Total/NA	Analysis	300.0		100			377105	12/20/16 23:31	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:57	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:32	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 06:54	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378295	12/27/16 08:22	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 16:00	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		2	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380231	01/05/17 10:18	YZ	TAL IRV

**Client Sample ID: MW-14** Lab Sample ID: 440-170251-8 Date Collected: 12/20/16 09:13 **Matrix: Water** 

Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 15:35	TCN	TAL IR\
Total/NA	Prep	3520C			990 mL	1 mL	377944	12/23/16 11:23	AP	TAL IR\
Total/NA	Analysis	8270C		1			378155	12/24/16 17:11	DF	TAL IR\
Total/NA	Analysis	300.0		2			377956	12/24/16 08:35	NTN	TAL IR\
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	377104	12/20/16 23:41	NTN	TAL IR
Total/NA	Analysis	300.0		2	5 mL	1.0 mL	377105	12/20/16 23:41	NN	TAL IR
Total/NA	Analysis	300.0		100			377105	12/20/16 23:52	NN	TAL IR\
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IR\
Total Recoverable	Analysis	6010B		1			380783	01/09/17 13:59	EN	TAL IR
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:32	KYP	TAL IR
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 07:07	YZ	TAL IR

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Lab Sample ID: 440-170251-8

**Matrix: Water** 

Client Sample ID: MW-14

Date Collected: 12/20/16 09:13

Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378295	12/27/16 08:22	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 16:00	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:23	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380231	01/05/17 10:33	YZ	TAL IRV

Client Sample ID: CM-9R3

Date Collected: 12/20/16 08:50

Lab Sample ID: 440-170251-9

Matrix: Water

Date Received: 12/20/16 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	·	1	10 mL	10 mL	377848	12/23/16 16:03	TCN	TAL IRV
Total/NA	Prep	3520C			1025 mL	1 mL	377944	12/23/16 11:23	AP	TAL IRV
Total/NA	Analysis	8270C		1			378155	12/24/16 17:33	DF	TAL IRV
Total/NA	Analysis	300.0		5			377956	12/24/16 08:55	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377104	12/21/16 00:02	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377105	12/21/16 00:02	NN	TAL IRV
Total/NA	Analysis	300.0		200			377105	12/21/16 00:12	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380783	01/09/17 14:01	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:33	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 07:24	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	378295	12/27/16 08:22	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 16:00	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:24	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380231	01/05/17 10:47	YZ	TAL IRV

Client Sample ID: CM-11R

Date Collected: 12/20/16 10:45

Lab Sample ID: 440-170251-10

Matrix: Water

Date Collected: 12/20/16 10:45 Date Received: 12/20/16 16:00

Prep Type Total/NA Total/NA	Batch Type Analysis Prep	Batch Method 8260B 3520C	Run	Pactor 1	Initial Amount 10 mL 890 mL	Final Amount 10 mL	Batch Number 377848 378304	Prepared or Analyzed 12/23/16 16:30 12/27/16 08:45	Analyst TCN	Lab TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 12:33	HN	TAL IRV
Total/NA	Analysis	300.0		5			377956	12/24/16 09:16	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377104	12/21/16 00:43	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377105	12/21/16 00:43	NN	TAL IRV

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: CM-11R

Date Collected: 12/20/16 10:45 Date Received: 12/20/16 16:00 Lab Sample ID: 440-170251-10

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200			377105	12/21/16 00:54	NN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379355	01/01/17 09:48	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380783	01/09/17 14:03	EN	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379704	01/04/17 09:33	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377319	12/21/16 07:30	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	378295	12/27/16 08:22	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 16:00	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378257	12/27/16 06:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378263	12/27/16 06:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377512	12/21/16 22:24	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380231	01/05/17 11:00	YZ	TAL IRV

Client Sample ID: PZ-4 Lab Sample ID: 440-170251-11

Date Collected: 12/20/16 14:35

Date Received: 12/20/16 16:00

Matrix: Water

Batch Batch Dil Initial Final Batch Prepared Method or Analyzed **Prep Type** Type Run **Factor Amount** Amount Number Analyst Lab Total/NA Analysis 8260B 377848 12/23/16 16:58 TCN TAL IRV 10 mL 10 mL Total/NA 3520C 995 mL 378304 TAL IRV Prep 1 mL 12/27/16 08:45 FTD Total/NA Analysis 8270C 378649 12/29/16 12:55 HN TAL IRV 1 Total/NA 300.0 1 12/24/16 09:36 NTN TAL IRV Analysis 377956 Total/NA Analysis 300.0 377104 12/21/16 01:04 NTN TAL IRV 1 Total/NA 300.0 12/21/16 01:04 NN TAL IRV Analysis 1 377105 Total/NA 300.0 377105 12/21/16 01:14 NN TAL IRV Analysis 50 Total Recoverable Prep 3005A 25 mL 25 mL 379355 01/01/17 09:48 Q1N TAL IRV Total Recoverable 6010B 380783 01/09/17 14:06 EN TAL IRV Analysis 1 Total/NA 410.4 0.625 mL 2.5 mL 379704 01/04/17 09:33 KYP TAL IRV Analysis Total/NA 12/21/16 07:39 YZ TAL IRV Analysis SM 2320B 1 377319 Total/NA Analysis SM 2540C 1 100 mL 100 mL 378295 12/27/16 08:22 XL TAL IRV Total/NA Analysis SM 4500 CO2 C 1 25 mL 25 mL 377750 12/22/16 16:00 SN TAL IRV Total/NA Prep SM 4500 NH3 B 50 mL 50 mL 378257 12/27/16 06:00 YZ TAL IRV Total/NA Analysis SM 4500 NH3 D 1 378263 12/27/16 06:30 YZ TAL IRV Total/NA Analysis SM 4500 S2 D 1 7.5 mL 7.5 ml 377512 12/21/16 22:24 EN TAL IRV 380232 01/05/17 12:11 YZ Total/NA Analysis SM 5310C 100 mL 100 mL TAL IRV

Client Sample ID: CM-10R Lab Sample ID: 440-170251-12

Date Collected: 12/20/16 13:00 Date Received: 12/20/16 16:00

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 17:26	TCN	TAL IRV

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**Matrix: Water** 

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Client Sample ID: CM-10R

Date Received: 12/20/16 16:00

Lab Sample ID: 440-170251-12 Date Collected: 12/20/16 13:00

**Matrix: Water** 

Batch Batch Dil Initial Final Batch Prepared Amount **Prep Type** Type Method Run **Factor Amount** Number or Analyzed Analyst Lab Total/NA Prep 3520C 1025 mL 1 mL 378304 12/27/16 08:45 FTD TAL IRV Total/NA 8270C Analysis 378649 12/29/16 13:17 HN TAL IRV 1 Total/NA Analysis 300.0 2 377954 12/24/16 07:22 NTN TAL IRV Total/NA Analysis 300.0 2 377104 12/21/16 01:25 NTN TAL IRV Total/NA 2 Analysis 300.0 377105 12/21/16 01:25 NN TAL IRV Total/NA Analysis 300.0 100 377105 12/21/16 01:35 NN TAL IRV Total Recoverable 3005A 25 mL 25 mL 379355 01/01/17 09:48 Q1N TAL IRV Prep Total Recoverable Analysis 6010B 1 380783 01/09/17 14:08 EN TAL IRV Total/NA 410.4 0.625 mL 2.5 mL 379704 01/04/17 09:33 KYP TAL IRV Analysis 1 Total/NA Analysis SM 2320B 377319 12/21/16 07:49 YZ TAL IRV Total/NA Analysis SM 2540C 1 50 mL 100 mL 378295 12/27/16 08:22 XL TAL IRV Total/NA SM 4500 CO2 C 25 mL 25 mL 12/22/16 16:00 SN TAL IRV Analysis 377750 5.0 mL TAL IRV Total/NA Prep SM 4500 NH3 B 50 mL 378257 12/27/16 06:00 YZ Total/NA SM 4500 NH3 D 378263 12/27/16 06:30 YZ TAL IRV Analysis 1 Total/NA Analysis SM 4500 S2 D 5 7.5 mL 7.5 mL 377512 12/21/16 22:24 EN TAL IRV Total/NA Analysis SM 5310C 100 mL 100 mL 380232 01/05/17 12:24 YZ TAL IRV

Client Sample ID: QCAB Lab Sample ID: 440-170251-13

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Date Collected: 12/20/16 00:01 **Matrix: Water** 

Date Received: 12/20/16 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	8260B			10 mL	10 mL	377848	12/23/16 17:53	TCN	TAL IRV	-

Client Sample ID: QCTB Lab Sample ID: 440-170251-14 **Matrix: Water** 

Date Collected: 12/20/16 00:01 Date Received: 12/20/16 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	377848	12/23/16 18:21	TCN	TAL IRV

**Laboratory References:** 

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

### **QC Sample Results**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

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

Lab Sample ID: MB 440-377848/8

**Matrix: Water** 

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

	MB	MB							
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0		ug/L			12/23/16 10:02	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/23/16 10:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/23/16 10:02	1
1,2-Dichlorobenzene	ND		0.50	0.25				12/23/16 10:02	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/23/16 10:02	1
1,3-Dichlorobenzene	ND		0.50		ug/L			12/23/16 10:02	1
1,3-Dichloropropane	ND		0.50		ug/L			12/23/16 10:02	1
1,4-Dichlorobenzene	ND		0.50	0.25	-			12/23/16 10:02	1
2,2-Dichloropropane	ND		1.0		ug/L			12/23/16 10:02	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	_			12/23/16 10:02	1
2-Hexanone	ND		5.0		ug/L			12/23/16 10:02	1
Acetone	ND		20		ug/L			12/23/16 10:02	1
Acetonitrile	ND		20		ug/L			12/23/16 10:02	1
Benzene	ND		0.50		ug/L			12/23/16 10:02	1
Allyl chloride	ND		1.0		ug/L			12/23/16 10:02	1
Bromoform	ND		1.0	0.40	-			12/23/16 10:02	1
Bromomethane	ND		0.50		ug/L			12/23/16 10:02	
Carbon disulfide	ND		1.0		ug/L			12/23/16 10:02	1
Carbon tetrachloride	ND		0.50	0.25	-			12/23/16 10:02	1
Chlorobenzene	ND		0.50		ug/L			12/23/16 10:02	· · · · · · · · · · · · · · · · · · ·
Bromochloromethane	ND		0.50	0.25	-			12/23/16 10:02	1
Chloroethane	ND		1.0	0.40	_			12/23/16 10:02	1
Chloroform	ND		0.50	0.25	-			12/23/16 10:02	
Chloromethane	ND		0.50	0.25				12/23/16 10:02	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			12/23/16 10:02	1
cis-1,3-Dichloropropene	ND		0.50		ug/L ug/L			12/23/16 10:02	
Dibromochloromethane	ND		0.50	0.25	_			12/23/16 10:02	1
Dibromomethane					•				1
	ND		0.50		ug/L			12/23/16 10:02	
Bromodichloromethane	ND		0.50		ug/L			12/23/16 10:02	1
Dichlorodifluoromethane	ND		1.0		ug/L			12/23/16 10:02	1
Ethyl methacrylate	ND		2.0		ug/L			12/23/16 10:02	1
Ethylbenzene	ND		0.50		ug/L			12/23/16 10:02	1
lodomethane	ND		2.0		ug/L			12/23/16 10:02	1
Isobutyl alcohol	ND		25		ug/L			12/23/16 10:02	1
m,p-Xylene	ND		1.0		ug/L			12/23/16 10:02	1
Methylacrylonitrile	ND		5.0		ug/L			12/23/16 10:02	1
Methyl methacrylate	ND		2.0		ug/L			12/23/16 10:02	
Methylene Chloride	ND		2.0		ug/L			12/23/16 10:02	1
Methyl tert-butyl ether	ND		0.50		ug/L			12/23/16 10:02	1
Naphthalene	ND		1.0	0.40	ug/L			12/23/16 10:02	1

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

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

Lab Sample ID: MB 440-377848/8 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 377848** MB MB Result Qualifier RL **MDL** Unit Analyte Prepared Analyzed Dil Fac o-Xylene  $\overline{\mathsf{ND}}$ 0.50 0.25 ug/L 12/23/16 10:02 Propionitrile ND 20 10 ug/L 12/23/16 10:02 Styrene ND 0.50 0.25 ug/L 12/23/16 10:02 t-Butanol ND 10 5.0 ug/L 12/23/16 10:02 Tetrachloroethene ND 0.50 0.25 ug/L 12/23/16 10:02 Tetrahydrofuran ND 10 5.0 ug/L 12/23/16 10:02 Toluene ND 0.50 0.25 ug/L 12/23/16 10:02 ND 0.25 ug/L trans-1,2-Dichloroethene 0.50 12/23/16 10:02 trans-1,3-Dichloropropene ND 0.50 0.25 ug/L 12/23/16 10:02 trans-1,4-Dichloro-2-butene ND 5.0 2.5 ug/L 12/23/16 10:02 Trichloroethene ND 0.50 0.25 ug/L 12/23/16 10:02 Trichlorofluoromethane ND 0.50 0.25 ug/L 12/23/16 10:02 Vinyl acetate ND 4.0 2.0 ug/L 12/23/16 10:02 Vinyl chloride ND 0.50 0.25 ug/L 12/23/16 10:02 1,2-Dibromoethane (EDB) ND 0.50 0.25 ug/L 12/23/16 10:02 ND 12/23/16 10:02 2-Butanone (MEK) 5.0 2.5 ug/L 4-Methyl-2-pentanone (MIBK) ND 5.0 2.5 ug/L 12/23/16 10:02 Acrylonitrile ND 2.0 1.0 ug/L 12/23/16 10:02 Acrolein ND 5.0 2.5 ug/L 12/23/16 10:02 MB MB

Tentatively Identified Compound

Est. Result Qualifier Unit D RT CAS No. Prepared Analyzed Dil Fac
Tentatively Identified Compound

None WB MB

Surrente WB Analyzed Dil Fac
12/23/16 10:02 1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102	80 - 128		12/23/16 10:02	1
4-Bromofluorobenzene (Surr)	104	80 - 120		12/23/16 10:02	1
Dibromofluoromethane (Surr)	114	76 - 132		12/23/16 10:02	1

Lab Sample ID: LCS 440-377848/9

**Matrix: Water** 

Analysis Batch: 377848

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

7 maryoto Batom of 10 to	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	24.8		ug/L		99	63 - 130
1,1,1,2-Tetrachloroethane	25.0	28.9		ug/L		116	60 - 141
1,1,1-Trichloroethane	25.0	29.1		ug/L		116	70 - 130
1,1,2,2-Tetrachloroethane	25.0	22.5		ug/L		90	63 - 130
1,1,2-Trichloroethane	25.0	25.7		ug/L		103	70 - 130
1,1-Dichloroethane	25.0	25.7		ug/L		103	64 - 130
1,1-Dichloroethene	25.0	24.6		ug/L		99	70 - 130
1,1-Dichloropropene	25.0	26.1		ug/L		104	70 - 130
1,2,4-Trichlorobenzene	25.0	29.1		ug/L		116	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	25.5		ug/L		102	52 - 140
1,2-Dichlorobenzene	25.0	24.6		ug/L		98	70 - 130
1,2-Dichloroethane	25.0	30.0		ug/L		120	57 <sub>-</sub> 138
1,2-Dichloropropane	25.0	26.7		ug/L		107	67 - 130
1,3-Dichlorobenzene	25.0	23.8		ug/L		95	70 - 130

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

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

Lab Sample ID: LCS 440-377848/9

**Matrix: Water** 

**Analysis Batch: 377848** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Analyte	Added	Regult	Qualifier	Unit	D	%Rec	1	
		Nesuit	Qualifici	0		70KeC	Limits	
1,3-Dichloropropane	25.0	25.0		ug/L		100	70 - 130	
1,4-Dichlorobenzene	25.0	24.1		ug/L		96	70 - 130	
2,2-Dichloropropane	25.0	32.3		ug/L		129	68 - 141	
2-Hexanone	25.0	31.4		ug/L		125	10 - 150	
Acetone	25.0	25.2		ug/L		101	10 - 150	
Benzene	25.0	24.5		ug/L		98	68 - 130	
Bromoform	25.0	28.8		ug/L		115	60 - 148	
Bromomethane	25.0	29.5		ug/L		118	64 - 139	
Carbon disulfide	25.0	25.2		ug/L		101	52 - 136	
Carbon tetrachloride	25.0	31.2		ug/L		125	60 - 150	
Chlorobenzene	25.0	24.3		ug/L		97	70 - 130	
Bromochloromethane	25.0	27.2		ug/L		109	70 - 130	
Chloroethane	25.0	28.3		ug/L		113	64 - 135	
Chloroform	25.0	28.2		ug/L		113	70 - 130	
Chloromethane	25.0	31.6		ug/L		126	47 - 140	
cis-1,2-Dichloroethene	25.0	26.9		ug/L		107	70 - 133	
cis-1,3-Dichloropropene	25.0	29.6		ug/L		118	70 - 133	
Dibromochloromethane	25.0	29.6		ug/L		118	69 - 145	
Dibromomethane	25.0	27.8		ug/L		111	70 - 130	
Bromodichloromethane	25.0	30.6		ug/L		122	70 - 132	
Dichlorodifluoromethane	25.0	29.7		ug/L		119	29 - 150	
Ethylbenzene	25.0	25.1		ug/L		101	70 - 130	
m,p-Xylene	25.0	26.0		ug/L		104	70 - 130	
Methylene Chloride	25.0	24.5		ug/L		98	52 - 130	
Methyl tert-butyl ether	25.0	28.3		ug/L		113	63 - 131	
Naphthalene	25.0	27.2		ug/L		109	60 - 140	
o-Xylene	25.0	25.6		ug/L		102	70 - 130	
Styrene	25.0	26.0		ug/L		104	70 - 134	
t-Butanol	250	256		ug/L		102	70 - 130	
Tetrachloroethene	25.0	24.9		ug/L		100	70 - 130	
Toluene	25.0	24.6		ug/L		98	70 - 130	
trans-1,2-Dichloroethene	25.0	26.9		ug/L		108	70 - 130	
trans-1,3-Dichloropropene	25.0	30.0		ug/L		120	70 - 132	
Trichloroethene	25.0	26.9		ug/L		108	70 - 130	
Trichlorofluoromethane	25.0	31.4		ug/L		125	60 - 150	
Vinyl acetate	25.0	29.7		ug/L		119	48 - 140	
Vinyl chloride	25.0	31.3		ug/L		125	59 <sub>-</sub> 133	
1,2-Dibromoethane (EDB)	25.0	27.8		ug/L		111	70 - 130	
2-Butanone (MEK)	25.0	26.2		ug/L		105	44 - 150	
4-Methyl-2-pentanone (MIBK)	25.0	31.0		ug/L		124	59 <sub>-</sub> 149	
Acrylonitrile	250	261		ug/L		104	48 - 140	
Acrolein	25.0	29.2		ug/L		117	10 - 145	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	111		76 - 132

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

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

Lab Sample ID: 440-168970-AU-6 MS

**Matrix: Water** 

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

Analysis Batch: 377848	Sample Sample	Spike	MS	MS				%Rec.	
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	ND	25.0	24.9		ug/L		100	60 - 130	
1,1,1,2-Tetrachloroethane	ND	25.0	27.1		ug/L		108	60 - 149	
I,1,1-Trichloroethane	ND	25.0	27.2		ug/L		109	70 - 130	
1,1,2,2-Tetrachloroethane	ND	25.0	22.6		ug/L		90	63 - 130	
I,1,2-Trichloroethane	ND	25.0	24.9		ug/L		100	70 - 130	
1,1-Dichloroethane	ND	25.0	24.4		ug/L		97	65 - 130	
I,1-Dichloroethene	ND	25.0	23.2		ug/L		93	70 - 130	
1,1-Dichloropropene	ND	25.0	23.8		ug/L		95	64 - 130	
I,2,4-Trichlorobenzene	ND	25.0	29.0		ug/L		116	60 <sub>-</sub> 140	
I,2-Dibromo-3-Chloropropane	ND	25.0	25.2		ug/L		101	48 - 140	
1,2-Dichlorobenzene	ND	25.0	24.0		ug/L		96	70 <sub>-</sub> 130	
,2-Dichloroethane	ND	25.0	29.0		ug/L		116	56 - 146	
,2-Dichloropropane	ND	25.0	25.9		ug/L		103	69 - 130	
1,3-Dichlorobenzene	ND	25.0	23.7		ug/L		95	70 - 130	
,3-Dichloropropane	ND	25.0	24.2		ug/L		97	70 - 130	
,4-Dichlorobenzene	ND	25.0	23.7		ug/L		95	70 - 130	
2,2-Dichloropropane	ND	25.0	30.6		ug/L		122	69 - 138	
2-Hexanone	ND	25.0	29.4		ug/L		118	10 - 150	
Acetone	ND	25.0	22.7		ug/L		91	10 - 150	
Benzene	ND	25.0	22.9				92	66 - 130	
Bromoform	ND ND	25.0 25.0	28.0		ug/L		112	59 <sub>-</sub> 150	
					ug/L				
Sromomethane	ND	25.0	26.9		ug/L		108	62 - 131	
Carbon disulfide	ND	25.0	23.6		ug/L		95	49 - 140	
Carbon tetrachloride	ND	25.0	28.6		ug/L		114	60 - 150	
Chlorobenzene	ND	25.0	22.6		ug/L		90	70 - 130	
Bromochloromethane	ND	25.0	26.8		ug/L		107	70 - 130	
Chloroethane	ND	25.0	25.0		ug/L		100	68 - 130	
Chloroform	ND	25.0	27.0		ug/L		108	70 - 130	
Chloromethane	ND	25.0	27.8		ug/L		111	39 - 144	
is-1,2-Dichloroethene	ND	25.0	25.5		ug/L		102	70 - 130	
is-1,3-Dichloropropene	ND	25.0	28.4		ug/L		113	70 - 133	
Dibromochloromethane	ND	25.0	28.8		ug/L		115	70 - 148	
Dibromomethane	ND	25.0	27.6		ug/L		111	70 - 130	
Bromodichloromethane	ND	25.0	29.9		ug/L		120	70 - 138	
Dichlorodifluoromethane	ND	25.0	25.8		ug/L		103	25 - 142	
thylbenzene	ND	25.0	23.0		ug/L		92	70 - 130	
n,p-Xylene	ND	25.0	24.2		ug/L		97	70 - 133	
/lethylene Chloride	0.96 J	25.0	25.0		ug/L		96	52 - 130	
Methyl tert-butyl ether	ND	25.0	28.2		ug/L		113	70 - 130	
laphthalene	ND	25.0	26.3		ug/L		105	60 - 140	
-Xylene	ND	25.0	23.9		ug/L		96	70 - 133	
Styrene	ND	25.0	24.1		ug/L		97	29 - 150	
-Butanol	ND	250	193		ug/L		77	70 - 130	
Tetrachloroethene	ND	25.0	23.0		ug/L		92	70 - 137	
oluene	ND	25.0	22.7		ug/L		91	70 - 130	
rans-1,2-Dichloroethene	ND	25.0	24.8		ug/L		99	70 - 130	
rans-1,3-Dichloropropene	ND	25.0	30.0		ug/L		120	70 - 138	
richloroethene	21	25.0	44.4		ug/L		92	70 - 130	

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

# Client Sample ID: Matrix Spike

**Prep Type: Total/NA** 

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

Lab Sample ID: 440-168970-AU-6 MS

**Matrix: Water** 

Analysis Batch: 377848

, , , , , , , , , , , , , , , , , , , ,	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Trichlorofluoromethane	ND		25.0	28.7		ug/L		115	60 - 150	
Vinyl acetate	ND		25.0	31.5		ug/L		126	23 - 150	
Vinyl chloride	ND		25.0	29.7		ug/L		119	50 <sub>-</sub> 137	
1,2-Dibromoethane (EDB)	ND		25.0	26.7		ug/L		107	70 - 131	
2-Butanone (MEK)	ND		25.0	24.1		ug/L		96	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.7		ug/L		119	52 - 150	
Acrylonitrile	ND		250	244		ug/L		98	38 - 144	
Acrolein	ND		25.0	30.3		ug/L		121	10 - 147	

MS MS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 128
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	113		76 - 132

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

**Matrix: Water** 

Lab Sample ID: 440-168970-AU-6 MSD

Analysis Batch: 377848	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	24.7		ug/L		99	60 - 130	1	30
1,1,1,2-Tetrachloroethane	ND		25.0	27.3		ug/L		109	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	27.3		ug/L		109	70 - 130	1	20
1,1,2,2-Tetrachloroethane	ND		25.0	22.7		ug/L		91	63 - 130	1	30
1,1,2-Trichloroethane	ND		25.0	24.9		ug/L		100	70 - 130	0	25
1,1-Dichloroethane	ND		25.0	24.3		ug/L		97	65 - 130	0	20
1,1-Dichloroethene	ND		25.0	23.2		ug/L		93	70 - 130	0	20
1,1-Dichloropropene	ND		25.0	24.6		ug/L		98	64 - 130	3	20
1,2,4-Trichlorobenzene	ND		25.0	28.9		ug/L		115	60 - 140	0	20
1,2-Dibromo-3-Chloropropane	ND		25.0	24.2		ug/L		97	48 - 140	4	30
1,2-Dichlorobenzene	ND		25.0	24.4		ug/L		98	70 - 130	1	20
1,2-Dichloroethane	ND		25.0	28.8		ug/L		115	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 130	1	20
1,3-Dichlorobenzene	ND		25.0	23.7		ug/L		95	70 - 130	0	20
1,3-Dichloropropane	ND		25.0	23.4		ug/L		93	70 - 130	3	25
1,4-Dichlorobenzene	ND		25.0	23.7		ug/L		95	70 - 130	0	20
2,2-Dichloropropane	ND		25.0	30.9		ug/L		124	69 - 138	1	25
2-Hexanone	ND		25.0	28.3		ug/L		113	10 - 150	4	35
Acetone	ND		25.0	23.4		ug/L		94	10 - 150	3	35
Benzene	ND		25.0	23.0		ug/L		92	66 - 130	0	20
Bromoform	ND		25.0	27.5		ug/L		110	59 - 150	2	25
Bromomethane	ND		25.0	27.8		ug/L		111	62 - 131	3	25
Carbon disulfide	ND		25.0	23.6		ug/L		94	49 - 140	0	20
Carbon tetrachloride	ND		25.0	28.3		ug/L		113	60 - 150	1	25
Chlorobenzene	ND		25.0	22.8		ug/L		91	70 - 130	1	20
Bromochloromethane	ND		25.0	26.5		ug/L		106	70 - 130	1	25
Chloroethane	ND		25.0	26.0		ug/L		104	68 - 130	4	25
Chloroform	ND		25.0	26.9		ug/L		108	70 - 130	0	20
Chloromethane	ND		25.0	26.3		ug/L		105	39 - 144	6	25

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

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

Lab Sample ID: 440-168970-AU-6 MSD

**Matrix: Water** 

1,4-Dioxane-d8 (Surr)

**Analysis Batch: 377848** 

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

7 <b>,</b> 0.00	Sample Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
cis-1,2-Dichloroethene	ND	25.0	25.9		ug/L		104	70 - 130	2	20
cis-1,3-Dichloropropene	ND	25.0	28.7		ug/L		115	70 - 133	1	20
Dibromochloromethane	ND	25.0	28.0		ug/L		112	70 - 148	3	25
Dibromomethane	ND	25.0	26.8		ug/L		107	70 - 130	3	25
Bromodichloromethane	ND	25.0	29.3		ug/L		117	70 - 138	2	20
Dichlorodifluoromethane	ND	25.0	24.7		ug/L		99	25 - 142	4	30
Ethylbenzene	ND	25.0	23.3		ug/L		93	70 - 130	1	20
m,p-Xylene	ND	25.0	24.6		ug/L		98	70 - 133	1	25
Methylene Chloride	0.96 J	25.0	24.6		ug/L		94	52 - 130	2	20
Methyl tert-butyl ether	ND	25.0	27.9		ug/L		112	70 - 130	1	25
Naphthalene	ND	25.0	26.0		ug/L		104	60 - 140	1	30
o-Xylene	ND	25.0	23.6		ug/L		94	70 - 133	1	20
Styrene	ND	25.0	23.9		ug/L		96	29 - 150	1	35
t-Butanol	ND	250	219		ug/L		87	70 - 130	13	25
Tetrachloroethene	ND	25.0	23.2		ug/L		93	70 - 137	1	20
Toluene	ND	25.0	22.9		ug/L		91	70 - 130	1	20
trans-1,2-Dichloroethene	ND	25.0	25.6		ug/L		103	70 - 130	3	20
trans-1,3-Dichloropropene	ND	25.0	29.4		ug/L		117	70 - 138	2	25
Trichloroethene	21	25.0	44.4		ug/L		92	70 - 130	0	20
Trichlorofluoromethane	ND	25.0	28.3		ug/L		113	60 - 150	1	25
Vinyl acetate	ND	25.0	29.2		ug/L		117	23 - 150	7	30
Vinyl chloride	ND	25.0	28.3		ug/L		113	50 - 137	5	30
1,2-Dibromoethane (EDB)	ND	25.0	26.3		ug/L		105	70 - 131	2	25
2-Butanone (MEK)	ND	25.0	24.5		ug/L		98	48 - 140	2	40
4-Methyl-2-pentanone (MIBK)	ND	25.0	28.2		ug/L		113	52 - 150	5	35
Acrylonitrile	ND	250	234		ug/L		94	38 - 144	4	40
Acrolein	ND	25.0	28.0		ug/L		112	10 - 147	8	40

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 128
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	113		76 - 132

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

Lab Sample ID: MB 440-377944/1-A	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 378155	Prep Batch: 377944

MB MB Analyte Result Qualifier RL MDL Unit Dil Fac Prepared Analyzed

1,4-Dioxane	ND	1.0	0.25 ug/L	12/23/16 11:23	12/24/16 19:23	1
	MB MB					
Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac

30 - 120

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<u>12/23/16 11:23</u> <u>12/24/16 19:23</u>

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

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

Lab Sample ID: LCS 440-3 Matrix: Water Analysis Batch: 378155	377944/2-A					Clie	nt Sa	mple ID	e: Lab Control Sample Prep Type: Total/NA Prep Batch: 377944
			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane			2.00	0.946	J	ug/L		47	35 - 120
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1,4-Dioxane-d8 (Surr)	50		30 - 120						
Lab Sample ID: LCSD 440	)-377944/3-A				C	Client Sa	ımple	ID: Lat	Control Sample Dup

_ Lab Sample ID: LCSD 440	)-377944/3- <b>∆</b>				(	Client Sa	amnle	ID: I at	Control :	Sample	a Dur
Matrix: Water	01104401	•					ap.io	ib. Lui	Prep Ty		
Analysis Batch: 378155									Prep Ba		
•			Spike	LCSD	LCSD				%Rec.		RPE
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limi
1,4-Dioxane			2.00	1.15		ug/L		57	35 - 120	19	35
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1.4-Dioxane-d8 (Surr)	59		30 - 120								

Lab Sample ID: MB 440-378304/1-A Matrix: Water								le ID: Method Prep Type: To	
Analysis Batch: 378647								Prep Batch:	378304
•	MB	MB						•	
Analyte R	esult	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1.4-Dioxane	ND		1.0	0.25	ua/L		12/27/16 08:45	12/28/16 16:21	

.,				5.25 a.g. 2			•
	MB	MB					
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	51		30 - 120		12/27/16 08:45	12/28/16 16:21	1

Lab Sample ID: LCS 440-3 Matrix: Water Analysis Batch: 378647	378304/2-A					Clie	nt Sai	mple ID	Prep Type: Total/NA Prep Batch: 378304
			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane			2.00	1.12		ug/L		56	35 - 120
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1,4-Dioxane-d8 (Surr)	59		30 - 120						

Lab Sample ID: LCSD 440 Matrix: Water Analysis Batch: 378647			(	Client Sa	ample	ID: Lat	Control Prep Tyl	pe: Tot	tal/NA 78304		
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane			2.00	1.33		ug/L		67	35 - 120	17	35
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8 (Surr)	68		30 - 120								

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-377104/4

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

Client Sample ID: DW-1

Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 377104** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 0.11 Nitrate as N ND 0.055 mg/L 12/20/16 14:14

Lab Sample ID: LCS 440-377104/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377104** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit D %Rec Nitrate as N 1.13 1.08 mg/L 95 90 - 110

Lab Sample ID: 440-170251-4 MS

**Matrix: Water** 

**Analysis Batch: 377104** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Nitrate as N ND 5.65 5.15 mg/L 91

Lab Sample ID: 440-170251-4 MSD **Client Sample ID: DW-1 Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377104** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Nitrate as N ND 5.65 5.28 80 - 120 mg/L

Lab Sample ID: MB 440-377105/4 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377105** 

MR MR Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Bromide ND 0.50 0.25 mg/L 12/20/16 14:14 Chloride ND 0.50 0.25 mg/L 12/20/16 14:14 Fluoride ND 0.50 0.25 mg/L 12/20/16 14:14 Sulfate ND 0.50 0.25 mg/L 12/20/16 14:14

Lab Sample ID: LCS 440-377105/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377105** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Bromide 5.00 5.01 mg/L 100 90 - 110 Chloride 5.00 4.57 91 mg/L 90 - 110 Fluoride 5.00 4.99 mg/L 100 90 - 110 Sulfate 5.00 100 90 - 110 4 99 mg/L

Lab Sample ID: 440-170251-4 MS Client Sample ID: DW-1 Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 377105										
_	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bromide	ND		25.0	24.3		mg/L		97	80 - 120	 -

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 440-170251-4 MS **Client Sample ID: DW-1 Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 377105** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	13		25.0	35.9		mg/L		92	80 - 120	
Fluoride	3.5		25.0	28.7		mg/L		101	80 - 120	

Lab Sample ID: 440-170251-4 MSD **Client Sample ID: DW-1** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 377105

- 1	Alialysis Datcii. 311 103											
	•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Bromide	ND		25.0	24.8		mg/L		99	80 - 120	2	20
	Chloride	13		25.0	35.9		mg/L		92	80 - 120	0	20
	Fluoride	3.5		25.0	28.6		mg/L		101	80 - 120	0	20

Lab Sample ID: MB 440-377954/4 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 377954** 

	MR MR						
Analyte	Result Quali	lifier RL	MDL U	Unit D	Prepared	Analyzed	Dil Fac
Chloride	ND	0.50	0.25 n	mg/L		12/23/16 12:13	1

Lab Sample ID: LCS 440-377954/2 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 377954** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit Limits D %Rec Chloride 5.00 4.67 mg/L 93 90 - 110

Lab Sample ID: 440-170952-D-2 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377954** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	39		250	268		mg/L		92	80 - 120	

Lab Sample ID: 440-170952-D-2 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377954** 

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	39		250	269		mg/L		92	80 - 120	1	20

Lab Sample ID: MB 440-377956/4 **Client Sample ID: Method Blank Prep Type: Total/NA** 

**Matrix: Water** 

**Analysis Batch: 377956** 

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			12/23/16 12:38	1

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 440-377956/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377956** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 5.00 Chloride 5.06 mg/L 101 90 - 110

Lab Sample ID: 440-170960-D-5 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377956** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Limits Analyte Result Qualifier Unit %Rec Chloride 160 500 639 mg/L 97 80 - 120

**Client Sample ID: Matrix Spike Duplicate** Lab Sample ID: 440-170960-D-5 MSD Prep Type: Total/NA

**Matrix: Water** 

Boron

**Analysis Batch: 377956** 

Sample Sample Spike MSD MSD %Rec. **RPD** RPD Result Qualifier Added Result Qualifier Limits Limit Analyte Unit D %Rec Chloride 160 500 647 mg/L 98 80 - 120 20

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-379355/1-A Client Sample ID: Method Blank **Matrix: Water Prep Type: Total Recoverable Prep Batch: 379355** 

**Analysis Batch: 380783** 

MB MB Analyte Result Qualifier **MDL** Unit Prepared RL Analyzed Dil Fac Potassium ND 0.50 0.25 mg/L 01/01/17 09:48 01/09/17 13:20 Manganese ND 0.020 0.010 mg/L 01/01/17 09:48 01/09/17 13:20 Magnesium ND 0.020 0.010 mg/L 01/01/17 09:48 01/09/17 13:20 0.010 mg/L Iron 0.0177 0.040 01/01/17 09:48 01/09/17 13:20 Sodium ND 0.50 0.25 mg/L 01/01/17 09:48 01/09/17 13:20 Calcium ND 0.10 0.050 mg/L 01/01/17 09:48 01/09/17 13:20 Boron ND 0.050 0.010 mg/L 01/01/17 09:48 01/09/17 13:20

Lab Sample ID: LCS 440-379355/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable Prep Batch: 379355 Analysis Batch: 380783** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Potassium 10.0 9.94 mg/L 99 80 - 120 Manganese 1.00 1.03 mg/L 103 80 - 120 Magnesium 1.00 1.06 mg/L 106 80 - 120 Iron 1.00 1.04 mg/L 104 80 - 120 Sodium 10.0 9.87 mg/L 99 80 - 120 1.00 1.05 mg/L 105 80 - 120Calcium

0.957

mg/L

96

80 - 120

1.00

Spike

Added

10.0

1.00

1.00

1.00

10.0

1.00

1.00

1.54

TestAmerica Job ID: 440-170251-1

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

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

Sample Sample

7.6

3.1

180

250

260

0.51

13

Result Qualifier

Lab Sample ID: 440-170251-1 MS

**Matrix: Water** 

Analyte

Potassium

Manganese

Magnesium

Iron

Sodium

Calcium

Boron

**Analysis Batch: 380783** 

Client Sample ID: Subdrain (N) **Prep Type: Total Recoverable** 

**Prep Batch: 379355** MS MS %Rec. Result Qualifier Unit D %Rec Limits 75 - 125 19.1 mg/L 115 4.18 mg/L 110 75 - 125 181 4 525 75 - 125 mg/L 14.5 4 179 mg/L 75 - 125269 4 mg/L 199 75 - 125 272 4 mg/L 1456 75 - 125

104

Lab Sample ID: 440-170251-1 MSD

**Matrix: Water** 

Analysis Batch: 380783

Client Sample ID: Subdrain (N) **Prep Type: Total Recoverable** 

75 - 125

**Prep Batch: 379355** 

Alialysis Datcii. 300703									Fieb Da	ilcii. 3 <i>i</i>	9333
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Potassium	7.6		10.0	18.7		mg/L		111	75 - 125	2	20
Manganese	3.1		1.00	3.99		mg/L		91	75 - 125	5	20
Magnesium	180		1.00	170	4	mg/L		-536	75 - 125	6	20
Iron	13	В	1.00	13.5	4	mg/L		84	75 - 125	7	20
Sodium	250		10.0	257	4	mg/L		81	75 - 125	4	20
Calcium	260		1.00	262	4	mg/L		495	75 - 125	4	20
Boron	0.51		1.00	1.55		mg/L		105	75 - 125	1	20

Method: 410.4 - COD

Lab Sample ID: MB 440-379704/3

**Matrix: Water** 

**Analysis Batch: 379704** 

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

mg/L

Client Sample ID: PZ-4

Prep Type: Total/NA

%Rec.

MB MB Result Qualifier RL MDL Unit **Prepared** Analyzed Dil Fac 20 **Chemical Oxygen Demand** ND 10 mg/L 01/04/17 09:31

Lab Sample ID: LCS 440-379704/4

**Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 379704 LCS LCS

**Analyte** Added Result Qualifier Unit %Rec Limits Chemical Oxygen Demand 200 200 mg/L 100 90 - 110

Spike

Lab Sample ID: 440-170251-11 MS

**Matrix: Water** 

Analysis Batch: 3/9/04										
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chemical Oxygen Demand	ND		200	203		mg/L		102	70 - 120	

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**Client Sample ID: Method Blank** 

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Matrix Spike Duplicate** 

**Client Sample ID: Matrix Spike** 

**Client Sample ID: Method Blank** 

**Client Sample ID: Lab Control Sample** 

Client Sample ID: PZ-4

Prep Type: Total/NA

Prep Type: Total/NA

**Prep Type: Total/NA** 

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Sunshine Landfill

Method: 410.4 - COD (Continued)

Lab Sample ID: 440-170251-11 MSD

**Matrix: Water** 

Analysis Batch: 379704

7 maryone Datom Croro.	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chemical Oxygen Demand	ND		200	204		mg/L		102	70 - 120	1	15

Lab Sample ID: MB 440-379832/3

**Matrix: Water** 

**Analysis Batch: 379832** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 20 Chemical Oxygen Demand  $\overline{\mathsf{ND}}$ 10 mg/L 01/04/17 15:34

Lab Sample ID: LCS 440-379832/4

**Matrix: Water** 

**Analysis Batch: 379832** 

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec **Chemical Oxygen Demand** 200 201 mg/L 100 90 - 110

Lab Sample ID: 440-170910-C-1 MS

**Matrix: Water** 

**Analysis Batch: 379832** 

Spike MS MS Sample Sample %Rec. Result Qualifier Added Result Qualifier Unit %Rec Limits Chemical Oxygen Demand ND 200 202 101 70 - 120 mg/L

Lab Sample ID: 440-170910-C-1 MSD

**Matrix: Water** 

Analysis Batch: 379832

Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit **Chemical Oxygen Demand** ND 200 200 70 - 120 mg/L 100

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-377319/3

**Matrix: Water** 

**Analysis Batch: 377319** 

-	MB M	IB							
Analyte	Result Q	ualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/21/16 05:21	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/21/16 05:21	1

Lab Sample ID: LCS 440-377319/2

**Matrix: Water** 

Analysis Batch: 377319

7 maryolo Batom 077010	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Alkalinity as CaCO3	85.8	86.7		mg/L		101	80 - 120

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 440-170251-1 DU Client Sample ID: Subdrain (N) **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377319** 

	Sample	Sample	DU	DU				RPD	
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit	
Alkalinity as CaCO3	920		 926		mg/L		 1	20	
Bicarbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20	

Lab Sample ID: 440-170251-8 DU Client Sample ID: MW-14 Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 377319

	Analysis Baton, 577616	Sample	Sample	DU	DU				RPD
	Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
	Alkalinity as CaCO3	380		383		mg/L		 0.3	20
l	Bicarbonate Alkalinity as CaCO3	380		383		mg/L		0.3	20

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

Lab Sample ID: MB 440-378207/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378207** 

MB MB Analyte RLMDL Unit Result Qualifier D Prepared Analyzed Dil Fac Total Dissolved Solids  $\overline{\mathsf{ND}}$ 10 5.0 mg/L 12/25/16 06:59

Lab Sample ID: LCS 440-378207/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378207** 

LCS LCS Spike %Rec. Analyte Added Result Qualifier %Rec Limits 1000 Total Dissolved Solids 972 mg/L 97 90 - 110

Lab Sample ID: 440-170251-2 DU **Client Sample ID: Combined Subdrains** 

**Matrix: Water** 

Analysis Batch: 378207

•	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	F	RPD	Limit
Total Dissolved Solids	3500		 3470		mg/L			0.7	5

Lab Sample ID: MB 440-378295/1 Client Sample ID: Method Blank **Matrix: Water** 

**Analysis Batch: 378295** 

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac **Total Dissolved Solids** ND 10 5.0 mg/L 12/27/16 08:22

Lab Sample ID: LCS 440-378295/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 378295

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec **Total Dissolved Solids** 1000 994 mg/L 99 90 - 110

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Prep Type: Total/NA

Prep Type: Total/NA

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: SM 2540C - Solids	, Total Dissolved	(TDS) (Continued)
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Lab Sample ID: 440-170251-7 DU Client Sample ID: MW-6 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378295** 

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit Total Dissolved Solids 2700 2830 mg/L

Method: SM 4500 CO2 C - Free Carbon Dioxide

Lab Sample ID: MB 440-377746/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377746** 

MB MB RL **RL** Unit Analyte Result Qualifier Prepared Analyzed Dil Fac 2.0 Carbon Dioxide, Free  $\overline{\mathsf{ND}}$ 2.0 mg/L 12/22/16 15:56

Lab Sample ID: 440-170565-H-4 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377746** 

Sample Sample DU DU **RPD** Analyte Result Qualifier Result Qualifier Unit **RPD** Limit Carbon Dioxide, Free 190 183 mg/L

Lab Sample ID: MB 440-377750/1 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377750** 

MB MB Result Qualifier RL **RL** Unit Prepared Analyzed Carbon Dioxide. Free ND 2.0 2.0 ma/L 12/22/16 16:00

Lab Sample ID: 440-170251-7 DU Client Sample ID: MW-6 Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 377750** 

Sample Sample DII DII RPD Analyte Result Qualifier Result Qualifier Unit Limit Carbon Dioxide, Free 97 95.0 mg/L

Lab Sample ID: MB 440-381044/1 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 381044** 

MB MB Result Qualifier RL **RL** Unit Analyte Prepared Analyzed Dil Fac 2.0 2.0 mg/L 01/10/17 14:22 Carbon Dioxide, Free ND

Lab Sample ID: 440-170251-1 DU Client Sample ID: Subdrain (N) Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 381044** 

DU DU **RPD** Sample Sample Result Qualifier Analyte Result Qualifier Unit D **RPD** Limit Carbon Dioxide, Free 250 243 mg/L

85 - 115

92

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-378257/2-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378263** 

**Prep Batch: 378257** 

MB MB

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 0.50 <u>12/27/16 06:00</u> <u>12/27/16 06:30</u>  $\overline{\mathsf{ND}}$ 0.10 mg/L

mg/L

Lab Sample ID: LCS 440-378257/1-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378263** Prep Batch: 378257 Spike LCS LCS Added Limits Analyte Result Qualifier Unit D %Rec

2.29

Lab Sample ID: 440-170251-1 MS Client Sample ID: Subdrain (N) **Prep Type: Total/NA** 

**Matrix: Water** 

Ammonia (as N)

Analyte

Ammonia (as N)

**Analysis Batch: 378263 Prep Batch: 378257** Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Unit D %Rec

2.50

Analyte Ammonia (as N) 3.9 5.00 8.40 mg/L 89 75 - 125

Lab Sample ID: 440-170251-1 MSD Client Sample ID: Subdrain (N) **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378263 Prep Batch: 378257** Sample Sample Spike MSD MSD

%Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Ammonia (as N) 3.9 5.00 8.40 89 75 - 125 0 mg/L

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 440-377512/3 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 377512** 

MB MB Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed Total Sulfide 0.050  $\overline{\mathsf{ND}}$ 0.020 mg/L 12/21/16 22:22

Lab Sample ID: LCS 440-377512/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 377512

Spike LCS LCS %Rec. Result Qualifier Added Analyte Unit D %Rec Limits Total Sulfide 106 0.500 0.532 mg/L 80 - 120

Lab Sample ID: 440-170251-1 MS Client Sample ID: Subdrain (N) **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377512** 

Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits **Total Sulfide** ND 0.500 0.508 mg/L 102 70 - 130

Client: Geo-Logic Associates

Project/Site: Sunshine Landfill

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

Lab Sample ID: 440-170251-1 MSD Client Sample ID: Subdrain (N) **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377512** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit

Total Sulfide ND 0.500 0.511 102 70 - 130 30 mg/L

Method: SM 5310C - TOC

Lab Sample ID: MB 440-380231/7 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 380231** 

MB MB

RL Analyte Result Qualifier MDL Unit Dil Fac D Prepared Analyzed **Total Organic Carbon**  $\overline{\mathsf{ND}}$ 0.10 0.050 mg/L 01/05/17 04:52

Lab Sample ID: LCS 440-380231/6 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380231** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits **Total Organic Carbon** 5.00 97 4.85 mg/L 90 - 110

Lab Sample ID: MRL 440-380231/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380231** 

Spike MRL MRL %Rec. Added Result Qualifier Limits Unit %Rec Total Organic Carbon 0.100 0.0552 J mg/L 55 50 - 150

Lab Sample ID: MRL 440-380231/8 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 380231** 

Spike MRL MRL %Rec. Added Result Qualifier Unit %Rec Limits Analyte 0.100 **Total Organic Carbon** 0.0831 J mg/L 83 50 - 150

Lab Sample ID: 440-171890-A-5 MS **Client Sample ID: Matrix Spike** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 380231** 

Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits **Total Organic Carbon** 0.71 5.00 5.84 mg/L 103 80 - 120

Lab Sample ID: 440-171890-A-5 MSD **Client Sample ID: Matrix Spike Duplicate** 

**Matrix: Water** 

**Analysis Batch: 380231** 

Sample Sample Spike MSD MSD %Rec. **RPD** Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits **RPD** Limit **Total Organic Carbon** 0.71 5.00 5.61 mg/L 98 80 - 120

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Prep Type: Total/NA

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

Method: SM 5310C - TOC (Continued)

Lab Sample ID: MB 440-380232/9 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380232** 

MB MB Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 0.10 Total Organic Carbon  $\overline{\mathsf{ND}}$ 0.050 mg/L 01/05/17 11:59

Lab Sample ID: LCS 440-380232/8 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380232** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec **Total Organic Carbon** 5.00 4.92 mg/L 98 90 - 110

Lab Sample ID: MRL 440-380232/39 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380232** 

Spike MRL MRL %Rec. Result Qualifier Added Limits Analyte Unit D %Rec Total Organic Carbon 0.100 0.0831 J mg/L 83 50 - 150

Client Sample ID: PZ-4 Lab Sample ID: 440-170251-11 MS **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380232** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Unit %Rec Limits Total Organic Carbon 1.2 5.00 6.27 102 80 - 120 mg/L

Lab Sample ID: 440-170251-11 MSD Client Sample ID: PZ-4 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380232** 

Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 5.00 103 80 - 120 Total Organic Carbon 1.2 6.30 mg/L

Lab Sample ID: MB 440-380347/7 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380347

Result Qualifier RL MDL Unit Analyte D Prepared Dil Fac Analyzed 0.10 **Total Organic Carbon** 0.050 mg/L 01/06/17 06:17 ND

MB MB

Lab Sample ID: LCS 440-380347/6 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 380347

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Total Organic Carbon 5.00 4.87 mg/L 97 90 - 110

Lab Sample ID: MRL 440-380347/5 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380347** 

Spike MRL MRL %Rec. Added Result Qualifier Unit D %Rec Limits **Total Organic Carbon** 0.100 0.101 101 mg/L 50 - 150

# **QC Sample Results**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

**Client Sample ID: Matrix Spike Duplicate** 

Client Sample ID: Matrix Spike

**Prep Type: Total/NA** 

Lab Sample ID: 440-171441-A-1 MS

**Matrix: Water** 

Analysis Batch: 380347

Sample Sample Spike MS MS %Rec. Result Qualifier Result Qualifier Analyte Added Unit D %Rec Limits Total Organic Carbon 1.7 5.00 6.22 90 80 - 120 mg/L

Lab Sample ID: 440-171441-A-1 MSD

Matrix: Water Analysis Batch: 380347									Prep Ty	pe: Tot	al/NA
7a., 6.10	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Organic Carbon	1.7		5.00	7.14		mg/L		109	80 - 120	14	20

Client: Geo-Logic Associates Project/Site: Sunshine Landfill

# **GC/MS VOA**

Analysis Batch: 377848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	8260B	
440-170251-2	Combined Subdrains	Total/NA	Water	8260B	
440-170251-3	Extraction Trench	Total/NA	Water	8260B	
440-170251-4	DW-1	Total/NA	Water	8260B	
440-170251-5	DW-2	Total/NA	Water	8260B	
440-170251-6	PZ-2	Total/NA	Water	8260B	
440-170251-7	MW-6	Total/NA	Water	8260B	
440-170251-8	MW-14	Total/NA	Water	8260B	
440-170251-9	CM-9R3	Total/NA	Water	8260B	
440-170251-10	CM-11R	Total/NA	Water	8260B	
440-170251-11	PZ-4	Total/NA	Water	8260B	
440-170251-12	CM-10R	Total/NA	Water	8260B	
440-170251-13	QCAB	Total/NA	Water	8260B	
440-170251-14	QCTB	Total/NA	Water	8260B	
MB 440-377848/8	Method Blank	Total/NA	Water	8260B	
LCS 440-377848/9	Lab Control Sample	Total/NA	Water	8260B	
440-168970-AU-6 MS	Matrix Spike	Total/NA	Water	8260B	
440-168970-AU-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# GC/MS Semi VOA

**Prep Batch: 377944** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	3520C	
440-170251-2	Combined Subdrains	Total/NA	Water	3520C	
440-170251-3	Extraction Trench	Total/NA	Water	3520C	
440-170251-4	DW-1	Total/NA	Water	3520C	
440-170251-5	DW-2	Total/NA	Water	3520C	
440-170251-6	PZ-2	Total/NA	Water	3520C	
440-170251-7	MW-6	Total/NA	Water	3520C	
440-170251-8	MW-14	Total/NA	Water	3520C	
440-170251-9	CM-9R3	Total/NA	Water	3520C	
MB 440-377944/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-377944/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-377944/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

# Analysis Batch: 378155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	8270C	377944
440-170251-2	Combined Subdrains	Total/NA	Water	8270C	377944
440-170251-3	Extraction Trench	Total/NA	Water	8270C	377944
440-170251-4	DW-1	Total/NA	Water	8270C	377944
440-170251-5	DW-2	Total/NA	Water	8270C	377944
440-170251-6	PZ-2	Total/NA	Water	8270C	377944
440-170251-7	MW-6	Total/NA	Water	8270C	377944
440-170251-8	MW-14	Total/NA	Water	8270C	377944
440-170251-9	CM-9R3	Total/NA	Water	8270C	377944
MB 440-377944/1-A	Method Blank	Total/NA	Water	8270C	377944
LCS 440-377944/2-A	Lab Control Sample	Total/NA	Water	8270C	377944
LCSD 440-377944/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	377944

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

# **GC/MS Semi VOA (Continued)**

# **Prep Batch: 378304**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-10	CM-11R	Total/NA	Water	3520C	
440-170251-11	PZ-4	Total/NA	Water	3520C	
440-170251-12	CM-10R	Total/NA	Water	3520C	
MB 440-378304/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-378304/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-378304/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

### Analysis Batch: 378647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-378304/1-A	Method Blank	Total/NA	Water	8270C	378304
LCS 440-378304/2-A	Lab Control Sample	Total/NA	Water	8270C	378304
LCSD 440-378304/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	378304

### **Analysis Batch: 378649**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-10	CM-11R	Total/NA	Water	8270C	378304
440-170251-11	PZ-4	Total/NA	Water	8270C	378304
440-170251-12	CM-10R	Total/NA	Water	8270C	378304

# HPLC/IC

### **Analysis Batch: 377104**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	300.0	
440-170251-2	Combined Subdrains	Total/NA	Water	300.0	
440-170251-3	Extraction Trench	Total/NA	Water	300.0	
440-170251-4	DW-1	Total/NA	Water	300.0	
440-170251-5	DW-2	Total/NA	Water	300.0	
440-170251-6	PZ-2	Total/NA	Water	300.0	
440-170251-7	MW-6	Total/NA	Water	300.0	
440-170251-8	MW-14	Total/NA	Water	300.0	
440-170251-9	CM-9R3	Total/NA	Water	300.0	
440-170251-10	CM-11R	Total/NA	Water	300.0	
440-170251-11	PZ-4	Total/NA	Water	300.0	
440-170251-12	CM-10R	Total/NA	Water	300.0	
MB 440-377104/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377104/2	Lab Control Sample	Total/NA	Water	300.0	
440-170251-4 MS	DW-1	Total/NA	Water	300.0	
440-170251-4 MSD	DW-1	Total/NA	Water	300.0	

### **Analysis Batch: 377105**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	300.0	_
440-170251-1	Subdrain (N)	Total/NA	Water	300.0	
440-170251-2	Combined Subdrains	Total/NA	Water	300.0	
440-170251-2	Combined Subdrains	Total/NA	Water	300.0	
440-170251-3	Extraction Trench	Total/NA	Water	300.0	
440-170251-3	Extraction Trench	Total/NA	Water	300.0	
440-170251-4	DW-1	Total/NA	Water	300.0	
440-170251-4	DW-1	Total/NA	Water	300.0	

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

**HPLC/IC (Continued)** 

**Analysis Batch: 377105 (Continued)** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-5	DW-2	Total/NA	Water	300.0	
440-170251-5	DW-2	Total/NA	Water	300.0	
440-170251-6	PZ-2	Total/NA	Water	300.0	
440-170251-6	PZ-2	Total/NA	Water	300.0	
440-170251-7	MW-6	Total/NA	Water	300.0	
440-170251-7	MW-6	Total/NA	Water	300.0	
440-170251-8	MW-14	Total/NA	Water	300.0	
440-170251-8	MW-14	Total/NA	Water	300.0	
440-170251-9	CM-9R3	Total/NA	Water	300.0	
440-170251-9	CM-9R3	Total/NA	Water	300.0	
440-170251-10	CM-11R	Total/NA	Water	300.0	
440-170251-10	CM-11R	Total/NA	Water	300.0	
440-170251-11	PZ-4	Total/NA	Water	300.0	
440-170251-11	PZ-4	Total/NA	Water	300.0	
440-170251-12	CM-10R	Total/NA	Water	300.0	
440-170251-12	CM-10R	Total/NA	Water	300.0	
MB 440-377105/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377105/2	Lab Control Sample	Total/NA	Water	300.0	
440-170251-4 MS	DW-1	Total/NA	Water	300.0	
440-170251-4 MSD	DW-1	Total/NA	Water	300.0	

**Analysis Batch: 377954** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-12	CM-10R	Total/NA	Water	300.0	
MB 440-377954/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377954/2	Lab Control Sample	Total/NA	Water	300.0	
440-170952-D-2 MS	Matrix Spike	Total/NA	Water	300.0	
440-170952-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

**Analysis Batch: 377956** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-5	DW-2	Total/NA	Water	300.0	<del>-</del>
440-170251-6	PZ-2	Total/NA	Water	300.0	
440-170251-7	MW-6	Total/NA	Water	300.0	
440-170251-8	MW-14	Total/NA	Water	300.0	
440-170251-9	CM-9R3	Total/NA	Water	300.0	
440-170251-10	CM-11R	Total/NA	Water	300.0	
440-170251-11	PZ-4	Total/NA	Water	300.0	
MB 440-377956/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377956/2	Lab Control Sample	Total/NA	Water	300.0	
440-170960-D-5 MS	Matrix Spike	Total/NA	Water	300.0	
440-170960-D-5 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

**Prep Batch: 379355** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total Recoverable	Water	3005A	
440-170251-2	Combined Subdrains	Total Recoverable	Water	3005A	
440-170251-3	Extraction Trench	Total Recoverable	Water	3005A	

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# **Metals (Continued)**

### Prep Batch: 379355 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-4	DW-1	Total Recoverable	Water	3005A	
440-170251-5	DW-2	Total Recoverable	Water	3005A	
440-170251-6	PZ-2	Total Recoverable	Water	3005A	
440-170251-7	MW-6	Total Recoverable	Water	3005A	
440-170251-8	MW-14	Total Recoverable	Water	3005A	
440-170251-9	CM-9R3	Total Recoverable	Water	3005A	
440-170251-10	CM-11R	Total Recoverable	Water	3005A	
440-170251-11	PZ-4	Total Recoverable	Water	3005A	
440-170251-12	CM-10R	Total Recoverable	Water	3005A	
MB 440-379355/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-379355/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-170251-1 MS	Subdrain (N)	Total Recoverable	Water	3005A	
440-170251-1 MSD	Subdrain (N)	Total Recoverable	Water	3005A	

### **Analysis Batch: 380783**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total Recoverable	Water	6010B	379355
440-170251-2	Combined Subdrains	Total Recoverable	Water	6010B	379355
440-170251-3	Extraction Trench	Total Recoverable	Water	6010B	379355
440-170251-4	DW-1	Total Recoverable	Water	6010B	379355
440-170251-5	DW-2	Total Recoverable	Water	6010B	379355
440-170251-6	PZ-2	Total Recoverable	Water	6010B	379355
440-170251-7	MW-6	Total Recoverable	Water	6010B	379355
440-170251-8	MW-14	Total Recoverable	Water	6010B	379355
440-170251-9	CM-9R3	Total Recoverable	Water	6010B	379355
440-170251-10	CM-11R	Total Recoverable	Water	6010B	379355
440-170251-11	PZ-4	Total Recoverable	Water	6010B	379355
440-170251-12	CM-10R	Total Recoverable	Water	6010B	379355
MB 440-379355/1-A	Method Blank	Total Recoverable	Water	6010B	379355
LCS 440-379355/2-A	Lab Control Sample	Total Recoverable	Water	6010B	379355
440-170251-1 MS	Subdrain (N)	Total Recoverable	Water	6010B	379355
440-170251-1 MSD	Subdrain (N)	Total Recoverable	Water	6010B	379355

### **Analysis Batch: 380859**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-4	DW-1	Total Recoverable	Water	6010B	379355
440-170251-6	PZ-2	Total Recoverable	Water	6010B	379355

# **General Chemistry**

### **Analysis Batch: 377319**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 2320B	_
440-170251-2	Combined Subdrains	Total/NA	Water	SM 2320B	
440-170251-3	Extraction Trench	Total/NA	Water	SM 2320B	
440-170251-4	DW-1	Total/NA	Water	SM 2320B	
440-170251-5	DW-2	Total/NA	Water	SM 2320B	
440-170251-6	PZ-2	Total/NA	Water	SM 2320B	
440-170251-7	MW-6	Total/NA	Water	SM 2320B	
440-170251-8	MW-14	Total/NA	Water	SM 2320B	

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# **General Chemistry (Continued)**

# **Analysis Batch: 377319 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-9	CM-9R3	Total/NA	Water	SM 2320B	
440-170251-10	CM-11R	Total/NA	Water	SM 2320B	
440-170251-11	PZ-4	Total/NA	Water	SM 2320B	
440-170251-12	CM-10R	Total/NA	Water	SM 2320B	
MB 440-377319/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-377319/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-170251-1 DU	Subdrain (N)	Total/NA	Water	SM 2320B	
440-170251-8 DU	MW-14	Total/NA	Water	SM 2320B	

### **Analysis Batch: 377512**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 4500 S2 D	
440-170251-2	Combined Subdrains	Total/NA	Water	SM 4500 S2 D	
440-170251-3	Extraction Trench	Total/NA	Water	SM 4500 S2 D	
440-170251-4	DW-1	Total/NA	Water	SM 4500 S2 D	
440-170251-5	DW-2	Total/NA	Water	SM 4500 S2 D	
440-170251-6	PZ-2	Total/NA	Water	SM 4500 S2 D	
440-170251-7	MW-6	Total/NA	Water	SM 4500 S2 D	
440-170251-8	MW-14	Total/NA	Water	SM 4500 S2 D	
440-170251-9	CM-9R3	Total/NA	Water	SM 4500 S2 D	
440-170251-10	CM-11R	Total/NA	Water	SM 4500 S2 D	
440-170251-11	PZ-4	Total/NA	Water	SM 4500 S2 D	
440-170251-12	CM-10R	Total/NA	Water	SM 4500 S2 D	
MB 440-377512/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-377512/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-170251-1 MS	Subdrain (N)	Total/NA	Water	SM 4500 S2 D	
440-170251-1 MSD	Subdrain (N)	Total/NA	Water	SM 4500 S2 D	

### **Analysis Batch: 377746**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-2	Combined Subdrains	Total/NA	Water	SM 4500 CO2 C	
440-170251-3	Extraction Trench	Total/NA	Water	SM 4500 CO2 C	
440-170251-4	DW-1	Total/NA	Water	SM 4500 CO2 C	
440-170251-5	DW-2	Total/NA	Water	SM 4500 CO2 C	
MB 440-377746/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-170565-H-4 DU	Duplicate	Total/NA	Water	SM 4500 CO2 C	

### **Analysis Batch: 377750**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-6	PZ-2	Total/NA	Water	SM 4500 CO2 C	
440-170251-7	MW-6	Total/NA	Water	SM 4500 CO2 C	
440-170251-8	MW-14	Total/NA	Water	SM 4500 CO2 C	
440-170251-9	CM-9R3	Total/NA	Water	SM 4500 CO2 C	
440-170251-10	CM-11R	Total/NA	Water	SM 4500 CO2 C	
440-170251-11	PZ-4	Total/NA	Water	SM 4500 CO2 C	
440-170251-12	CM-10R	Total/NA	Water	SM 4500 CO2 C	
MB 440-377750/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-170251-7 DU	MW-6	Total/NA	Water	SM 4500 CO2 C	

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

# **General Chemistry (Continued)**

# **Analysis Batch: 378207**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 2540C	
440-170251-2	Combined Subdrains	Total/NA	Water	SM 2540C	
440-170251-3	Extraction Trench	Total/NA	Water	SM 2540C	
440-170251-4	DW-1	Total/NA	Water	SM 2540C	
440-170251-5	DW-2	Total/NA	Water	SM 2540C	
440-170251-6	PZ-2	Total/NA	Water	SM 2540C	
MB 440-378207/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-378207/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-170251-2 DU	Combined Subdrains	Total/NA	Water	SM 2540C	

### **Prep Batch: 378257**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 4500 NH3 B	
440-170251-2	Combined Subdrains	Total/NA	Water	SM 4500 NH3 B	
440-170251-3	Extraction Trench	Total/NA	Water	SM 4500 NH3 B	
440-170251-4	DW-1	Total/NA	Water	SM 4500 NH3 B	
440-170251-5	DW-2	Total/NA	Water	SM 4500 NH3 B	
440-170251-6	PZ-2	Total/NA	Water	SM 4500 NH3 B	
440-170251-7	MW-6	Total/NA	Water	SM 4500 NH3 B	
440-170251-8	MW-14	Total/NA	Water	SM 4500 NH3 B	
440-170251-9	CM-9R3	Total/NA	Water	SM 4500 NH3 B	
440-170251-10	CM-11R	Total/NA	Water	SM 4500 NH3 B	
440-170251-11	PZ-4	Total/NA	Water	SM 4500 NH3 B	
440-170251-12	CM-10R	Total/NA	Water	SM 4500 NH3 B	
MB 440-378257/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-378257/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-170251-1 MS	Subdrain (N)	Total/NA	Water	SM 4500 NH3 B	
440-170251-1 MSD	Subdrain (N)	Total/NA	Water	SM 4500 NH3 B	

### **Analysis Batch: 378263**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-2	Combined Subdrains	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-3	Extraction Trench	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-4	DW-1	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-5	DW-2	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-6	PZ-2	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-7	MW-6	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-8	MW-14	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-9	CM-9R3	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-10	CM-11R	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-11	PZ-4	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-12	CM-10R	Total/NA	Water	SM 4500 NH3 D	378257
MB 440-378257/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	378257
LCS 440-378257/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-1 MS	Subdrain (N)	Total/NA	Water	SM 4500 NH3 D	378257
440-170251-1 MSD	Subdrain (N)	Total/NA	Water	SM 4500 NH3 D	378257

### Analysis Batch: 378295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-7	MW-6	Total/NA	Water	SM 2540C	

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Client: Geo-Logic Associates Project/Site: Sunshine Landfill

# **General Chemistry (Continued)**

# **Analysis Batch: 378295 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-8	MW-14	Total/NA	Water	SM 2540C	
440-170251-9	CM-9R3	Total/NA	Water	SM 2540C	
440-170251-10	CM-11R	Total/NA	Water	SM 2540C	
440-170251-11	PZ-4	Total/NA	Water	SM 2540C	
440-170251-12	CM-10R	Total/NA	Water	SM 2540C	
MB 440-378295/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-378295/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-170251-7 DU	MW-6	Total/NA	Water	SM 2540C	

### **Analysis Batch: 379704**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	410.4	
440-170251-2	Combined Subdrains	Total/NA	Water	410.4	
440-170251-3	Extraction Trench	Total/NA	Water	410.4	
440-170251-5	DW-2	Total/NA	Water	410.4	
440-170251-6	PZ-2	Total/NA	Water	410.4	
440-170251-7	MW-6	Total/NA	Water	410.4	
440-170251-8	MW-14	Total/NA	Water	410.4	
440-170251-9	CM-9R3	Total/NA	Water	410.4	
440-170251-10	CM-11R	Total/NA	Water	410.4	
440-170251-11	PZ-4	Total/NA	Water	410.4	
440-170251-12	CM-10R	Total/NA	Water	410.4	
MB 440-379704/3	Method Blank	Total/NA	Water	410.4	
LCS 440-379704/4	Lab Control Sample	Total/NA	Water	410.4	
440-170251-11 MS	PZ-4	Total/NA	Water	410.4	
440-170251-11 MSD	PZ-4	Total/NA	Water	410.4	

### **Analysis Batch: 379832**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-4	DW-1	Total/NA	Water	410.4	
MB 440-379832/3	Method Blank	Total/NA	Water	410.4	
LCS 440-379832/4	Lab Control Sample	Total/NA	Water	410.4	
440-170910-C-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-170910-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

### **Analysis Batch: 380231**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 5310C	
440-170251-5	DW-2	Total/NA	Water	SM 5310C	
440-170251-6	PZ-2	Total/NA	Water	SM 5310C	
440-170251-7	MW-6	Total/NA	Water	SM 5310C	
440-170251-8	MW-14	Total/NA	Water	SM 5310C	
440-170251-9	CM-9R3	Total/NA	Water	SM 5310C	
440-170251-10	CM-11R	Total/NA	Water	SM 5310C	
MB 440-380231/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-380231/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380231/5	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380231/8	Lab Control Sample	Total/NA	Water	SM 5310C	
440-171890-A-5 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-171890-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

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# **QC Association Summary**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

# **General Chemistry (Continued)**

# Analysis Batch: 380232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-3	Extraction Trench	Total/NA	Water	SM 5310C	
440-170251-11	PZ-4	Total/NA	Water	SM 5310C	
440-170251-12	CM-10R	Total/NA	Water	SM 5310C	
MB 440-380232/9	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-380232/8	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380232/39	Lab Control Sample	Total/NA	Water	SM 5310C	
440-170251-11 MS	PZ-4	Total/NA	Water	SM 5310C	
440-170251-11 MSD	PZ-4	Total/NA	Water	SM 5310C	

### **Analysis Batch: 380347**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-2	Combined Subdrains	Total/NA	Water	SM 5310C	_
440-170251-4	DW-1	Total/NA	Water	SM 5310C	
MB 440-380347/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-380347/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380347/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-171441-A-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-171441-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

### Analysis Batch: 381044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170251-1	Subdrain (N)	Total/NA	Water	SM 4500 CO2 C	
MB 440-381044/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-170251-1 DU	Subdrain (N)	Total/NA	Water	SM 4500 CO2 C	

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# **Definitions/Glossary**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

### **Qualifiers**

### **GC/MS VOA**

Qualifier **Qualifier Description** 

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

ID Analyte identified by RT & presence of single mass ion

### **GC/MS VOA TICs**

Indicates an Estimated Value for TICs

Т Result is a tentatively identified compound (TIC) and an estimated value.

Presumptive evidence of material.

### GC/MS Semi VOA

#### Qualifier **Qualifier Description**

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### HPLC/IC

#### Qualifier **Qualifier Description**

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**

В Compound was found in the blank and sample.

4 MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### **General Chemistry**

#### Qualifier **Qualifier Description**

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### **Glossary**

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

¤ Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery **CFL** Contains Free Liquid CNF Contains no Free Liquid

**DER** Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration MDA Minimum detectable activity **EDL Estimated Detection Limit** MDC Minimum detectable concentration

MDL Method Detection Limit MI Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

**PQL Practical Quantitation Limit** 

QC **Quality Control RER** Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

**RPD** Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

TestAmerica Irvine

Page 72 of 76

# **Certification Summary**

Client: Geo-Logic Associates Project/Site: Sunshine Landfill TestAmerica Job ID: 440-170251-1

3

# **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17 *
Hawaii	State Program	9	N/A	01-29-17 *
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-17 *
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

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 $<sup>\</sup>ensuremath{^*}$  Certification renewal pending - certification considered valid.

TestAmerica Irvine

**TestAmerica** 

071479

**Chain of Custody Record** 

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614

suite 100			R/#T/0	
Irvine, CA 92614 Phone: 049 941 1099 E.L.				THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.
. T.J. LUL., 1844	Regulatory Program:	DW NPDES	☐ RCRA ☐ Other:	
Client Contact (Rocub)?	ş	Merthana	Site Contact Moth Pertur Date: 12-26-16	COC, No:
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Preservation Used: 1= Ice, Z= HCI; 3= HZSO4; 4=HNO3;	5=NaOH; 6= Other			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Pleas Comments Section if the lab is to dispose of the sample.	Please List any EPA Waste Codes for	odes for the sample in the	Sample Disposal ( A tee may be assessed if samples are retained longer than 1 month)	ed longer tnan 1 month)
Non-Hazard Hammable Skin Irritant	Doison B	nwo	Return to Client Disposal by Lab Archive for	Months Months
Special Instructions/QC Requirements & Comments:				
Custody Seals Intagt:	Custody Seal No.:		Cooler Temp. ("C): Obs'd: Corr'd:	Therm ID No.:
7/	Company:	Date/Time:	Received by: Company:	Date/Time: $U \cup U \cup U \cup U$
Relinquished by	Company:	Date/Time:	Received by: ( ) Company:	Date/Time:
ORelinquished by:	Company:	18 18	Received in Laboratory by: Company:	Date/Time:
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TestAmerica Irvine

17461 Derian Ave Suite 100

Irvine, CA 92614 Phone: 949.261.1022 Fax:

Chain of Custody Record

TestAmerico 147687

THE LEADER IN ENVIRONMENTAL TESTING TESTANG TESTANG.

TAL-8210 (0713) Other: ☐ RCRA Regulatory Program: Dw NPDES

19:00 Sample Specific Notes: 009) Sampler:**B5, m ⊊**, Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) 02/9 2 For Lab Use Only: **7** Lab Sampling: Months lob / SDG No. Walk-in Client: Therm ID No Date/Time: Date/Time: Date/Time: SOC No: 2-4/18/19/13/1-5/0.9 Date: 12-20.16 Carrier: Test Ary r. 6a Archive for Company: Company: Disposal by Lab Lab Contact: Rossinc Received in Laborators) by Site Contact: McH Return to Client 201 90928 A93 Perform MS / MSD (Y / N ) 12. 20. 16 / 1600 Date/Time:/ Filtered Sample ( Y / N ) Date/Time: 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. Cont. Project Manager; Kyle Velchons Tel/Fax: 858 - 451-1136 Date/Time: ☐ WORKING DAYS 15.55 15.55 15.55 Matrix **Analysis Turnaround Time** Unknown Type (C=Comp, G=Grab) TAT if different from Below 1 week 2 days l day CALENDAR DAYS Sample Time Preservation Used: 1= ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NeOH; 6= Other Custody Seal No. Poison B **479** Company: 12.20/1 Company: Sample 12.20/ Date DSSOCIAK Skin Irritant Special Instructions/QC Requirements & Comments: Project Name: Senshing C'enyon 2 Address: 1 HIS W. Bernardo C+ Sample Identification Cllent Contact Ϋ́ Flammable 7424647 Company Name: Geology City/State/Zip: Scn Drescy Possible Hazard Identification: Phone:**958-45** Custody Seals Intact: Selinquished by: Relinquished by: Relinquished by: Non-Hazard Fax:

# **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-170251-1

Login Number: 170251 List Source: TestAmerica Irvine

List Number: 1

Creator: Soderblom, Tim

Creator: Soderblom, IIm		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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.	False	Refer to Job Narrative for details.
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	

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-170565-1

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: 1/9/2017 5:09:17 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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# **Sample Summary**

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

TestAmerica Job ID: 440-170565-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-170565-1	MW-2A	Water	12/21/16 10:30	12/21/16 18:50
440-170565-2	MW-2B	Water	12/21/16 08:55	12/21/16 18:50
440-170565-3	DW-4	Water	12/21/16 08:10	12/21/16 18:50
440-170565-4	MW-5	Water	12/21/16 12:15	12/21/16 18:50
440-170565-5	MW-9	Water	12/21/16 10:30	12/21/16 18:50
440-170565-6	DW-3	Water	12/21/16 08:25	12/21/16 18:50
440-170565-7	Duplicate	Water	12/21/16 00:01	12/21/16 18:50
440-170565-8	QCAB	Water	12/21/16 00:01	12/21/16 18:50
440-170565-9	QCTB	Water	12/21/16 00:01	12/21/16 18:50

### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Job ID: 440-170565-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-170565-1

### Comments

No additional comments.

### Receipt

The samples were received on 12/21/2016 6:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.1° C, 2.3° C and 2.4° C.

### Receipt Exceptions

The following samples were received at the laboratory without a sample collection time documented on the chain of custody: Duplicate (440-170565-7), QCAB (440-170565-8) and QCTB (440-170565-9). The laboratory was instructed to use a sample collection time of 00:01.

### GC/MS VOA

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

### GC/MS Semi VOA

Method(s) 8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-378304 and analytical batch 440-378647. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-379293 and analytical batch 440-379545. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 8270C: The following sample was not reported due to failure of quality control parameters in the initial analysis. The sample cannot be reanalyzed within holding time. The test was canceled; client will re-sample: DW-4 (440-170565-3).

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

### HPLC/IC

Method(s) 300.0: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 440-377297 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 300.0: The following sample was diluted for Bromide due to the nature of the sample matrix: MW-2A (440-170565-1) and MW-2B (440-170565-2). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following sample was diluted for Bromide and Fluoride due to the nature of the sample matrix: DW-4 (440-170565-3). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples was diluted for Nitrate as N due to the nature of the sample matrix: MW-2A (440-170565-1), MW-2B (440-170565-2), DW-4 (440-170565-3), MW-5 (440-170565-4) and MW-9 (440-170565-5). 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

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

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### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

# Job ID: 440-170565-1 (Continued)

### **Laboratory: TestAmerica Irvine (Continued)**

Method(s) 3520C: The following sample was prepared outside of preparation holding time: DW-4 (440-170565-3). Originally sample was extracted within holding time, however, surrogate recovery was low.

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

### **VOA Prep**

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

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-1

Matrix: Water

Client Sample ID: MW-2A Date Collected: 12/21/16 10:30

Iodomethane

m,p-Xylene

Naphthalene

o-Xylene

Isobutyl alcohol

Methylacrylonitrile

Methyl methacrylate

Methylene Chloride

Methyl tert-butyl ether

Method: 8260B - Volatile Org	anic Compounds (GC/M	S)						
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/28/16 10:36	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/28/16 10:36	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/28/16 10:36	
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/28/16 10:36	
1,3-Dichlorobenzene	ND	0.50		ug/L			12/28/16 10:36	
1,3-Dichloropropane	ND	0.50		ug/L			12/28/16 10:36	
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 10:36	
2,2-Dichloropropane	ND	1.0		ug/L			12/28/16 10:36	
2-Chloro-1,3-butadiene	ND	1.0		ug/L			12/28/16 10:36	
2-Hexanone	ND	5.0	2.5	ug/L			12/28/16 10:36	
Acetone	ND	20		ug/L			12/28/16 10:36	
Acetonitrile	ND	20		ug/L			12/28/16 10:36	
Benzene	ND	0.50		ug/L			12/28/16 10:36	
Allyl chloride	ND	1.0		ug/L			12/28/16 10:36	
Bromoform	ND	1.0		ug/L			12/28/16 10:36	
Bromomethane	ND	0.50		ug/L			12/28/16 10:36	
Carbon disulfide	ND	1.0	0.50	ug/L			12/28/16 10:36	
Carbon tetrachloride	ND	0.50		ug/L			12/28/16 10:36	
Chlorobenzene	ND	0.50	0.25	ug/L			12/28/16 10:36	
Bromochloromethane	ND	0.50		ug/L			12/28/16 10:36	
Chloroethane	ND	1.0	0.40	ug/L			12/28/16 10:36	
Chloroform	ND	0.50		ug/L			12/28/16 10:36	
Chloromethane	ND	0.50	0.25	ug/L			12/28/16 10:36	
cis-1,2-Dichloroethene	ND	0.50		ug/L			12/28/16 10:36	
cis-1,3-Dichloropropene	ND	0.50	0.25	ug/L			12/28/16 10:36	
Dibromochloromethane	ND	0.50		ug/L			12/28/16 10:36	
Dibromomethane	ND	0.50		ug/L			12/28/16 10:36	
Bromodichloromethane	ND	0.50		ug/L			12/28/16 10:36	
Dichlorodifluoromethane	ND	1.0		ug/L			12/28/16 10:36	
Ethyl methacrylate	ND	2.0		ug/L			12/28/16 10:36	
Ethylbenzene	ND	0.50		ug/L			12/28/16 10:36	
la de cardo a car	ND	0.0		- 3			40/00/40 40:00	

TestAmerica Irvine

12/28/16 10:36

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12/28/16 10:36

12/28/16 10:36

12/28/16 10:36

12/28/16 10:36

2.0

25

1.0

5.0

2.0

2.0

0.50

1.0

0.50

1.0 ug/L

13 ug/L

0.50 ug/L

2.5 ug/L

1.0 ug/L

0.88 ug/L

0.25 ug/L

0.40 ug/L

0.25 ug/L

ND

ND

ND

ND

ND

ND

ND

ND

ND

2

5

7

10

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Client: Geo-Logic Associates

Client Sample ID: MW-2A Date Collected: 12/21/16 10:30

Date Received: 12/21/16 18:50

Surrogate

1,4-Dioxane-d8 (Surr)

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-170565-1

Prepared

<u>12/27/16 08:45</u> <u>12/29/16 13:40</u>

Analyzed

Dil Fac

Motor

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			12/28/16 10:36	1
Styrene	ND		0.50	0.25	ug/L			12/28/16 10:36	1
t-Butanol	ND		10	5.0	ug/L			12/28/16 10:36	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/28/16 10:36	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/28/16 10:36	1
Toluene	ND		0.50	0.25	ug/L			12/28/16 10:36	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/28/16 10:36	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/28/16 10:36	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/28/16 10:36	1
Trichloroethene	ND		0.50	0.25	ug/L			12/28/16 10:36	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/28/16 10:36	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/28/16 10:36	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/28/16 10:36	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/28/16 10:36	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/28/16 10:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/28/16 10:36	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/28/16 10:36	1
Acrolein	ND		5.0	2.5	ug/L			12/28/16 10:36	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.9	TJ	ug/L		5.31			12/28/16 10:36	1
Unknown	8.1	TJ	ug/L	17	7.37			12/28/16 10:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110	-	80 - 128					12/28/16 10:36	1
4-Bromofluorobenzene (Surr)	102		80 - 120					12/28/16 10:36	1
Dibromofluoromethane (Surr)	100		76 - 132					12/28/16 10:36	1
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.95	0.24	ug/L		12/27/16 08:45	12/29/16 13:40	1

Method: 300.0 - Anions, Ion	Chromatography					
Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Bromide	ND ND	1.0	0.50 mg/L		12/21/16 20:40	2
Nitrate as N	ND	0.22	0.11 mg/L		12/21/16 20:40	2
Chloride	15	1.0	0.50 mg/L		12/21/16 20:40	2
Fluoride	1.8	1.0	0.50 mg/L		12/21/16 20:40	2
Sulfate	1600	50	25 mg/L		12/21/16 20:50	100

Limits

30 - 120

%Recovery Qualifier

54

Analyte	Result (	Qualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.60	0.050	0.010	mg/L		12/29/16 08:09	12/30/16 10:37	1
Calcium	230	0.10	0.050	mg/L		12/29/16 08:09	12/30/16 10:37	1
Iron	23	0.040	0.010	mg/L		12/29/16 08:09	12/30/16 10:37	1
Magnesium	120	0.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:37	1
Manganese	1.2	0.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:37	1
Potassium	5.9	0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:37	1

Client: Geo-Logic Associates

**Bicarbonate Alkalinity as CaCO3** 

Carbon Dioxide, Free

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

12/27/16 08:10

12/22/16 15:56

Client Sample ID: MW-2A Lab Sample ID: 440-170565-1

Date Collected: 12/21/16 10:30 **Matrix: Water** 

Date Received: 12/21/16 18:50

Method: 6010B - Metals (ICP) Analyte		overable (Co Qualifier	ontinued) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	420		0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:37	1
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	16	J	20	10	mg/L			01/04/17 09:09	1
Total Dissolved Solids	2500		20	10	mg/L			12/28/16 08:52	1
Ammonia (as N)	3.2		0.50	0.10	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:27	1
<b>Total Organic Carbon</b>	3.8		0.10	0.050	mg/L			01/05/17 14:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	360		4.0	4.0	mg/L			12/27/16 08:10	1

Client Sample ID: MW-2B Lab Sample ID: 440-170565-2

4.0

2.0

4.0 mg/L

2.0 mg/L

360

**72** 

Date Collected: 12/21/16 08:55 **Matrix: Water** Date Received: 12/21/16 18:50

Method: 8260B - Volatile Organic Compounds (GC/MS) Result Qualifier RL **MDL** Unit D **Analyte** Prepared Analyzed Dil Fac 1,2,3-Trichloropropane  $\overline{\mathsf{ND}}$ 1.0 0.40 ug/L 12/28/16 11:55 ND 0.50 1,1,1,2-Tetrachloroethane 0.25 ug/L 12/28/16 11:55 1.1.1-Trichloroethane ND 0.50 0.25 ug/L 12/28/16 11:55 1,1,2,2-Tetrachloroethane ND 0.50 0.25 ug/L 12/28/16 11:55 1,1,2-Trichloroethane ND 0.50 0.25 ug/L 12/28/16 11:55 1.1-Dichloroethane ND 0.50 0.25 ug/L 12/28/16 11:55 1,1-Dichloroethene ND 0.50 0.25 ug/L 12/28/16 11:55 1,1-Dichloropropene ND 0.50 0.25 ug/L 12/28/16 11:55 ND 1,2,4-Trichlorobenzene 1.0 0.40 ug/L 12/28/16 11:55 1.2-Dibromo-3-Chloropropane ND 1.0 0.50 ug/L 12/28/16 11:55 1,2-Dichlorobenzene ND 0.50 0.25 ug/L 12/28/16 11:55 1,2-Dichloroethane ND 0.50 0.25 ug/L 12/28/16 11:55 ND 0.50 0.25 ug/L 1,2-Dichloropropane 12/28/16 11:55 0.50 0.25 ug/L 1,3-Dichlorobenzene ND 12/28/16 11:55 0.25 ug/L 1,3-Dichloropropane ND 0.50 12/28/16 11:55 1,4-Dichlorobenzene ND 0.50 0.25 ug/L 12/28/16 11:55 ND 2,2-Dichloropropane 1.0 0.40 ug/L 12/28/16 11:55 2-Chloro-1,3-butadiene ND 1.0 0.50 ug/L 12/28/16 11:55 2-Hexanone ND 5.0 2.5 ug/L 12/28/16 11:55 Acetone ND 20 10 ug/L 12/28/16 11:55 Acetonitrile ND 20 10 ug/L 12/28/16 11:55 ND Benzene 0.50 0.25 ug/L 12/28/16 11:55 0.50 ug/L Allyl chloride ND 1.0 12/28/16 11:55 Bromoform ND 1.0 0.40 ug/L 12/28/16 11:55 Bromomethane ND 0.50 0.25 ug/L 12/28/16 11:55 Carbon disulfide ND 1.0 0.50 ug/L 12/28/16 11:55 Carbon tetrachloride ND 0.50 0.25 ug/L 12/28/16 11:55 Chlorobenzene ND 0.50 0.25 ug/L 12/28/16 11:55 Bromochloromethane ND 0.50 0.25 ug/L 12/28/16 11:55 Chloroethane ND 12/28/16 11:55 1.0 0.40 ug/L

TestAmerica Irvine

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1/9/2017

Client: Geo-Logic Associates

Date Received: 12/21/16 18:50

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

**Client Sample ID: MW-2B** Lab Sample ID: 440-170565-2

Date Collected: 12/21/16 08:55

**Matrix: Water** 

Method: 8260B - Volatile Organalyte	Result	Qualifier	RL	MD	L Unit	D	Prepared	Analyzed	Dil Fa
Chloroform	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
Chloromethane	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
cis-1,2-Dichloroethene	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
cis-1,3-Dichloropropene	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
Dibromochloromethane	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
Dibromomethane	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
Bromodichloromethane	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
Dichlorodifluoromethane	ND		1.0	0.4	0 ug/L			12/28/16 11:55	
Ethyl methacrylate	ND		2.0	1.0	0 ug/L			12/28/16 11:55	
Ethylbenzene	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
lodomethane	ND		2.0	1.0	0 ug/L			12/28/16 11:55	
Isobutyl alcohol	ND		25	1	3 ug/L			12/28/16 11:55	
m,p-Xylene	ND		1.0	0.5	0 ug/L			12/28/16 11:55	
Methylacrylonitrile	ND		5.0	2.	5 ug/L			12/28/16 11:55	
Methyl methacrylate	ND		2.0		0 ug/L			12/28/16 11:55	
Methylene Chloride	ND		2.0		8 ug/L			12/28/16 11:55	
Methyl tert-butyl ether	ND		0.50		5 ug/L			12/28/16 11:55	
Naphthalene	ND		1.0	0.4	0 ug/L			12/28/16 11:55	
o-Xylene	ND		0.50		5 ug/L			12/28/16 11:55	
Propionitrile	ND		20		0 ug/L			12/28/16 11:55	
Styrene	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
t-Butanol	ND		10		0 ug/L			12/28/16 11:55	
Tetrachloroethene	ND		0.50		5 ug/L			12/28/16 11:55	
Tetrahydrofuran	ND		10		0 ug/L			12/28/16 11:55	
Toluene	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
trans-1,2-Dichloroethene	ND		0.50		5 ug/L			12/28/16 11:55	
trans-1,3-Dichloropropene	ND		0.50		5 ug/L			12/28/16 11:55	
trans-1,4-Dichloro-2-butene	ND		5.0	2.	5 ug/L			12/28/16 11:55	
Trichloroethene	ND		0.50		5 ug/L			12/28/16 11:55	
Trichlorofluoromethane	ND		0.50	0.2	5 ug/L			12/28/16 11:55	
Vinyl acetate	ND		4.0	2.	0 ug/L			12/28/16 11:55	
Vinyl chloride	ND		0.50		5 ug/L			12/28/16 11:55	
1,2-Dibromoethane (EDB)	ND		0.50		5 ug/L			12/28/16 11:55	
2-Butanone (MEK)	ND		5.0		5 ug/L			12/28/16 11:55	
4-Methyl-2-pentanone (MIBK)	ND		5.0		5 ug/L			12/28/16 11:55	
Acrylonitrile	ND		2.0		0 ug/L			12/28/16 11:55	
Acrolein	ND		5.0		5 ug/L			12/28/16 11:55	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	6.7	TJ	ug/L		7.23			12/28/16 11:55	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	106		80 - 128					12/28/16 11:55	
4-Bromofluorobenzene (Surr)	101		80 - 120					12/28/16 11:55	
Dibromofluoromethane (Surr)	102		76 - 132					12/28/16 11:55	
Method: 8270C - Semivolatile			(GC/MS)						
Analyte		Qualifier	` ŔĹ	MD	L Unit	D	Prepared	Analyzed	Dil Fa

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Client Sample ID: MW-2B Lab Sample ID: 440-170565-2

Date Collected: 12/21/16 08:55 Date Received: 12/21/16 18:50

**Matrix: Water** 

01/05/17 15:08

Analyzed

12/27/16 08:19

12/27/16 08:19

12/22/16 15:56

Dil Fac

Prepared

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	63		30 - 120				12/27/16 08:45	12/29/16 14:02	1
Method: 300.0 - Anions, Ion C	hromatogra	phy							
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/21/16 21:00	2
Nitrate as N	ND		0.22	0.11	mg/L			12/21/16 21:00	2
Chloride	12		1.0	0.50	mg/L			12/21/16 21:00	2
Fluoride	1.6		1.0	0.50	mg/L			12/21/16 21:00	2
Sulfate	1600		50	25	mg/L			12/21/16 21:11	100
Method: 6010B - Metals (ICP)	- Total Reco	overable							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.58		0.050	0.010	mg/L		12/29/16 08:09	12/30/16 10:25	1
Calcium	190		0.10	0.050	mg/L		12/29/16 08:09	12/30/16 10:25	1
Iron	3.0		0.040	0.010	mg/L		12/29/16 08:09	12/30/16 10:25	1
Magnesium	110		0.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:25	1
Manganese	0.13		0.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:25	1
Potassium	4.6		0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:25	1
Sodium	450		0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:25	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L		·——	01/04/17 15:35	1
Total Dissolved Solids	2600		20	10	mg/L			12/28/16 08:52	1
Ammonia (as N)	3.5		0.50	0.10	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	0.022	J	0.050	0.020	mg/L			12/21/16 22:27	1

Client Sample ID: DW-4 Lab Sample ID: 440-170565-3 **Matrix: Water** 

0.10

RL

4.0

4.0

2.0

1.9

350

350

**35** 

Result Qualifier

0.050 mg/L

**RL Unit** 

4.0 mg/L

4.0 mg/L

2.0 mg/L

Date Collected: 12/21/16 08:10 Date Received: 12/21/16 18:50

**Bicarbonate Alkalinity as CaCO3** 

**Total Organic Carbon** 

**Alkalinity as CaCO3** 

**Carbon Dioxide, Free** 

Analyte

Analyte	Result Qua	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/28/16 12:21	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/28/16 12:21	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/28/16 12:21	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:21	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/28/16 12:21	1

TestAmerica Irvine

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1/9/2017

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-3

Matrix: Water

Client Sample ID: DW-4
Date Collected: 12/21/16 08:10

Date Received: 12/21/16 18:50 Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued) Dil Fac **Analyte** Result Qualifier RL MDL Unit D Prepared **Analyzed** 1,3-Dichlorobenzene ND 0.50 0.25 ug/L 12/28/16 12:21 1,3-Dichloropropane ND 0.50 0.25 ug/L 12/28/16 12:21 1,4-Dichlorobenzene ND 0.50 0.25 ug/L 12/28/16 12:21 2,2-Dichloropropane ND 1.0 0.40 ug/L 12/28/16 12:21 2-Chloro-1,3-butadiene ND 0.50 ug/L 1.0 12/28/16 12:21 5.0 2-Hexanone ND 2.5 ug/L 12/28/16 12:21 Acetone ND 20 10 ug/L 12/28/16 12:21 Acetonitrile 20 ND 10 ug/L 12/28/16 12:21 ND Benzene 0.50 0.25 ug/L 12/28/16 12:21 Allyl chloride ND 1.0 0.50 ug/L 12/28/16 12:21 Bromoform ND 1.0 0.40 ug/L 12/28/16 12:21 Bromomethane ND 0.50 0.25 ug/L 12/28/16 12:21 Carbon disulfide ND 1.0 0.50 ug/L 12/28/16 12:21 Carbon tetrachloride ND 0.50 0.25 ug/L 12/28/16 12:21 Chlorobenzene ND 0.50 0.25 ug/L 12/28/16 12:21

Bromochloromethane	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Chloroethane	ND	1.0	0.40 ug/L	12/28/16 12:21	1
Chloroform	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Chloromethane	ND	0.50	0.25 ug/L	12/28/16 12:21	1
cis-1,2-Dichloroethene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
cis-1,3-Dichloropropene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Dibromochloromethane	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Dibromomethane	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Bromodichloromethane	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Dichlorodifluoromethane	ND	1.0	0.40 ug/L	12/28/16 12:21	1
Ethyl methacrylate	ND	2.0	1.0 ug/L	12/28/16 12:21	1
Ethylbenzene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
lodomethane	ND	2.0	1.0 ug/L	12/28/16 12:21	1
Isobutyl alcohol	ND	25	13 ug/L	12/28/16 12:21	1
m,p-Xylene	ND	1.0	0.50 ug/L	12/28/16 12:21	1
Methylacrylonitrile	ND	5.0	2.5 ug/L	12/28/16 12:21	1
Methyl methacrylate	ND	2.0	1.0 ug/L	12/28/16 12:21	1
Methylene Chloride	ND	2.0	0.88 ug/L	12/28/16 12:21	1
Methyl tert-butyl ether	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Naphthalene	ND	1.0	0.40 ug/L	12/28/16 12:21	1
o-Xylene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Propionitrile	ND	20	10 ug/L	12/28/16 12:21	1
Styrene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
t-Butanol	ND	10	5.0 ug/L	12/28/16 12:21	1
Tetrachloroethene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Tetrahydrofuran	ND	10	5.0 ug/L	12/28/16 12:21	1
Toluene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
trans-1,2-Dichloroethene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
trans-1,3-Dichloropropene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
trans-1,4-Dichloro-2-butene	ND	5.0	2.5 ug/L	12/28/16 12:21	1
Trichloroethene	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Trichlorofluoromethane	ND	0.50	0.25 ug/L	12/28/16 12:21	1
Vinyl acetate	ND	4.0	2.0 ug/L	12/28/16 12:21	1
Vinyl chloride	ND	0.50	0.25 ug/L	12/28/16 12:21	1

TestAmerica Irvine

2

4

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10

12

Client: Geo-Logic Associates

Client Sample ID: DW-4

Date Collected: 12/21/16 08:10

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-3

**Matrix: Water** 

Date Received: 12/21/16 18:50	

Method: 8260B - Volatile Org	anic Compounds (GC/M	S) (Continu	ed)					
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND	0.50	0.25	ug/L			12/28/16 12:21	1
2-Butanone (MEK)	ND	5.0	2.5	ug/L			12/28/16 12:21	1
4-Methyl-2-pentanone (MIBK)	ND	5.0	2.5	ug/L			12/28/16 12:21	1
Acrylonitrile	ND	2.0	1.0	ug/L			12/28/16 12:21	1
Acrolein	ND	5.0	2.5	ug/L			12/28/16 12:21	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	4.3	TJ	ug/L		3.12			12/28/16 12:21	1
Unknown	3.4	ΤJ	ug/L		15.14			12/28/16 12:21	1
Unknown	12	TJ	ug/L		17.01			12/28/16 12:21	1

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 128	_		12/28/16 12:21	1
4-Bromofluorobenzene (Surr)	101		80 - 120			12/28/16 12:21	1
Dibromofluoromethane (Surr)	104		76 - 132			12/28/16 12:21	1

Method: 300.0 - Anions, Ion Chromatography

Method. 300.0 - Allions, lon Ci	iii oiiiatogi a	Pily							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		1.0	0.50	mg/L			12/21/16 21:21	2
Nitrate as N	ND		0.22	0.11	mg/L			12/21/16 21:21	2
Chloride	11		1.0	0.50	mg/L			12/21/16 21:21	2
Fluoride	ND		1.0	0.50	mg/L			12/21/16 21:21	2
Sulfate	1800		50	25	mg/L			12/21/16 21:31	100

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.59	0.	.050	0.010	mg/L		12/29/16 08:09	12/30/16 10:15	1
Calcium	200	(	0.10	0.050	mg/L		12/29/16 08:09	12/30/16 10:15	1
Iron	2.5	0.	.040	0.010	mg/L		12/29/16 08:09	12/30/16 10:15	1
Magnesium	130	0.	.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:15	1
Manganese	0.14	0	.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:15	1
Potassium	4.7	(	0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:15	1
Sodium	480		0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:15	1

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20	10	mg/L			01/04/17 15:35	1
Total Dissolved Solids	2800		20	10	mg/L			12/28/16 08:52	1
Ammonia (as N)	4.5		0.50	0.10	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:27	1
Total Organic Carbon	1.9		0.10	0.050	mg/L			01/05/17 15:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	350		4.0	4.0	mg/L			12/22/16 14:55	1
Bicarbonate Alkalinity as CaCO3	350		4.0	4.0	mg/L			12/22/16 14:55	1
Carbon Dioxide, Free	32		2.0	2.0	mg/L			12/22/16 15:56	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Client Sample ID: MW-5 Lab Sample ID: 440-170565-4

Date Collected: 12/21/16 12:15

Matrix: Water

Date Received: 12/21/16 18:50

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/28/16 12:47	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/28/16 12:47	
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/28/16 12:47	
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/28/16 12:47	
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 12:47	
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/28/16 12:47	
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/28/16 12:47	
2-Hexanone	ND	5.0	2.5	ug/L			12/28/16 12:47	
Acetone	ND	20	10	ug/L			12/28/16 12:47	
Acetonitrile	ND	20	10	ug/L			12/28/16 12:47	
Benzene	ND	0.50		ug/L			12/28/16 12:47	
Allyl chloride	ND	1.0		ug/L			12/28/16 12:47	
Bromoform	ND	1.0		ug/L			12/28/16 12:47	
Bromomethane	ND	0.50		ug/L			12/28/16 12:47	
Carbon disulfide	ND	1.0		ug/L			12/28/16 12:47	
Carbon tetrachloride	ND	0.50		ug/L			12/28/16 12:47	
Chlorobenzene	ND	0.50		ug/L			12/28/16 12:47	
Bromochloromethane	ND	0.50		ug/L			12/28/16 12:47	
Chloroethane	ND	1.0		ug/L			12/28/16 12:47	
Chloroform	ND	0.50		ug/L			12/28/16 12:47	
Chloromethane	ND	0.50		ug/L			12/28/16 12:47	
cis-1,2-Dichloroethene	ND	0.50		ug/L			12/28/16 12:47	
cis-1,3-Dichloropropene	ND	0.50		ug/L			12/28/16 12:47	
Dibromochloromethane	ND	0.50		ug/L			12/28/16 12:47	
Dibromomethane	ND	0.50		ug/L			12/28/16 12:47	
Bromodichloromethane	ND	0.50		ug/L			12/28/16 12:47	
Dichlorodifluoromethane	ND	1.0		ug/L			12/28/16 12:47	
Ethyl methacrylate	ND	2.0		ug/L			12/28/16 12:47	
Ethylbenzene	ND	0.50		ug/L			12/28/16 12:47	
lodomethane	ND	2.0		ug/L			12/28/16 12:47	
Isobutyl alcohol	ND	25		ug/L			12/28/16 12:47	
m,p-Xylene	ND	1.0		ug/L			12/28/16 12:47	
Methylacrylonitrile	ND	5.0		ug/L			12/28/16 12:47	
Methyl methacrylate	ND	2.0		ug/L			12/28/16 12:47	
Methylene Chloride	ND	2.0		ug/L			12/28/16 12:47	
Methyl tert-butyl ether	ND	0.50		ug/L			12/28/16 12:47	
Naphthalene	ND	1.0		ug/L			12/28/16 12:47	
o-Xylene	ND	0.50		ug/L			12/28/16 12:47	

TestAmerica Irvine

6

8

10

40

Project/Site: Republic Sunshine Canyon

**Client Sample ID: MW-5** 

**Potassium** 

Lab Sample ID: 440-170565-4

**Matrix: Water** 

Date Collected: 12/21/16 12:15 Date Received: 12/21/16 18:50

Analyte	Result	Qualifier	RL	N	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20		10	ug/L			12/28/16 12:47	
Styrene	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
t-Butanol	ND		10		5.0	ug/L			12/28/16 12:47	•
Tetrachloroethene	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
Tetrahydrofuran	ND		10		5.0	ug/L			12/28/16 12:47	
Toluene	ND		0.50		0.25	ug/L			12/28/16 12:47	
trans-1,2-Dichloroethene	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
trans-1,3-Dichloropropene	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
trans-1,4-Dichloro-2-butene	ND		5.0		2.5	ug/L			12/28/16 12:47	
Trichloroethene	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
Trichlorofluoromethane	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
Vinyl acetate	ND		4.0		2.0	ug/L			12/28/16 12:47	
Vinyl chloride	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
1,2-Dibromoethane (EDB)	ND		0.50	(	0.25	ug/L			12/28/16 12:47	
2-Butanone (MEK)	ND		5.0		2.5	ug/L			12/28/16 12:47	
4-Methyl-2-pentanone (MIBK)	ND		5.0		2.5	ug/L			12/28/16 12:47	
Acrylonitrile	ND		2.0		1.0	ug/L			12/28/16 12:47	
Acrolein	ND		5.0		2.5	ug/L			12/28/16 12:47	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	4.8	TJ	ug/L		5.	.88			12/28/16 12:47	
Unknown	25	TJ	ug/L		17.	.02			12/28/16 12:47	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	111		80 - 128						12/28/16 12:47	-
4-Bromofluorobenzene (Surr)	103		80 - 120						12/28/16 12:47	
Dibromofluoromethane (Surr)	101		76 - 132						12/28/16 12:47	
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)							
Analyte	Result	Qualifier	RL	N	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	11		1.0		0.26	ug/L		12/27/16 08:45	12/29/16 14:47	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	56		30 - 120					12/27/16 08:45	12/29/16 14:47	
Method: 300.0 - Anions, Ion (	Chromatogra	phy								
Analyte	Result	Qualifier	RL	N	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Bromide	2.4		1.0		0.50	mg/L			12/21/16 21:42	
Nitrate as N	ND		0.22	(	0.11	mg/L			12/21/16 21:42	:
Chloride	130		50		25	mg/L			12/21/16 21:52	10
Fluoride	3.2		1.0		0.50	mg/L			12/21/16 21:42	:
Sulfate	1500		50		25	mg/L			12/21/16 21:52	100
Method: 6010B - Metals (ICP)	- Total Reco	overable								
Analyte		Qualifier	RL	N	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Boron	1.0		0.050	0.	.010	mg/L		12/29/16 08:04	12/30/16 11:13	
Calcium	430		0.10	0.	.050	mg/L		12/29/16 08:04	12/30/16 11:13	
Iron	19		0.040	0.	.010	mg/L		12/29/16 08:04	12/30/16 11:13	
Magnesium	190		0.020	0.	.010	mg/L		12/29/16 08:04	12/30/16 11:13	
Manganese	4.8		0.020	0.	.010	mg/L		12/29/16 08:04	12/30/16 11:13	
						ma/l		12/20/16 09:04		

TestAmerica Irvine

12/29/16 08:04 12/30/16 11:13

0.50

0.25 mg/L

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-4

Matrix: Water

12/22/16 15:56

Date Collected: 12/21/16 12:15 Date Received: 12/21/16 18:50

**Carbon Dioxide, Free** 

**Client Sample ID: MW-5** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	270		0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:13	1
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	66		20	10	mg/L			01/04/17 15:35	1
Total Dissolved Solids	3100		20	10	mg/L			12/28/16 08:52	1
Ammonia (as N)	6.6		2.5	0.50	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:27	1
<b>Total Organic Carbon</b>	26		1.0	0.50	mg/L			01/06/17 06:29	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	640		4.0	4.0	mg/L			12/22/16 15:07	1
Bicarbonate Alkalinity as CaCO3	640		4.0	4.0	mg/L			12/22/16 15:07	1

Client Sample ID: MW-9

Lab Sample ID: 440-170565-5

Metrix: Weter

2.0

2.0 mg/L

190

Date Collected: 12/21/16 10:30 Matrix: Water Date Received: 12/21/16 18:50

Analyte	Result Qu	alifier RL	MDL		D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/28/16 22:00	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/28/16 22:00	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/28/16 22:00	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,3-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/28/16 22:00	1
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/28/16 22:00	1
2-Hexanone	ND	5.0	2.5	ug/L			12/28/16 22:00	1
Acetone	ND	20	10	ug/L			12/28/16 22:00	1
Acetonitrile	ND	20	10	ug/L			12/28/16 22:00	1
Benzene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
Allyl chloride	ND	1.0	0.50	ug/L			12/28/16 22:00	1
Bromoform	ND	1.0	0.40	ug/L			12/28/16 22:00	1
Bromomethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
Carbon disulfide	ND	1.0	0.50	ug/L			12/28/16 22:00	1
Carbon tetrachloride	ND	0.50	0.25	ug/L			12/28/16 22:00	1
Chlorobenzene	ND	0.50	0.25	ug/L			12/28/16 22:00	1
Bromochloromethane	ND	0.50	0.25	ug/L			12/28/16 22:00	1
Chloroethane	ND	1.0	0.40	ug/L			12/28/16 22:00	1

TestAmerica Irvine

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11

1:

1

1/9/2017

Client Sample ID: MW-9

Analyte

1,4-Dioxane

Date Collected: 12/21/16 10:30 Date Received: 12/21/16 18:50 Lab Sample ID: 440-170565-5

Matrix: Water

Analyte	Result	Qualifier	/MS) (Conti RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.50	0.25	ug/L			12/28/16 22:00	1
Chloromethane	ND		0.50	0.25	ug/L			12/28/16 22:00	1
cis-1,2-Dichloroethene	0.54		0.50	0.25	ug/L			12/28/16 22:00	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/28/16 22:00	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/28/16 22:00	1
Dibromomethane	ND		0.50	0.25	ug/L			12/28/16 22:00	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/28/16 22:00	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/28/16 22:00	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/28/16 22:00	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/28/16 22:00	1
lodomethane	ND		2.0	1.0	ug/L			12/28/16 22:00	1
Isobutyl alcohol	ND		25		ug/L			12/28/16 22:00	1
m,p-Xylene	ND		1.0		ug/L			12/28/16 22:00	1
Methylacrylonitrile	ND		5.0		ug/L			12/28/16 22:00	1
Methyl methacrylate	ND		2.0		ug/L			12/28/16 22:00	1
Methylene Chloride	ND		2.0		ug/L			12/28/16 22:00	1
Methyl tert-butyl ether	ND		0.50		ug/L			12/28/16 22:00	1
Naphthalene	ND		1.0		ug/L			12/28/16 22:00	1
o-Xylene	ND		0.50		ug/L			12/28/16 22:00	1
Propionitrile	ND		20		ug/L			12/28/16 22:00	1
Styrene	ND		0.50		ug/L			12/28/16 22:00	1
t-Butanol	33		10		ug/L			12/28/16 22:00	1
Tetrachloroethene	ND		0.50		ug/L			12/28/16 22:00	1
Tetrahydrofuran	6.2	J	10		ug/L			12/28/16 22:00	1
Toluene	ND		0.50		ug/L			12/28/16 22:00	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			12/28/16 22:00	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			12/28/16 22:00	1
trans-1,4-Dichloro-2-butene	ND		5.0		ug/L			12/28/16 22:00	
Trichloroethene	ND		0.50		ug/L			12/28/16 22:00	1
Trichlorofluoromethane	ND		0.50		ug/L			12/28/16 22:00	1
Vinyl acetate	ND		4.0		ug/L			12/28/16 22:00	
Vinyl decidic Vinyl chloride	ND		0.50		ug/L			12/28/16 22:00	1
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/28/16 22:00	1
2-Butanone (MEK)	ND		5.0		ug/L ug/L			12/28/16 22:00	
	ND ND		5.0		ug/L ug/L			12/28/16 22:00	1
4-Methyl-2-pentanone (MIBK) Acrylonitrile	ND ND		2.0		_			12/28/16 22:00	1
Acrolein	ND		5.0		ug/L ug/L			12/28/16 22:00	ا 1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	5.1	TJ	ug/L		.87			12/28/16 22:00	1
Unknown	11	TJ	ug/L	17.	.75			12/28/16 22:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 128					12/28/16 22:00	1
4-Bromofluorobenzene (Surr)	99		80 - 120					12/28/16 22:00	1
Dibromofluoromethane (Surr)	100		76 - 132					12/28/16 22:00	1

TestAmerica Irvine

Analyzed

<u>12/27/16 08:45</u> <u>12/29/16 15:08</u>

Prepared

RL

1.0

MDL Unit

0.26 ug/L

Result Qualifier

23

Dil Fac

3

E

6

8

10

12

Client: Geo-Logic Associates

**Client Sample ID: MW-9** 

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-5

**Matrix: Water** 

Date Collected: 12/21/16 10:30 Date Received: 12/21/16 18:50

Surrogate Limits Prepared Analyzed %Recovery Qualifier Dil Fac 1,4-Dioxane-d8 (Surr) 51 30 - 120 <u>12/27/16 08:45</u> <u>12/29/16 15:08</u>

Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4.8	2.5	1.3	mg/L			12/21/16 22:02	5
ND	0.55	0.28	mg/L			12/21/16 22:02	5
260	100	50	mg/L			12/21/16 22:13	200
2.9	2.5	1.3	mg/L			12/21/16 22:02	5
1600	100	50	mg/L			12/21/16 22:13	200
	4.8 ND 260 2.9	4.8     2.5       ND     0.55       260     100       2.9     2.5	4.8     2.5     1.3       ND     0.55     0.28       260     100     50       2.9     2.5     1.3	4.8     2.5     1.3     mg/L       ND     0.55     0.28     mg/L       260     100     50     mg/L       2.9     2.5     1.3     mg/L	4.8     2.5     1.3 mg/L       ND     0.55     0.28 mg/L       260     100     50 mg/L       2.9     2.5     1.3 mg/L	4.8     2.5     1.3 mg/L       ND     0.55     0.28 mg/L       260     100     50 mg/L       2.9     2.5     1.3 mg/L	4.8     2.5     1.3     mg/L     12/21/16 22:02       ND     0.55     0.28     mg/L     12/21/16 22:02       260     100     50     mg/L     12/21/16 22:13       2.9     2.5     1.3     mg/L     12/21/16 22:02

Method: 6010B - Meta	ls (ICP) - Total Recove	erable							
Analyte	Result Q	ualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	0.010	mg/L		12/29/16 08:04	12/30/16 11:22	1
Calcium	440		0.10	0.050	mg/L		12/29/16 08:04	12/30/16 11:22	1
Iron	51		0.040	0.010	mg/L		12/29/16 08:04	12/30/16 11:22	1
Magnesium	220		0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:22	1
Manganese	5.6		0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:22	1
Potassium	26		0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:22	1
Sodium	420		0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:22	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	160		20	10	mg/L			01/04/17 09:10	1
<b>Total Dissolved Solids</b>	3600		50	25	mg/L			12/28/16 08:52	1
Ammonia (as N)	4.7		2.5	0.50	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:27	1
Total Organic Carbon	53		1.0	0.50	mg/L			01/06/17 06:43	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	740		4.0	4.0	mg/L			12/22/16 15:20	1
Bicarbonate Alkalinity as CaCO3	740		4.0	4.0	mg/L			12/22/16 15:20	1
Carbon Dioxide, Free	270		2.0	2.0	mg/L			12/22/16 15:56	1

Lab Sample ID: 440-170565-6 Client Sample ID: DW-3 Date Collected: 12/21/16 08:25

Date Received: 12/21/16 18:50

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40	ug/L			12/29/16 00:11	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,1,1-Trichloroethane	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,1,2-Trichloroethane	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,1-Dichloroethane	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,1-Dichloroethene	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,1-Dichloropropene	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,2,4-Trichlorobenzene	ND	1.0	0.40	ug/L			12/29/16 00:11	1
1,2-Dibromo-3-Chloropropane	ND	1.0	0.50	ug/L			12/29/16 00:11	1
1,2-Dichlorobenzene	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,2-Dichloroethane	ND	0.50	0.25	ug/L			12/29/16 00:11	1
1,2-Dichloropropane	ND	0.50	0.25	ug/L			12/29/16 00:11	1

TestAmerica Irvine

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**Matrix: Water** 

Client: Geo-Logic Associates

**Client Sample ID: DW-3** 

Date Collected: 12/21/16 08:25

Date Received: 12/21/16 18:50

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-6

**Matrix: Water** 

Analyte	Result Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
1,3-Dichlorobenzene	ND	0.50	0.25	-			12/29/16 00:11	
1,3-Dichloropropane	ND	0.50	0.25	ug/L			12/29/16 00:11	
1,4-Dichlorobenzene	ND	0.50	0.25	ug/L			12/29/16 00:11	
2,2-Dichloropropane	ND	1.0	0.40	ug/L			12/29/16 00:11	
2-Chloro-1,3-butadiene	ND	1.0	0.50	ug/L			12/29/16 00:11	
2-Hexanone	ND	5.0	2.5	ug/L			12/29/16 00:11	
Acetone	ND	20	10	ug/L			12/29/16 00:11	
Acetonitrile	ND	20	10	ug/L			12/29/16 00:11	
Benzene	ND	0.50	0.25	ug/L			12/29/16 00:11	
Allyl chloride	ND	1.0	0.50	ug/L			12/29/16 00:11	
Bromoform	ND	1.0	0.40	ug/L			12/29/16 00:11	
Bromomethane	ND	0.50	0.25	ug/L			12/29/16 00:11	
Carbon disulfide	ND	1.0	0.50	ug/L			12/29/16 00:11	
Carbon tetrachloride	ND	0.50	0.25	ug/L			12/29/16 00:11	
Chlorobenzene	ND	0.50	0.25	ug/L			12/29/16 00:11	
Bromochloromethane	ND	0.50	0.25	ug/L			12/29/16 00:11	
Chloroethane	ND	1.0		ug/L			12/29/16 00:11	
Chloroform	ND	0.50	0.25	ug/L			12/29/16 00:11	
Chloromethane	ND	0.50	0.25	ug/L			12/29/16 00:11	
cis-1,2-Dichloroethene	ND	0.50		ug/L			12/29/16 00:11	
cis-1,3-Dichloropropene	ND	0.50		ug/L			12/29/16 00:11	
Dibromochloromethane	ND	0.50		ug/L			12/29/16 00:11	
Dibromomethane	ND	0.50	0.25	ug/L			12/29/16 00:11	
Bromodichloromethane	ND	0.50		ug/L			12/29/16 00:11	
Dichlorodifluoromethane	ND	1.0		ug/L			12/29/16 00:11	
Ethyl methacrylate	ND	2.0		ug/L			12/29/16 00:11	
Ethylbenzene	ND	0.50		ug/L			12/29/16 00:11	
lodomethane	ND	2.0		ug/L			12/29/16 00:11	
Isobutyl alcohol	ND	25		ug/L			12/29/16 00:11	
m,p-Xylene	ND	1.0		ug/L			12/29/16 00:11	
Methylacrylonitrile	ND	5.0		ug/L			12/29/16 00:11	
Methyl methacrylate	ND	2.0		ug/L			12/29/16 00:11	
Methylene Chloride	ND	2.0		ug/L			12/29/16 00:11	
Methyl tert-butyl ether	ND	0.50	0.25				12/29/16 00:11	
Naphthalene	ND	1.0	0.40	-			12/29/16 00:11	
o-Xylene	ND	0.50	0.25				12/29/16 00:11	
Propionitrile	ND	20		ug/L			12/29/16 00:11	
Styrene	ND	0.50		ug/L			12/29/16 00:11	
-Butanol	ND	10		ug/L			12/29/16 00:11	
Tetrachloroethene	ND	0.50		ug/L			12/29/16 00:11	
Tetrahydrofuran	ND	10		ug/L			12/29/16 00:11	
Toluene	ND	0.50		ug/L			12/29/16 00:11	
trans-1,2-Dichloroethene	ND	0.50		ug/L			12/29/16 00:11	
trans-1,3-Dichloropropene	ND	0.50		ug/L			12/29/16 00:11	
trans-1,4-Dichloro-2-butene	ND	5.0		ug/L			12/29/16 00:11	
Trichloroethene	ND	0.50		ug/L			12/29/16 00:11	
Trichlorofluoromethane	ND	0.50		ug/L			12/29/16 00:11	
Vinyl acetate	ND	4.0		ug/L			12/29/16 00:11	
Vinyl chloride	ND ND	0.50		ug/L ug/L			12/29/16 00:11	

TestAmerica Irvine

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-6

**Client Sample ID: DW-3** Date Collected: 12/21/16 08:25

**Matrix: Water** 

Date Received: 12/21/16 18:50

Analyte	Result	Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,2-Dibromoethane (EDB)	ND		0.50		0.25	ug/L			12/29/16 00:11	
2-Butanone (MEK)	ND		5.0		2.5	ug/L			12/29/16 00:11	
4-Methyl-2-pentanone (MIBK)	ND		5.0		2.5	ug/L			12/29/16 00:11	
Acrylonitrile	ND		2.0		1.0	ug/L			12/29/16 00:11	
Acrolein	ND		5.0		2.5	ug/L			12/29/16 00:11	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	3.1	TJ	ug/L		5.	87			12/29/16 00:11	
Unknown	19	TJ	ug/L		17.	54			12/29/16 00:11	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	110		80 - 128						12/29/16 00:11	
4-Bromofluorobenzene (Surr)	101		80 - 120						12/29/16 00:11	
Dibromofluoromethane (Surr)	101		76 - 132						12/29/16 00:11	
Method: 8270C - Semivolatile	Organic Co	mpounds	(GC/MS)							
Analyte		Qualifier	, RL		MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	ND		0.96		0.24	ug/L		12/27/16 08:45	12/29/16 15:30	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	63		30 - 120					12/27/16 08:45	12/29/16 15:30	

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND ND	0.50	0.25	mg/L			12/21/16 23:17	1
Nitrate as N	ND	0.11	0.055	mg/L			12/21/16 23:17	1
Chloride	14	0.50	0.25	mg/L			12/21/16 23:17	1
Fluoride	0.73	0.50	0.25	mg/L			12/21/16 23:17	1
Sulfate	1200	25	13	mg/L			12/21/16 23:27	50

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.066	0.050	0.010	mg/L		12/29/16 08:04	12/30/16 11:24	1
Calcium	320	0.10	0.050	mg/L		12/29/16 08:04	12/30/16 11:24	1
Iron	0.81	0.040	0.010	mg/L		12/29/16 08:04	12/30/16 11:24	1
Magnesium	110	0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:24	1
Manganese	0.088	0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:24	1
Potassium	9.7	0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:24	1
Sodium	71	0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:24	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	17	J	20	10	mg/L			01/04/17 09:10	1
<b>Total Dissolved Solids</b>	1900		10	5.0	mg/L			12/28/16 08:52	1
Ammonia (as N)	0.76		0.50	0.10	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:27	1
Total Organic Carbon	0.67		0.10	0.050	mg/L			01/05/17 16:05	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	170	<del></del> -	4.0	4.0	mg/L			12/22/16 15:31	1
Bicarbonate Alkalinity as CaCO3	170		4.0	4.0	mg/L			12/22/16 15:31	1
Carbon Dioxide, Free	16		2.0	2.0	mg/L			12/22/16 15:56	1

TestAmerica Irvine

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Client Sample ID: Duplicate Lab Sample ID: 440-170565-7

Date Collected: 12/21/16 00:01 Matrix: Water

Date Received: 12/21/16 18:50							
Method: 8260B - Volatile Orga	nic Compounds (GC/MS	S)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1.2.3-Trichloronronane	ND	10	0.40 μα/Ι			12/20/16 00:37	1

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/29/16 00:37	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 00:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/29/16 00:37	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,4-Dichlorobenzene	ND		0.50		ug/L			12/29/16 00:37	1
2,2-Dichloropropane	ND		1.0		ug/L			12/29/16 00:37	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/29/16 00:37	1
2-Hexanone	ND		5.0		ug/L			12/29/16 00:37	1
Acetone	ND		20		ug/L			12/29/16 00:37	1
Acetonitrile	ND		20		ug/L			12/29/16 00:37	1
Benzene	ND		0.50		ug/L			12/29/16 00:37	1
Allyl chloride	ND		1.0	0.50	-			12/29/16 00:37	1
Bromoform	ND		1.0		ug/L			12/29/16 00:37	1
Bromomethane	ND		0.50		ug/L			12/29/16 00:37	1
Carbon disulfide	ND		1.0		ug/L			12/29/16 00:37	1
Carbon tetrachloride	ND		0.50		ug/L			12/29/16 00:37	1
Chlorobenzene	ND		0.50	0.25	-			12/29/16 00:37	1
Bromochloromethane	ND		0.50		ug/L			12/29/16 00:37	1
Chloroethane	ND		1.0		ug/L			12/29/16 00:37	1
Chloroform	ND		0.50	0.25				12/29/16 00:37	
Chloromethane	ND		0.50	0.25	-			12/29/16 00:37	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			12/29/16 00:37	1
cis-1,3-Dichloropropene	ND		0.50	0.25	-			12/29/16 00:37	
Dibromochloromethane	ND		0.50	0.25				12/29/16 00:37	1
Dibromomethane	ND		0.50		ug/L			12/29/16 00:37	1
Bromodichloromethane	ND		0.50		ug/L			12/29/16 00:37	
Dichlorodifluoromethane	ND		1.0		ug/L			12/29/16 00:37	1
Ethyl methacrylate	ND		2.0		ug/L			12/29/16 00:37	1
Ethylbenzene	ND		0.50		ug/L			12/29/16 00:37	1
Iodomethane	ND		2.0		ug/L			12/29/16 00:37	1
Isobutyl alcohol	ND		25		ug/L			12/29/16 00:37	1
m,p-Xylene	ND		1.0		ug/L			12/29/16 00:37	1
Methylacrylonitrile	ND		5.0		ug/L			12/29/16 00:37	1
Methyl methacrylate	ND		2.0		ug/L			12/29/16 00:37	1
Methylene Chloride	ND		2.0		ug/L			12/29/16 00:37	
Methyl tert-butyl ether	ND		0.50		ug/L			12/29/16 00:37	1
Naphthalene	ND		1.0		ug/L			12/29/16 00:37	1
o-Xylene	ND		0.50		ug/L			12/29/16 00:37	

TestAmerica Irvine

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Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

**Client Sample ID: Duplicate** 

Date Collected: 12/21/16 00:01 Date Received: 12/21/16 18:50 Lab Sample ID: 440-170565-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			12/29/16 00:37	1
Styrene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
t-Butanol	ND		10	5.0	ug/L			12/29/16 00:37	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 00:37	1
Toluene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 00:37	1
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 00:37	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 00:37	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/29/16 00:37	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/29/16 00:37	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/29/16 00:37	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 00:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/29/16 00:37	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 00:37	1
Acrolein	ND		5.0	2.5	ug/L			12/29/16 00:37	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	16	TJ	ug/L	17	7.57			12/29/16 00:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 128					12/29/16 00:37	1
4-Bromofluorobenzene (Surr)	101		80 - 120					12/29/16 00:37	1
Dibromofluoromethane (Surr)	101		76 - 132					12/29/16 00:37	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.97	0.24	ug/L		12/27/16 08:45	12/29/16 15:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	59		30 - 120				12/27/16 08:45	12/29/16 15:52	

Method: 300.0 - Anion		· ·						
Analyte	Result Q	Qualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND ND	0.50	0.25	mg/L		-	12/21/16 23:38	1
Nitrate as N	ND	0.11	0.055	mg/L			12/21/16 23:38	1
Chloride	14	0.50	0.25	mg/L			12/21/16 23:38	1
Fluoride	0.72	0.50	0.25	mg/L			12/21/16 23:38	1
Sulfate	1200	25	13	mg/L			12/21/16 23:48	50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.065		0.050	0.010	mg/L		12/29/16 08:04	12/30/16 11:27	1
Calcium	310		0.10	0.050	mg/L		12/29/16 08:04	12/30/16 11:27	1
Iron	0.91		0.040	0.010	mg/L		12/29/16 08:04	12/30/16 11:27	1
Magnesium	110		0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:27	1
Manganese	0.089		0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:27	1
Potassium	9.3		0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:27	1
Sodium	69		0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:27	1

TestAmerica Irvine

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		20		mg/L			01/04/17 09:10	1
Total Dissolved Solids	1900		10	5.0	mg/L			12/28/16 08:52	1
Ammonia (as N)	0.76		0.50	0.10	mg/L		12/28/16 03:00	12/28/16 05:00	1
Total Sulfide	ND		0.050	0.020	mg/L			12/21/16 22:27	1
Total Organic Carbon	0.52		0.10	0.050	mg/L			01/05/17 16:16	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	170		4.0	4.0	mg/L			12/22/16 15:39	1
Bicarbonate Alkalinity as CaCO3	170		4.0	4.0	mg/L			12/22/16 15:39	1
Carbon Dioxide, Free	18		2.0	2.0	mg/L			12/22/16 15:56	1

Client Sample ID: QCAB Lab Sample ID: 440-170565-8

Date Collected: 12/21/16 00:01 Matrix: Water

Date Received: 12/21/16 18:50

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/29/16 01:04	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 01:04	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/29/16 01:04	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/29/16 01:04	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/29/16 01:04	1
2-Hexanone	ND		5.0	2.5	ug/L			12/29/16 01:04	1
Acetone	ND		20	10	ug/L			12/29/16 01:04	1
Acetonitrile	ND		20	10	ug/L			12/29/16 01:04	1
Benzene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Allyl chloride	ND		1.0	0.50	ug/L			12/29/16 01:04	1
Bromoform	ND		1.0	0.40	ug/L			12/29/16 01:04	1
Bromomethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/29/16 01:04	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Chloroethane	ND		1.0	0.40	ug/L			12/29/16 01:04	1
Chloroform	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Chloromethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Dibromomethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-170565-8

**Matrix: Water** 

Client Sample ID: QCAB
Date Collected: 12/21/16 00:01
Date Received: 12/21/16 18:50

Dibromofluoromethane (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/29/16 01:04	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/29/16 01:04	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Iodomethane	ND		2.0	1.0	ug/L			12/29/16 01:04	1
Isobutyl alcohol	ND		25	13	ug/L			12/29/16 01:04	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/29/16 01:04	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/29/16 01:04	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/29/16 01:04	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/29/16 01:04	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Naphthalene	ND		1.0	0.40	ug/L			12/29/16 01:04	1
o-Xylene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Propionitrile	ND		20	10	ug/L			12/29/16 01:04	1
Styrene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
t-Butanol	ND		10	5.0	ug/L			12/29/16 01:04	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 01:04	1
Toluene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 01:04	1
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 01:04	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/29/16 01:04	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/29/16 01:04	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/29/16 01:04	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 01:04	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/29/16 01:04	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 01:04	1
Acrolein	ND		5.0	2.5	ug/L			12/29/16 01:04	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	5.4	TJ	ug/L	5	.87			12/29/16 01:04	1
Unknown	15	ΤJ	ug/L	16	.88			12/29/16 01:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 128			•		12/29/16 01:04	1
4-Bromofluorobenzene (Surr)	99		80 - 120					12/29/16 01:04	1

Client Sample ID: QCTB

Date Collected: 12/21/16 00:01

Lab Sample ID: 440-170565-9

Matrix: Water

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Date Collected: 12/21/16 00:01
Date Received: 12/21/16 18:50

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Method: 8260B - Volatile Orga	anic Compounds (GC/M	S)				
Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	1.0	0.40 ug/L		12/29/16 01:30	1
1,1,1,2-Tetrachloroethane	ND	0.50	0.25 ug/L		12/29/16 01:30	1
1,1,1-Trichloroethane	ND	0.50	0.25 ug/L		12/29/16 01:30	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.25 ug/L		12/29/16 01:30	1

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12/29/16 01:04

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-9

**Matrix: Water** 

**Client Sample ID: QCTB** 

Date Collected: 12/21/16 00:01 Date Received: 12/21/16 18:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:30	
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:30	•
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:30	
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 01:30	•
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 01:30	•
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/29/16 01:30	,
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 01:30	
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 01:30	
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 01:30	• • • • • • • • •
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 01:30	
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 01:30	
1,4-Dichlorobenzene	ND		0.50	0.25	-			12/29/16 01:30	• • • • • • • •
2,2-Dichloropropane	ND		1.0	0.40	-			12/29/16 01:30	
2-Chloro-1,3-butadiene	ND		1.0	0.50	-			12/29/16 01:30	
2-Hexanone	ND		5.0		ug/L			12/29/16 01:30	· · · · · · .
Acetone	ND		20		ug/L			12/29/16 01:30	
Acetonitrile	ND		20		ug/L			12/29/16 01:30	
Benzene	ND		0.50	0.25	-			12/29/16 01:30	,
Allyl chloride	ND		1.0	0.50	-			12/29/16 01:30	
Bromoform	ND		1.0	0.40	-			12/29/16 01:30	
Bromomethane	ND		0.50	0.25	-			12/29/16 01:30	· · · · · · .
Carbon disulfide	ND		1.0	0.50	-			12/29/16 01:30	
Carbon tetrachloride	ND		0.50	0.25	-			12/29/16 01:30	
Chlorobenzene	ND		0.50	0.25	-			12/29/16 01:30	
Bromochloromethane	ND		0.50	0.25	-			12/29/16 01:30	
Chloroethane	ND		1.0	0.40	-			12/29/16 01:30	
Chloroform	ND		0.50	0.25	-			12/29/16 01:30	,
Chloromethane	ND		0.50	0.25	_			12/29/16 01:30	
cis-1,2-Dichloroethene	ND		0.50	0.25	-			12/29/16 01:30	
cis-1,3-Dichloropropene	ND		0.50	0.25	-			12/29/16 01:30	
Dibromochloromethane	ND		0.50	0.25	-			12/29/16 01:30	
Dibromomethane	ND		0.50	0.25	-			12/29/16 01:30	
Bromodichloromethane	ND		0.50	0.25	-			12/29/16 01:30	
Dichlorodifluoromethane	ND		1.0	0.40	-			12/29/16 01:30	
Ethyl methacrylate	ND		2.0		ug/L			12/29/16 01:30	
Ethylbenzene	ND		0.50	0.25				12/29/16 01:30	,
lodomethane	ND		2.0		ug/L			12/29/16 01:30	
Isobutyl alcohol	ND		25		ug/L			12/29/16 01:30	
m,p-Xylene	ND		1.0		ug/L			12/29/16 01:30	,
Methylacrylonitrile	ND		5.0		ug/L			12/29/16 01:30	
Methyl methacrylate	ND		2.0		ug/L			12/29/16 01:30	
Methylene Chloride	ND		2.0		ug/L			12/29/16 01:30	,
Methyl tert-butyl ether	ND		0.50		ug/L			12/29/16 01:30	
Naphthalene	ND ND		1.0		ug/L ug/L			12/29/16 01:30	
								12/29/16 01:30	
o-Xylene Propionitrilo	ND		0.50		ug/L				
Propionitrile Styropo	ND		20		ug/L			12/29/16 01:30	
Styrene	ND		0.50		ug/L			12/29/16 01:30	
t-Butanol	ND		10	5.0	ug/L			12/29/16 01:30	•

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Client: Geo-Logic Associates

**Client Sample ID: QCTB** 

Dibromofluoromethane (Surr)

Date Collected: 12/21/16 00:01

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Lab Sample ID: 440-170565-9

12/29/16 01:30

**Matrix: Water** 

Date Received: 12/21/16 18:50	
Method: 8260B - Volatile Organic Compo	ounds (GC/MS) (Continued)

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Analyte	Result	Qualifier	RL	MDL	. Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 01:30	1
Toluene	ND		0.50	0.25	ug/L			12/29/16 01:30	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:30	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 01:30	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 01:30	1
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 01:30	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 01:30	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/29/16 01:30	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/29/16 01:30	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/29/16 01:30	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 01:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/29/16 01:30	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 01:30	1
Acrolein	ND		5.0	2.5	ug/L			12/29/16 01:30	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac

Unknown	25 TJ	ug/L	16.33		12/29/16 01:30	1
Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109	80 - 128			12/29/16 01:30	1
4-Bromofluorobenzene (Surr)	104	80 - 120			12/29/16 01:30	1

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## **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

lethod	Method Description	Protocol	Laboratory
260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
00.0	Anions, Ion Chromatography	MCAWW	TAL IRV
010B	Metals (ICP)	SW846	TAL IRV
10.4	COD	MCAWW	TAL IRV
M 2320B	Alkalinity	SM	TAL IRV
M 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
M 4500 CO2 C	Free Carbon Dioxide	SM	TAL IRV
M 4500 NH3 D	Ammonia	SM	TAL IRV
M 4500 S2 D	Sulfide, Total	SM	TAL IRV
M 5310C	TOC	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:**

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

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-170565-1

**Matrix: Water** 

Client Sample ID: MW-2A Date Collected: 12/21/16 10:30 Date Received: 12/21/16 18:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378516	12/28/16 10:36	WC	TAL IRV
Total/NA	Prep	3520C			1050 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 13:40	HN	TAL IRV
Total/NA	Analysis	300.0		2			377296	12/21/16 20:40	NTN	TAL IRV
Total/NA	Analysis	300.0		2			377297	12/21/16 20:40	NTN	TAL IRV
Total/NA	Analysis	300.0		100			377297	12/21/16 20:50	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	378816	12/29/16 08:09	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			379159	12/30/16 10:37	K1E	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379698	01/04/17 09:09	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			378308	12/27/16 08:10	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380232	01/05/17 14:57	YZ	TAL IRV

Client Sample ID: MW-2B

Date Collected: 12/21/16 08:55

Lab Sample ID: 440-170565-2

Matrix: Water

Date Received: 12/21/16 18:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378516	12/28/16 11:55	WC	TAL IRV
Total/NA	Prep	3520C			1040 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 14:02	HN	TAL IRV
Total/NA	Analysis	300.0		2			377296	12/21/16 21:00	NTN	TAL IRV
Total/NA	Analysis	300.0		2			377297	12/21/16 21:00	NTN	TAL IRV
Total/NA	Analysis	300.0		100			377297	12/21/16 21:11	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	378816	12/29/16 08:09	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			379159	12/30/16 10:25	K1E	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379832	01/04/17 15:35	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			378308	12/27/16 08:19	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380232	01/05/17 15:08	YZ	TAL IRV

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Project/Site: Republic Sunshine Canyon

Client Sample ID: DW-4 Lab Sample ID: 440-170565-3 Date Collected: 12/21/16 08:10 **Matrix: Water** 

Date Received: 12/21/16 18:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378516	12/28/16 12:21	WC	TAL IRV
Total/NA	Analysis	300.0		2			377296	12/21/16 21:21	NTN	TAL IRV
Total/NA	Analysis	300.0		2			377297	12/21/16 21:21	NTN	TAL IRV
Total/NA	Analysis	300.0		100			377297	12/21/16 21:31	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	378816	12/29/16 08:09	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			379159	12/30/16 10:15	K1E	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379832	01/04/17 15:35	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377837	12/22/16 14:55	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380232	01/05/17 15:20	YZ	TAL IRV

**Client Sample ID: MW-5** Lab Sample ID: 440-170565-4

Date Collected: 12/21/16 12:15 **Matrix: Water** Date Received: 12/21/16 18:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378516	12/28/16 12:47	WC	TAL IRV
Total/NA	Prep	3520C			980 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 14:47	HN	TAL IRV
Total/NA	Analysis	300.0		2			377296	12/21/16 21:42	NTN	TAL IRV
Total/NA	Analysis	300.0		2			377297	12/21/16 21:42	NTN	TAL IRV
Total/NA	Analysis	300.0		100			377297	12/21/16 21:52	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	378813	12/29/16 08:04	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			379188	12/30/16 11:13	K1E	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379832	01/04/17 15:35	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377837	12/22/16 15:07	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	380347	01/06/17 06:29	YZ	TAL IRV

Project/Site: Republic Sunshine Canyon

Lab Sample ID: 440-170565-5

**Matrix: Water** 

**Client Sample ID: MW-9** 

Date Collected: 12/21/16 10:30 Date Received: 12/21/16 18:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378704	12/28/16 22:00	AA	TAL IRV
Total/NA	Prep	3520C			955 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 15:08	HN	TAL IRV
Total/NA	Analysis	300.0		5			377296	12/21/16 22:02	NTN	TAL IRV
Total/NA	Analysis	300.0		5			377297	12/21/16 22:02	NTN	TAL IRV
Total/NA	Analysis	300.0		200			377297	12/21/16 22:13	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	378813	12/29/16 08:04	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			379188	12/30/16 11:22	K1E	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379698	01/04/17 09:10	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377837	12/22/16 15:20	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			10 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	380347	01/06/17 06:43	YZ	TAL IRV

**Client Sample ID: DW-3** Lab Sample ID: 440-170565-6 Date Collected: 12/21/16 08:25

**Matrix: Water** 

Date Received: 12/21/16 18:50

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378704	12/29/16 00:11	AA	TAL IRV
Total/NA	Prep	3520C			1045 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 15:30	HN	TAL IRV
Total/NA	Analysis	300.0		1			377296	12/21/16 23:17	NTN	TAL IRV
Total/NA	Analysis	300.0		1			377297	12/21/16 23:17	NTN	TAL IRV
Total/NA	Analysis	300.0		50			377297	12/21/16 23:27	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	378813	12/29/16 08:04	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			379188	12/30/16 11:24	K1E	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	379698	01/04/17 09:10	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377837	12/22/16 15:31	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Total/NA	Analysis	SM 5310C		1	100 mL	100 mL	380232	01/05/17 16:05	YZ	TAL IRV

TestAmerica Irvine

Project/Site: Republic Sunshine Canyon

**Client Sample ID: Duplicate** 

Date Collected: 12/21/16 00:01 Date Received: 12/21/16 18:50

Lab Sample ID: 440-170565-7

**Matrix: Water** 

Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Analysis	8260B		1	10 mL	10 mL	378704	12/29/16 00:37	AA	TAL IRV
Prep	3520C			1035 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Analysis	8270C		1			378649	12/29/16 15:52	HN	TAL IRV
Analysis	300.0		1			377296	12/21/16 23:38	NTN	TAL IRV
Analysis	300.0		1			377297	12/21/16 23:38	NTN	TAL IRV
Analysis	300.0		50			377297	12/21/16 23:48	NTN	TAL IRV
Prep	3005A			25 mL	25 mL	378813	12/29/16 08:04	Q1N	TAL IRV
Analysis	6010B		1			379188	12/30/16 11:27	K1E	TAL IRV
Analysis	410.4		1	0.625 mL	2.5 mL	379698	01/04/17 09:10	KYP	TAL IRV
Analysis	SM 2320B		1			377837	12/22/16 15:39	YZ	TAL IRV
Analysis	SM 2540C		1	100 mL	100 mL	378530	12/28/16 08:52	XL	TAL IRV
Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377746	12/22/16 15:56	SN	TAL IRV
Prep	SM 4500 NH3 B			50 mL	50 mL	378501	12/28/16 03:00	YZ	TAL IRV
Analysis	SM 4500 NH3 D		1			378507	12/28/16 05:00	YZ	TAL IRV
Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	377513	12/21/16 22:27	EN	TAL IRV
Analysis	SM 5310C		1	100 mL	100 mL	380232	01/05/17 16:16	YZ	TAL IRV
	Analysis	Type         Method           Analysis         8260B           Prep         3520C           Analysis         8270C           Analysis         300.0           Analysis         300.0           Analysis         300.0           Prep         3005A           Analysis         6010B           Analysis         SM 2320B           Analysis         SM 2540C           Analysis         SM 4500 CO2 C           Prep         SM 4500 NH3 B           Analysis         SM 4500 NH3 D           Analysis         SM 4500 S2 D	Type         Method         Run           Analysis         8260B           Prep         3520C           Analysis         8270C           Analysis         300.0           Analysis         300.0           Aralysis         300.0           Prep         3005A           Analysis         6010B           Analysis         SM 2320B           Analysis         SM 2540C           Analysis         SM 4500 CO2 C           Prep         SM 4500 NH3 B           Analysis         SM 4500 NH3 D           Analysis         SM 4500 S2 D	Type         Method         Run         Factor           Analysis         8260B         1           Prep         3520C         1           Analysis         8270C         1           Analysis         300.0         1           Analysis         300.0         50           Prep         3005A         50           Analysis         6010B         1           Analysis         5M 2320B         1           Analysis         SM 2540C         1           Analysis         SM 4500 CO2 C         1           Prep         SM 4500 NH3 B         1           Analysis         SM 4500 NH3 D         1           Analysis         SM 4500 S2 D         1	Type         Method         Run         Factor         Amount           Analysis         8260B         1         10 mL           Prep         3520C         1         1035 mL           Analysis         8270C         1	Type         Method         Run         Factor         Amount         Amount           Prep         3520C         1035 mL         1 mL           Analysis         8270C         1         1035 mL         1 mL           Analysis         300.0         1	Type         Method         Run         Factor         Amount         Amount         Number           Analysis         8260B         1         10 mL         10 mL         378704           Prep         3520C         1035 mL         1 mL         378304           Analysis         8270C         1	Type         Method         Run         Factor         Amount         Number or Analyzed         or Analyzed           Analysis         8260B         1         10 mL         10 mL         378704         12/29/16 00:37           Prep         3520C         1         1035 mL         1 mL         378304         12/27/16 08:45           Analysis         8270C         1         378649         12/29/16 15:52           Analysis         300.0         1         377296         12/21/16 23:38           Analysis         300.0         1         377297         12/21/16 23:38           Analysis         300.0         50         377297         12/21/16 23:48           Prep         3005A         25 mL         25 mL         378813         12/29/16 08:04           Analysis         6010B         1         0.625 mL         379188         12/30/16 11:27           Analysis         410.4         1         0.625 mL         2.5 mL         379698         01/04/17 09:10           Analysis         SM 2320B         1         100 mL         378530         12/22/16 15:39           Analysis         SM 2540C         1         100 mL         378530         12/22/16 15:56           Prep <td>Type         Method         Run         Factor         Amount         Amount         Number         or Analyzed         Analysis           Analysis         8260B         1         10 mL         10 mL         378704         12/29/16 00:37         AA           Prep         3520C         1035 mL         1 mL         378304         12/27/16 08:45         FTD           Analysis         8270C         1         3778649         12/29/16 15:52         HN           Analysis         300.0         1         377296         12/21/16 23:38         NTN           Analysis         300.0         1         377297         12/21/16 23:48         NTN           Analysis         300.0         50         377297         12/21/16 23:48         NTN           Prep         3005A         25 mL         25 mL         378813         12/29/16 08:04         Q1N           Analysis         6010B         1         0.625 mL         2.5 mL         379698         01/04/17 09:10         KYP           Analysis         SM 2320B         1         100 mL         377837         12/22/16 15:39         YZ           Analysis         SM 4500 CO2 C         1         25 mL         25 mL         377746</td>	Type         Method         Run         Factor         Amount         Amount         Number         or Analyzed         Analysis           Analysis         8260B         1         10 mL         10 mL         378704         12/29/16 00:37         AA           Prep         3520C         1035 mL         1 mL         378304         12/27/16 08:45         FTD           Analysis         8270C         1         3778649         12/29/16 15:52         HN           Analysis         300.0         1         377296         12/21/16 23:38         NTN           Analysis         300.0         1         377297         12/21/16 23:48         NTN           Analysis         300.0         50         377297         12/21/16 23:48         NTN           Prep         3005A         25 mL         25 mL         378813         12/29/16 08:04         Q1N           Analysis         6010B         1         0.625 mL         2.5 mL         379698         01/04/17 09:10         KYP           Analysis         SM 2320B         1         100 mL         377837         12/22/16 15:39         YZ           Analysis         SM 4500 CO2 C         1         25 mL         25 mL         377746

**Client Sample ID: QCAB** Lab Sample ID: 440-170565-8 **Matrix: Water** 

Date Collected: 12/21/16 00:01

Date Received: 12/21/16 18:50

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	378704	12/29/16 01:04	AA	TAL IRV

**Client Sample ID: QCTB** Lab Sample ID: 440-170565-9 **Matrix: Water** 

Date Collected: 12/21/16 00:01 Date Received: 12/21/16 18:50

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Pre	р Туре	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Tota	al/NA	Analysis	8260B		1	10 mL	10 mL	378704	12/29/16 01:30	AA	TAL IRV

**Laboratory References:** 

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

TestAmerica Irvine

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: MB 440-378516/4

**Matrix: Water** 

Analysis Batch: 378516

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Analysia		MB	D.	BATC!	l lm!t	_	Duamana	A mal:	Dil Car
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0		•			12/28/16 08:34	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			12/28/16 08:34	1
1,1,1-Trichloroethane	ND		0.50		ug/L			12/28/16 08:34	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			12/28/16 08:34	1
1,1,2-Trichloroethane	ND		0.50		ug/L			12/28/16 08:34	1
1,1-Dichloroethane	ND		0.50		ug/L			12/28/16 08:34	1
1,1-Dichloroethene	ND		0.50		ug/L			12/28/16 08:34	1
1,1-Dichloropropene	ND		0.50		ug/L			12/28/16 08:34	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			12/28/16 08:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			12/28/16 08:34	1
1,2-Dichlorobenzene	ND		0.50		ug/L			12/28/16 08:34	1
1,2-Dichloroethane	ND		0.50		ug/L			12/28/16 08:34	1
1,2-Dichloropropane	ND		0.50		ug/L			12/28/16 08:34	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/28/16 08:34	1
1,3-Dichloropropane	ND		0.50		ug/L			12/28/16 08:34	1
1,4-Dichlorobenzene	ND		0.50		ug/L			12/28/16 08:34	1
2,2-Dichloropropane	ND		1.0		ug/L			12/28/16 08:34	1
2-Chloro-1,3-butadiene	ND		1.0		ug/L			12/28/16 08:34	1
2-Hexanone	ND		5.0	2.5	ug/L			12/28/16 08:34	1
Acetone	ND		20	10	ug/L			12/28/16 08:34	1
Acetonitrile	ND		20	10	ug/L			12/28/16 08:34	1
Benzene	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Allyl chloride	ND		1.0	0.50	ug/L			12/28/16 08:34	1
Bromoform	ND		1.0	0.40	ug/L			12/28/16 08:34	1
Bromomethane	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/28/16 08:34	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Chloroethane	ND		1.0	0.40	ug/L			12/28/16 08:34	1
Chloroform	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Chloromethane	ND		0.50	0.25	ug/L			12/28/16 08:34	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/28/16 08:34	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Dibromomethane	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Dichlorodifluoromethane	ND		1.0		ug/L			12/28/16 08:34	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/28/16 08:34	1
Ethylbenzene	ND		0.50	0.25	ug/L			12/28/16 08:34	1
Iodomethane	ND		2.0		ug/L			12/28/16 08:34	1
Isobutyl alcohol	ND		25		ug/L			12/28/16 08:34	1
m,p-Xylene	ND		1.0		ug/L			12/28/16 08:34	1
Methylacrylonitrile	ND		5.0		ug/L			12/28/16 08:34	1
Methyl methacrylate	ND		2.0		ug/L			12/28/16 08:34	1
Methylene Chloride	ND		2.0		ug/L			12/28/16 08:34	1
Methyl tert-butyl ether	ND		0.50		ug/L			12/28/16 08:34	1
Naphthalene	ND		1.0		ug/L			12/28/16 08:34	1

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

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

Lab Sample ID: MB 440-378516/4 Client Sample ID: Method Blank **Matrix: Water Prep Type: Total/NA Analysis Batch: 378516** 

	MB MB							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND ND	0.50	0.25	ug/L			12/28/16 08:34	1
Propionitrile	ND	20	10	ug/L			12/28/16 08:34	1
Styrene	ND	0.50	0.25	ug/L			12/28/16 08:34	1
t-Butanol	ND	10	5.0	ug/L			12/28/16 08:34	1
Tetrachloroethene	ND	0.50	0.25	ug/L			12/28/16 08:34	1
Tetrahydrofuran	ND	10	5.0	ug/L			12/28/16 08:34	1
Toluene	ND	0.50	0.25	ug/L			12/28/16 08:34	1
trans-1,2-Dichloroethene	ND	0.50	0.25	ug/L			12/28/16 08:34	1
trans-1,3-Dichloropropene	ND	0.50	0.25	ug/L			12/28/16 08:34	1
trans-1,4-Dichloro-2-butene	ND	5.0	2.5	ug/L			12/28/16 08:34	1
Trichloroethene	ND	0.50	0.25	ug/L			12/28/16 08:34	1
Trichlorofluoromethane	ND	0.50	0.25	ug/L			12/28/16 08:34	1
Vinyl acetate	ND	4.0	2.0	ug/L			12/28/16 08:34	1
Vinyl chloride	ND	0.50	0.25	ug/L			12/28/16 08:34	1
1,2-Dibromoethane (EDB)	ND	0.50	0.25	ug/L			12/28/16 08:34	1
2-Butanone (MEK)	ND	5.0	2.5	ug/L			12/28/16 08:34	1
4-Methyl-2-pentanone (MIBK)	ND	5.0	2.5	ug/L			12/28/16 08:34	1
Acrylonitrile	ND	2.0	1.0	ug/L			12/28/16 08:34	1
Acrolein	ND	5.0	2.5	ug/L			12/28/16 08:34	1

MB MB Tentatively Identified Compound Est. Result Qualifier Unit D RT CAS No. Prepared Analyzed Dil Fac Tentatively Identified Compound None ug/L 12/28/16 08:34

	IVIB IVIB				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110	80 - 128		12/28/16 08:34	1
4-Bromofluorobenzene (Surr)	99	80 - 120		12/28/16 08:34	1
Dibromofluoromethane (Surr)	103	76 <sub>-</sub> 132		12/28/16 08:34	1

Lab Sample ID: LCS 440-378516/5

**Matrix: Water** 

Analysis Batch: 378516

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

Analysis Baton. 670010	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2,3-Trichloropropane	25.0	25.0		ug/L		100	63 - 130
1,1,1,2-Tetrachloroethane	25.0	25.8		ug/L		103	60 - 141
1,1,1-Trichloroethane	25.0	24.7		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	25.0	25.6		ug/L		103	63 - 130
1,1,2-Trichloroethane	25.0	25.5		ug/L		102	70 - 130
1,1-Dichloroethane	25.0	25.2		ug/L		101	64 - 130
1,1-Dichloroethene	25.0	23.6		ug/L		94	70 - 130
1,1-Dichloropropene	25.0	25.1		ug/L		100	70 - 130
1,2,4-Trichlorobenzene	25.0	26.4		ug/L		106	60 - 140
1,2-Dibromo-3-Chloropropane	25.0	26.2		ug/L		105	52 - 140
1,2-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130
1,2-Dichloroethane	25.0	25.3		ug/L		101	57 <sub>-</sub> 138
1,2-Dichloropropane	25.0	26.3		ug/L		105	67 - 130
1,3-Dichlorobenzene	25.0	25.2		ug/L		101	70 - 130

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

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

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

### Lab Sample ID: LCS 440-378516/5

Matrix: Water

Analysis Batch: 378516	Spike	LCS	LCS			%Rec.
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits
1,3-Dichloropropane	25.0	25.7		ug/L	103	70 - 130
1,4-Dichlorobenzene	25.0	25.6		ug/L	102	70 - 130
2,2-Dichloropropane	25.0	23.7		ug/L	95	68 - 141
2-Hexanone	25.0	26.4		ug/L	106	10 - 150
Acetone	25.0	25.6		ug/L	102	10 - 150
Benzene	25.0	24.2		ug/L	97	68 - 130
Bromoform	25.0	26.7		ug/L	107	60 - 148
Bromomethane	25.0	25.5		ug/L	102	64 - 139
Carbon disulfide	25.0	24.2		ug/L	97	52 - 136
Carbon tetrachloride	25.0	25.4		ug/L	102	60 - 150
Chlorobenzene	25.0	24.8		ug/L	99	70 - 130
Bromochloromethane	25.0	26.2		ug/L	105	70 - 130
Chloroethane	25.0	25.4		ug/L	102	64 - 135
Chloroform	25.0	25.2		ug/L	101	70 - 130
Chloromethane	25.0	24.5		ug/L	98	47 - 140
cis-1,2-Dichloroethene	25.0	24.2		ug/L	97	70 - 133
cis-1,3-Dichloropropene	25.0	26.7		ug/L	107	70 - 133
Dibromochloromethane	25.0	26.0		ug/L	104	69 - 145
Dibromomethane	25.0	25.5		ug/L	102	70 - 130
Bromodichloromethane	25.0	26.0		ug/L	104	70 - 132
Dichlorodifluoromethane	25.0	23.1		ug/L	93	29 - 150
Ethylbenzene	25.0	25.0		ug/L	100	70 - 130
m,p-Xylene	25.0	25.8		ug/L	103	70 - 130
Methylene Chloride	25.0	24.9		ug/L	100	52 - 130
Methyl tert-butyl ether	25.0	25.6		ug/L	102	63 - 131
Naphthalene	25.0	26.0		ug/L	104	60 - 140
o-Xylene	25.0	26.4		ug/L	105	70 - 130
Styrene	25.0	25.7		ug/L	103	70 - 134
t-Butanol	250	259		ug/L	104	70 - 130
Tetrachloroethene	25.0	26.1		ug/L	104	70 - 130
Toluene	25.0	24.7		ug/L	99	70 - 130
trans-1,2-Dichloroethene	25.0	24.4		ug/L	98	70 - 130
trans-1,3-Dichloropropene	25.0	25.6		ug/L	102	70 - 132
Trichloroethene	25.0	25.8		ug/L	103	70 - 130
Trichlorofluoromethane	25.0	26.2		ug/L	105	60 - 150
Vinyl acetate	25.0	25.9		ug/L	104	48 - 140
Vinyl chloride	25.0	24.4		ug/L	98	59 - 133
1,2-Dibromoethane (EDB)	25.0	27.0		ug/L	108	70 - 130
2-Butanone (MEK)	25.0	25.0		ug/L	100	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	26.9		ug/L	108	59 <sub>-</sub> 149
Acrylonitrile	250	262		ug/L	105	48 - 140
Acrolein	25.0	23.0		ug/L	92	10 - 145

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 128
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

TestAmerica Irvine

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: LCSD 440-378516/6

**Matrix: Water** 

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

Analysis Batch: 378516	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	25.0	23.9		ug/L		95	63 - 130	5	20
1,1,1,2-Tetrachloroethane	25.0	26.7		ug/L		107	60 - 141	3	20
1,1,1-Trichloroethane	25.0	26.6		ug/L		106	70 - 130	7	20
1,1,2,2-Tetrachloroethane	25.0	25.4		ug/L		101	63 - 130	1	25
1,1,2-Trichloroethane	25.0	26.0		ug/L		104	70 - 130	2	20
1,1-Dichloroethane	25.0	27.2		ug/L		109	64 - 130	8	20
1,1-Dichloroethene	25.0	26.3		ug/L		105	70 - 130	11	20
1,1-Dichloropropene	25.0	27.3		ug/L		109	70 - 130	9	20
1,2,4-Trichlorobenzene	25.0	27.6		ug/L		110	60 - 140	4	20
1,2-Dibromo-3-Chloropropane	25.0	24.6		ug/L		98	52 - 140	6	30
1,2-Dichlorobenzene	25.0	26.5		ug/L		106	70 - 130	3	20
1,2-Dichloroethane	25.0	26.1		ug/L		105	57 <sub>-</sub> 138	3	20
1,2-Dichloropropane	25.0	27.6		ug/L		110	67 - 130	5	20
1,3-Dichlorobenzene	25.0	26.6		ug/L		106	70 - 130	5	20
1,3-Dichloropropane	25.0	26.2		ug/L		105	70 - 130	2	20
1,4-Dichlorobenzene	25.0	26.4		ug/L		106	70 - 130	3	20
2,2-Dichloropropane	25.0	27.5		ug/L		110	68 - 141	15	25
2-Hexanone	25.0	25.0		ug/L		100	10 - 150	6	30
Acetone	25.0	24.5		ug/L		98	10 - 150	4	30
Benzene	25.0	26.0		ug/L		104	68 - 130	7	20
Bromoform	25.0	26.7		ug/L		107	60 - 148	0	25
Bromomethane	25.0	27.5		ug/L		110	64 - 139	8	20
Carbon disulfide	25.0	26.2		ug/L		105	52 - 136	8	20
Carbon tetrachloride	25.0	27.5		ug/L		110	60 - 150	8	25
Chlorobenzene	25.0	25.7		ug/L		103	70 - 130	3	20
Bromochloromethane	25.0	27.6		ug/L		110	70 - 130	5	20
Chloroethane	25.0	27.1		ug/L		108	64 - 135	7	20
Chloroform	25.0	27.3		ug/L		109	70 - 130	8	20
Chloromethane	25.0	26.7		ug/L		107	47 - 140	9	25
cis-1,2-Dichloroethene	25.0	26.4		ug/L		106	70 - 133	9	20
cis-1,3-Dichloropropene	25.0	27.5		ug/L		110	70 - 133	3	25
Dibromochloromethane	25.0	26.2		ug/L		105	69 - 145	1	20
Dibromomethane	25.0	26.3		ug/L		105	70 - 130	3	20
Bromodichloromethane	25.0	27.5		ug/L		110	70 - 132	5	20
Dichlorodifluoromethane	25.0	23.6		ug/L		95	29 - 150	2	30
Ethylbenzene	25.0	25.8		ug/L		103	70 - 130	3	20
m,p-Xylene	25.0	27.0		ug/L		108	70 - 130	5	20
Methylene Chloride	25.0	27.2		ug/L		109	52 <sub>-</sub> 130	9	20
Methyl tert-butyl ether	25.0	26.8		ug/L		107	63 - 131	5	25
Naphthalene	25.0	26.4		ug/L		105	60 - 140	2	25
o-Xylene	25.0	27.6		ug/L		110	70 - 130	4	20
Styrene	25.0	26.4		ug/L		106	70 - 134	3	20
t-Butanol	25.0	273		ug/L ug/L		100	70 - 134	5	20
Tetrachloroethene	25.0	27.2		ug/L ug/L		109	70 - 130 70 - 130	4	20
Toluene	25.0	26.6		ug/L ug/L		109	70 - 130 70 - 130	7	20
trans-1,2-Dichloroethene	25.0	27.0		ug/L ug/L		108	70 - 130	10	20
trans-1,3-Dichloropropene	25.0	25.5		ug/L ug/L		100	70 - 130 70 - 132	0	20
Trichloroethene	25.0	28.0		ug/L ug/L		112	70 - 132 70 - 130	8	20

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: LCSD 440-378516/6

**Matrix: Water** 

**Analysis Batch: 378516** 

<b>Client Sample ID: Lab</b>	<b>Control Sam</b>	ple Dup
	<b>Prep Type: T</b>	otal/NA

RPD LCSD LCSD %Rec 02 0

Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Trichlorofluoromethane	25.0	28.3		ug/L		113	60 - 150	8	20
Vinyl acetate	25.0	27.3		ug/L		109	48 - 140	5	20
Vinyl chloride	25.0	26.9		ug/L		108	59 - 133	10	30
1,2-Dibromoethane (EDB)	25.0	27.3		ug/L		109	70 - 130	1	20
2-Butanone (MEK)	25.0	25.4		ug/L		102	44 - 150	1	35
4-Methyl-2-pentanone (MIBK)	25.0	25.7		ug/L		103	59 - 149	5	30
Acrylonitrile	250	263		ug/L		105	48 - 140	0	30
Acrolein	25.0	24.9		ug/L		99	10 - 145	8	30

Spike

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132

Lab Sample ID: 440-170565-1 MS

**Matrix: Water** 

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

Analysis Batch: 378516 MS MS %Rec. Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 1,2,3-Trichloropropane ND 25.0 25.8 ug/L 103 60 - 130 1,1,1,2-Tetrachloroethane ND 25.0 25.0 ug/L 100 60 - 149 1,1,1-Trichloroethane ND 25.0 24.8 ug/L 99 70 - 130 1,1,2,2-Tetrachloroethane ND 25.0 26.1 ug/L 104 63 - 130 70 - 130 1,1,2-Trichloroethane ND 25.0 25.0 100 ug/L ND 25.0 24.9 1,1-Dichloroethane ug/L 99 65 - 1301,1-Dichloroethene ND 25.0 23.9 ug/L 96 70 - 1301,1-Dichloropropene ND 25.0 25.5 ug/L 102 64 - 1301,2,4-Trichlorobenzene ND 25.0 26.0 ug/L 104 60 - 140 ND 108 1,2-Dibromo-3-Chloropropane 25.0 27.1 ug/L 48 - 140 1,2-Dichlorobenzene ND 25.0 24.9 100 70 - 130 ug/L ND 99 1,2-Dichloroethane 25.0 24.8 ug/L 56 - 146 1,2-Dichloropropane ND 25.0 25.8 ug/L 103 69 - 130 70 - 130 1,3-Dichlorobenzene ND 25.0 25.2 ug/L 101 1,3-Dichloropropane ND 25.0 25.5 ug/L 102 70 - 130 1,4-Dichlorobenzene ND 25.0 24.8 ug/L 99 70 - 130 2,2-Dichloropropane ND 25.0 25.7 ug/L 103 69 - 138 2-Hexanone ND 25.0 27.1 108 10 - 150 ug/L Acetone ND 25.0 27.8 ug/L 111 10 - 150 Benzene ND 25.0 23.8 ug/L 95 66 - 130ug/L Bromoform ND 25.0 26.2 105 59 - 150 Bromomethane ND 25.0 25.5 ug/L 102 62 - 131 Carbon disulfide ND 25.0 24.2 ug/L 97 49 - 140 ND 25.0 100 60 - 150 Carbon tetrachloride 25.0 ug/L ND 25.0 96 70 - 130 Chlorobenzene 24.1 ug/L Bromochloromethane ND 25.0 25.8 ug/L 103 70 - 130 ND 25.0 25.2 101 Chloroethane ug/L 68 - 130Chloroform ND 25.0 24.7 ug/L 99 70 - 130Chloromethane ND 25.0 26.0 ug/L 104 39 - 144

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

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

Lab Sample ID: 440-170565-1 MS

**Matrix: Water** 

Analysis Batch: 378516

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

Alialysis Batch. 376316	Sample	Sample	Spike	ме	MS			%Rec.	
Analyte	•	Qualifier	Added		Qualifier	Unit	D %Rec	Limits	
cis-1,2-Dichloroethene	ND		25.0	24.2		ug/L	97	70 - 130	
cis-1,3-Dichloropropene	ND		25.0	25.6		ug/L	102	70 - 133	
Dibromochloromethane	ND		25.0	24.8		ug/L	99	70 <sub>-</sub> 148	
Dibromomethane	ND		25.0	25.5		ug/L	102	70 - 130	
Bromodichloromethane	ND		25.0	25.1		ug/L	100	70 - 138	
Dichlorodifluoromethane	ND		25.0	22.9		ug/L	91	25 - 142	
Ethylbenzene	ND		25.0	24.4		ug/L	98	70 - 130	
m,p-Xylene	ND		25.0	25.0		ug/L	100	70 - 133	
Methylene Chloride	ND		25.0	25.2		ug/L	101	52 - 130	
Methyl tert-butyl ether	ND		25.0	25.7		ug/L	103	70 - 130	
Naphthalene	ND		25.0	26.4		ug/L	106	60 - 140	
o-Xylene	ND		25.0	24.9		ug/L	100	70 - 133	
Styrene	ND		25.0	23.7		ug/L	95	29 - 150	
t-Butanol	ND		250	248		ug/L	99	70 - 130	
Tetrachloroethene	ND		25.0	25.0		ug/L	100	70 - 137	
Toluene	ND		25.0	24.7		ug/L	99	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	24.8		ug/L	99	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	25.0		ug/L	100	70 - 138	
Trichloroethene	ND		25.0	25.5		ug/L	102	70 - 130	
Trichlorofluoromethane	ND		25.0	26.3		ug/L	105	60 - 150	
Vinyl acetate	ND		25.0	26.8		ug/L	107	23 - 150	
Vinyl chloride	ND		25.0	26.3		ug/L	105	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	26.8		ug/L	107	70 - 131	
2-Butanone (MEK)	ND		25.0	26.6		ug/L	106	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	28.0		ug/L	112	52 <sub>-</sub> 150	
Acrylonitrile	ND		250	277		ug/L	111	38 - 144	

25.0

25.8

ug/L

103

10 - 147

Client Sample ID: MW-2A

Prep Type: Total/NA

MS MS

ND

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132

Lab Sample ID: 440-170565-1 MSD

**Matrix: Water** 

Acrolein

Analysis Batch: 378516

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2,3-Trichloropropane	ND		25.0	26.1		ug/L		105	60 - 130	1	30
1,1,1,2-Tetrachloroethane	ND		25.0	25.9		ug/L		104	60 - 149	4	20
1,1,1-Trichloroethane	ND		25.0	25.1		ug/L		100	70 - 130	1	20
1,1,2,2-Tetrachloroethane	ND		25.0	26.4		ug/L		106	63 - 130	1	30
1,1,2-Trichloroethane	ND		25.0	25.8		ug/L		103	70 - 130	3	25
1,1-Dichloroethane	ND		25.0	25.7		ug/L		103	65 - 130	3	20
1,1-Dichloroethene	ND		25.0	23.9		ug/L		96	70 - 130	0	20
1,1-Dichloropropene	ND		25.0	25.7		ug/L		103	64 - 130	1	20
1,2,4-Trichlorobenzene	ND		25.0	27.4		ug/L		109	60 - 140	5	20
1,2-Dibromo-3-Chloropropane	ND		25.0	25.5		ug/L		102	48 - 140	6	30

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: 440-170565-1 MSD

**Matrix: Water** 

Acrolein

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

Analysis Batch: 378516	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	•	Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2-Dichlorobenzene	ND	<del></del>	25.0	26.2	-	ug/L		105	70 - 130	5	20
1,2-Dichloroethane	ND		25.0	25.9		ug/L		104	56 <sub>-</sub> 146	4	20
1,2-Dichloropropane	ND		25.0	26.5		ug/L		106	69 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	25.8		ug/L		103	70 - 130	2	20
1,3-Dichloropropane	ND		25.0	25.4		ug/L		102	70 - 130	1	25
1,4-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130	6	20
2,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 138	0	25
2-Hexanone	ND		25.0	25.3		ug/L		101	10 - 150	7	35
Acetone	ND		25.0	26.1		ug/L		105	10 - 150	6	35
Benzene	ND		25.0	24.9		ug/L		100	66 - 130	5	20
Bromoform	ND		25.0	26.2		ug/L		105	59 <sub>-</sub> 150	0	25
Bromomethane	ND		25.0	26.6		ug/L		107	62 - 131	4	25
Carbon disulfide	ND		25.0	24.4		ug/L		98	49 - 140	1	20
Carbon tetrachloride	ND		25.0	25.9		ug/L		104	60 - 150	4	25
Chlorobenzene	ND		25.0	24.7		ug/L		99	70 - 130	3	20
Bromochloromethane	ND		25.0	26.5		ug/L		106	70 - 130	3	25
Chloroethane	ND		25.0	25.7		ug/L		103	68 - 130	2	25
Chloroform	ND		25.0	25.5		ug/L		102	70 - 130	3	20
Chloromethane	ND		25.0	25.5		ug/L		102	39 - 144	2	25
cis-1,2-Dichloroethene	ND		25.0	25.0		ug/L		100	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	26.3		ug/L		105	70 - 133	3	20
Dibromochloromethane	ND		25.0	25.7		ug/L		103	70 - 148	4	25
Dibromomethane	ND		25.0	25.5		ug/L		102	70 - 130	0	25
Bromodichloromethane	ND		25.0	26.0		ug/L		104	70 - 138	3	20
Dichlorodifluoromethane	ND		25.0	23.0		ug/L		92	25 - 142	1	30
Ethylbenzene	ND		25.0	25.0		ug/L		100	70 - 130	2	20
m,p-Xylene	ND		25.0	25.8		ug/L		103	70 - 133	3	25
Methylene Chloride	ND		25.0	25.9		ug/L		103	52 - 130	3	20
Methyl tert-butyl ether	ND		25.0	26.2		ug/L		105	70 - 130	2	25
Naphthalene	ND		25.0	27.0		ug/L		108	60 - 140	2	30
o-Xylene	ND		25.0	26.2		ug/L		105	70 - 133	5	20
Styrene	ND		25.0	25.3		ug/L		101	29 - 150	6	35
t-Butanol	ND		250	264		ug/L		106	70 - 130	6	25
Tetrachloroethene	ND		25.0	25.4		ug/L		102	70 - 137	1	20
Toluene	ND		25.0	24.9		ug/L		100	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	25.2		ug/L		101	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	25.6		ug/L		102	70 - 138	2	25
Trichloroethene	ND		25.0	26.1		ug/L		105	70 - 130	2	20
Trichlorofluoromethane	ND		25.0	26.2		ug/L		105	60 - 150	0	25
Vinyl acetate	ND		25.0	26.2		ug/L		105	23 - 150	2	30
Vinyl chloride	ND		25.0	25.9		ug/L		104	50 - 137	1	30
1,2-Dibromoethane (EDB)	ND		25.0	27.2		ug/L		109	70 - 131	1	25
2-Butanone (MEK)	ND		25.0	24.4		ug/L		97	48 - 140	9	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	26.8		ug/L		107	52 - 150	4	35
Acrylonitrile	ND		250	266		ug/L		107	38 - 144	4	40

TestAmerica Irvine

25.0

ug/L

100

10 - 147

25.0

ND

3

40

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: 440-170565-1 MSD

**Matrix: Water** 

**Analysis Batch: 378516** 

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

MSD MSD

MR MR

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 128
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132

Lab Sample ID: MB 440-378704/4

**Matrix: Water** 

**Analysis Batch: 378704** 

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

Analyte	Desuit	O		ME		_			
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/28/16 20:41	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/28/16 20:41	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/28/16 20:41	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/28/16 20:41	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/28/16 20:41	1
2-Hexanone	ND		5.0	2.5	ug/L			12/28/16 20:41	1
Acetone	ND		20	10	ug/L			12/28/16 20:41	1
Acetonitrile	ND		20	10	ug/L			12/28/16 20:41	1
Benzene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Allyl chloride	ND		1.0	0.50	ug/L			12/28/16 20:41	1
Bromoform	ND		1.0	0.40	ug/L			12/28/16 20:41	1
Bromomethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/28/16 20:41	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Chloroethane	ND		1.0	0.40	ug/L			12/28/16 20:41	1
Chloroform	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Chloromethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Dibromomethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/28/16 20:41	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/28/16 20:41	1

TestAmerica Irvine

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

Lab Sample ID: MB 440-378704/4

**Analysis Batch: 378704** 

**Matrix: Water** 

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

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
lodomethane	ND		2.0	1.0	ug/L			12/28/16 20:41	1
Isobutyl alcohol	ND		25	13	ug/L			12/28/16 20:41	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/28/16 20:41	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/28/16 20:41	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/28/16 20:41	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/28/16 20:41	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Naphthalene	ND		1.0	0.40	ug/L			12/28/16 20:41	1
o-Xylene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Propionitrile	ND		20	10	ug/L			12/28/16 20:41	1
Styrene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
t-Butanol	ND		10	5.0	ug/L			12/28/16 20:41	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/28/16 20:41	1
Toluene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/28/16 20:41	1
Trichloroethene	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/28/16 20:41	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/28/16 20:41	1
Vinyl chloride	ND		0.50		ug/L			12/28/16 20:41	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/28/16 20:41	1
2-Butanone (MEK)	ND		5.0		ug/L			12/28/16 20:41	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/28/16 20:41	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/28/16 20:41	1
Acrolein	ND		5.0	2.5	ug/L			12/28/16 20:41	1
	МВ	МВ							
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		80 - 128		12/28/16 20:41	1
4-Bromofluorobenzene (Surr)	101		80 - 120		12/28/16 20:41	1
Dibromofluoromethane (Surr)	100		76 - 132		12/28/16 20:41	1

MB MB

Lab Sample ID: LCS 440-378704/5

**Matrix: Water** 

**Analysis Batch: 378704** 

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

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,3-Trichloropropane	25.0	23.8	-	ug/L		95	63 - 130	
1,1,1,2-Tetrachloroethane	25.0	25.8		ug/L		103	60 - 141	
1,1,1-Trichloroethane	25.0	25.4		ug/L		102	70 - 130	
1,1,2,2-Tetrachloroethane	25.0	25.0		ug/L		100	63 - 130	
1,1,2-Trichloroethane	25.0	25.1		ug/L		101	70 - 130	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: LCS 440-378704/5

**Matrix: Water** 

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

Analysis Batch: 378704	Spike	LCS	LCS				%Rec.	
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethane	25.0	25.9		ug/L		104	64 - 130	
1,1-Dichloroethene	25.0	24.8		ug/L		99	70 - 130	
1,1-Dichloropropene	25.0	26.2		ug/L		105	70 - 130	
1,2,4-Trichlorobenzene	25.0	26.6		ug/L		106	60 - 140	
1,2-Dibromo-3-Chloropropane	25.0	23.1		ug/L		92	52 - 140	
1,2-Dichlorobenzene	25.0	25.0		ug/L		100	70 - 130	
1.2-Dichloroethane	25.0	25.5		ug/L		102	57 <sub>-</sub> 138	
1,2-Dichloropropane	25.0	27.0		ug/L		108	67 - 130	
1,3-Dichlorobenzene	25.0	25.3		ug/L		101	70 - 130	
1,3-Dichloropropane	25.0	25.2		ug/L		101	70 - 130	
1,4-Dichlorobenzene	25.0	25.6		ug/L		102	70 - 130	
2,2-Dichloropropane	25.0	25.6		ug/L		102	68 <sub>-</sub> 141	
2-Hexanone	25.0	24.4		ug/L		98	10 - 150	
Acetone	25.0	24.6		ug/L		98	10 - 150	
Benzene	25.0	25.0		ug/L ug/L		100	68 <sub>-</sub> 130	
Bromoform	25.0	25.5		ug/L ug/L		100	60 - 148	
Bromomethane	25.0	26.4				102	64 - 139	
Carbon disulfide	25.0	24.6		ug/L		98	52 <sub>-</sub> 136	
				ug/L				
Carbon tetrachloride	25.0	25.9		ug/L		104	60 - 150 70 - 130	
Chlorobenzene	25.0	25.1		ug/L		100		
Bromochloromethane	25.0	26.5		ug/L		106	70 - 130	
Chloroethane	25.0	26.3		ug/L		105	64 - 135	
Chloroform	25.0	25.8		ug/L		103	70 <sub>-</sub> 130	
Chloromethane	25.0	26.8		ug/L		107	47 - 140	
cis-1,2-Dichloroethene	25.0	25.2		ug/L		101	70 - 133	
cis-1,3-Dichloropropene	25.0	26.4		ug/L		106	70 - 133	
Dibromochloromethane	25.0	25.8		ug/L		103	69 - 145	
Dibromomethane	25.0	25.3		ug/L		101	70 - 130	
Bromodichloromethane	25.0	26.0		ug/L		104	70 - 132	
Dichlorodifluoromethane	25.0	24.9		ug/L		99	29 - 150	
Ethylbenzene	25.0	25.0		ug/L		100	70 - 130	
m,p-Xylene	25.0	26.4		ug/L		105	70 - 130	
Methylene Chloride	25.0	25.9		ug/L		104	52 - 130	
Methyl tert-butyl ether	25.0	26.0		ug/L		104	63 - 131	
Naphthalene	25.0	25.1		ug/L		101	60 - 140	
o-Xylene	25.0	26.8		ug/L		107	70 - 130	
Styrene	25.0	25.8		ug/L		103	70 - 134	
t-Butanol	250	259		ug/L		104	70 - 130	
Tetrachloroethene	25.0	25.5		ug/L		102	70 - 130	
Toluene	25.0	25.6		ug/L		102	70 - 130	
rans-1,2-Dichloroethene	25.0	25.5		ug/L		102	70 - 130	
trans-1,3-Dichloropropene	25.0	25.2		ug/L		101	70 - 132	
Trichloroethene	25.0	26.9		ug/L		108	70 - 130	
Trichlorofluoromethane	25.0	26.7		ug/L		107	60 - 150	
Vinyl acetate	25.0	23.9		ug/L		96	48 - 140	
Vinyl chloride	25.0	26.9		ug/L		108	59 - 133	
1,2-Dibromoethane (EDB)	25.0	26.3		ug/L		105	70 - 130	
2-Butanone (MEK)	25.0	24.0		ug/L		96	44 - 150	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: LCS 440-378704/5

**Matrix: Water** 

**Analysis Batch: 378704** 

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

		Spike	LCS	LCS				%Rec.		
An	nalyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
4-1	Methyl-2-pentanone (MIBK)	25.0	24.9		ug/L		99	59 - 149		_
Ac	rylonitrile	250	257		ug/L		103	48 - 140		
Ac	rolein	25.0	21.2		ug/L		85	10 - 145		

 Surrogate
 %Recovery
 Qualifier
 Limits

 Toluene-d8 (Surr)
 106
 80 - 128

 4-Bromofluorobenzene (Surr)
 98
 80 - 120

 Dibromofluoromethane (Surr)
 103
 76 - 132

Lab Sample ID: LCSD 440-378704/6

Matrix: Water

Bromochloromethane

cis-1,2-Dichloroethene

cis-1,3-Dichloropropene

Dibromochloromethane

Bromodichloromethane

Chloroethane

Chloromethane

Dibromomethane

Chloroform

Analysis Batch: 378704

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

Spike LCSD LCSD %Rec. **RPD Analyte** Added Result Qualifier Unit %Rec Limits **RPD** Limit 25.0 24.6 98 63 - 130 1,2,3-Trichloropropane ug/L 20 25.0 25.9 104 60 - 141 20 1,1,1,2-Tetrachloroethane ug/L 0 20 1,1,1-Trichloroethane 25.0 24.5 ug/L 98 70 - 130 1,1,2,2-Tetrachloroethane 25.0 25.6 ug/L 102 63 - 1302 25 1,1,2-Trichloroethane 25.0 24.9 ug/L 100 70 - 130 20 1.1-Dichloroethane 25.0 25.9 ug/L 103 64 - 130 n 20 1,1-Dichloroethene 25.0 24.0 96 70 - 130 20 ug/L 101 70 - 130 20 1,1-Dichloropropene 25.0 25.3 ug/L 3 1,2,4-Trichlorobenzene 25.0 26.3 ug/L 105 60 - 140 20 1,2-Dibromo-3-Chloropropane 25.0 24.1 96 52 - 140 30 ug/L 25.0 1,2-Dichlorobenzene 25.7 ug/L 103 70 - 130 20 1.2-Dichloroethane 25.0 24.9 ug/L 100 57 - 1382 20 1,2-Dichloropropane 25.0 26.3 ug/L 105 67 - 13020 1,3-Dichlorobenzene 25.0 25.8 103 70 - 130 2 20 ug/L 100 25.0 25.1 ug/L 70 - 130 20 1,3-Dichloropropane 104 20 1,4-Dichlorobenzene 25.0 26.0 ug/L 70 - 130 2,2-Dichloropropane 25.0 99 25 24.8 ug/L 68 - 1413 2-Hexanone 25.0 23.8 ug/L 95 10 - 150 2 30 Acetone 25.0 23.6 ug/L 94 10 - 150 30 Benzene 25.0 24.5 ug/L 98 68 - 130 20 Bromoform 25.0 25.5 ug/L 102 60 - 14825 Bromomethane 25.0 26.2 ug/L 105 64 - 139 20 Carbon disulfide 25.0 24.1 96 52 - 136 2 20 ug/L Carbon tetrachloride 25.0 25.5 ug/L 102 60 - 150 2 25 Chlorobenzene 25.0 24.7 ug/L 99 70 - 130 20

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25.0

25.0

25.0

25.0

25.0

25.0

25.0

25.0

25.0

26.0

25.4

25.4

26.3

24.6

26.4

25.5

24.5

25.6

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

104

101

101

105

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70 - 130

64 - 135

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47 - 140

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70 - 130

70 - 132

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

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

Lab Sample ID: LCSD 440-378704/6

**Matrix: Water** 

Analysis Batch: 378704

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

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane	25.0	23.6	-	ug/L		94	29 - 150	5	30
Ethylbenzene	25.0	24.9		ug/L		99	70 - 130	1	20
m,p-Xylene	25.0	25.5		ug/L		102	70 - 130	3	20
Methylene Chloride	25.0	25.3		ug/L		101	52 - 130	2	20
Methyl tert-butyl ether	25.0	25.5		ug/L		102	63 - 131	2	25
Naphthalene	25.0	25.2		ug/L		101	60 - 140	0	25
o-Xylene	25.0	26.6		ug/L		106	70 - 130	1	20
Styrene	25.0	25.0		ug/L		100	70 - 134	3	20
t-Butanol	250	260		ug/L		104	70 - 130	1	20
Tetrachloroethene	25.0	25.2		ug/L		101	70 - 130	1	20
Toluene	25.0	24.8		ug/L		99	70 - 130	3	20
trans-1,2-Dichloroethene	25.0	24.9		ug/L		100	70 - 130	2	20
trans-1,3-Dichloropropene	25.0	25.0		ug/L		100	70 - 132	1	20
Trichloroethene	25.0	25.9		ug/L		104	70 - 130	4	20
Trichlorofluoromethane	25.0	26.1		ug/L		104	60 - 150	2	20
Vinyl acetate	25.0	24.3		ug/L		97	48 - 140	1	20
Vinyl chloride	25.0	26.5		ug/L		106	59 - 133	2	30
1,2-Dibromoethane (EDB)	25.0	26.1		ug/L		104	70 - 130	1	20
2-Butanone (MEK)	25.0	24.6		ug/L		98	44 - 150	2	35
4-Methyl-2-pentanone (MIBK)	25.0	25.3		ug/L		101	59 - 149	2	30
Acrylonitrile	250	247		ug/L		99	48 - 140	4	30
Acrolein	25.0	20.2		ug/L		81	10 - 145	5	30

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132

Lab Sample ID: 440-170565-5 MS

**Matrix: Water** 

**Analysis Batch: 378704** 

Sample	Sample	Spike	MS	MS				%Rec.
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
ND		25.0	26.3		ug/L		105	60 - 130
ND		25.0	25.2		ug/L		101	60 - 149
ND		25.0	25.1		ug/L		100	70 - 130
ND		25.0	26.8		ug/L		107	63 - 130
ND		25.0	25.8		ug/L		103	70 - 130
ND		25.0	25.1		ug/L		101	65 <sub>-</sub> 130
ND		25.0	24.7		ug/L		99	70 - 130
ND		25.0	26.0		ug/L		104	64 - 130
ND		25.0	26.6		ug/L		106	60 - 140
ND		25.0	26.8		ug/L		107	48 - 140
ND		25.0	25.6		ug/L		102	70 - 130
ND		25.0	24.6		ug/L		98	56 <sub>-</sub> 146
ND		25.0	25.5		ug/L		102	69 - 130
ND		25.0	24.9		ug/L		99	70 - 130
ND		25.0	25.4		ug/L		102	70 - 130
	Result  ND  ND  ND  ND  ND  ND  ND  ND  ND  N	ND N	Result         Qualifier         Added           ND         25.0           ND         25.0	Result         Qualifier         Added         Result           ND         25.0         26.3           ND         25.0         25.2           ND         25.0         26.8           ND         25.0         26.8           ND         25.0         25.8           ND         25.0         24.7           ND         25.0         26.0           ND         25.0         26.6           ND         25.0         26.8           ND         25.0         25.6           ND         25.0         24.6           ND         25.0         25.5           ND         25.0         25.5	Result         Qualifier         Added         Result         Qualifier           ND         25.0         26.3         26.3           ND         25.0         25.2           ND         25.0         25.1           ND         25.0         26.8           ND         25.0         25.8           ND         25.0         25.1           ND         25.0         24.7           ND         25.0         26.6           ND         25.0         26.6           ND         25.0         25.6           ND         25.0         24.6           ND         25.0         25.5           ND         25.0         25.5           ND         25.0         24.9	Result         Qualifier         Added         Result         Qualifier         Unit           ND         25.0         26.3         ug/L           ND         25.0         25.2         ug/L           ND         25.0         25.1         ug/L           ND         25.0         26.8         ug/L           ND         25.0         25.8         ug/L           ND         25.0         25.1         ug/L           ND         25.0         24.7         ug/L           ND         25.0         26.0         ug/L           ND         25.0         26.6         ug/L           ND         25.0         26.8         ug/L           ND         25.0         25.6         ug/L           ND         25.0         25.6         ug/L           ND         25.0         25.5         ug/L           ND         25.0         25.5         ug/L           ND         25.0         25.5         ug/L           ND         25.0         25.5         ug/L	Result         Qualifier         Added         Result         Qualifier         Unit         D           ND         25.0         26.3         ug/L         ug/L           ND         25.0         25.2         ug/L           ND         25.0         25.1         ug/L           ND         25.0         26.8         ug/L           ND         25.0         25.8         ug/L           ND         25.0         25.1         ug/L           ND         25.0         24.7         ug/L           ND         25.0         26.6         ug/L           ND         25.0         26.8         ug/L           ND         25.0         26.8         ug/L           ND         25.0         25.6         ug/L           ND         25.0         25.6         ug/L           ND         25.0         25.5         ug/L           ND         25.0	Result ND         Qualifier         Added Added Added         Result Qualifier         Unit Unit Unit Unit Unit Unit Unit Unit

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Prep Type: Total/NA

Client Sample ID: MW-9

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-170565-5 MS

**Matrix: Water** 

Surrogate

Toluene-d8 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Analysis Batch: 378704

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

Analyte	Sample S Result (	•	Spike Added		MS Qualifier	Unit	D	%Rec	%Rec. Limits	
1,4-Dichlorobenzene	ND		25.0	25.4		ug/L		102	70 - 130	
2,2-Dichloropropane	ND		25.0	25.7		ug/L		103	69 - 138	
2-Hexanone	ND		25.0	27.3		ug/L		109	10 - 150	
Acetone	ND		25.0	28.4		ug/L		114	10 - 150	
Benzene	ND		25.0	24.1		ug/L		96	66 - 130	
Bromoform	ND		25.0	26.3		ug/L		105	59 - 150	
Bromomethane	ND		25.0	26.4		ug/L		106	62 - 131	
Carbon disulfide	ND		25.0	24.7		ug/L		99	49 - 140	
Carbon tetrachloride	ND		25.0	25.8		ug/L		103	60 - 150	
Chlorobenzene	ND		25.0	24.4		ug/L		97	70 - 130	
Bromochloromethane	ND		25.0	25.9		ug/L		104	70 - 130	
Chloroethane	ND		25.0	25.9		ug/L		104	68 - 130	
Chloroform	ND		25.0	25.2		ug/L		101	70 - 130	
Chloromethane	ND		25.0	26.1		ug/L		104	39 - 144	
cis-1,2-Dichloroethene	0.54		25.0	25.2		ug/L		99	70 - 130	
cis-1,3-Dichloropropene	ND		25.0	26.0		ug/L		104	70 - 133	
Dibromochloromethane	ND		25.0	25.1		ug/L		100	70 - 148	
Dibromomethane	ND		25.0	25.3		ug/L		101	70 - 130	
Bromodichloromethane	ND		25.0	24.8		ug/L		99	70 - 138	
Dichlorodifluoromethane	ND		25.0	24.3		ug/L		97	25 - 142	
Ethylbenzene	ND		25.0	24.7		ug/L		99	70 - 130	
m,p-Xylene	ND		25.0	25.6		ug/L		102	70 - 133	
Methylene Chloride	ND		25.0	24.6		ug/L		99	52 - 130	
Methyl tert-butyl ether	ND		25.0	26.4		ug/L		106	70 - 130	
Naphthalene	ND		25.0	27.3		ug/L		109	60 - 140	
o-Xylene	ND		25.0	25.7		ug/L		103	70 - 133	
Styrene	ND		25.0	24.9		ug/L		99	29 - 150	
t-Butanol	33		250	268		ug/L		94	70 - 130	
Tetrachloroethene	ND		25.0	25.4		ug/L		101	70 - 137	
Toluene	ND		25.0	25.1		ug/L		100	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	25.4		ug/L		102	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	25.0		ug/L		100	70 - 138	
Trichloroethene	ND		25.0	25.6		ug/L		102	70 - 130	
Trichlorofluoromethane	ND		25.0	26.5		ug/L		106	60 - 150	
Vinyl acetate	ND		25.0	26.6		ug/L		106	23 - 150	
Vinyl chloride	ND		25.0	27.0		ug/L		108	50 - 137	
1,2-Dibromoethane (EDB)	ND		25.0	27.0		ug/L		108	70 - 131	
2-Butanone (MEK)	ND		25.0	26.9		ug/L		107	48 - 140	
4-Methyl-2-pentanone (MIBK)	ND		25.0	28.8		ug/L		115	52 - 150	
Acrylonitrile	ND		250	289		ug/L		115	38 - 144	
Acrolein	ND		25.0	25.9		ug/L		104	10 - 147	
	MS I	MS								

TestAmerica Irvine

Limits

80 - 128

80 - 120

76 - 132

%Recovery Qualifier

106

98

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

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

Lab Sample ID: 440-170565-5 MSD

**Matrix: Water** 

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

Analysis Batch: 378704	Sample	Sample	Spike	MSD	MSD				%Rec.		RPE
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limi
1,2,3-Trichloropropane	ND		25.0	25.7		ug/L		103	60 - 130	2	30
1,1,1,2-Tetrachloroethane	ND		25.0	25.6		ug/L		102	60 - 149	1	20
1,1,1-Trichloroethane	ND		25.0	25.4		ug/L		102	70 - 130	1	20
1,1,2,2-Tetrachloroethane	ND		25.0	26.2		ug/L		105	63 - 130	2	30
1,1,2-Trichloroethane	ND		25.0	25.7		ug/L		103	70 - 130	0	2
1,1-Dichloroethane	ND		25.0	25.7		ug/L		103	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	25.1		ug/L		100	70 - 130	2	20
1,1-Dichloropropene	ND		25.0	25.9		ug/L		103	64 - 130	0	20
1,2,4-Trichlorobenzene	ND		25.0	26.2		ug/L		105	60 - 140	1	20
1,2-Dibromo-3-Chloropropane	ND		25.0	27.2		ug/L		109	48 - 140	2	30
1,2-Dichlorobenzene	ND		25.0	25.5		ug/L		102	70 <sub>-</sub> 130	0	20
1,2-Dichloroethane	ND		25.0	24.7		ug/L		99	56 <sub>-</sub> 146	0	20
1,2-Dichloropropane	ND		25.0	26.0		ug/L		104	69 - 130	2	20
1,3-Dichlorobenzene	ND		25.0	25.4		ug/L		102	70 - 130	2	20
1,3-Dichloropropane	ND		25.0	26.2		ug/L		105	70 - 130	3	2
1,4-Dichlorobenzene	ND		25.0	25.7		ug/L		103	70 - 130	1	20
2,2-Dichloropropane	ND		25.0	25.4		ug/L		102	69 - 138	1	2
2-Hexanone	ND		25.0	27.6		ug/L		110	10 - 150	1	3
Acetone	ND		25.0	25.8		ug/L		103	10 - 150	10	3
Benzene	ND		25.0	24.6		ug/L		98	66 - 130	2	20
Bromoform	ND		25.0	26.1		ug/L		105	59 <sub>-</sub> 150	1	2
Bromomethane	ND		25.0	26.8		ug/L		107	62 - 131	· · · · · · · · · · · · · · · · · · ·	2
Carbon disulfide	ND		25.0	25.3		ug/L		101	49 - 140	2	20
Carbon tetrachloride	ND		25.0	25.7		ug/L		103	60 - 150	1	2
Chlorobenzene	ND		25.0	24.9		ug/L		100	70 - 130	2	20
Bromochloromethane	ND		25.0	26.0		ug/L		104	70 - 130	0	2
Chloroethane	ND		25.0	26.4		ug/L		106	68 - 130	2	2
Chloroform	ND		25.0	25.3		ug/L		101	70 - 130	0	20
Chloromethane	ND		25.0	26.8		ug/L		107	39 - 144	3	2
cis-1,2-Dichloroethene	0.54		25.0	25.3		ug/L		99	70 - 130	0	20
cis-1,3-Dichloropropene	ND		25.0	26.7		ug/L		107	70 - 133	3	20
Dibromochloromethane	ND		25.0	24.9		ug/L		100	70 - 148	1	2
Dibromomethane	ND		25.0	25.2		ug/L		101	70 - 130	1	2
Bromodichloromethane	ND		25.0	24.7		ug/L		99	70 - 138	0	20
Dichlorodifluoromethane	ND		25.0	25.3		ug/L		101	25 - 142	4	30
Ethylbenzene	ND		25.0	25.7		ug/L		103	70 - 130	4	20
m,p-Xylene	ND		25.0	25.9		ug/L		103	70 - 133	1	2
Methylene Chloride	ND		25.0	25.0		ug/L		100	52 - 130	1	20
Methyl tert-butyl ether	ND		25.0	26.5		ug/L		106	70 - 130	1	2
Naphthalene	ND		25.0	27.1		ug/L		108	60 - 140	1	30
o-Xylene	ND		25.0	26.0		ug/L		104	70 - 133	1	20
Styrene	ND		25.0	24.9		ug/L		100	29 - 150	0	3
t-Butanol	33		250	263		ug/L		92	70 - 130	2	2
Tetrachloroethene	ND		25.0	26.2		ug/L		105	70 - 137	3	20
Toluene	ND		25.0	25.5		ug/L		102	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	25.6		ug/L		102	70 - 130	<u>-</u>	20
trans-1,3-Dichloropropene	ND		25.0	25.4		ug/L		102	70 - 138	2	2
Trichloroethene	ND		25.0	26.0		ug/L		104	70 - 130	1	20

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Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-170565-5 MSD

**Matrix: Water** 

**Analysis Batch: 378704** 

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

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Trichlorofluoromethane	ND		25.0	27.2		ug/L		109	60 - 150	3	25
Vinyl acetate	ND		25.0	27.0		ug/L		108	23 - 150	2	30
Vinyl chloride	ND		25.0	27.6		ug/L		110	50 - 137	2	30
1,2-Dibromoethane (EDB)	ND		25.0	27.2		ug/L		109	70 - 131	1	25
2-Butanone (MEK)	ND		25.0	26.2		ug/L		105	48 - 140	2	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.2		ug/L		117	52 - 150	1	35
Acrylonitrile	ND		250	281		ug/L		112	38 - 144	3	40
Acrolein	ND		25.0	23.2		ug/L		93	10 - 147	11	40

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 128
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132

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

Lab Sample ID: MB 440-378304/1-A

**Matrix: Water** 

**Analysis Batch: 378647** 

MB MB

Prep Type: Total/NA Prep Batch: 378304

Client Sample ID: Method Blank

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 1,4-Dioxane  $\overline{\mathsf{ND}}$ 1.0 0.25 ug/L 12/27/16 08:45 12/28/16 16:21

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,4-Dioxane-d8 (Surr) 51 30 - 120 12/27/16 08:45 12/28/16 16:21

Lab Sample ID: LCS 440-378304/2-A

**Matrix: Water** 

Analysis Batch: 378647

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA **Prep Batch: 378304** 

Spike LCS LCS Analyte Added Result Qualifier Unit D %Rec Limits 2.00 1,4-Dioxane 1.12 ug/L 56 35 - 120

LCS LCS

Limits Surrogate %Recovery Qualifier 30 - 120 1,4-Dioxane-d8 (Surr) 59

Lab Sample ID: LCSD 440-378304/3-A

**Matrix: Water** 

**Analysis Batch: 378647** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 378304 %Rec. **RPD** 

LCSD LCSD Spike Analyte Added Result Qualifier Unit Limits RPD Limit 1,4-Dioxane 2.00 1.33 ug/L 35 - 120

LCSD LCSD

Surrogate %Recovery Qualifier Limits 1,4-Dioxane-d8 (Surr) 30 - 120 68

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%Rec.

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Matrix Spike Duplicate

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Matrix Spike

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Prep Type: Total/NA

**Prep Type: Total/NA** 

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-377296/4

**Matrix: Water** 

**Analysis Batch: 377296** 

MB MB

Analyte **Result Qualifier** RL **MDL** Unit Prepared Analyzed Dil Fac Nitrate as N 0.11 ND 0.055 mg/L 12/21/16 09:52

Lab Sample ID: LCS 440-377296/2

**Matrix: Water** 

**Analysis Batch: 377296** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit D %Rec Nitrate as N 1.13 1.08 mg/L 96 90 - 110

Lab Sample ID: 440-170478-H-1 MS

**Matrix: Water** 

**Analysis Batch: 377296** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	ND		1.13	1.14		mg/L		101	80 - 120	

Lab Sample ID: 440-170478-H-1 MSD

**Matrix: Water** 

**Analysis Batch: 377296** 

•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	ND		1.13	1.14		mg/L		101	80 - 120	0	20

Lab Sample ID: MB 440-377297/4

**Matrix: Water** 

**Analysis Batch: 377297** 

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		0.50	0.25	mg/L			12/21/16 09:52	1
Chloride	ND		0.50	0.25	mg/L			12/21/16 09:52	1
Fluoride	ND		0.50	0.25	mg/L			12/21/16 09:52	1
Sulfate	ND		0.50	0.25	mg/L			12/21/16 09:52	1

Lab Sample ID: LCS 440-377297/2

**Matrix: Water** 

**Analysis Batch: 377297** 

, , , , , , , , , , , , , , , , , , , ,	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bromide	5.00	5.04	-	mg/L		101	90 - 110	 
Chloride	5.00	4.55		mg/L		91	90 - 110	
Fluoride	5.00	5.06		mg/L		101	90 - 110	
Sulfate	5.00	4 94		ma/l		99	90 - 110	

Lab Sample ID: 440-170478-H-1 MS

**Matrix: Water** 

Analysis Batch: 377297										
_	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bromide	2.4		5.00	7.74		mg/L		107	80 - 120	 

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Client Sample ID: Method Blank

Prep Type: Total/NA

**Prep Type: Total/NA** 

Prep Type: Total/NA

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-170478-H-1 MS

**Matrix: Water** 

**Analysis Batch: 377297** 

rinaly old Datom Crizo.	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluoride	2.7		5.00	8.43		mg/L		114	80 - 120	
Sulfate	ND		5.00	5.04		ma/L		101	80 - 120	

Lab Sample ID: 440-170478-H-1 MSD

**Matrix: Water** 

**Analysis Batch: 377297** 

Client Sample	ID: Matrix Spike Dupli	cate
	Prep Type: Tota	I/NA

Spike Sample Sample MSD MSD %Rec. **RPD** Limits **Analyte** Result Qualifier Added Result Qualifier Unit D %Rec RPD Limit Bromide 2.4 5.00 7.76 108 80 - 120 20 mg/L 0 Fluoride 2.7 5.00 8.37 mg/L 112 80 - 120 20 Sulfate ND 5.00 5.09 mg/L 102 80 - 120 20

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-378813/1-A

**Matrix: Water** 

**Analysis Batch: 379188** 

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

**Prep Batch: 378813** 

	MB MB							
Analyte	Result Qualifi	ier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	0.050	0.010	mg/L		12/29/16 08:04	12/30/16 11:09	1
Calcium	ND	0.10	0.050	mg/L		12/29/16 08:04	12/30/16 11:09	1
Iron	ND	0.040	0.010	mg/L		12/29/16 08:04	12/30/16 11:09	1
Magnesium	ND	0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:09	1
Manganese	ND	0.020	0.010	mg/L		12/29/16 08:04	12/30/16 11:09	1
Potassium	ND	0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:09	1
Sodium	ND	0.50	0.25	mg/L		12/29/16 08:04	12/30/16 11:09	1

Lab Sample ID: LCS 440-378813/2-A

**Matrix: Water** 

Analysis Batch: 379188

**Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 378813** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Boron	1.00	1.00		mg/L		100	80 - 120	
Calcium	1.00	1.06		mg/L		106	80 - 120	
Iron	1.00	1.09		mg/L		109	80 - 120	
Magnesium	1.00	1.04		mg/L		104	80 - 120	
Manganese	1.00	1.04		mg/L		104	80 - 120	
Potassium	10.0	10.0		mg/L		100	80 - 120	
Sodium	10.0	10.0		mg/L		100	80 - 120	

Lab Sample ID: 440-170565-4 MS

**Matrix: Water** 

Analysis Ratch: 370188

Alidiysis Balcii. 379100	Sample	Sample	Spike	MS	MS				%Rec.	lCII. 3/0013
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Boron	1.0		1.00	2.00		mg/L		95	75 - 125	
Calcium	430		1.00	401	4	mg/L		-3358	75 - 125	
Iron	19		1.00	18.8	4	mg/L		-47	75 - 125	
Magnesium	190		1.00	176	4	mg/L		-1542	75 - 125	

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Client Sample ID: MW-5

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

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

30

270

270

Potassium

Sodium

Lab Sample ID: 440-170565	ab Sample ID: 440-170565-4 MS								
Matrix: Water	Matrix: Water								
Analysis Batch: 379188			<b>Prep Batch: 378813</b>						
•	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Manganese	4.8	<del></del>	1.00	5.38	4	ma/L		58	75 - 125

38.7

255 4

263 4

10.0

10.0

10.0

Lab Sample ID: 440-170565-4 MSD

Matrix: Water							P	rep Typ	e: Total I							
Analysis Batch: 379188									Prep Ba	itch: 37	tch: 378813					
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD					
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit					
Boron	1.0		1.00	1.95		mg/L		91	75 - 125	2	20					
Calcium	430		1.00	414	4	mg/L		-2083	75 - 125	3	20					
Iron	19		1.00	19.8	4	mg/L		57	75 - 125	5	20					
Magnesium	190		1.00	183	4	mg/L		-814	75 - 125	4	20					
Manganese	4.8		1.00	5.54	4	mg/L		74	75 - 125	3	20					
Potassium	30		10.0	39.2		mg/L		90	75 - 125	1	20					

Lab Sample ID: MB 440-378816/1-A

**Matrix: Water** 

Sodium

**Analysis Batch: 379159** 

**Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 378816** MR MR

mg/L

mg/L

mg/L

	IVID	IVID								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Boron	ND		0.050	0.010	mg/L		12/29/16 08:09	12/30/16 10:10	1	
Calcium	ND		0.10	0.050	mg/L		12/29/16 08:09	12/30/16 10:10	1	
Iron	ND		0.040	0.010	mg/L		12/29/16 08:09	12/30/16 10:10	1	
Magnesium	ND		0.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:10	1	
Manganese	ND		0.020	0.010	mg/L		12/29/16 08:09	12/30/16 10:10	1	
Potassium	ND		0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:10	1	
Sodium	ND		0.50	0.25	mg/L		12/29/16 08:09	12/30/16 10:10	1	

Lab Sample ID: LCS 440-378816/2-A

**Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable Analysis Batch: 379159 Prep Batch: 378816** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Boron	1.00	0.885		mg/L		89	80 - 120	
Calcium	1.00	1.02		mg/L		102	80 - 120	
Iron	1.00	0.999		mg/L		100	80 - 120	
Magnesium	1.00	0.989		mg/L		99	80 - 120	
Manganese	1.00	1.01		mg/L		101	80 - 120	
Potassium	10.0	8.93		mg/L		89	80 - 120	
Sodium	10.0	8.95		mg/L		89	80 - 120	

Lab Sample ID: 440-170565-3 MS

Matrix: Water

Matrix: water							P	repiy	pe: Total	Recoverable
Analysis Batch: 379159									Prep B	atch: 378816
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Boron	0.59		1.00	1.62		mg/L		103	75 - 125	

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Client Sample ID: DW-4

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-17056	5-3 MS							CI	ient Samp	ole ID: DW-4
Matrix: Water							P	rep Typ	e: Total F	Recoverable
Analysis Batch: 379159									Prep Ba	tch: 378816
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Calcium	200		1.00	202	4	mg/L		75	75 - 125	

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result (	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Calcium	200		1.00	202	4	mg/L		75	75 - 125	
Iron	2.5		1.00	3.57		mg/L		102	75 - 125	
Magnesium	130		1.00	135	4	mg/L		290	75 - 125	
Manganese	0.14		1.00	1.15		mg/L		102	75 - 125	
Potassium	4.7		10.0	14.9		mg/L		102	75 - 125	
Sodium	480		10.0	493	4	mg/L		105	75 - 125	
_										

Lab Sample ID: 440-170565-3 MSD Client Sample ID: DW-4 **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 379159 Prep Batch: 378816** it

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	0.59		1.00	1.60		mg/L		101	75 - 125	1	20
Calcium	200		1.00	208	4	mg/L		661	75 - 125	3	20
Iron	2.5		1.00	3.58		mg/L		104	75 - 125	0	20
Magnesium	130		1.00	136	4	mg/L		401	75 - 125	1	20
Manganese	0.14		1.00	1.15		mg/L		102	75 - 125	0	20
Potassium	4.7		10.0	15.2		mg/L		106	75 - 125	2	20
Sodium	480		10.0	499	4	mg/L		167	75 - 125	1	20

Method: 410.4 - COD

Lab Sample ID: MB 440-379698/3 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 379698** 

MB MB RL **MDL** Unit Analyte Result Qualifier Prepared Analyzed Dil Fac **Chemical Oxygen Demand** ND 20 10 mg/L 01/04/17 09:09

Lab Sample ID: LCS 440-379698/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 379698** 

Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits 200 199 Chemical Oxygen Demand mg/L 90 - 110

Lab Sample ID: 440-170565-1 MS Client Sample ID: MW-2A **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 379698** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Unit %Rec Limits Chemical Oxygen Demand 16 J 200 205 70 - 120 mg/L

Lab Sample ID: 440-170565-1 MSD Client Sample ID: MW-2A **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 379698** 

Sample Sample Spike MSD MSD %Rec. **RPD** Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits RPD Limit Chemical Oxygen Demand 16 J 200 200 mg/L 92 70 - 120

TestAmerica Irvine

1/9/2017

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Type: Total/NA

**Prep Type: Total/NA** 

Prep Type: Total/NA

Method: 410.4 - COD (Continued)

Lab Sample ID: MB 440-379832/3

**Matrix: Water** 

**Analysis Batch: 379832** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 20 01/04/17 15:34 Chemical Oxygen Demand  $\overline{\mathsf{ND}}$ 10 mg/L

Lab Sample ID: LCS 440-379832/4

**Matrix: Water** 

**Analysis Batch: 379832** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec Chemical Oxygen Demand 200 201 mg/L 100 90 - 110

Lab Sample ID: 440-170910-C-1 MS

**Matrix: Water** 

**Analysis Batch: 379832** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits

Analyte Unit D %Rec **Chemical Oxygen Demand** ND 200 202 101 70 - 120 mg/L

Lab Sample ID: 440-170910-C-1 MSD

**Matrix: Water** 

**Analysis Batch: 379832** 

Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Chemical Oxygen Demand ND 200 200 100 70 - 120 15 mg/L

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-377837/3

**Matrix: Water** 

**Analysis Batch: 377837** 

MB MB Result Qualifier RL **RL** Unit Dil Fac Analyte Prepared Analyzed Alkalinity as CaCO3 4.0  $\overline{\mathsf{ND}}$ 4.0 mg/L 12/22/16 13:58 Bicarbonate Alkalinity as CaCO3 ND 4.0 4.0 mg/L 12/22/16 13:58

Lab Sample ID: LCS 440-377837/2

**Matrix: Water** 

**Analysis Batch: 377837** 

%Rec. Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits Alkalinity as CaCO3 85.8 85.1 mg/L 99 80 - 120

Lab Sample ID: 440-170565-7 DU

**Matrix: Water** 

Analysis Batch: 377837

Allalysis Datell. of 1001								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPI	) Limit
Alkalinity as CaCO3	170		167		mg/L		0.	2 20
Bicarbonate Alkalinity as CaCO3	170		167		mg/L		0.:	2 20

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

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

# Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 440-378308/3

**Matrix: Water** 

Alkalinity as CaCO3

Analyte

**Analysis Batch: 378308** 

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

MB MB Result Qualifier RL **RL** Unit D Prepared Analyzed Dil Fac 4.0 4.0 mg/L 12/27/16 04:30 ND ND 4.0 4.0 mg/L 12/27/16 04:30

Lab Sample ID: LCS 440-378308/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378308** 

Bicarbonate Alkalinity as CaCO3

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits mg/L Alkalinity as CaCO3 85.8 86.0 100 80 - 120

Lab Sample ID: MRL 440-378308/11 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378308** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit %Rec Limits Alkalinity as CaCO3 4.00 ND mg/L 84 50 - 150

Lab Sample ID: 550-74795-A-5 DU **Client Sample ID: Duplicate Matrix: Water** Prep Type: Total/NA

Analysis Batch: 378308

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Alkalinity as CaCO3	190		188		mg/L			20
Bicarbonate Alkalinity as CaCO3	190		184		mg/L		1	20

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

Lab Sample ID: MB 440-378530/1 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 378530** 

MB MB Result Qualifier RL **MDL** Unit Prepared Dil Fac Analyzed 10 **Total Dissolved Solids** ND 5.0 mg/L 12/28/16 08:52

Lab Sample ID: LCS 440-378530/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 378530** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec I imits **Total Dissolved Solids** 1000 976 mg/L 98 90 - 110

Client Sample ID: MW-2A Lab Sample ID: 440-170565-1 DU Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 378530

Sample Sample DU DU **RPD** Result Qualifier RPD Analyte Result Qualifier D Limit Unit **Total Dissolved Solids** 2500 2620 mg/L

TestAmerica Job ID: 440-170565-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: SM 4500 CO2 C - Free Carbon Dioxide

Lab Sample ID: MB 440-377746/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377746** 

MB MB Analyte Result Qualifier RL **RL** Unit Prepared Analyzed Dil Fac 2.0 12/22/16 15:56 Carbon Dioxide, Free ND 2.0 mg/L

Lab Sample ID: 440-170565-4 DU **Client Sample ID: MW-5 Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 377746** 

Ammonia (as N)

Sample Sample DU DU **RPD** Result Qualifier Result Qualifier **RPD** Analyte Limit Unit Carbon Dioxide, Free 190 183 mg/L 20

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-378501/2-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378507 Prep Batch: 378501** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 0.50 0.10 mg/L 12/28/16 03:00 12/28/16 05:00 Ammonia (as N)  $\overline{\mathsf{ND}}$ 

Lab Sample ID: LCS 440-378501/1-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378507 Prep Batch: 378501** LCS LCS Spike %Rec.

Added Result Qualifier Limits Analyte Unit D %Rec Ammonia (as N) 2.50 2.40 mg/L 85 - 115

Lab Sample ID: 440-171048-A-3-B MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378507 Prep Batch: 378501** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier D %Rec Limits Unit ND 2.50 Ammonia (as N) 2.40 96 75 - 125 mg/L

ND

Lab Sample ID: 440-171048-A-3-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378507 Prep Batch: 378501** Sample Sample Spike MSD MSD %Rec. **RPD** Added Result Qualifier RPD Analyte Result Qualifier Unit %Rec Limits Limit

Lab Sample ID: 440-171121-B-2-B DU **Client Sample ID: Duplicate** 

2.31

mg/L

**Matrix: Water** Prep Type: Total/NA **Analysis Batch: 378507 Prep Batch: 378501** 

2.50

DU DU Sample Sample **RPD** Analyte Result Qualifier Result Qualifier Unit D RPD Limit Ammonia (as N) 69 66.3 mg/L

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75 - 125

4

TestAmerica Job ID: 440-170565-1

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: MW-2A

Client Sample ID: MW-2A

Client Sample ID: Method Blank

Prep Type: Total/NA

%Rec.

Prep Type: Total/NA

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

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 440-377513/3

**Matrix: Water** 

**Analysis Batch: 377513** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac D Prepared 0.050 Total Sulfide ND 0.020 mg/L 12/21/16 22:27

Lab Sample ID: LCS 440-377513/4

**Matrix: Water** 

**Analysis Batch: 377513** 

Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit %Rec Total Sulfide 0.500 0.513 mg/L 103 80 - 120

Lab Sample ID: 440-170565-1 MS

**Matrix: Water** 

**Analysis Batch: 377513** 

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Analyte Unit D

Limits %Rec **Total Sulfide** ND 0.500 0.472 mg/L 94 70 - 130

Lab Sample ID: 440-170565-1 MSD

**Matrix: Water** 

**Analysis Batch: 377513** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit **Total Sulfide** ND 0.500 0.463 93 70 - 130 30 mg/L

Method: SM 5310C - TOC

Lab Sample ID: MB 440-380232/9

**Matrix: Water** 

**Analysis Batch: 380232** 

MB MB

Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed 0.10 0.050 mg/L **Total Organic Carbon**  $\overline{\mathsf{ND}}$ 

Lab Sample ID: LCS 440-380232/8

**Matrix: Water** 

**Analysis Batch: 380232** 

Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit %Rec Limits **Total Organic Carbon** 5.00 4.92 mg/L 98

Lab Sample ID: MRL 440-380232/39

**Matrix: Water** 

**Analysis Batch: 380232** 

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D %Rec Limits **Total Organic Carbon** 0.100 0.0831 J mg/L 83 50 - 150

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Prep Type: Total/NA

01/05/17 11:59

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

90 - 110

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

Client Sample ID: Method Blank

Prep Type: Total/NA

Method: SM 5310C - TOC (Continued)

Lab Sample ID: 440-170251-G-11 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380232** 

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 5.00 **Total Organic Carbon** 1.2 6.27 mg/L 102 80 - 120

Lab Sample ID: 440-170251-G-11 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 380232** Sample Sample Spike MSD MSD %Rec. **RPD** 

Result Qualifier Added Limits Analyte Result Qualifier Unit **RPD** Limit %Rec **Total Organic Carbon** 1.2 5.00 6.30 mg/L 103 80 - 120 20

Lab Sample ID: MB 440-380347/7

**Matrix: Water** 

Analysis Batch: 380347

MB MB Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed Total Organic Carbon  $\overline{\mathsf{ND}}$ 0.10 0.050 mg/L 01/06/17 06:17

Lab Sample ID: LCS 440-380347/6 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 380347** Spike LCS LCS %Rec.

Added Result Qualifier Unit %Rec Limits **Total Organic Carbon** 5.00 4.87 mg/L 97 90 - 110

Lab Sample ID: MRL 440-380347/5 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 380347** 

Spike MRI MRI %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 0.100 mg/L 50 - 150 Total Organic Carbon 0.101 101

Lab Sample ID: 440-171441-A-1 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 380347

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits 90 **Total Organic Carbon** 1.7 5.00 6.22 80 - 120 mg/L

Lab Sample ID: 440-171441-A-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380347

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Limits RPD **Analyte** Result Qualifier Unit %Rec Limit **Total Organic Carbon** 1.7 5.00 7.14 mg/L 109 80 - 120 20

TestAmerica Job ID: 440-170565-1

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

# **GC/MS VOA**

# Analysis Batch: 378516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	8260B	_
440-170565-2	MW-2B	Total/NA	Water	8260B	
440-170565-3	DW-4	Total/NA	Water	8260B	
440-170565-4	MW-5	Total/NA	Water	8260B	
MB 440-378516/4	Method Blank	Total/NA	Water	8260B	
LCS 440-378516/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 440-378516/6	Lab Control Sample Dup	Total/NA	Water	8260B	
440-170565-1 MS	MW-2A	Total/NA	Water	8260B	
440-170565-1 MSD	MW-2A	Total/NA	Water	8260B	

### **Analysis Batch: 378704**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-5	MW-9	Total/NA	Water	8260B	
440-170565-6	DW-3	Total/NA	Water	8260B	
440-170565-7	Duplicate	Total/NA	Water	8260B	
440-170565-8	QCAB	Total/NA	Water	8260B	
440-170565-9	QCTB	Total/NA	Water	8260B	
MB 440-378704/4	Method Blank	Total/NA	Water	8260B	
LCS 440-378704/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 440-378704/6	Lab Control Sample Dup	Total/NA	Water	8260B	
440-170565-5 MS	MW-9	Total/NA	Water	8260B	
440-170565-5 MSD	MW-9	Total/NA	Water	8260B	

# **GC/MS Semi VOA**

# **Prep Batch: 378304**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	3520C	
440-170565-2	MW-2B	Total/NA	Water	3520C	
440-170565-4	MW-5	Total/NA	Water	3520C	
440-170565-5	MW-9	Total/NA	Water	3520C	
440-170565-6	DW-3	Total/NA	Water	3520C	
440-170565-7	Duplicate	Total/NA	Water	3520C	
MB 440-378304/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-378304/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-378304/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

# Analysis Batch: 378647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-378304/1-A	Method Blank	Total/NA	Water	8270C	378304
LCS 440-378304/2-A	Lab Control Sample	Total/NA	Water	8270C	378304
LCSD 440-378304/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	378304

# **Analysis Batch: 378649**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	8270C	378304
440-170565-2	MW-2B	Total/NA	Water	8270C	378304
440-170565-4	MW-5	Total/NA	Water	8270C	378304
440-170565-5	MW-9	Total/NA	Water	8270C	378304
440-170565-6	DW-3	Total/NA	Water	8270C	378304

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# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

# GC/MS Semi VOA (Continued)

# **Analysis Batch: 378649 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-7	Duplicate	Total/NA	Water	8270C	378304

# HPLC/IC

# Analysis Batch: 377296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	300.0	_
440-170565-2	MW-2B	Total/NA	Water	300.0	
440-170565-3	DW-4	Total/NA	Water	300.0	
440-170565-4	MW-5	Total/NA	Water	300.0	
440-170565-5	MW-9	Total/NA	Water	300.0	
440-170565-6	DW-3	Total/NA	Water	300.0	
440-170565-7	Duplicate	Total/NA	Water	300.0	
MB 440-377296/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377296/2	Lab Control Sample	Total/NA	Water	300.0	
440-170478-H-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-170478-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### **Analysis Batch: 377297**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	300.0	
440-170565-1	MW-2A	Total/NA	Water	300.0	
440-170565-2	MW-2B	Total/NA	Water	300.0	
440-170565-2	MW-2B	Total/NA	Water	300.0	
440-170565-3	DW-4	Total/NA	Water	300.0	
440-170565-3	DW-4	Total/NA	Water	300.0	
440-170565-4	MW-5	Total/NA	Water	300.0	
440-170565-4	MW-5	Total/NA	Water	300.0	
440-170565-5	MW-9	Total/NA	Water	300.0	
440-170565-5	MW-9	Total/NA	Water	300.0	
440-170565-6	DW-3	Total/NA	Water	300.0	
440-170565-6	DW-3	Total/NA	Water	300.0	
440-170565-7	Duplicate	Total/NA	Water	300.0	
440-170565-7	Duplicate	Total/NA	Water	300.0	
MB 440-377297/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377297/2	Lab Control Sample	Total/NA	Water	300.0	
440-170478-H-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-170478-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

# **Metals**

# **Prep Batch: 378813**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-4	MW-5	Total Recoverable	Water	3005A	_
440-170565-5	MW-9	Total Recoverable	Water	3005A	
440-170565-6	DW-3	Total Recoverable	Water	3005A	
440-170565-7	Duplicate	Total Recoverable	Water	3005A	
MB 440-378813/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-378813/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-170565-4 MS	MW-5	Total Recoverable	Water	3005A	

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# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

# **Metals (Continued)**

# Prep Batch: 378813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-4 MSD	MW-5	Total Recoverable	Water	3005A	

### **Prep Batch: 378816**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total Recoverable	Water	3005A	<del>-</del>
440-170565-2	MW-2B	Total Recoverable	Water	3005A	
440-170565-3	DW-4	Total Recoverable	Water	3005A	
MB 440-378816/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-378816/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-170565-3 MS	DW-4	Total Recoverable	Water	3005A	
440-170565-3 MSD	DW-4	Total Recoverable	Water	3005A	

# **Analysis Batch: 379159**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total Recoverable	Water	6010B	378816
440-170565-2	MW-2B	Total Recoverable	Water	6010B	378816
440-170565-3	DW-4	Total Recoverable	Water	6010B	378816
MB 440-378816/1-A	Method Blank	Total Recoverable	Water	6010B	378816
LCS 440-378816/2-A	Lab Control Sample	Total Recoverable	Water	6010B	378816
440-170565-3 MS	DW-4	Total Recoverable	Water	6010B	378816
440-170565-3 MSD	DW-4	Total Recoverable	Water	6010B	378816

# **Analysis Batch: 379188**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-4	MW-5	Total Recoverable	Water	6010B	378813
440-170565-5	MW-9	Total Recoverable	Water	6010B	378813
440-170565-6	DW-3	Total Recoverable	Water	6010B	378813
440-170565-7	Duplicate	Total Recoverable	Water	6010B	378813
MB 440-378813/1-A	Method Blank	Total Recoverable	Water	6010B	378813
LCS 440-378813/2-A	Lab Control Sample	Total Recoverable	Water	6010B	378813
440-170565-4 MS	MW-5	Total Recoverable	Water	6010B	378813
440-170565-4 MSD	MW-5	Total Recoverable	Water	6010B	378813

# **General Chemistry**

### **Analysis Batch: 377513**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	SM 4500 S2 D	
440-170565-2	MW-2B	Total/NA	Water	SM 4500 S2 D	
440-170565-3	DW-4	Total/NA	Water	SM 4500 S2 D	
440-170565-4	MW-5	Total/NA	Water	SM 4500 S2 D	
440-170565-5	MW-9	Total/NA	Water	SM 4500 S2 D	
440-170565-6	DW-3	Total/NA	Water	SM 4500 S2 D	
440-170565-7	Duplicate	Total/NA	Water	SM 4500 S2 D	
MB 440-377513/3	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-377513/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-170565-1 MS	MW-2A	Total/NA	Water	SM 4500 S2 D	
440-170565-1 MSD	MW-2A	Total/NA	Water	SM 4500 S2 D	

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TestAmerica Job ID: 440-170565-1

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

# **General Chemistry (Continued)**

# **Analysis Batch: 377746**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep B	3atch
440-170565-1	MW-2A	Total/NA	Water	SM 4500 CO2 C	
440-170565-2	MW-2B	Total/NA	Water	SM 4500 CO2 C	
440-170565-3	DW-4	Total/NA	Water	SM 4500 CO2 C	
440-170565-4	MW-5	Total/NA	Water	SM 4500 CO2 C	
440-170565-5	MW-9	Total/NA	Water	SM 4500 CO2 C	
440-170565-6	DW-3	Total/NA	Water	SM 4500 CO2 C	
440-170565-7	Duplicate	Total/NA	Water	SM 4500 CO2 C	
MB 440-377746/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-170565-4 DU	MW-5	Total/NA	Water	SM 4500 CO2 C	

### **Analysis Batch: 377837**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-3	DW-4	Total/NA	Water	SM 2320B	_
440-170565-4	MW-5	Total/NA	Water	SM 2320B	
440-170565-5	MW-9	Total/NA	Water	SM 2320B	
440-170565-6	DW-3	Total/NA	Water	SM 2320B	
440-170565-7	Duplicate	Total/NA	Water	SM 2320B	
MB 440-377837/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-377837/2	Lab Control Sample	Total/NA	Water	SM 2320B	
440-170565-7 DU	Duplicate	Total/NA	Water	SM 2320B	

# **Analysis Batch: 378308**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	SM 2320B	
440-170565-2	MW-2B	Total/NA	Water	SM 2320B	
MB 440-378308/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-378308/2	Lab Control Sample	Total/NA	Water	SM 2320B	
MRL 440-378308/11	Lab Control Sample	Total/NA	Water	SM 2320B	
550-74795-A-5 DU	Duplicate	Total/NA	Water	SM 2320B	

### **Prep Batch: 378501**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	SM 4500 NH3 B	
440-170565-2	MW-2B	Total/NA	Water	SM 4500 NH3 B	
440-170565-3	DW-4	Total/NA	Water	SM 4500 NH3 B	
440-170565-4	MW-5	Total/NA	Water	SM 4500 NH3 B	
440-170565-5	MW-9	Total/NA	Water	SM 4500 NH3 B	
440-170565-6	DW-3	Total/NA	Water	SM 4500 NH3 B	
440-170565-7	Duplicate	Total/NA	Water	SM 4500 NH3 B	
MB 440-378501/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-378501/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-171048-A-3-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-171048-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-171121-B-2-B DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

# **Analysis Batch: 378507**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	SM 4500 NH3 D	378501
440-170565-2	MW-2B	Total/NA	Water	SM 4500 NH3 D	378501
440-170565-3	DW-4	Total/NA	Water	SM 4500 NH3 D	378501
440-170565-4	MW-5	Total/NA	Water	SM 4500 NH3 D	378501

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TestAmerica Job ID: 440-170565-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

# **General Chemistry (Continued)**

# **Analysis Batch: 378507 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-5	MW-9	Total/NA	Water	SM 4500 NH3 D	378501
440-170565-6	DW-3	Total/NA	Water	SM 4500 NH3 D	378501
440-170565-7	Duplicate	Total/NA	Water	SM 4500 NH3 D	378501
MB 440-378501/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	378501
LCS 440-378501/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	378501
440-171048-A-3-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	378501
440-171048-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	378501
440-171121-B-2-B DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	378501

# **Analysis Batch: 378530**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	SM 2540C	_
440-170565-2	MW-2B	Total/NA	Water	SM 2540C	
440-170565-3	DW-4	Total/NA	Water	SM 2540C	
440-170565-4	MW-5	Total/NA	Water	SM 2540C	
440-170565-5	MW-9	Total/NA	Water	SM 2540C	
440-170565-6	DW-3	Total/NA	Water	SM 2540C	
440-170565-7	Duplicate	Total/NA	Water	SM 2540C	
MB 440-378530/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-378530/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-170565-1 DU	MW-2A	Total/NA	Water	SM 2540C	

# **Analysis Batch: 379698**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	410.4	
440-170565-5	MW-9	Total/NA	Water	410.4	
440-170565-6	DW-3	Total/NA	Water	410.4	
440-170565-7	Duplicate	Total/NA	Water	410.4	
MB 440-379698/3	Method Blank	Total/NA	Water	410.4	
LCS 440-379698/4	Lab Control Sample	Total/NA	Water	410.4	
440-170565-1 MS	MW-2A	Total/NA	Water	410.4	
440-170565-1 MSD	MW-2A	Total/NA	Water	410.4	

### **Analysis Batch: 379832**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-2	MW-2B	Total/NA	Water	410.4	
440-170565-3	DW-4	Total/NA	Water	410.4	
440-170565-4	MW-5	Total/NA	Water	410.4	
MB 440-379832/3	Method Blank	Total/NA	Water	410.4	
LCS 440-379832/4	Lab Control Sample	Total/NA	Water	410.4	
440-170910-C-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-170910-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

# **Analysis Batch: 380232**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-1	MW-2A	Total/NA	Water	SM 5310C	
440-170565-2	MW-2B	Total/NA	Water	SM 5310C	
440-170565-3	DW-4	Total/NA	Water	SM 5310C	
440-170565-6	DW-3	Total/NA	Water	SM 5310C	
440-170565-7	Duplicate	Total/NA	Water	SM 5310C	
MB 440-380232/9	Method Blank	Total/NA	Water	SM 5310C	

# **QC Association Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

# **General Chemistry (Continued)**

# **Analysis Batch: 380232 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-380232/8	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380232/39	Lab Control Sample	Total/NA	Water	SM 5310C	
440-170251-G-11 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-170251-G-11 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

# **Analysis Batch: 380347**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170565-4	MW-5	Total/NA	Water	SM 5310C	
440-170565-5	MW-9	Total/NA	Water	SM 5310C	
MB 440-380347/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-380347/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380347/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-171441-A-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-171441-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

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# **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

### **Qualifiers**

#### **GC/MS VOA**

Qualifier Qualifier Description

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **GC/MS VOA TICs**

Qualifier Qualifier Description

J Indicates an Estimated Value for TICs

T Result is a tentatively identified compound (TIC) and an estimated value.

**Metals** 

MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

applicable.

**General Chemistry** 

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.

Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CNF Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration
MDA Minimum detectable activity
EDL Estimated Detection Limit
MDC Minimum detectable concentration

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control
RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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# **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170565-1

# **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date	
Alaska	State Program	10	CA01531	06-30-17	
Arizona State Program		9	AZ0671	10-14-17	
California	LA Cty Sanitation Districts	9	10256	01-31-17 *	
California	State Program	9	CA ELAP 2706	06-30-18	
Guam	State Program	9	Cert. No. 16-001r	01-23-17 *	
Hawaii	State Program	9	N/A	01-29-17 *	
Kansas	NELAP Secondary AB	7	E-10420	07-31-17	
Nevada	State Program	9	CA015312016-2	07-31-17	
New Mexico	State Program	6	N/A	01-29-17 *	
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *	
Oregon	NELAP	10	4028	01-29-17 *	
USDA	Federal		P330-15-00184	07-08-18	
Washington	State Program	10	C900	09-03-17	

1/9/2017

<sup>\*</sup> Certification renewal pending - certification considered valid.

TestAmerica Irvine

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TestAmerica Irvine 17461 Derian Ave

**Chain of Custody Record** 

**TestAmerico** 147599

THE LEADER IN ENVIRONMENTAL TESTING TestAmerica Laboratories, Inc.

Other: RCRA ☐ NPDES ΜO

TAL-8210 (0713) Sample Specific Notes: iampler: **B.S/1 m.C.1** Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) or Lab Use Ohly .ab Sampling: Job / SDG No. Valk-in Client: Months 440-170565 Chain of Custody Therm ID No Date/Tine Date/Time: COC No: Date/fime Archive for 2-1-1 Corrid Company: Company: γ メメメメ X メオメ Disposal by Lab Date: | Repeived in Laboratory by: X We Chan Site Contact: M. c. # Return to Client Received by: (N \Y) QSM\SM mnohe9 Filtered Sample (Y / N) Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the 3 Cont. 53 12.23.16 Date/Time: Date/Time: ☐ WORKING DAYS 36 22:22 Matrix **Analysis Turnaround** Geologic Awarida Type (C=Comp, G=Grab) Sample Regulatory Program: TAT if different from Below 2 weeks 3 1 week 2 days U day Project Manager: Ky Tel/Fax: 858 - 45 1030 0810 2882 12:15 0.30 08:24 Sample CALENDAR DAYS Time Preservation Used: 1= ice, 2= HCi; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Custody Seal No. Poison B Sample Date Company: Company 11222 Skin Irritant 749751408 0500 -018#04 Comments Section if the lab is to dispose of the sample. Special Instructions/QC Requirements & Comments: Client Contact Keoub / 2 \_ Cenyon Sample Identification Address: 11415 W. Barnardo h (4) Irvine, CA 92614 Phone: 949,261,1022 Fax: Company Name: Ges. Logic 7 - 3 my-9 MW-7 M7-8 つ う ん Project Name: Sunshine Possible Hazard Identification 3 ax: 858- 451 Phone 58-45 Custody Seals Intact: City/State/Zip: Sen seling ished by: Blinquished by A polynomistra 2 Non-Hazard 63 of 64

Client: Geo-Logic Associates

Job Number: 440-170565-1

Login Number: 170565 List Source: TestAmerica Irvine

List Number: 1

Creator: Soderblom, Tim

Creator. Societion, Tim		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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.	False	Refer to Job Narrative for details.
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	

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# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-170697-1

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: 1/10/2017 1:20:49 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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# **Sample Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

	01: 10 1 10		0 !!	
Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-170697-1	DW-5	Water	12/22/16 09:00	12/22/16 15:10
440-170697-2	MW-1	Water	12/22/16 10:05	12/22/16 15:10
440-170697-3	MW-13R	Water	12/22/16 09:20	12/22/16 15:10
440-170697-4	QCAB	Water	12/22/16 00:01	12/22/16 15:10
440-170697-5	QCTB	Water	12/22/16 00:01	12/22/16 15:10

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### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Job ID: 440-170697-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-170697-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/22/2016 3:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

#### GC/MS VOA

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

#### GC/MS Semi VOA

Method(s) 8270C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-378304 and analytical batch 440-378647. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

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

#### HPLC/IC

Method(s) 300.0: The continuing calibration verification (CCV) associated with batch 440-377636 recovered above the upper control limit for Sulfate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: DW-5 (440-170697-1).

Method(s) 300.0: Due to the high concentration of Chloride and/or Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 440-377636 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria

Method(s) 300.0: The following sample was diluted for Nitrate as N due to the nature of the sample matrix: MW-1 (440-170697-2). 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.

#### Metals

Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 440-379996 and analytical batch 440-380880 were outside control limits for Boron. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### **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.

TestAmerica Irvine 1/10/2017

# **Client Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Lab Sample ID: 440-170697-1

Matrix: Water

**Client Sample ID: DW-5** Date Collected: 12/22/16 09:00

Date Received: 12/22/16 15:10

Propionitrile

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Acetone	ND		20	10	ug/L			12/29/16 21:59	
Acetonitrile	ND		20	10	ug/L			12/29/16 21:59	
Acrolein	ND		5.0	2.5	ug/L			12/29/16 21:59	
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 21:59	
Allyl chloride	2.3		1.0	0.50	ug/L			12/29/16 21:59	
Benzene	ND		0.50	0.25	ug/L			12/29/16 21:59	
Bromochloromethane	ND		0.50	0.25	ug/L			12/29/16 21:59	
Bromodichloromethane	ND		0.50	0.25	ug/L			12/29/16 21:59	
Bromoform	ND		1.0	0.40	ug/L			12/29/16 21:59	
Bromomethane	ND		0.50	0.25	ug/L			12/29/16 21:59	
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 21:59	
Carbon disulfide	ND		1.0	0.50	ug/L			12/29/16 21:59	
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/29/16 21:59	
Chlorobenzene	ND		0.50	0.25	-			12/29/16 21:59	
2-Chloro-1,3-butadiene	ND		1.0	0.50				12/29/16 21:59	
Chloroethane	ND		1.0	0.40				12/29/16 21:59	
Chloroform	ND		0.50	0.25				12/29/16 21:59	
Chloromethane	ND		0.50	0.25				12/29/16 21:59	
sis-1,2-Dichloroethene	ND		0.50	0.25				12/29/16 21:59	
sis-1,3-Dichloropropene	ND		0.50	0.25				12/29/16 21:59	
Dibromochloromethane	ND		0.50	0.25	-			12/29/16 21:59	
,2-Dibromo-3-Chloropropane	ND		1.0	0.50				12/29/16 21:59	
,2-Dibromoethane (EDB)	ND		0.50	0.25				12/29/16 21:59	
Dibromomethane	ND		0.50	0.25	-			12/29/16 21:59	
,2-Dichlorobenzene	ND		0.50	0.25				12/29/16 21:59	
,3-Dichlorobenzene	ND		0.50	0.25				12/29/16 21:59	
,4-Dichlorobenzene	ND ND		0.50	0.25	-			12/29/16 21:59	
Dichlorodifluoromethane	ND		1.0	0.40				12/29/16 21:59	
,1-Dichloroethane	ND ND		0.50	0.40				12/29/16 21:59	
, r-Dichloroethane	ND ND		0.50	0.25	-			12/29/16 21:59	
,1-Dichloroethene	ND ND		0.50		ug/L			12/29/16 21:59	
	ND ND		0.50		-			12/29/16 21:59	
,2-Dichloropropane					ug/L				
,3-Dichloropropane	ND		0.50		ug/L			12/29/16 21:59	
2,2-Dichloropropane	ND		1.0		ug/L			12/29/16 21:59	
,1-Dichloropropene	ND		0.50		ug/L			12/29/16 21:59	
Ethylbenzene	ND		0.50		ug/L			12/29/16 21:59	
Ethyl methacrylate	ND		2.0		ug/L			12/29/16 21:59	
2-Hexanone	ND		5.0		ug/L			12/29/16 21:59	
odomethane	ND		2.0		ug/L			12/29/16 21:59	
sobutyl alcohol	ND		25		ug/L			12/29/16 21:59	
Methylacrylonitrile	ND		5.0		ug/L			12/29/16 21:59	
Methylene Chloride	ND		2.0	0.88				12/29/16 21:59	
Methyl methacrylate	ND		2.0		ug/L			12/29/16 21:59	
-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			12/29/16 21:59	
Methyl tert-butyl ether	ND		0.50		ug/L			12/29/16 21:59	
n,p-Xylene	ND		1.0		ug/L			12/29/16 21:59	
Naphthalene	0.86	J	1.0	0.40	ug/L			12/29/16 21:59	
	ND		0.50	0.25				12/29/16 21:59	

TestAmerica Irvine

12/29/16 21:59

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10 ug/L

ND

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Client Sample ID: DW-5
Date Collected: 12/22/16 09:00

Dibromofluoromethane (Surr)

Date Received: 12/22/16 15:10

Lab Sample ID: 440-170697-1

Matrix: Water

•	A A	au		

Analyte	Result	Qualifier	RL		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		0.50		0.25	ug/L			12/29/16 21:59	1
t-Butanol	5.0	J ID	10		5.0	ug/L			12/29/16 21:59	1
1,1,1,2-Tetrachloroethane	ND		0.50		0.25	ug/L			12/29/16 21:59	1
1,1,2,2-Tetrachloroethane	ND		0.50		0.25	ug/L			12/29/16 21:59	1
Tetrachloroethene	ND		0.50		0.25	ug/L			12/29/16 21:59	1
Tetrahydrofuran	ND		10		5.0	ug/L			12/29/16 21:59	1
Toluene	ND		0.50		0.25	ug/L			12/29/16 21:59	1
trans-1,4-Dichloro-2-butene	ND		5.0		2.5	ug/L			12/29/16 21:59	1
trans-1,2-Dichloroethene	ND		0.50		0.25	ug/L			12/29/16 21:59	1
trans-1,3-Dichloropropene	ND		0.50		0.25	ug/L			12/29/16 21:59	1
1,2,4-Trichlorobenzene	ND		1.0		0.40	ug/L			12/29/16 21:59	1
1,1,1-Trichloroethane	ND		0.50		0.25	ug/L			12/29/16 21:59	1
1,1,2-Trichloroethane	ND		0.50		0.25	ug/L			12/29/16 21:59	1
Trichloroethene	ND		0.50		0.25	ug/L			12/29/16 21:59	1
Trichlorofluoromethane	ND		0.50		0.25	ug/L			12/29/16 21:59	1
1,2,3-Trichloropropane	ND		1.0		0.40	ug/L			12/29/16 21:59	1
Vinyl acetate	ND		4.0		2.0	ug/L			12/29/16 21:59	1
Vinyl chloride	ND		0.50		0.25	ug/L			12/29/16 21:59	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D		RT	CAS No.	Prepared	Analyzed	Dil Fac
Butane, 2,3-dimethyl-	14	TJN	ug/L		4	.46	79-29-8		12/29/16 21:59	1
Benzene, (2-methylpropyl)-	11	TJN	ug/L		13	.22	538-93-2		12/29/16 21:59	1
1H-Indene, 2,3-dihydro-1,6-dimethyl-	12	TJN	ug/L		14	.96	17059-48-2		12/29/16 21:59	1
Benzene, 1,2,4,5-tetramethyl-	34	TJN	ug/L		15	.26	95-93-2		12/29/16 21:59	1
Benzene, pentamethyl-	13	TJN	ug/L		16	.21	700-12-9		12/29/16 21:59	1
1H-Indene,	8.3	TJN	ug/L		16	.37	40650-41-7		12/29/16 21:59	1
2,3-dihydro-1,1,5-trimethyl-										
Unknown		ΤJ	ug/L			.63			12/29/16 21:59	1
1H-Indene, 2,3-dihydro-4,7-dimethyl-		TJN	ug/L			.96	6682-71-9		12/29/16 21:59	1
Unknown	10	ΤJ	ug/L		17	.15			12/29/16 21:59	1
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 128				_		12/29/16 21:59	1
4-Bromofluorobenzene (Surr)	100		80 - 120						12/29/16 21:59	1

Method: 8270C - Semivolatile Or	ganic Compou	ınds (GC/M	S)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.26	ug/L		12/27/16 08:45	12/29/16 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	51		30 - 120				12/27/16 08:45	12/29/16 16:14	1

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Method: 300.0 - Anions, Ion Cl	Chromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.67		0.50	0.25	mg/L			12/23/16 00:45	1
Nitrate as N	ND		0.11	0.055	mg/L			12/23/16 00:45	1
Chloride	21		0.50	0.25	mg/L			12/23/16 00:45	1
Fluoride	3.7		0.50	0.25	mg/L			12/23/16 00:45	1
Sulfate	ND		0.50	0.25	mg/L			12/23/16 00:45	1

TestAmerica Irvine

12/29/16 21:59

# **Client Sample Results**

Client: Geo-Logic Associates

Carbon Dioxide, Free

Project/Site: Republic Sunshine Canyon

**Client Sample ID: DW-5** Lab Sample ID: 440-170697-1

Date Collected: 12/22/16 09:00 Matrix: Water

Date Received: 12/22/16 15:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	0.86		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:12	1
Manganese	0.11		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:12	1
Magnesium	0.95		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:12	1
Iron	0.14		0.040	0.010	mg/L		01/05/17 08:50	01/09/17 19:12	1
Sodium	480		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:12	1
Boron	2.8	F1	0.050	0.010	mg/L		01/05/17 08:50	01/09/17 19:12	1
Calcium	5.9		0.10	0.050	mg/L		01/05/17 08:50	01/09/17 19:12	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	51		20	10	mg/L			01/05/17 17:38	1
Total Dissolved Solids	1100		10	5.0	mg/L			12/25/16 10:08	1
Ammonia (as N)	0.27	J	0.50	0.10	mg/L		01/03/17 03:00	01/03/17 04:30	1
Total Sulfide	0.073		0.050	0.020	mg/L			12/24/16 08:16	1
Total Organic Carbon	6.8		0.50	0.25	mg/L			01/06/17 09:19	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	970		4.0	4.0	mg/L			12/23/16 06:01	1

Client Sample ID: MW-1 Lab Sample ID: 440-170697-2 Matrix: Water

ND

2.0

2.0 mg/L

Date Collected: 12/22/16 10:05 Date Received: 12/22/16 15:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	10	ug/L			12/29/16 22:27	1
Acetonitrile	ND		20	10	ug/L			12/29/16 22:27	1
Acrolein	ND		5.0	2.5	ug/L			12/29/16 22:27	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 22:27	1
Allyl chloride	ND		1.0	0.50	ug/L			12/29/16 22:27	1
Benzene	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Bromoform	ND		1.0	0.40	ug/L			12/29/16 22:27	1
Bromomethane	ND		0.50	0.25	ug/L			12/29/16 22:27	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 22:27	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/29/16 22:27	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/29/16 22:27	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/29/16 22:27	1
Chloroethane	ND		1.0	0.40	ug/L			12/29/16 22:27	1
Chloroform	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Chloromethane	ND		0.50	0.25	ug/L			12/29/16 22:27	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 22:27	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/29/16 22:27	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/29/16 22:27	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/29/16 22:27	1
Dibromomethane	ND		0.50	0.25	ug/L			12/29/16 22:27	1

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TestAmerica Job ID: 440-170697-1

12/22/16 17:34

Client: Geo-Logic Associates TestAmerica Job ID: 440-170697-1

Project/Site: Republic Sunshine Canyon

Client Sample ID: MW-1 Lab Sample ID: 440-170697-2

Date Collected: 12/22/16 10:05

Date Received: 12/22/16 15:10

Matrix: Water

Prepared	Analyzed	Dil Fac
	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	
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	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	,
	12/29/16 22:27	1
	12/29/16 22:27	1
	12/29/16 22:27	,
	12/29/16 22:27	1
	12/29/16 22:27	1
	12/29/16 22:27	
	12/29/16 22:27	1
	12/29/16 22:27	
	12/29/16 22:27	,
	12/29/16 22:27	
	12/29/16 22:27	
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	12/29/16 22:27	
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	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	
	12/29/16 22:27	1
	12/29/16 22:27	1
	12/29/16 22:27	1
	12/29/16 22:27	1
	12/29/16 22:27	
	12/29/16 22:27	
. Prepared	Analyzed	Dil Fac
	12/29/16 22:27	1
Prepared	Analyzed	Dil Fac
	12/29/16 22:27	1
	Prepared	Prepared Analyzed

TestAmerica Irvine

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Client Sample ID: MW-1

Date Collected: 12/22/16 10:05 Date Received: 12/22/16 15:10

Lab Sample ID: 440-170697-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		76 - 132		12/29/16 22:27	1

Method: 8270C - Semivolatile Organic	Compounds (GC/MS)
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Analyte	9	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dio	oxane	19		1.0	0.25	ug/L	<del></del> -	12/28/16 09:58	12/29/16 20:18	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	48	30 - 120	12/28/16 09:58	12/29/16 20:18	1

### Method: 300.0 - Anions, Ion Chromatography

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	3.7		1.0	0.50	mg/L			12/23/16 01:10	2
Nitrate as N	ND		0.22	0.11	mg/L			12/23/16 01:10	2
Chloride	220		50	25	mg/L			12/23/16 01:23	100
Fluoride	2.5		1.0	0.50	mg/L			12/23/16 01:10	2
Sulfate	1600		100	50	mg/L			12/24/16 07:58	200
_									

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	33		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:24	1
Manganese	3.6		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:24	1
Magnesium	210		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:24	1
Iron	63		0.040	0.010	mg/L		01/05/17 08:50	01/09/17 19:24	1
Sodium	370		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:24	1
Boron	1.3		0.050	0.010	mg/L		01/05/17 08:50	01/09/17 19:24	1
Calcium	460		0.10	0.050	mg/L		01/05/17 08:50	01/09/17 19:24	1

lt Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
0	20	10	mg/L			01/05/17 17:38	1
0	50	25	mg/L			12/25/16 10:08	1
7	0.50	0.10	mg/L		01/03/17 03:00	01/03/17 04:30	1
5 J	0.050	0.020	mg/L			12/24/16 08:16	1
4	1.0	0.50	mg/L			01/05/17 07:57	10
lt Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
0	4.0	4.0	mg/L			12/23/16 06:24	1
0	4.0	4.0	mg/L			12/23/16 06:24	1
0	2.0	2.0	mg/L			12/22/16 17:34	1
	Qualifier  O  O  O  O  O  O  O  O  O  O  O  O  O	20 50 50 50 50 50 50 50 50 50 50 50 50 50	10	20	10	10	100 20 10 mg/L 01/05/17 17:38 00 50 25 mg/L 12/25/16 10:08 12/25/16 10:08 00 50 0.50 0.10 mg/L 01/03/17 03:00 01/03/17 04:30 00.55 J 0.050 0.020 mg/L 12/24/16 08:16 00 0.50 mg/L 01/05/17 07:57 00.50 0.50 0.50 0.50 0.50 0.50 0.50 0

Client Sample ID: MW-13R

Lab Sample ID: 440-170697-3

Date Collected: 12/22/16 09:20

Date Received: 12/22/16 15:10

Matrix: Water

Method: 8260B - Volatile Organic Com	pounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	10	ug/L			12/29/16 22:54	1
Acetonitrile	ND		20	10	ug/L			12/29/16 22:54	1
Acrolein	ND		5.0	2.5	ug/L			12/29/16 22:54	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 22:54	1
Allyl chloride	ND		1.0	0.50	ug/L			12/29/16 22:54	1

# **Client Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Lab Sample ID: 440-170697-3

Matrix: Water

Client Sample ID: MW-13R

Date Collected: 12/22/16 09:20 Date Received: 12/22/16 15:10

Analyte	Result Qualifier	RL	MDL	Unit	D Prep	pared Analyzed	Dil Fa
Benzene	ND ND	0.50	0.25	ug/L		12/29/16 22:54	
Bromochloromethane	ND	0.50	0.25	ug/L		12/29/16 22:54	
Bromodichloromethane	ND	0.50	0.25	ug/L		12/29/16 22:54	
Bromoform	ND	1.0		ug/L		12/29/16 22:54	
Bromomethane	ND	0.50	0.25	ug/L		12/29/16 22:54	
2-Butanone (MEK)	ND	5.0		ug/L		12/29/16 22:54	
Carbon disulfide	ND	1.0		ug/L		12/29/16 22:54	
Carbon tetrachloride	ND	0.50		ug/L		12/29/16 22:54	
Chlorobenzene	ND	0.50		ug/L		12/29/16 22:54	
2-Chloro-1,3-butadiene	ND	1.0	0.50			12/29/16 22:54	
Chloroethane	ND	1.0		ug/L		12/29/16 22:54	
Chloroform	ND	0.50		ug/L		12/29/16 22:54	
Chloromethane	ND	0.50		ug/L		12/29/16 22:54	
cis-1,2-Dichloroethene	ND	0.50		ug/L		12/29/16 22:54	
cis-1,3-Dichloropropene	ND	0.50		ug/L		12/29/16 22:54	
Dibromochloromethane	ND	0.50		ug/L		12/29/16 22:54	
1,2-Dibromo-3-Chloropropane	ND	1.0		ug/L		12/29/16 22:54	
1,2-Dibromoethane (EDB)	ND	0.50	0.25			12/29/16 22:54	
Dibromomethane	ND	0.50		ug/L		12/29/16 22:54	
1,2-Dichlorobenzene	ND	0.50		ug/L		12/29/16 22:54	
1,3-Dichlorobenzene	ND	0.50		ug/L		12/29/16 22:54	
I,4-Dichlorobenzene	ND ND	0.50		ug/L ug/L		12/29/16 22:54	
				<del>.</del>			
Dichlorodifluoromethane	ND ND	1.0		ug/L		12/29/16 22:54 12/29/16 22:54	
1,1-Dichloroethane		0.50		ug/L			
1,2-Dichloroethane	ND ND	0.50		ug/L		12/29/16 22:54	
1,1-Dichloroethene	ND	0.50		ug/L		12/29/16 22:54	
1,2-Dichloropropane	ND	0.50		ug/L		12/29/16 22:54	
1,3-Dichloropropane	ND	0.50		ug/L		12/29/16 22:54	
2,2-Dichloropropane	ND	1.0		ug/L		12/29/16 22:54	
1,1-Dichloropropene	ND	0.50		ug/L		12/29/16 22:54	
Ethylbenzene	ND	0.50		ug/L		12/29/16 22:54	
Ethyl methacrylate	ND	2.0		ug/L		12/29/16 22:54	
2-Hexanone	ND	5.0		ug/L		12/29/16 22:54	
odomethane	ND	2.0		ug/L		12/29/16 22:54	
sobutyl alcohol	ND	25		ug/L		12/29/16 22:54	
Methylacrylonitrile	ND	5.0		ug/L		12/29/16 22:54	
Methylene Chloride	ND	2.0		ug/L		12/29/16 22:54	
Methyl methacrylate	ND	2.0		ug/L		12/29/16 22:54	
4-Methyl-2-pentanone (MIBK)	ND	5.0		ug/L		12/29/16 22:54	
Methyl tert-butyl ether	ND	0.50	0.25	ug/L		12/29/16 22:54	
m,p-Xylene	ND	1.0	0.50	ug/L		12/29/16 22:54	
Naphthalene	ND	1.0	0.40	ug/L		12/29/16 22:54	
o-Xylene	ND	0.50	0.25	ug/L		12/29/16 22:54	
Propionitrile	ND	20	10	ug/L		12/29/16 22:54	
Styrene	ND	0.50	0.25	ug/L		12/29/16 22:54	
t-Butanol	6.3 J ID	10	5.0	ug/L		12/29/16 22:54	
1,1,1,2-Tetrachloroethane	ND	0.50	0.25	ug/L		12/29/16 22:54	
1,1,2,2-Tetrachloroethane	ND	0.50	0.25	ug/L		12/29/16 22:54	
Tetrachloroethene	ND	0.50		ug/L		12/29/16 22:54	

TestAmerica Irvine

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TestAmerica Job ID: 440-170697-1

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

Lab Sample ID: 440-170697-3 Date Collected: 12/22/16 09:20

Matrix: Water

Date Received: 12/22/16 15:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 22:54	
Toluene	ND		0.50	0.25	ug/L			12/29/16 22:54	
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 22:54	
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 22:54	
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 22:54	
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 22:54	
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 22:54	
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 22:54	
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 22:54	
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 22:54	
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/29/16 22:54	
Vinyl acetate	ND		4.0	2.0	ug/L			12/29/16 22:54	
Vinyl chloride	ND		0.50	0.25	ug/L			12/29/16 22:54	
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fa
Unknown	5.8	TJ	ug/L		1.44			12/29/16 22:54	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Toluene-d8 (Surr)	108		80 - 128					12/29/16 22:54	
4-Bromofluorobenzene (Surr)	100		80 - 120					12/29/16 22:54	
Dibromofluoromethane (Surr)	103		76 - 132					12/29/16 22:54	
Method: 8270C - Semivolatile Org	ganic Compou	nds (GC/N	IS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,4-Dioxane	6.2		1.0	0.26	ug/L		12/28/16 09:58	12/29/16 20:39	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,4-Dioxane-d8 (Surr)	44		30 - 120				12/28/16 09:58	12/29/16 20:39	
Method: 300.0 - Anions, Ion Chro	matography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Bromide	1.7		0.50	0.25	mg/L			12/23/16 01:36	
Nitrate as N	ND		0.11	0.055	mg/L			12/23/16 01:36	
Chloride	210		25	13	mg/L			12/23/16 01:48	5
Fluoride	0.59		0.50	0.25	mg/L			12/23/16 01:36	
Sulfate	680		50	25	mg/L			12/24/16 08:15	10
Method: 6010B - Metals (ICP) - To	otal Recoverab	ole							
Analyte		Qualifier	RL_		Unit	<u>D</u>	Prepared	Analyzed	Dil Fa
Potassium	23		0.50		mg/L		01/05/17 08:50	01/09/17 19:26	
Manganese	ND		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:26	
Magnesium	160		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:26	
ron	0.23		0.040	0.010	mg/L		01/05/17 08:50	01/09/17 19:26	
Sodium	210		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:26	
Boron	0.88		0.050	0.010	mg/L		01/05/17 08:50	01/09/17 19:26	
Calcium	170		0.10	0.050	mg/L		01/05/17 08:50	01/09/17 19:26	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chemical Oxygen Demand	250			10	mg/L	<del></del>		01/05/17 17:38	
Total Dissolved Solids			20						

# **Client Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Lab Sample ID: 440-170697-3

Client Sample ID: MW-13R Date Collected: 12/22/16 09:20

Matrix: Water

Date Received: 12/22/16 15:10

General Chemistry (Continued)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	6.3		1.0	0.20	mg/L		01/03/17 03:00	01/03/17 04:30	1
Total Sulfide	100		10	4.0	mg/L			12/24/16 08:16	200
Total Organic Carbon	22		1.0	0.50	mg/L			01/05/17 05:31	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	720		4.0	4.0	mg/L			12/23/16 06:36	1
Bicarbonate Alkalinity as CaCO3	720		4.0	4.0	mg/L			12/23/16 06:36	1
Carbon Dioxide, Free	72		2.0	2.0	mg/L			12/22/16 21:04	1

Lab Sample ID: 440-170697-4 **Client Sample ID: QCAB** 

Date Collected: 12/22/16 00:01 Matrix: Water

Date Received: 12/22/16 15:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	10	ug/L			12/29/16 23:22	1
Acetonitrile	ND		20	10	ug/L			12/29/16 23:22	1
Acrolein	ND		5.0	2.5	ug/L			12/29/16 23:22	1
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 23:22	1
Allyl chloride	ND		1.0	0.50	ug/L			12/29/16 23:22	1
Benzene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Bromochloromethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Bromodichloromethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Bromoform	ND		1.0	0.40	ug/L			12/29/16 23:22	1
Bromomethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 23:22	1
Carbon disulfide	ND		1.0	0.50	ug/L			12/29/16 23:22	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Chlorobenzene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
2-Chloro-1,3-butadiene	ND		1.0	0.50	ug/L			12/29/16 23:22	1
Chloroethane	ND		1.0	0.40	ug/L			12/29/16 23:22	1
Chloroform	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Chloromethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Dibromochloromethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			12/29/16 23:22	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Dibromomethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			12/29/16 23:22	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			12/29/16 23:22	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 23:22	1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

**Client Sample ID: QCAB** 

Lab Sample ID: 440-170697-4

Date Collected: 12/22/16 00:01 Matrix: Water Date Received: 12/22/16 15:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Ethyl methacrylate	ND		2.0	1.0	ug/L			12/29/16 23:22	1
2-Hexanone	ND		5.0	2.5	ug/L			12/29/16 23:22	1
Iodomethane	ND		2.0	1.0	ug/L			12/29/16 23:22	1
Isobutyl alcohol	ND		25	13	ug/L			12/29/16 23:22	1
Methylacrylonitrile	ND		5.0	2.5	ug/L			12/29/16 23:22	1
Methylene Chloride	ND		2.0	0.88	ug/L			12/29/16 23:22	1
Methyl methacrylate	ND		2.0	1.0	ug/L			12/29/16 23:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/29/16 23:22	1
Methyl tert-butyl ether	ND		0.50	0.25	ug/L			12/29/16 23:22	1
m,p-Xylene	ND		1.0	0.50	ug/L			12/29/16 23:22	1
Naphthalene	ND		1.0	0.40	ug/L			12/29/16 23:22	1
o-Xylene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Propionitrile	ND		20	10	ug/L			12/29/16 23:22	1
Styrene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
t-Butanol	ND		10	5.0	ug/L			12/29/16 23:22	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 23:22	1
Toluene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 23:22	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 23:22	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 23:22	1
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/29/16 23:22	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/29/16 23:22	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/29/16 23:22	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					12/29/16 23:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 128			-		12/29/16 23:22	1
4-Bromofluorobenzene (Surr)	103		80 - 120					12/29/16 23:22	1

Lab Sample ID: 440-170697-5 **Client Sample ID: QCTB** 

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Date Collected: 12/22/16 00:01 Matrix: Water

Date Received: 12/22/16 15:10

Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organi	c Compounds (GC/MS)							
Analyte	Result Qualifier	RL	MDL U	Jnit	D	Prepared	Analyzed	Dil Fac
Acetone	ND -	20	10 u	ıg/L			12/29/16 23:49	1
Acetonitrile	ND	20	10 u	ıg/L			12/29/16 23:49	1
Acrolein	ND	5.0	2.5 u	ıg/L			12/29/16 23:49	1

TestAmerica Irvine

12/29/16 23:22

# **Client Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

**Client Sample ID: QCTB** Lab Sample ID: 440-170697-5 Date Collected: 12/22/16 00:01

Matrix: Water

Date Received: 12/22/16 15:10

Analyte	Result (	Qualifier	RL MD	DL	Unit	D	Prepared	Analyzed	Dil Fa
Acrylonitrile	ND		2.0 1	.0	ug/L			12/29/16 23:49	
Allyl chloride	ND		.0 0.	50	ug/L			12/29/16 23:49	
Benzene	ND	0.	50 0.2	25	ug/L			12/29/16 23:49	
Bromochloromethane	ND	0.			ug/L			12/29/16 23:49	
Bromodichloromethane	ND	0.			ug/L			12/29/16 23:49	
Bromoform	ND		.0 0.4	40	ug/L			12/29/16 23:49	
Bromomethane	ND	0.	50 0.2	25	ug/L			12/29/16 23:49	
2-Butanone (MEK)	ND	!	5.0 2	2.5	ug/L			12/29/16 23:49	
Carbon disulfide	ND				ug/L			12/29/16 23:49	
Carbon tetrachloride	ND	0.	50 0.2	25	ug/L			12/29/16 23:49	
Chlorobenzene	ND	0.			ug/L			12/29/16 23:49	
2-Chloro-1,3-butadiene	ND				ug/L			12/29/16 23:49	
Chloroethane	ND				ug/L			12/29/16 23:49	
Chloroform	ND	0.			ug/L			12/29/16 23:49	
Chloromethane	ND				ug/L			12/29/16 23:49	
cis-1,2-Dichloroethene	ND				ug/L			12/29/16 23:49	
cis-1,3-Dichloropropene	ND				ug/L			12/29/16 23:49	
Dibromochloromethane	ND				ug/L			12/29/16 23:49	
1,2-Dibromo-3-Chloropropane	ND				ug/L			12/29/16 23:49	
1,2-Dibromoethane (EDB)	ND				ug/L			12/29/16 23:49	
Dibromomethane	ND				ug/L			12/29/16 23:49	
1,2-Dichlorobenzene	ND				ug/L			12/29/16 23:49	
I,3-Dichlorobenzene	ND				ug/L			12/29/16 23:49	
I,4-Dichlorobenzene	ND				ug/L			12/29/16 23:49	
Dichlorodifluoromethane	ND				ug/L			12/29/16 23:49	
,1-Dichloroethane	ND				ug/L			12/29/16 23:49	
,2-Dichloroethane	ND				ug/L			12/29/16 23:49	
,1-Dichloroethene	ND				ug/L			12/29/16 23:49	
I,2-Dichloropropane	ND				ug/L			12/29/16 23:49	
I,3-Dichloropropane	ND				ug/L			12/29/16 23:49	
2,2-Dichloropropane	ND				ug/L			12/29/16 23:49	
1,1-Dichloropropene	ND				ug/L			12/29/16 23:49	
Ethylbenzene	ND				ug/L			12/29/16 23:49	
Ethyl methacrylate	ND				ug/L			12/29/16 23:49	
2-Hexanone	ND				ug/L			12/29/16 23:49	
odomethane	ND				ug/L			12/29/16 23:49	
sobutyl alcohol	ND				ug/L			12/29/16 23:49	
Methylacrylonitrile	ND				ug/L			12/29/16 23:49	
Methylene Chloride	ND ND				ug/L			12/29/16 23:49	
Methyl methacrylate	ND				ug/L			12/29/16 23:49	
4-Methyl-2-pentanone (MIBK)	ND				ug/L			12/29/16 23:49	
Methyl tert-butyl ether	ND				ug/L			12/29/16 23:49	
m,p-Xylene	ND ND				ug/L			12/29/16 23:49	
Naphthalene	ND ND				_			12/29/16 23:49	
·					ug/L				
o-Xylene	ND				ug/L			12/29/16 23:49	
Propionitrile	ND ND				ug/L			12/29/16 23:49	
Styrene	ND				ug/L			12/29/16 23:49	
t-Butanol 1,1,1,2-Tetrachloroethane	ND ND				ug/L ug/L			12/29/16 23:49 12/29/16 23:49	

# **Client Sample Results**

Client: Geo-Logic Associates

**Client Sample ID: QCTB** 

Date Collected: 12/22/16 00:01

Date Received: 12/22/16 15:10

1,2,3-Trichloropropane

Vinyl acetate

Vinyl chloride

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Lab Sample ID: 440-170697-5

ab Gample 1D. 440-170037-3

12/29/16 23:49

12/29/16 23:49

12/29/16 23:49

Matrix: Water

Method: 8260B - Volatile Organ	ic Compounds (	GC/MS) (Con	tinued)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 23:49	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/29/16 23:49	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 23:49	1
Toluene	ND		0.50	0.25	ug/L			12/29/16 23:49	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 23:49	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 23:49	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 23:49	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 23:49	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 23:49	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 23:49	1
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 23:49	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 23:49	1

0.40 ug/L

2.0 ug/L

0.25 ug/L

Tentatively Identified Compound	Est. Result Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None	ug/L					12/29/16 23:49	1
Surrogate	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac

1.0

4.0

0.50

ND

ND

ND

Surrogate	%Recovery	Qualifier Limits	Prepared Analyze	ed Dil Fac
Toluene-d8 (Surr)	107	80 - 128	12/29/16 2	3:49 1
4-Bromofluorobenzene (Surr)	101	80 - 120	12/29/16 2	3:49 1
Dibromofluoromethane (Surr)	107	76 <sub>-</sub> 132	12/29/16 2	3:49 1

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# **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

lethod	Method Description	Protocol	Laboratory
260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV
00.0	Anions, Ion Chromatography	MCAWW	TAL IRV
010B	Metals (ICP)	SW846	TAL IRV
10.4	COD	MCAWW	TAL IRV
M 2320B	Alkalinity	SM	TAL IRV
M 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
M 4500 CO2 C	Free Carbon Dioxide	SM	TAL IRV
M 4500 NH3 D	Ammonia	SM	TAL IRV
M 4500 S2 D	Sulfide, Total	SM	TAL IRV
SM 5310C	TOC	SM	TAL IRV

#### **Protocol References:**

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

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

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

#### Laboratory References:

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

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# **Lab Chronicle**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Lab Sample ID: 440-170697-1

**Matrix: Water** 

Client Sample ID: DW-5
Date Collected: 12/22/16 09:00
Date Received: 12/22/16 15:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	379003	12/29/16 21:59	AA	TAL IRV
Total/NA	Prep	3520C			980 mL	1 mL	378304	12/27/16 08:45	FTD	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 16:14	HN	TAL IRV
Total/NA	Analysis	300.0		1			377635	12/23/16 00:45	NTN	TAL IRV
Total/NA	Analysis	300.0		1			377636	12/23/16 00:45	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379996	01/05/17 08:50	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380880	01/09/17 19:12	B1H	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	380158	01/05/17 17:38	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377894	12/23/16 06:01	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378207	12/25/16 10:08	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 17:34	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	379386	01/03/17 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			379387	01/03/17 04:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	378107	12/24/16 08:16	EN	TAL IRV
Total/NA	Analysis	SM 5310C		5	100 mL	100 mL	380347	01/06/17 09:19	YZ	TAL IRV

Client Sample ID: MW-1 Lab Sample ID: 440-170697-2

Matrix: Water

Date Collected: 12/22/16 10:05 Date Received: 12/22/16 15:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	379003	12/29/16 22:27	AA	TAL IRV
Total/NA	Prep	3520C			985 mL	1 mL	378579	12/28/16 09:58	BMN	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 20:18	HN	TAL IR\
Total/NA	Analysis	300.0		200			377952	12/24/16 07:58	NTN	TAL IRV
Total/NA	Analysis	300.0		2			377635	12/23/16 01:10	NTN	TAL IR\
Total/NA	Analysis	300.0		2			377636	12/23/16 01:10	NTN	TAL IR\
Total/NA	Analysis	300.0		100			377636	12/23/16 01:23	NTN	TAL IR\
Total Recoverable	Prep	3005A			25 mL	25 mL	379996	01/05/17 08:50	Q1N	TAL IR\
Total Recoverable	Analysis	6010B		1			380880	01/09/17 19:24	B1H	TAL IR\
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	380158	01/05/17 17:38	KYP	TAL IR\
Total/NA	Analysis	SM 2320B		1			377894	12/23/16 06:24	YZ	TAL IR\
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	378207	12/25/16 10:08	XL	TAL IR\
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 17:34	SN	TAL IR\
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	379386	01/03/17 03:00	YZ	TAL IR\
Total/NA	Analysis	SM 4500 NH3 D		1			379387	01/03/17 04:30	YZ	TAL IR
Total/NA	Analysis	SM 4500 S2 D		1	7.5 mL	7.5 mL	378107	12/24/16 08:16	EN	TAL IR
Total/NA	Analysis	SM 5310C		10	100 mL	100 mL	380231	01/05/17 07:57	YZ	TAL IR

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### Lab Chronicle

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Lab Sample ID: 440-170697-3

Matrix: Water

Client Sample ID: MW-13R Date Collected: 12/22/16 09:20 Date Received: 12/22/16 15:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	379003	12/29/16 22:54	AA	TAL IRV
Total/NA	Prep	3520C			965 mL	1 mL	378579	12/28/16 09:58	BMN	TAL IRV
Total/NA	Analysis	8270C		1			378649	12/29/16 20:39	HN	TAL IRV
Total/NA	Analysis	300.0		100			377952	12/24/16 08:15	NTN	TAL IRV
Total/NA	Analysis	300.0		1			377635	12/23/16 01:36	NTN	TAL IRV
Total/NA	Analysis	300.0		1			377636	12/23/16 01:36	NTN	TAL IRV
Total/NA	Analysis	300.0		50			377636	12/23/16 01:48	NTN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	379996	01/05/17 08:50	Q1N	TAL IRV
Total Recoverable	Analysis	6010B		1			380880	01/09/17 19:26	B1H	TAL IRV
Total/NA	Analysis	410.4		1	0.625 mL	2.5 mL	380158	01/05/17 17:38	KYP	TAL IRV
Total/NA	Analysis	SM 2320B		1			377894	12/23/16 06:36	YZ	TAL IRV
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378207	12/25/16 10:08	XL	TAL IRV
Total/NA	Analysis	SM 4500 CO2 C		1	25 mL	25 mL	377750	12/22/16 21:04	SN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			25 mL	50 mL	379386	01/03/17 03:00	YZ	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			379387	01/03/17 04:30	YZ	TAL IRV
Total/NA	Analysis	SM 4500 S2 D		200	7.5 mL	7.5 mL	378107	12/24/16 08:16	EN	TAL IRV

**Client Sample ID: QCAB** Lab Sample ID: 440-170697-4

100 mL

100 mL

380231

01/05/17 05:31 YZ

10

Date Collected: 12/22/16 00:01 Date Received: 12/22/16 15:10

Dil Initial Batch Batch Final Batch Prepared Method Туре Factor Amount Amount Number or Analyzed Prep Type Run Analyst Lab 8260B 379003 TAL IRV Total/NA Analysis 10 mL 10 mL 12/29/16 23:22 AA

**Client Sample ID: QCTB** Lab Sample ID: 440-170697-5 Date Collected: 12/22/16 00:01

Date Received: 12/22/16 15:10

Analysis

SM 5310C

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Туре Method Run Factor Amount Amount Number or Analyzed Analyst Total/NA Analysis 8260B 10 mL 10 mL 379003 12/29/16 23:49 AA TAL IRV

**Laboratory References:** 

Total/NA

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

TestAmerica Irvine

1/10/2017

TAL IRV

**Matrix: Water** 

Matrix: Water

# **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

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

Lab Sample ID: MB 440-379003/4

**Matrix: Water** 

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

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acetone	ND		20	10	ug/L			12/29/16 19:41	
Acetonitrile	ND		20	10	ug/L			12/29/16 19:41	
Acrolein	ND		5.0	2.5	ug/L			12/29/16 19:41	
Acrylonitrile	ND		2.0	1.0	ug/L			12/29/16 19:41	
Allyl chloride	ND		1.0	0.50	ug/L			12/29/16 19:41	
Benzene	ND		0.50	0.25	ug/L			12/29/16 19:41	
Bromochloromethane	ND		0.50	0.25	ug/L			12/29/16 19:41	
Bromodichloromethane	ND		0.50	0.25	ug/L			12/29/16 19:41	
Bromoform	ND		1.0	0.40	ug/L			12/29/16 19:41	
Bromomethane	ND		0.50	0.25	ug/L			12/29/16 19:41	
2-Butanone (MEK)	ND		5.0	2.5	ug/L			12/29/16 19:41	
Carbon disulfide	ND		1.0	0.50	ug/L			12/29/16 19:41	
Carbon tetrachloride	ND		0.50	0.25	ug/L			12/29/16 19:41	
Chlorobenzene	ND		0.50		ug/L			12/29/16 19:41	
2-Chloro-1,3-butadiene	ND		1.0		ug/L			12/29/16 19:41	
Chloroethane	ND		1.0		ug/L			12/29/16 19:41	
Chloroform	ND		0.50		ug/L			12/29/16 19:41	
Chloromethane	ND		0.50		ug/L			12/29/16 19:41	
cis-1,2-Dichloroethene	ND		0.50		ug/L			12/29/16 19:41	
cis-1,3-Dichloropropene	ND		0.50		ug/L			12/29/16 19:41	
Dibromochloromethane	ND		0.50		ug/L			12/29/16 19:41	
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			12/29/16 19:41	
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/29/16 19:41	
Dibromomethane	ND		0.50		ug/L			12/29/16 19:41	
1,2-Dichlorobenzene	ND		0.50		ug/L			12/29/16 19:41	
1,3-Dichlorobenzene	ND		0.50		ug/L			12/29/16 19:41	
1,4-Dichlorobenzene	ND		0.50		ug/L			12/29/16 19:41	
Dichlorodifluoromethane	ND		1.0		ug/L			12/29/16 19:41	
1,1-Dichloroethane	ND		0.50		ug/L			12/29/16 19:41	
1,2-Dichloroethane	ND		0.50		ug/L			12/29/16 19:41	
1,1-Dichloroethene	ND		0.50		ug/L			12/29/16 19:41	
1,2-Dichloropropane	ND		0.50		ug/L			12/29/16 19:41	
1,3-Dichloropropane	ND		0.50		ug/L			12/29/16 19:41	
2,2-Dichloropropane	ND		1.0		ug/L			12/29/16 19:41	
1,1-Dichloropropene	ND		0.50		ug/L			12/29/16 19:41	
Ethylbenzene	ND		0.50		ug/L			12/29/16 19:41	
Ethyl methacrylate	ND		2.0		ug/L ug/L			12/29/16 19:41	
2-Hexanone	ND ND		5.0					12/29/16 19:41	
					ug/L				
lodomethane	ND		2.0		ug/L			12/29/16 19:41	
Isobutyl alcohol	ND		25		ug/L			12/29/16 19:41	
Methylacrylonitrile	ND		5.0		ug/L			12/29/16 19:41	
Methylene Chloride	ND		2.0		ug/L			12/29/16 19:41	
Methyl methacrylate	ND		2.0		ug/L			12/29/16 19:41	
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L 			12/29/16 19:41	
Methyl tert-butyl ether	ND		0.50		ug/L			12/29/16 19:41	
m,p-Xylene	ND		1.0		ug/L			12/29/16 19:41	
Naphthalene	ND		1.0	0.40	ug/L			12/29/16 19:41	
o-Xylene	ND		0.50	0.25	ug/L			12/29/16 19:41	

TestAmerica Job ID: 440-170697-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

MR MR

Lab Sample ID: MB 440-379003/4 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 379003

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionitrile	ND		20	10	ug/L			12/29/16 19:41	1
Styrene	ND		0.50	0.25	ug/L			12/29/16 19:41	1
t-Butanol	ND		10	5.0	ug/L			12/29/16 19:41	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 19:41	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			12/29/16 19:41	1
Tetrachloroethene	ND		0.50	0.25	ug/L			12/29/16 19:41	1
Tetrahydrofuran	ND		10	5.0	ug/L			12/29/16 19:41	1
Toluene	ND		0.50	0.25	ug/L			12/29/16 19:41	1
trans-1,4-Dichloro-2-butene	ND		5.0	2.5	ug/L			12/29/16 19:41	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			12/29/16 19:41	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			12/29/16 19:41	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			12/29/16 19:41	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 19:41	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			12/29/16 19:41	1
Trichloroethene	ND		0.50	0.25	ug/L			12/29/16 19:41	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			12/29/16 19:41	1
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			12/29/16 19:41	1
Vinyl acetate	ND		4.0	2.0	ug/L			12/29/16 19:41	1
Vinyl chloride	ND		0.50	0.25	ug/L			12/29/16 19:41	1

MB MB Tentatively Identified Compound Est. Result Qualifier Unit D RT CAS No. Prepared Analyzed Dil Fac Tentatively Identified Compound ug/L 12/29/16 19:41 None

	MB MB				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107	80 - 128		12/29/16 19:41	1
4-Bromofluorobenzene (Surr)	102	80 - 120		12/29/16 19:41	1
Dibromofluoromethane (Surr)	104	76 - 132		12/29/16 19:41	1

Lab Sample ID: LCS 440-379003/5

**Matrix: Water** 

**Analysis Batch: 379003** 

Client Sample ID: L	ab Control Sample
P	rep Type: Total/NA

•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acetone	25.0	20.9		ug/L		83	10 - 150
Acrolein	25.0	18.7		ug/L		75	10 _ 145
Acrylonitrile	250	223		ug/L		89	48 - 140
Benzene	25.0	24.1		ug/L		96	68 - 130
Bromochloromethane	25.0	24.2		ug/L		97	70 - 130
Bromodichloromethane	25.0	24.8		ug/L		99	70 - 132
Bromoform	25.0	24.0		ug/L		96	60 - 148
Bromomethane	25.0	22.5		ug/L		90	64 - 139
2-Butanone (MEK)	25.0	21.2		ug/L		85	44 - 150
Carbon disulfide	25.0	20.8		ug/L		83	52 - 136
Carbon tetrachloride	25.0	21.6		ug/L		86	60 - 150
Chlorobenzene	25.0	23.2		ug/L		93	70 - 130
Chloroethane	25.0	22.4		ug/L		90	64 - 135
Chloroform	25.0	23.4		ug/L		94	70 - 130

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# **QC Sample Results**

Spike

LCS LCS

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

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

Lab Sample ID: LCS 440-379003/5

**Matrix: Water** 

Analysis Batch: 379003

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

%Rec.

	<b>эріке</b>	LUS	LUS			%Rec.	
Analyte	Added	Result	Qualifier Ur	it	D %Rec	Limits	
Chloromethane	25.0	21.7	ug	L	87	47 - 140	
cis-1,2-Dichloroethene	25.0	23.4	ug	Ľ	93	70 - 133	
cis-1,3-Dichloropropene	25.0	25.4	ug	'L	102	70 - 133	
Dibromochloromethane	25.0	23.8	ug	'L	95	69 - 145	
1,2-Dibromo-3-Chloropropane	25.0	20.6	ug	L	82	52 - 140	
1,2-Dibromoethane (EDB)	25.0	23.9	ug	'L	96	70 - 130	
Dibromomethane	25.0	22.8	ug	'L	91	70 - 130	
1,2-Dichlorobenzene	25.0	24.7	ug	'L	99	70 - 130	
1,3-Dichlorobenzene	25.0	23.6	ug	'L	94	70 - 130	
1,4-Dichlorobenzene	25.0	23.9	ug	'L	96	70 - 130	
Dichlorodifluoromethane	25.0	18.9	ug	Ĺ	75	29 - 150	
1,1-Dichloroethane	25.0	23.4	ug	L	94	64 - 130	
1,2-Dichloroethane	25.0	24.1	ug	L	96	57 - 138	
1,1-Dichloroethene	25.0	21.8	ug	Ľ	87	70 - 130	
1,2-Dichloropropane	25.0	24.7	ug	'L	99	67 - 130	
1,3-Dichloropropane	25.0	24.3	ug	'L	97	70 - 130	
2,2-Dichloropropane	25.0	22.0			88	68 - 141	
1,1-Dichloropropene	25.0	22.9	ug	'L	91	70 - 130	
Ethylbenzene	25.0	22.4	ug	'L	90	70 - 130	
2-Hexanone	25.0	21.8	ug	Ĺ	87	10 - 150	
Methylene Chloride	25.0	23.0	ug	'L	92	52 - 130	
4-Methyl-2-pentanone (MIBK)	25.0	23.8	ug	'L	95	59 - 149	
Methyl tert-butyl ether	25.0	25.6	ug	Ĺ	102	63 - 131	
m,p-Xylene	25.0	23.8	ug	'L	95	70 - 130	
Naphthalene	25.0	24.6	ug	'L	99	60 - 140	
o-Xylene	25.0	23.6	ug	Ľ	95	70 - 130	
Styrene	25.0	23.3	ug	'L	93	70 - 134	
t-Butanol	250	244	ug	'L	97	70 - 130	
1,1,1,2-Tetrachloroethane	25.0	23.5	ug	Ľ	94	60 _ 141	
1,1,2,2-Tetrachloroethane	25.0	24.0			96	63 - 130	
Tetrachloroethene	25.0	21.7	ug	'L	87	70 - 130	
Toluene	25.0	22.7	ug	Ľ	91	70 - 130	
trans-1,2-Dichloroethene	25.0	23.6	_		94	70 - 130	
trans-1,3-Dichloropropene	25.0	25.1	ug		101	70 - 132	
1,2,4-Trichlorobenzene	25.0	25.2	<del>.</del>		101	60 - 140	
1,1,1-Trichloroethane	25.0	21.5	_		86	70 - 130	
1,1,2-Trichloroethane	25.0	24.1	ug		96	70 - 130	
Trichloroethene	25.0	22.7	<del>.</del>		91	70 - 130	
Trichlorofluoromethane	25.0	21.5	ĕ		86	60 - 150	
1,2,3-Trichloropropane	25.0	22.7	J		91	63 - 130	
Vinyl acetate	25.0	25.9			104	48 - 140	
Vinyl decide Vinyl chloride	25.0	20.7	ū		83	59 <sub>-</sub> 133	
viriyi omorido	20.0	20.1	ug	_	00	00 - 100	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 128
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

# **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

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

Lab Sample ID: 440-170481-A-1 MS

**Matrix: Water** 

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

Analysis Batch: 379003	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	
Acetone	ND		25.0	19.1		ug/L	_ <u>-</u>	777	10 - 150	
Acrolein	ND		25.0	17.6		ug/L		70	10 - 147	
Acrylonitrile	ND		250	208		ug/L		83	38 - 144	
Benzene	ND		25.0	24.4		ug/L		98	66 - 130	
Bromochloromethane	ND		25.0	24.4		ug/L		97	70 - 130	
Bromodichloromethane	ND ND		25.0	25.0		_		100	70 - 130 70 - 138	
Bromoform	ND		25.0			ug/L		92	70 - 130 59 - 150	
Bromomethane	ND ND		25.0	23.1		ug/L				
				23.2		ug/L		93 75	62 - 131	
2-Butanone (MEK)	ND		25.0	18.7		ug/L		75	48 - 140	
Carbon disulfide	ND		25.0	22.2		ug/L		89	49 - 140	
Carbon tetrachloride	ND		25.0	22.5		ug/L		90	60 <sub>-</sub> 150	
Chlorobenzene	ND		25.0	23.3		ug/L		93	70 - 130	
Chloroethane	ND		25.0	23.2		ug/L		93	68 - 130	
Chloroform	ND		25.0	23.4		ug/L		94	70 - 130	
Chloromethane	ND		25.0	21.8		ug/L		87	39 - 144	
cis-1,2-Dichloroethene	ND		25.0	23.6		ug/L		94	70 _ 130	
cis-1,3-Dichloropropene	ND		25.0	25.2		ug/L		101	70 <sub>-</sub> 133	
Dibromochloromethane	ND		25.0	23.3		ug/L		93	70 - 148	
1,2-Dibromo-3-Chloropropane	ND		25.0	18.8		ug/L		75	48 - 140	
1,2-Dibromoethane (EDB)	ND		25.0	22.9		ug/L		92	70 - 131	
Dibromomethane	ND		25.0	23.1		ug/L		93	70 - 130	
1,2-Dichlorobenzene	ND		25.0	24.0		ug/L		96	70 - 130	
1,3-Dichlorobenzene	ND		25.0	23.2		ug/L		93	70 - 130	
1,4-Dichlorobenzene	ND		25.0	23.5		ug/L		94	70 - 130	
Dichlorodifluoromethane	ND		25.0	20.0		ug/L		80	25 - 142	
1,1-Dichloroethane	ND		25.0	23.6		ug/L		95	65 - 130	
1,2-Dichloroethane	ND		25.0	23.5		ug/L		94	56 - 146	
1,1-Dichloroethene	ND		25.0	22.3		ug/L		89	70 - 130	
1,2-Dichloropropane	ND		25.0	25.1		ug/L		100	69 - 130	
1,3-Dichloropropane	ND		25.0	23.6		ug/L		94	70 - 130	
2,2-Dichloropropane	ND		25.0	23.7		ug/L		95	69 - 138	
1,1-Dichloropropene	ND		25.0	23.7		ug/L		95	64 - 130	
Ethylbenzene	ND		25.0	23.1		ug/L		92	70 - 130	
2-Hexanone	ND		25.0	20.6		ug/L		83	10 - 150	
Methylene Chloride	ND		25.0	22.5		ug/L		90	52 - 130	
4-Methyl-2-pentanone (MIBK)	ND		25.0	22.3		ug/L		89	52 - 150	
Methyl tert-butyl ether	ND		25.0	25.4		ug/L		102	70 - 130	
m,p-Xylene	ND		25.0	24.0		ug/L		96	70 - 133	
Naphthalene	0.49	J	25.0	23.5		ug/L		92	60 - 140	
o-Xylene	ND		25.0	24.0		ug/L		96	70 - 133	
Styrene	0.84		25.0	24.7		ug/L		95	29 - 150	
t-Butanol	ND		250	240		ug/L		96	70 - 130	
1,1,1,2-Tetrachloroethane	ND		25.0	23.6		ug/L		94	60 _ 149	
1,1,2,2-Tetrachloroethane	ND		25.0	22.5		ug/L		90	63 _ 130	
Tetrachloroethene	ND		25.0	22.1		ug/L		88	70 - 137	
Toluene	ND		25.0	23.2		ug/L		93	70 - 130	
trans-1,2-Dichloroethene	ND		25.0	24.1		ug/L		96	70 - 130	
trans-1,3-Dichloropropene	ND		25.0	24.8		ug/L		99	70 - 130 70 - 138	

TestAmerica Irvine

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Client: Geo-Logic Associates TestAmerica Job ID: 440-170697-1 Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-170481-A-1 MS **Matrix: Water** 

Analysis Batch: 379003

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

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2,4-Trichlorobenzene	ND		25.0	25.0		ug/L		100	60 - 140	
1,1,1-Trichloroethane	ND		25.0	22.3		ug/L		89	70 - 130	
1,1,2-Trichloroethane	ND		25.0	23.4		ug/L		94	70 - 130	
Trichloroethene	ND		25.0	23.5		ug/L		94	70 - 130	
Trichlorofluoromethane	ND		25.0	22.2		ug/L		89	60 _ 150	
1,2,3-Trichloropropane	ND		25.0	21.2		ug/L		85	60 - 130	
Vinyl acetate	ND		25.0	25.3		ug/L		101	23 - 150	
Vinyl chloride	ND		25.0	21.5		ug/L		86	50 - 137	

MS MS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 128
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	104		76 - 132

Lab Sample ID: 440-170481-A-1 MSD

**Matrix: Water** 

Analysis Ratch: 379003

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

Analysis Batch: 379003	Sample	Sample	Spike	MSD	MSD			%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit
Acetone	ND		25.0	20.4	ug/L		82	10 - 150	6	35
Acrolein	ND		25.0	19.8	ug/L		79	10 - 147	11	40
Acrylonitrile	ND		250	231	ug/L		92	38 - 144	10	40
Benzene	ND		25.0	25.4	ug/L		102	66 - 130	4	20
Bromochloromethane	ND		25.0	25.5	ug/L		102	70 - 130	5	25
Bromodichloromethane	ND		25.0	26.1	ug/L		105	70 - 138	4	20
Bromoform	ND		25.0	25.0	ug/L		100	59 - 150	8	25
Bromomethane	ND		25.0	23.2	ug/L		93	62 _ 131	0	25
2-Butanone (MEK)	ND		25.0	21.9	ug/L		87	48 - 140	15	40
Carbon disulfide	ND		25.0	22.6	ug/L		91	49 - 140	2	20
Carbon tetrachloride	ND		25.0	23.3	ug/L		93	60 - 150	3	25
Chlorobenzene	ND		25.0	24.1	ug/L		96	70 - 130	3	20
Chloroethane	ND		25.0	23.6	ug/L		94	68 - 130	2	25
Chloroform	ND		25.0	24.4	ug/L		98	70 - 130	4	20
Chloromethane	ND		25.0	22.3	ug/L		89	39 - 144	2	25
cis-1,2-Dichloroethene	ND		25.0	24.4	ug/L		98	70 - 130	3	20
cis-1,3-Dichloropropene	ND		25.0	26.2	ug/L		105	70 - 133	4	20
Dibromochloromethane	ND		25.0	24.8	ug/L		99	70 - 148	6	25
1,2-Dibromo-3-Chloropropane	ND		25.0	21.4	ug/L		86	48 - 140	13	30
1,2-Dibromoethane (EDB)	ND		25.0	24.5	ug/L		98	70 - 131	7	25
Dibromomethane	ND		25.0	23.9	ug/L		96	70 - 130	3	25
1,2-Dichlorobenzene	ND		25.0	25.8	ug/L		103	70 - 130	7	20
1,3-Dichlorobenzene	ND		25.0	24.5	ug/L		98	70 - 130	5	20
1,4-Dichlorobenzene	ND		25.0	24.9	ug/L		99	70 - 130	6	20
Dichlorodifluoromethane	ND		25.0	20.3	ug/L		81	25 - 142	1	30
1,1-Dichloroethane	ND		25.0	24.4	ug/L		97	65 - 130	3	20
1,2-Dichloroethane	ND		25.0	25.4	ug/L		102	56 - 146	8	20
1,1-Dichloroethene	ND		25.0	22.9	ug/L		92	70 - 130	3	20
1,2-Dichloropropane	ND		25.0	25.9	ug/L		104	69 - 130	3	20

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TestAmerica Job ID: 440-170697-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: 440-170481-A-1 MSD

**Matrix: Water** 

Analysis Batch: 379003

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,3-Dichloropropane	ND		25.0	25.1		ug/L		100	70 - 130	6	25
2,2-Dichloropropane	ND		25.0	24.9		ug/L		99	69 - 138	5	25
1,1-Dichloropropene	ND		25.0	24.5		ug/L		98	64 - 130	3	20
Ethylbenzene	ND		25.0	23.7		ug/L		95	70 - 130	3	20
2-Hexanone	ND		25.0	22.8		ug/L		91	10 - 150	10	35
Methylene Chloride	ND		25.0	23.5		ug/L		94	52 - 130	4	20
4-Methyl-2-pentanone (MIBK)	ND		25.0	24.7		ug/L		99	52 - 150	10	35
Methyl tert-butyl ether	ND		25.0	27.0		ug/L		108	70 - 130	6	25
m,p-Xylene	ND		25.0	24.7		ug/L		99	70 - 133	3	25
Naphthalene	0.49	J	25.0	25.9		ug/L		102	60 - 140	10	30
o-Xylene	ND		25.0	24.7		ug/L		99	70 - 133	3	20
Styrene	0.84		25.0	25.0		ug/L		96	29 - 150	1	35
t-Butanol	ND		250	249		ug/L		100	70 - 130	4	25
1,1,1,2-Tetrachloroethane	ND		25.0	24.3		ug/L		97	60 - 149	3	20
1,1,2,2-Tetrachloroethane	ND		25.0	24.7		ug/L		99	63 - 130	9	30
Tetrachloroethene	ND		25.0	22.5		ug/L		90	70 - 137	2	20
Toluene	ND		25.0	23.6		ug/L		95	70 - 130	2	20
trans-1,2-Dichloroethene	ND		25.0	25.1		ug/L		101	70 - 130	4	20
trans-1,3-Dichloropropene	ND		25.0	26.3		ug/L		105	70 - 138	6	25
1,2,4-Trichlorobenzene	ND		25.0	26.3		ug/L		105	60 - 140	5	20
1,1,1-Trichloroethane	ND		25.0	23.1		ug/L		92	70 - 130	4	20
1,1,2-Trichloroethane	ND		25.0	25.3		ug/L		101	70 - 130	8	25
Trichloroethene	ND		25.0	24.1		ug/L		97	70 - 130	3	20
Trichlorofluoromethane	ND		25.0	22.9		ug/L		92	60 - 150	3	25
1,2,3-Trichloropropane	ND		25.0	23.6		ug/L		94	60 - 130	11	30
Vinyl acetate	ND		25.0	27.4		ug/L		110	23 - 150	8	30
Vinyl chloride	ND		25.0	21.6		ug/L		87	50 - 137	1	30

MSD MSD

Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 100 80 - 128 4-Bromofluorobenzene (Surr) 102 80 - 120 Dibromofluoromethane (Surr) 105 76 - 132

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

Lab Sample ID: MB 440-378304/1-A

**Matrix: Water** 

1,4-Dioxane-d8 (Surr)

Analyte

1,4-Dioxane

Analysis Batch: 378647

MB	MB	
	O	

IVID	IVID
Result	Qualifie

ND

RL 1.0 MDL Unit 0.25 ug/L

Prepared 12/27/16 08:45

Analyzed 12/28/16 16:21

Client Sample ID: Method Blank

**Prep Batch: 378304** 

Prep Type: Total/NA

MB MB Surrogate

%Recovery Qualifier Limits 51 30 - 120

Prepared 12/27/16 08:45

Analyzed 12/28/16 16:21

Dil Fac

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Client Sample ID: Lab Control Sample Dup

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

Lab Sample ID: LCS 440-378304/2-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Analysis Batch: 378647 Prep Batch: 378304

Spike LCS LCS Added Result Qualifier Limits Analyte Unit D %Rec 35 - 120 1,4-Dioxane 2.00 1.12 ug/L 56

LCS LCS

Qualifier Limits Surrogate %Recovery 30 - 120 1,4-Dioxane-d8 (Surr) 59

Lab Sample ID: LCSD 440-378304/3-A

**Matrix: Water** 

Prep Type: Total/NA Analysis Batch: 378647 Prep Batch: 378304 LCSD LCSD Spike %Rec. **RPD** Result Qualifier Added Limits RPD Limit Analyte Unit %Rec 67 35 1,4-Dioxane 2.00 ug/L 35 \_ 120 1.33

LCSD LCSD

Surrogate %Recovery Qualifier Limits 30 - 120 1,4-Dioxane-d8 (Surr) 68

Lab Sample ID: MB 440-378579/1-A

**Matrix: Water** 

Analysis Batch: 378649

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

**Prep Batch: 378579** 

Qualifier MDL Analyte Result RL Unit Prepared Analyzed Dil Fac 1,4-Dioxane ND 1.0 0.25 ug/L 12/28/16 09:58 12/29/16 17:42

MB MB

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,4-Dioxane-d8 (Surr) 62 30 - 120 12/28/16 09:58 12/29/16 17:42

Lab Sample ID: LCS 440-378579/2-A

**Matrix: Water** 

Client Sample ID: Lab Control Sample Prep Type: Total/NA Analysis Batch: 378649 **Prep Batch: 378579** LCS LCS

Spike Analyte Added Result Qualifier Unit D %Rec Limits 1,4-Dioxane 2.00 1.02 ug/L 51 35 - 120

LCS LCS

%Recovery Surrogate Qualifier Limits 1,4-Dioxane-d8 (Surr) 56 30 - 120

Lab Sample ID: 440-170807-F-3-A MSD

**Matrix: Water** 

Analysis Batch: 378649 **Prep Batch: 378579** Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Analyte Added Result Qualifier Unit %Rec Limits RPD Limit 1,4-Dioxane ND 2.01 1.20 ug/L 60 35 - 120 2 25

MSD MSD

Surrogate %Recovery Qualifier Limits 1,4-Dioxane-d8 (Surr) 30 - 120 59

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Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

Spike

Added

2.02

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

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

Lab Sample ID: 440-170807-G-3-A MS

**Matrix: Water** 

Analyte

1,4-Dioxane

Analysis Batch: 378649

Client Sample ID: Matrix Spike

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA **Prep Batch: 378579** 

%Rec. Limits

%Rec 61

35 - 120

MS MS

ND

Sample Sample Result Qualifier

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

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-377635/4

**Matrix: Water** 

Analyte

Analysis Batch: 377635

MB MB

Result Qualifier RL MDL Unit D Analyzed Dil Fac Prepared 0.11 Nitrate as N ND 0.055 mg/L 12/22/16 12:05

MS MS

1.23

Result Qualifier

Unit

ug/L

Lab Sample ID: LCS 440-377635/2

**Matrix: Water** 

Analysis Batch: 377635

	<b>эріке</b>	LUS	LUS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	1.13	1.13		mg/L		100	90 - 110	

Lab Sample ID: 440-170778-G-4 MS

**Matrix: Water** 

**Analysis Batch: 377635** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	)	%Rec	Limits	
Nitrate as N	0.19	J	2.26	2.28		mg/L		92	80 - 120	

Lab Sample ID: 440-170778-G-4 MSD

**Matrix: Water** 

Analysis Batch: 377635

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	0	%Rec	Limits	RPD	Limit
Nitrate as N	0.19	J	2 26	2 30		ma/l		94	80 - 120		20

Lab Sample ID: MB 440-377636/4

**Matrix: Water** 

Analysis Batch: 377636

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

	IVID	INID								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Bromide	ND		0.50	0.25	mg/L			12/22/16 12:05	1	
Chloride	ND		0.50	0.25	mg/L			12/22/16 12:05	1	
Fluoride	ND		0.50	0.25	mg/L			12/22/16 12:05	1	
Sulfate	ND		0.50	0.25	mg/L			12/22/16 12:05	1	

TestAmerica Irvine

1/10/2017

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 440-377636/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 377636

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bromide	5.00	5.14		mg/L		103	90 - 110	
Chloride	5.00	4.81		mg/L		96	90 - 110	
Fluoride	5.00	4.85		mg/L		97	90 - 110	
Sulfate	5.00	5 09		ma/l		102	90 - 110	

Lab Sample ID: 440-170778-G-4 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 377636

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bromide	3.7		10.0	13.1		mg/L		94	80 - 120	
Fluoride	0.84	J	10.0	9.59		mg/L		88	80 - 120	

Lab Sample ID: 440-170778-G-4 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 377636

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Bromide	3.7		10.0	13.2		mg/L		95	80 - 120	0	20
Fluoride	0.84	J	10.0	9.91		mg/L		91	80 - 120	3	20

Lab Sample ID: MB 440-377952/4 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 377952

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Sulfate	ND		0.50	0.25	mg/L			12/23/16 12:24	1	

MD MD

Lab Sample ID: LCS 440-377952/2 Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS

**Matrix: Water** 

Analysis Batch: 377952

	Орікс		200			/01 <b>1CC</b> .	
Analyte	Added	Result	Qualifier U	nit D	%Rec	Limits	
Sulfate	5.00	4.75		ig/L	95	90 - 110	

Cnika

Lab Sample ID: 440-170930-G-11 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 377952

-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	670		1000	1580		ma/l		91	80 120	 

Lab Sample ID: 440-170930-G-11 MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Water** 

Analysis Batch: 377952											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sulfate	670		1000	1580		mg/L		90	80 - 120		20

TestAmerica Irvine

Prep Type: Total/NA

%Rac

TestAmerica Job ID: 440-170697-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-379996/1-A

**Matrix: Water** 

Analysis Batch: 380880

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

**Prep Batch: 379996** 

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:07	1
Manganese	ND		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:07	1
Magnesium	ND		0.020	0.010	mg/L		01/05/17 08:50	01/09/17 19:07	1
Iron	ND		0.040	0.010	mg/L		01/05/17 08:50	01/09/17 19:07	1
Sodium	ND		0.50	0.25	mg/L		01/05/17 08:50	01/09/17 19:07	1
Boron	ND		0.050	0.010	mg/L		01/05/17 08:50	01/09/17 19:07	1
Calcium	ND		0.10	0.050	mg/L		01/05/17 08:50	01/09/17 19:07	1

MD MD

Lab Sample ID: LCS 440-379996/2-A

Matrix: Water

Analysis Batch: 380880

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

**Prep Batch: 379996** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Potassium	10.0	11.0		mg/L		110	80 - 120	
Manganese	1.00	1.13		mg/L		113	80 - 120	
Magnesium	1.00	1.13		mg/L		113	80 - 120	
Iron	1.00	1.08		mg/L		108	80 - 120	
Sodium	10.0	10.8		mg/L		108	80 - 120	
Boron	1.00	1.03		mg/L		103	80 - 120	
Calcium	1.00	1.10		mg/L		110	80 - 120	

Lab Sample ID: 440-170697-1 MS

**Matrix: Water** 

Analysis Batch: 380880

Client Sample ID: DW-5 **Prep Type: Total Recoverable** Prep Batch: 379996

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Potassium	0.86		10.0	12.2		mg/L		114	75 - 125	
Manganese	0.11		1.00	1.23		mg/L		112	75 <sub>-</sub> 125	
Magnesium	0.95		1.00	2.04		mg/L		109	75 _ 125	
Iron	0.14		1.00	1.27		mg/L		113	75 <sub>-</sub> 125	
Sodium	480		10.0	478	4	mg/L		-28	75 - 125	
Boron	2.8	F1	1.00	3.90		mg/L		111	75 <sub>-</sub> 125	
Calcium	5.9		1.00	6.86	4	mg/L		95	75 - 125	

Lab Sample ID: 440-170697-1 MSD

**Matrix: Water** 

Analysis Batch: 380880

Client Sample ID: DW-5 **Prep Type: Total Recoverable Prep Batch: 379996** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Potassium	0.86		10.0	12.3		mg/L		115	75 - 125	1	20
Manganese	0.11		1.00	1.23		mg/L		113	75 - 125	1	20
Magnesium	0.95		1.00	2.10		mg/L		115	75 - 125	3	20
Iron	0.14		1.00	1.25		mg/L		112	75 - 125	1	20
Sodium	480		10.0	508	4	mg/L		271	75 - 125	6	20
Boron	2.8	F1	1.00	4.13	F1	mg/L		134	75 - 125	6	20
Calcium	5.9		1.00	7.28	4	mg/L		137	75 - 125	6	20

TestAmerica Irvine

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Method: 410.4 - COD

Lab Sample ID: MB 440-380158/3

**Matrix: Water** 

**Analysis Batch: 380158** 

MB MB

AnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDil FacChemical Oxygen DemandND2010mg/L01/05/17 17:371

Lab Sample ID: LCS 440-380158/4

Matrix: Water

Analysis Batch: 380158

 Analyte
 Added Chemical Oxygen Demand
 Result 200
 Qualifier 200
 Unit 200
 D %Rec Limits 200
 Limits 200
 Property 200
 Prop

Lab Sample ID: 440-170653-A-1 MS

**Matrix: Water** 

Analysis Batch: 380158

Analysis Butch: 000100

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chemical Oxygen Demand	31		200	240		mg/L		104	70 - 120	

Lab Sample ID: 440-170653-A-1 MSD

**Matrix: Water** 

Analysis Batch: 380158

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chemical Oxygen Demand	31		200	230		mg/L		100	70 - 120	4	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 440-377894/3

**Matrix: Water** 

Analysis Batch: 377894

	MB	MB
maluta	Daguile	Δ

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/23/16 04:57	1
Bicarbonate Alkalinity as CaCO3	ND		4.0	4.0	mg/L			12/23/16 04:57	1

Lab Sample ID: LCS 440-377894/2

Matrix: Water

Analysis Batch: 377894

	Spike	LCS LCS				%Rec.	
Analyte	Added	Result Qualif	ier Unit	D	%Rec	Limits	
Alkalinity as CaCO3	85.8	86.1	ma/L		100	80 - 120	

Lab Sample ID: MRL 440-377894/11

**Matrix: Water** 

Analysis Batch: 377894

١		Spike	MRL	MRL				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Alkalinity as CaCO3	4.00	ND		mg/L		85	50 - 150	

Spike

Added

4.00

MRL MRL

DU DU

717

717

RL

10

Spike

Added

1000

Result Qualifier

MDL Unit

5.0 mg/L

LCS LCS

DU DU

3470

Result Qualifier

972

Result Qualifier

4.43

Result Qualifier

Unit

mg/L

Unit

mg/L

mg/L

Unit

mg/L

Unit

mg/L

Client Sample ID: Lab Control Sample

%Rec.

Limits

50 - 150

%Rec

Prepared

%Rec

97

D

111

D

Prep Type: Total/NA

Client Sample ID: MW-13R

Client Sample ID: Method Blank

Analyzed

12/25/16 06:59

**Client Sample ID: Lab Control Sample** 

%Rec.

Limits

90 - 110

Prep Type: Total/NA

RPD

0.1

0.1

Prep Type: Total/NA

Prep Type: Total/NA

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MRL 440-377894/4

**Matrix: Water** 

Analysis Batch: 377894

Analyte

Alkalinity as CaCO3

Lab Sample ID: 440-170697-3 DU

**Matrix: Water** Analysis Batch: 377894

Analyte Alkalinity as CaCO3

Bicarbonate Alkalinity as CaCO3

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

Sample Sample Result Qualifier

> мв мв Result Qualifier

> > ND

Sample Sample

3500

Result Qualifier

720

Lab Sample ID: MB 440-378207/1

**Matrix: Water** 

Analysis Batch: 378207

Analyte

Total Dissolved Solids

Lab Sample ID: LCS 440-378207/2 **Matrix: Water** 

Analysis Batch: 378207

Analyte

**Total Dissolved Solids** 

Lab Sample ID: 440-170251-H-2 DU **Matrix: Water** 

Analysis Batch: 378207

Analyte

Total Dissolved Solids

Method: SM 4500 CO2 C - Free Carbon Dioxide

Lab Sample ID: MB 440-377750/1 **Matrix: Water** 

Analysis Batch: 377750

Analyte

Carbon Dioxide, Free

Lab Sample ID: 440-170697-2 DU

**Matrix: Water** 

Analysis Batch: 377750

Result Qualifier Analyte Carbon Dioxide, Free

Sample Sample

300

MB MB

ND

Result Qualifier

299

RL

2.0

DU DU Result Qualifier

**RL** Unit

2.0 mg/L

Unit

mg/L

D

Prepared

RPD

TestAmerica Irvine

1/10/2017

RPD

Limit

20

20

Dil Fac

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

Limit

RPD

Client Sample ID: Method Blank

Analyzed

12/22/16 16:00

Prep Type: Total/NA

Client Sample ID: MW-1

Prep Type: Total/NA

Dil Fac

RPD

Limit

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Client Sample ID: Method Blank

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-379386/2-A

**Matrix: Water** 

Analysis Batch: 379387

Prep Type: Total/NA

Prep Batch: 379386

мв мв

Result Qualifier RL MDL Unit D Dil Fac Analyte Prepared Analyzed 0.50 01/03/17 03:00 Ammonia (as N) ND 0.10 mg/L 01/03/17 04:30

Lab Sample ID: LCS 440-379386/1-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 379387

Prep Batch: 379386 LCS LCS Spike

Result Qualifier Analyte Added Unit %Rec Limits Ammonia (as N) 2.50 2.31 mg/L 92 85 - 115

Lab Sample ID: 440-171529-A-1-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 379387

Prep Batch: 379386 MS MS Spike %Rec. Sample Sample Result Qualifier Added Result Qualifier Unit D %Rec Limits 0.68 2.50 2.93 75 \_ 125 Ammonia (as N) mg/L

Lab Sample ID: 440-171529-A-1-D MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 379387

Prep Batch: 379386 Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Limit 0.68 2.50 Ammonia (as N) 2.81 mg/L 85 75 - 125

Lab Sample ID: 440-171523-B-2-C DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 379387 Prep Batch: 379386 Sample Sample DII DII RPD Result Qualifier Limit Analyte Result Qualifier Unit RPD Ammonia (as N) 66 69.1 mg/L 15

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 440-378107/4 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 378107

мв мв

RLMDL Unit Dil Fac Analyte Result Qualifier D Prepared Analyzed 0.050 Total Sulfide ND 0.020 mg/L 12/24/16 08:15

Lab Sample ID: LCS 440-378107/5 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 378107

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Total Sulfide 0.480 0.460 mg/L 96 80 - 120

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

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

Lab Sample ID: LCSD 440-378107/16 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 378107

Spike LCSD LCSD %Rec. RPD Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec 0.480 Total Sulfide 0.481 mg/L 100 80 - 120

Lab Sample ID: MRL 440-378107/3 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 378107

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit %Rec Limits Total Sulfide 0.0480 0.0436 mg/L 91 50 - 150

Lab Sample ID: 440-170768-A-1 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 378107

MS MS %Rec. Spike Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Total Sulfide ND 0.480 0.464 mg/L 70 - 130

Lab Sample ID: 440-170768-A-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 378107** 

RPD Sample Sample Spike MSD MSD %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Limit Total Sulfide ND 0.480 0.478 mg/L 100 70 - 130 30

Lab Sample ID: 440-170768-A-1 DU **Client Sample ID: Duplicate** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 378107** 

Sample Sample DU DU RPD Result RPD Analyte Result Qualifier Qualifier Unit Limit Total Sulfide ND ND mg/L 30

Method: SM 5310C - TOC

Lab Sample ID: MB 440-380231/7 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380231

мв мв RLMDL Unit Dil Fac Analyte Result Qualifier D Prepared Analyzed **Total Organic Carbon** ND 0.10 0.050 mg/L 01/05/17 04:52

Lab Sample ID: LCS 440-380231/6 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380231

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Total Organic Carbon 5.00 4.85 mg/L 97 90 - 110

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

Method: SM 5310C - TOC (Continued)

Lab Sample ID: MRL 440-380231/5 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 380231

Spike MRL MRL %Rec. Result Qualifier babbA Limits Analyte Unit D %Rec **Total Organic Carbon** 0.100 0.0552 J mg/L 55 50 - 150

Lab Sample ID: MRL 440-380231/8 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 380231

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit %Rec Limits Total Organic Carbon 0.100 0.0831 J mg/L 83 50 - 150

Lab Sample ID: 440-171890-A-5 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380231

MS MS %Rec. Spike Sample Sample Result Qualifier Added Result Qualifier Unit %Rec Limits 5.00 103 Total Organic Carbon 0.71 5.84 mg/L 80 - 120

Lab Sample ID: 440-171890-A-5 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380231

Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Result Qualifier Unit %Rec Limits Limit 0.71 5.00 Total Organic Carbon 5.61 mg/L 98 80 120 20

Lab Sample ID: MB 440-380347/7 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380347

MR MR

RL MDL Unit Analyte Result Qualifier D Dil Fac Prepared Analyzed Total Organic Carbon 0.10 01/06/17 06:17 ND 0.050 mg/L

Lab Sample ID: LCS 440-380347/6 Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380347

LCS LCS Spike %Rec. Added Analyte Result Qualifier Unit %Rec Limits 97 **Total Organic Carbon** 5.00 4.87 mg/L 90 - 110

Lab Sample ID: MRL 440-380347/5 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380347

MRL MRL Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Total Organic Carbon 0.100 0.101 mg/L 101 50 - 150

Lab Sample ID: 440-171441-A-1 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 380347

Spike MS MS %Rec. Sample Sample Result Qualifier Added Result Qualifier Unit %Rec Limits **Total Organic Carbon** 1.7 5.00 6.22 mg/L 90 80 - 120

# **QC Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

%Rec.

Lab Sample ID: 440-171441-A-1 MSD

**Matrix: Water** 

Analysis Batch: 380347

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

Sample Sample Analyte Result Qualifier Added Result Qualifier Limits RPD Limit Unit %Rec Total Organic Carbon 5.00 109 20 1.7 7.14 mg/L 80 - 120 14

MSD MSD

Spike

RPD

TestAmerica Job ID: 440-170697-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

#### **GC/MS VOA**

#### Analysis Batch: 379003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	8260B	
440-170697-2	MW-1	Total/NA	Water	8260B	
440-170697-3	MW-13R	Total/NA	Water	8260B	
440-170697-4	QCAB	Total/NA	Water	8260B	
440-170697-5	QCTB	Total/NA	Water	8260B	
MB 440-379003/4	Method Blank	Total/NA	Water	8260B	
LCS 440-379003/5	Lab Control Sample	Total/NA	Water	8260B	
440-170481-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-170481-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

#### **GC/MS Semi VOA**

#### **Prep Batch: 378304**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	3520C	
MB 440-378304/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-378304/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 440-378304/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

#### **Prep Batch: 378579**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-2	MW-1	Total/NA	Water	3520C	
440-170697-3	MW-13R	Total/NA	Water	3520C	
MB 440-378579/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-378579/2-A	Lab Control Sample	Total/NA	Water	3520C	
440-170807-F-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	
440-170807-G-3-A MS	Matrix Spike	Total/NA	Water	3520C	

#### Analysis Batch: 378647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-378304/1-A	Method Blank	Total/NA	Water	8270C	378304
LCS 440-378304/2-A	Lab Control Sample	Total/NA	Water	8270C	378304
LCSD 440-378304/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	378304

#### Analysis Batch: 378649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	8270C	378304
440-170697-2	MW-1	Total/NA	Water	8270C	378579
440-170697-3	MW-13R	Total/NA	Water	8270C	378579
MB 440-378579/1-A	Method Blank	Total/NA	Water	8270C	378579
LCS 440-378579/2-A	Lab Control Sample	Total/NA	Water	8270C	378579
440-170807-F-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	378579
440-170807-G-3-A MS	Matrix Spike	Total/NA	Water	8270C	378579

#### HPLC/IC

#### Analysis Batch: 377635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	300.0	
440-170697-2	MW-1	Total/NA	Water	300.0	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

#### **HPLC/IC (Continued)**

# Analysis Batch: 377635 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-3	MW-13R	Total/NA	Water	300.0	
MB 440-377635/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377635/2	Lab Control Sample	Total/NA	Water	300.0	
440-170778-G-4 MS	Matrix Spike	Total/NA	Water	300.0	
440-170778-G-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### Analysis Batch: 377636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	300.0	
440-170697-2	MW-1	Total/NA	Water	300.0	
440-170697-2	MW-1	Total/NA	Water	300.0	
440-170697-3	MW-13R	Total/NA	Water	300.0	
440-170697-3	MW-13R	Total/NA	Water	300.0	
MB 440-377636/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377636/2	Lab Control Sample	Total/NA	Water	300.0	
440-170778-G-4 MS	Matrix Spike	Total/NA	Water	300.0	
440-170778-G-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### Analysis Batch: 377952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-2	MW-1	Total/NA	Water	300.0	
440-170697-3	MW-13R	Total/NA	Water	300.0	
MB 440-377952/4	Method Blank	Total/NA	Water	300.0	
LCS 440-377952/2	Lab Control Sample	Total/NA	Water	300.0	
440-170930-G-11 MS	Matrix Spike	Total/NA	Water	300.0	
440-170930-G-11 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

#### **Metals**

#### **Prep Batch: 379996**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total Recoverable	Water	3005A	
440-170697-2	MW-1	Total Recoverable	Water	3005A	
440-170697-3	MW-13R	Total Recoverable	Water	3005A	
MB 440-379996/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 440-379996/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
440-170697-1 MS	DW-5	Total Recoverable	Water	3005A	
440-170697-1 MSD	DW-5	Total Recoverable	Water	3005A	

#### Analysis Batch: 380880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total Recoverable	Water	6010B	379996
440-170697-2	MW-1	Total Recoverable	Water	6010B	379996
440-170697-3	MW-13R	Total Recoverable	Water	6010B	379996
MB 440-379996/1-A	Method Blank	Total Recoverable	Water	6010B	379996
LCS 440-379996/2-A	Lab Control Sample	Total Recoverable	Water	6010B	379996
440-170697-1 MS	DW-5	Total Recoverable	Water	6010B	379996
440-170697-1 MSD	DW-5	Total Recoverable	Water	6010B	379996

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

#### **General Chemistry**

#### Analysis Batch: 377750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	SM 4500 CO2 C	
440-170697-2	MW-1	Total/NA	Water	SM 4500 CO2 C	
440-170697-3	MW-13R	Total/NA	Water	SM 4500 CO2 C	
MB 440-377750/1	Method Blank	Total/NA	Water	SM 4500 CO2 C	
440-170697-2 DU	MW-1	Total/NA	Water	SM 4500 CO2 C	

#### Analysis Batch: 377894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	SM 2320B	
440-170697-2	MW-1	Total/NA	Water	SM 2320B	
440-170697-3	MW-13R	Total/NA	Water	SM 2320B	
MB 440-377894/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 440-377894/2	Lab Control Sample	Total/NA	Water	SM 2320B	
MRL 440-377894/11	Lab Control Sample	Total/NA	Water	SM 2320B	
MRL 440-377894/4	Lab Control Sample	Total/NA	Water	SM 2320B	
440-170697-3 DU	MW-13R	Total/NA	Water	SM 2320B	

#### Analysis Batch: 378107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-170697-1	DW-5	Total/NA	Water	SM 4500 S2 D	
440-170697-2	MW-1	Total/NA	Water	SM 4500 S2 D	
440-170697-3	MW-13R	Total/NA	Water	SM 4500 S2 D	
MB 440-378107/4	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 440-378107/5	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 440-378107/16	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
MRL 440-378107/3	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
440-170768-A-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
440-170768-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	
440-170768-A-1 DU	Duplicate	Total/NA	Water	SM 4500 S2 D	

#### **Analysis Batch: 378207**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	SM 2540C	
440-170697-2	MW-1	Total/NA	Water	SM 2540C	
440-170697-3	MW-13R	Total/NA	Water	SM 2540C	
MB 440-378207/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 440-378207/2	Lab Control Sample	Total/NA	Water	SM 2540C	
440-170251-H-2 DU	Duplicate	Total/NA	Water	SM 2540C	

#### **Prep Batch: 379386**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	SM 4500 NH3 B	
440-170697-2	MW-1	Total/NA	Water	SM 4500 NH3 B	
440-170697-3	MW-13R	Total/NA	Water	SM 4500 NH3 B	
MB 440-379386/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 440-379386/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
440-171529-A-1-C MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-171529-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
440-171523-B-2-C DU	Duplicate	Total/NA	Water	SM 4500 NH3 B	

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Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

# **General Chemistry (Continued)**

#### Analysis Batch: 379387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	SM 4500 NH3 D	379386
440-170697-2	MW-1	Total/NA	Water	SM 4500 NH3 D	379386
440-170697-3	MW-13R	Total/NA	Water	SM 4500 NH3 D	379386
MB 440-379386/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 D	379386
LCS 440-379386/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	379386
440-171529-A-1-C MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	379386
440-171529-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	379386
440-171523-B-2-C DU	Duplicate	Total/NA	Water	SM 4500 NH3 D	379386

#### **Analysis Batch: 380158**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	410.4	
440-170697-2	MW-1	Total/NA	Water	410.4	
440-170697-3	MW-13R	Total/NA	Water	410.4	
MB 440-380158/3	Method Blank	Total/NA	Water	410.4	
LCS 440-380158/4	Lab Control Sample	Total/NA	Water	410.4	
440-170653-A-1 MS	Matrix Spike	Total/NA	Water	410.4	
440-170653-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	410.4	

#### Analysis Batch: 380231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
440-170697-2	MW-1	Total/NA	Water	SM 5310C	
440-170697-3	MW-13R	Total/NA	Water	SM 5310C	
MB 440-380231/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-380231/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380231/5	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380231/8	Lab Control Sample	Total/NA	Water	SM 5310C	
440-171890-A-5 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-171890-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

#### Analysis Batch: 380347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-170697-1	DW-5	Total/NA	Water	SM 5310C	
MB 440-380347/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 440-380347/6	Lab Control Sample	Total/NA	Water	SM 5310C	
MRL 440-380347/5	Lab Control Sample	Total/NA	Water	SM 5310C	
440-171441-A-1 MS	Matrix Spike	Total/NA	Water	SM 5310C	
440-171441-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310C	

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# **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

#### **Qualifiers**

#### **GC/MS VOA**

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

#### **GC/MS VOA TICs**

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

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not
	applicable.

#### **General Chemistry**

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **Glossary**

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

# **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-170697-1

#### **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17 *
Hawaii	State Program	9	N/A	01-29-17 *
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-17 *
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

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 $<sup>\</sup>ensuremath{^{\star}}$  Certification renewal pending - certification considered valid.

TestAmerica Irvine

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THE LEADER IN ENVIRONMENTAL TESTING TESTANG TESTANG. **TestAmerica** Sample Specific Notes: 7 Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) 100 Walk-in Client: SDG No. 12/27/21 herm ID No Date/Time 2.4/2.0 Archive for 140910 Company メメ Company 440-170697 Chain of Custody メメメ Disposal by Lab Date: **Chain of Custody Record** Return to Client JUNCHUN Site Contact: RCRA X Perform MS / MSD (Y / N ) Filtered Sample ( Y / N ) 1227.10 1518 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Regulatory Program: Dw NPDES # of Cont. 3 3 12-22./6 Date/Time: 7 Date/Time: Date/Time WORKING DAYS Matrix 3 Analysis Turnaround Time Type (C=Comp, G=Grab) TAT if different from Below Project Manager: Tel/Fax: 752 -US 1 week 2 days 2221 1 0º00 2820 Sample Time 1005 CALENDAR DAYS Preservation Used: 1= ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Custody Seal No. ) Company: Sample Date Company: Company: Timas: 1 Sob # 2016 . 0030 Special Instructions/QC Requirements & Comments: Comments Section if the lab is to dispose of the sample TestAmerica Irvine 37461 Berian Ave iu - 137 Sample Identification SASS けられいとまる Irvine, CA 92614 Phone: 949.261.1022 Fax: Client Contact V 3 3 4146 ossible Hazard Identification 3 Custody Seals Intact A GIA Company Name: SWALL Phone: 85 2 Relinquished by: inquished by telinquished by Non-Hazard Project Name City/State/Zip Address:

# **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-170697-1

Login Number: 170697 List Source: TestAmerica Irvine

List Number: 1

Creator: Soderblom, Tim

Creator. Societion, Tilli		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	

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THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100

Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-172844-1

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: 1/17/2017 1:38:34 PM

Rossina Tomova, Project Manager I (949)261-1022

rossina.tomova@testamericainc.com

.....LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

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

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# **Sample Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-172844-1	DW-4	Water	01/10/17 10:00	01/10/17 15:55

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#### **Case Narrative**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

Job ID: 440-172844-1

**Laboratory: TestAmerica Irvine** 

Narrative

Job Narrative 440-172844-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 1/10/2017 3:55 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

#### GC/MS Semi VOA

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.

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# **Client Sample Results**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

Lab Sample ID: 440-172844-1

Matrix: Water

Date Collected: 01/10/17 10:00 Date Received: 01/10/17 15:55

Client Sample ID: DW-4

Method: 8270C - Semivolatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.25	ug/L		01/12/17 07:22	01/13/17 21:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8 (Surr)	52		30 - 120				01/12/17 07:22	01/13/17 21:45	1

# **Method Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

Method	Method Description	Protocol	Laboratory
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL IRV

#### **Protocol References:**

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

#### Laboratory References:

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

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#### **Lab Chronicle**

Client: Geo-Logic Associates

Client Sample ID: DW-4

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

Lab Sample ID: 440-172844-1

Matrix: Water

Date Collected: 01/10/17 10:00 Date Received: 01/10/17 15:55

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			990 mL	1 mL	381422	01/12/17 07:22	JC1	TAL IRV
Total/NA	Analysis	8270C		1			381868	01/13/17 21:45	HN	TAL IRV

Laboratory References:

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

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TestAmerica Job ID: 440-172844-1

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

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

Lab Sample ID: MB 440-381422/1-A Client Sample ID: Method Blank

**Matrix: Water** Prep Type: Total/NA Analysis Batch: 381868 **Prep Batch: 381422** мв мв

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 0.25 ug/L 1.0 01/12/17 07:22 01/13/17 19:34 1,4-Dioxane ND

MB MB Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed 30 - 120 01/12/17 07:22 01/13/17 19:34 1,4-Dioxane-d8 (Surr) 53

Lab Sample ID: LCS 440-381422/2-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Analysis Batch: 381868 Prep Batch: 381422

LCS LCS Spike Added Result Qualifier Analyte Unit Limits %Rec

1,4-Dioxane 2.00 0.881 J ug/L 35 - 120 LCS LCS

Surrogate %Recovery Qualifier Limits 30 - 120 1,4-Dioxane-d8 (Surr) 53

Lab Sample ID: 440-172766-C-5-A MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 381868 **Prep Batch: 381422** MS MS %Rec. Sample Sample Spike

Qualifier Added Result Qualifier Analyte Result Unit %Rec Limits 1,4-Dioxane ND 1.99 1.06 ug/L 35 - 120

MS MS Qualifier Surrogate %Recovery Limits 1,4-Dioxane-d8 (Surr) 51 30 - 120

Lab Sample ID: 440-172766-C-5-B MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Water** Prep Type: Total/NA

Analysis Batch: 381868 **Prep Batch: 381422** MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits **RPD** Limit

1,4-Dioxane ND 2.04 0.974 ug/L 48 35 - 120 MSD MSD

%Recovery Qualifier Surrogate Limits 1,4-Dioxane-d8 (Surr) 47 30 - 120

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

#### **GC/MS Semi VOA**

#### **Prep Batch: 381422**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-172844-1	DW-4	Total/NA	Water	3520C	
MB 440-381422/1-A	Method Blank	Total/NA	Water	3520C	
LCS 440-381422/2-A	Lab Control Sample	Total/NA	Water	3520C	
440-172766-C-5-A MS	Matrix Spike	Total/NA	Water	3520C	
440-172766-C-5-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	

#### Analysis Batch: 381868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-172844-1	DW-4	Total/NA	Water	8270C	381422
MB 440-381422/1-A	Method Blank	Total/NA	Water	8270C	381422
LCS 440-381422/2-A	Lab Control Sample	Total/NA	Water	8270C	381422
440-172766-C-5-A MS	Matrix Spike	Total/NA	Water	8270C	381422
440-172766-C-5-B MSD	Matrix Spike Duplicate	Total/NA	Water	8270C	381422

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# **Definitions/Glossary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

**Quality Control** 

Relative error ratio

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 440-172844-1

#### **Qualifiers**

#### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### **Glossary**

QC

RL

RER

RPD

TEF TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit

# **Certification Summary**

Client: Geo-Logic Associates

Project/Site: Republic Sunshine Canyon

TestAmerica Job ID: 440-172844-1

#### **Laboratory: TestAmerica Irvine**

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17 *
Hawaii	State Program	9	N/A	01-29-17 *
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-17 *
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

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 $<sup>\</sup>ensuremath{^{\star}}$  Certification renewal pending - certification considered valid.

TestAmerica Irvine

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TestAmerica Laboratories. Inc.

92614 .9.261.1822 Fax \$ 0 Les X Regulatory Program:	一米Regulatory Progra	m: Dw NPDES	S RCRA Other:	THE LEADER IN ENVIRONMENTAL TESTING  TestAmerica Laboratories, Inc.  TAL-8210 (0713)
Client Fontact	Project Manager:	12/am	Site Contact: M. Boton Date: 01-1	COC NO:
dame: G. C. T. Cool I.	Tel/Fax: KSをいる	1136	Lab Contact: 🔑 ,	A cocs
115 W.B.	Turn	Iround Time		Sambler: PC ハー
State/Zip.今. G. State/	CALENDAR DAYS	WORKING DAYS	2	For Lab Use Only.
154-35	TAT if different from Below	wole		Walk-in Client:
300 - 150	2 weeks	<b>s</b>	(N)	Lab Sampling:
and and the	1 week			Job / SDG No.:
P O #	1 day			
		Sample Type	M mid	
Sample Identification	Sample Sample (C. Date G.	(C=Comp, # of G=Grab) Matrix Cont.		Sample Specific Notes:
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				<b>b</b> x
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	; 5=NaOH; 6= Other			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Plea	Please List any EPA Waste Codes for the sample in the	les for the sample in th	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	mples are retained longer than 1 month)
Non-Hazard Flammable Skin Irritant	Poison B	Unknown	Return to Client	Archive for Months
ctions/QC F			-	دح
			7:7	4
Custody Seals Intact: Yes No	Custody Seal No.:	,	Cooler Temp. (°C): Obs'd:	r'd:
Religioushed by:	Company:	Live FT/64	45 Company:	1 1312
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Relinquished by:	Company:	Date/Time:	Reference Copyright D. Copyright	SSS TIONS TO
		-	14/1/14/ Y	

# **Login Sample Receipt Checklist**

Client: Geo-Logic Associates Job Number: 440-172844-1

Login Number: 172844 List Source: TestAmerica Irvine

List Number: 1

Creator: Garcia, Veronica G

Creator. Garcia, veronica G		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
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	

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# APPENDIX C MONTHLY VADOSE ZONE GAS MONITORING REPORTS





NEXT MONTH 8-/6-/6

# SUNSHINE CANYON LANDFILL - CITY PERIMETER PROBE MONITORING DATA

TECHNICI DATE: 7	1AN: 190h -19-16	Prt )	ohns			ER CO		S: Sunn	1401en- 16500530
PROBE NUMBER	TIME	PPM CH.	%VOL CH.	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	COMMENTS
213									
A - 13	1210		0,0	4,10	7,6	16.8	80,6	2	
B - 29	1212		000	t,08	0,0	19,6	80,4	2	
C - 45	1214		0,0	7,55	0,0	19,9	80,0	3	
D - 61	1217		0,0	75	0,0	19,8	80,2	4	
E - 77	1221		0.0	-15148	0,0	199	8011	4	
214							- 1000000000000000000000000000000000000		
A - 13	1200		0,0	-,19	1,2	17,0	81,7	2	
B - 30	1202		0.0	-1.65	0,2	19,0	80,8	2	
C - 48	1804		0.0	-15,96	0,/	17.0	80,3	3	
215								010 (00-0	
A - 13	1142		0,0	112	518	7,6	8616	2	
B - 30	1144		0.0	1,16	6.9	917	83.4	2	And the second section of the second
C - 47	1146		0.0	1.15	011	18,8	811		1
D - 64	1149		0.0	1110	0,2	19,4	80,4	4	
E - 81	(153		0.0	1,18	4,7	9,5	8518	.1	
216									
A - 14	ills		0,0	+,10	0.0	19.7	80,3	2	
B - 43	1127		0,0	1.12	0.0	19.5	8012	2 3	
C - 62	1129		0.0	1114	0.0	1917	80,3		
D - 86	1132		0.0	1,15	0.0	19,7	80,3	4	
E-110	1136		0,0	110	0.0	14,7	80,3	4	
217	10000					10	- A-		
A - 13	1115		0,0	1,07	3.3	16,4	503	2	
B - 30	1117		0.0	F192	2/	17.5	80,3	2	
218								· · · · · · · · · · · · · · · · · · ·	Removed Do
7.5							2111 - 10,0100	2	to Constrai

RES SIGNATURE:_	n	2
LEA SIGNATURE:		



TECHNICIAN: Riber + Johns DATE: 7-19-16					TEMPERATURE: 800 WEATHER CONDITIONS: Sunny &Clear INST & SERIAL #: Gen 5000 / 9500530						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	COMMENTS		
219											
A - 13	1055		0.0	1,16	0,7	18.8		2			
B - 64	1057		0,0	1,18	0,0	1911	80,01	2			
C - 115	1059		0,0	1.16	0.0	19,4	80,6	3			
D - 166	1102		00	1.17	0,7		81,5	4			
E - 217	1106		010	1,14	0,0	19,5	80,5	4			
220											
A - 14	1020		0,0	+.13	1,3	18.3	80,4	2			
B - 40	1022		0.0	4,11	0,8	18.7	80,5	2			
C - 87	1024		0.0	1,14	0,1	19,4	80,5	3			
D - 124	1027		0,0	1,16	0,1	19.3	80,6	4			
E - 158	1031		0,0	11/2	0,1	19,3	808	4			
220B											
A - 14	1000		0.0	1 +,30	7:1	17.3	80.6	2			
B - 38	1000		0.0	16,13	0.1	19.8	801	2			
C - 62	1004		0.0	+0,07		16.2	81.5	3			
D - 86	1007		0,0	410	211	171	80.8	4			
E - 110	1013		0,0	711	1,7	16.9	81,3	4	The state of the s		
221											
A - 13	0920		0,0	1,06	0,6	19.6	179.5	2			
B - 56	0922		0,0	110	0,5	19,0	80,6	2			
C - 99	0924		0.0	1,08		19,9	7918	- 3			
D - 142	10927		0.0	1,06	0.0	20,3	79,7	4			
E - 185	0931		0.0	1,27		2013	77.7	4	3-0-10-0-10-0-10-0-10-0-10-0-10-0-10-0-		
222											
A - 13	0940		0.0	11,09	0.8	19.3	80,0	2			
B - 54.8	0942	W Voye (Creen)	0.0	till	0,0	70,0	(20.0)	2			
C - 96.5	0944		00	115	0,4	19,5	80,1	3			
D - 138.3	00/47		0.0	1.10	0.7	19,5	80,0	1			
E - 180	06/5/		100	1,08		120,0	79,9	1	1		

RES SIGNATURE: W.Z.



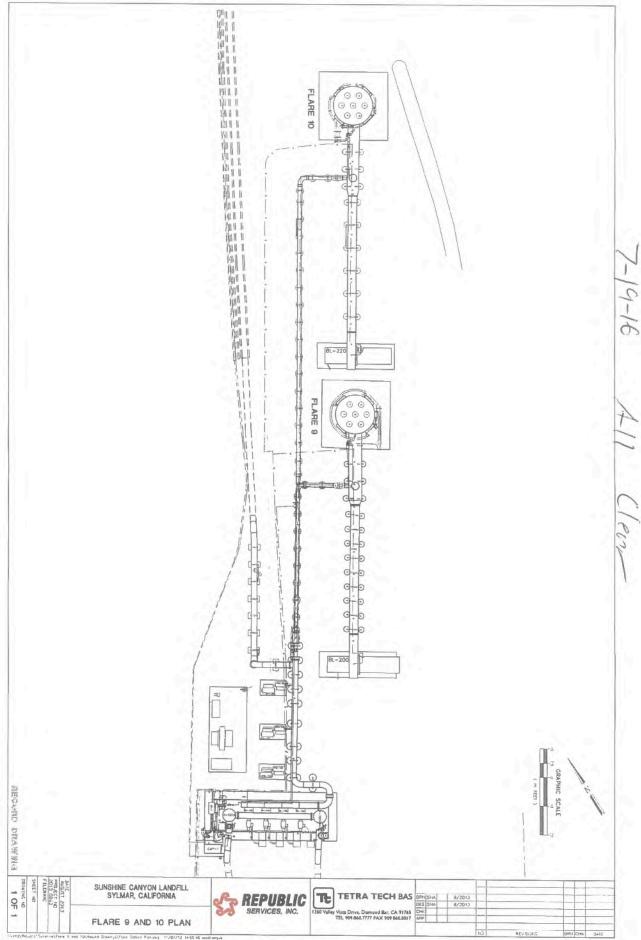
TECHNICIA DATE: >	-19-16	ter J	chus	N		RCON	DITIONS	s: Synn-	/ G500530
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
223									
A - 13	0900	1 20	0,0	4,09	5,3	5,5	89,2	2	
B - 37.5	0902		00	1.08	6.4	3,8	89,8	- 2	
C - 62	0904		0.0	1,12	3,9	11,3	84,8	3	
D - 86.5	0407		0,0	1,09	711	150	62.9	4	
E - 111	0911		0.0	1.10	3-6	11.1	85,3	4	
224				***************************************	-1		-1/-		
A - 13	0830		0,0	1103	0.0	20,3	796	2	
B - 67.5	0832		0.0	TO2	0,0		79.6	Links and the second se	
C - 122	10834		0.0	1,05	0.0	20,3	79.6	3	
D - 177.5	0837		0,0	-13,08		2013	796	4	3.17-4.2-44.45.00-00-00-00-00-00-00-00-00-00-00-00-00-
E - 232	0841		0.0	-9.97	0.0	20,3	77.6	4	
225									
A - 13	0810		0.0	-135	0,5	19,5	80,0	2	
B - 72	0812		0.0	~5,03	0,0	70,1	79.9	2	
C - 131	0814		0.0	-10,52	0,2	19.8	79,9	3	
D - 190	0817		0.0	10,64	0,0	20,1	198	4	
E - 244	084		0,0	-9,40	0,0	20,2		1	
226									3)11
A - 13	0710		0,0	1,02	0.1		80,0	2	
B - 64	0712		0.0	7193	011		79,9	2	
C - 114	0714		0,0	1-11.34	0.1	2011	79,8	3	
D - 164	0717		0,0	42,17		20,2	19,7	4	
E - 208	0721		0,0	-12,78		20,2	79,6	4	
227				11-7-13-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-					
A - 13	0730		0,0	0,02		120,3		2 2	
B - 48.7	0732		0.0	-162	0,1	20,2	29,2	-	
C - 84.4	0754		0,0	-,58		20,3	71,6	, 3	
D-114	0737		0.0	7,80	011	20,3		+	
E - 115.7	0741	10-	0.0	7,56	0,2	19,9	199	4	

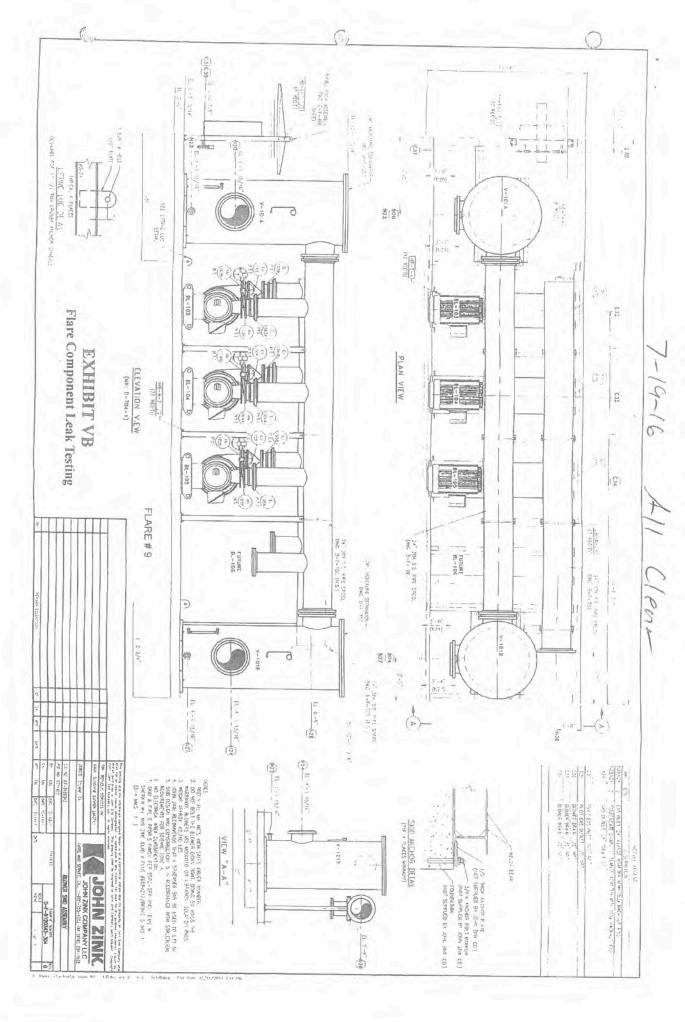
RES SIGNATURE: 12



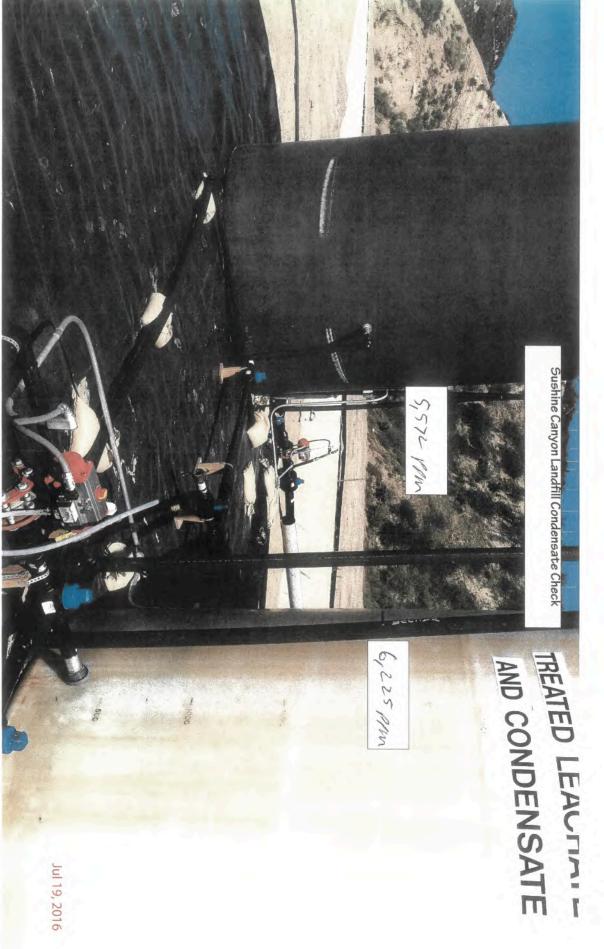
TECHNICIA DATE: 7-		ert)	Shir	V		R CON	DITIONS		790101-
PROBE NUMBER	TIME	PPM CH <sub>1</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2		%BAL	PURGE TIME	COMMENTS
228									
A - 13	0750		0,0	t.//	0.1	20,0	80,0	2	
B - 63	0752		0,0	767	01/	19,7	80,1	2	
C - 113	0754		0,0	1-147	0,0	20,00	79,9	3	
D - 163	0757		0,0	754	0,2	199	79.9	4	
E - 213	0801		0.0	-0,49	0,1	20,0	79,9	-4	
229									Medical Court III Medical Company Com-
A - 13	0650	144 : 1	0,0	-1,45	0.8	18,9	80,3	2	
B - 48.7	0652	1	0.0	-11.37	01	20,3	7916	2	
C - 84.4	0654		0,0	-14,96	0,1	70, 2	797	3	
D - 114	0657		0.0	-16,56	0.1	20,2	79,7	4	
E - 155.7	0701		0.0	-23,0	01	201	79.8	.1	
230									Removed Dis
A - 16		142.1						2	to construction
B - 33								2	
C - 50							į	3	
231				10000					Remored Das
A - 13		İ				1		2	to Construction
B - 26								2	
C - 39								2 3	
D - 51				Control of the Contro				4	A STATE OF THE STA
E - 66	nor mes							4	
241									
A - 13	1227	1	0,0	-15,58	0,0	19.9	800	2	
B - 28	1229		0,0	-22,65		70,0		2	
C - 47	1231		0,0	2.81	0,0	20,0		3	
D - 64	1234		0,0	-27,91		70,0		4	200000
E - 85	1237		0.0	-27,90	20,0	20,0		4	

RES SIGNATURE: \_\_\_\_\_\_\_





7-19-16 AM Clear



Jul 19, 2016



#### L.T.F. MONITORING

TECHNICIAN: DATE: 7-/ BACKGROUNI	Robert ) 9-16 D: Z.7	chns	TEMPERATUR WEATHER CO INST & SERIAL	LE: 61° NDITIONS: 54 L#: TVA 1000	013/1030044-322
	TIME	(PAIN) CHY			COMMENTS
GAC #1	0640	3,2 ppin			
		4 (			
	1				
*	2	The East of the Control of the Contr			

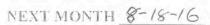
RES SIGNATURE:



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
7-19-16	TV 1- 1000B	1030945 322	500 ppm 444
7-19-16	Gem Suos	6500530	15 90 CHy

SIGNATURE:





TECHNIC DATE: 7	IAN: Rol 2-21-16	next.	Juhrs		WEATI			S: 54n0	17 Allen-
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH,	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS
202									Removed
A - 10								2	Puz tu
B - 25								2	Construction
C - 38								3	12,27,00
203							Sullamos		
A - 10	0630		0,0	1,05	1,7	19,1	79,2	2	1000
B - 25	0652		0,0	-,01	7,6	18,2	79,2	2	
C - 40	0634		0.0	-,01	2,8	1717	79,5	3	1000
206		DAMA COST (Section 1							
A - 10	0655		0:0	1,07	9.2	11,6	79.1	2	
B-25	10657		0,0	1,14	9.2	11,6	79.1 78.5	2 2	
C - 38	0659		0.0	1,06	16,9	7,5	75.6	3	
207									
A - 10	0710		0,0	750	011		79,8	2	
B - 25	0712		0,0	7,49	0,3	19.1		2	
C-40	0714		0.0	1,09	011	19,8	8011	3	100
208									- The second sec
A = 9.1	0640		0.0	t0,02			78,9	2	
B - 25	0642		0.0	4,27	8.9		78,7	2 2 3	
C - 40	0644		0,0	1,04	9,0	11.8	79.3	3	
210					alaisenas amananana	V New III			
A - 10	0730		0,0	-31		20,3	79.8	2	
B - 25	0732		0.0	-,31	0.1	20,3	79.7	$\frac{2}{3}$	
C - 39	0734		0.0	1,02	011	20,1	79,8	3	

RES SIGNATURE:\_



TECHNICI DATE: 7	AN: R.1.	ocat )	chu S		TEMPE WEATH INST &	ER CO	E: 790 NDITION	S: 5444	y d (1 en-
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	
242									
C - 42	0830	1	0.0	1,09	4.7	1111	8411	3	
D = 60	0833		0,0	117		12,3	83.4	4	innum
E - 78	0876		6.0	1,14	7,9	6.4	85.7	4	
243									
A - 11	0950		10,0	1,07	4.7	11./	84,3	2 2	
B - 20	0952		0.0	10	4,4	11,1	84,5		
C - 33	0954		0,0	1,08	2,9	13,4	83.7	3	
244							7011		1
A - 11	0917		0,0	4,10	0.1	20,2	798	2 2	
B - 21	0019		0.0	1.14	18,3	7,6	79,2	3	
C - 36	0421		0.0	1,10	5,9	154	19,0	3	
245									
A - 11	1005		00	10,01	128	4.9	82,3	2	
B - 20	1007		0.0	1,03	7.4	12,8	79,5	2	3 (100)
C - 35	1009		000	50,4	6,0	14,0	80,0	3	
D - 50	1/012		0.0	01	9.7	10,0	80.4	4	
E - 64	1016		0.0	7128	0,/	18,6	81,2	204	
246			1					d	Removed
Λ - 9								2	bue to
B - 16							1000	2	Con Struction
205R									
A - 11	10927		0,0	1,14	12,5	9,2	78.6	2	
B + 20	0929		0,2	1.01	29.9	0.4	69,4	2 3	
C - 33	0431		1.2	1,08	3,9,4	0,4	591		
D - 48	0934		1,9	7,04	77,2	0,0	53,9	4	
E - 62	0437	2	1,9	7.26	44.8	0,0	53,3	4	

RES SIGNATURE:		
	M	
LEA SIGNATURE:		



TECHNICI DATE: 7		TEMPERATURE: 750 WEATHER CONDITIONS: Sunny (11964) INST & SERIAL #: Gen Soup Grosso							
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS
239				ne =====					4-11/2014
A - 11	0745		0,0	1,06	6,9	14,2	78,9	2	1
13 - 20	0747		0.0	1,05	011	20,2	79.6	2	
C - 35	0749		0.0	t05	0.1	70,5	77,5	3	
D - 50	0752		0.0	+,10	0.1	20,5	79.4	4	
E - 64	0756		0.0	1,03	011	20,5	79.4	4	1 1000
240	0 i mo ( m = 1v -						-		1
A -11	0800		0,0	1,08	17.5	4.7		2	
B - 20	0402		0,0	14,10	0,4	199	79.7	2	
C - 33	0604		10.0	1,07	Ori	20,4		3	
D - 49	0806		0,0	1,05	011	20,3		4	
E - 61	0811		0.5	-157	01/	20,1	7914	4	
	The second second								and that yet yet and the second secon
									Andrew Comment

RES SIGNATURE:



TECHNICIA DATE: 7-7	IN: Rob 21-16	ert lu	ohns	\	VEATHI	ER CON	: 750 DITION #: Gr	S: Sun	ny Aclena
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2		%BAL	PURGE TIME	
VADOSE ZONE									
203D	1017		0,0	-5,92	0,0	19,4	80,6	2	
204D	0720		010	-2,54	0,3	70,0	7917	2	* 1 mm
211D	1035		0.0	-3,48	0,0	19.4	80,5	2	
PROBE NUMBER	TIME	PPM CH <sub>J</sub>	%VOL CH <sub>4</sub>	P (Manual (1) 11 (10 11 11 11 11 11 11 11 11 11 11 11 11 1					COMMENTS
THE TRANSPORT OF THE PROPERTY									
					***************************************				
									40
- 1 - 11 - Company on the contract of the cont									a deliminate a deliminate del management del manage
- 1 - 100									

RES SIGNATURE: BURNELLEA SIGNATURE: MORELLEA S



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	TINU	SERIAL#	CAL GAS
7-21-16	Gren 5000	4500510	15-96 CH4
season strong the feeting control			

SIGNATURE: 12 Z



### SUNSHINE CANYON BUILDING METER CALIBRATION CONTINUOUS BUILDING MONITORING

LOCATION	SERIAL NUMBER	DATE	CALIBRATION GAS	NOTES
LTP Trailer	Sierra 2001 0305501	7-21-16	1.0% by vol. CH <sub>4</sub>	
LEA Office	Sierra 2001 011853	7-21-16	1.0% by vol. CH <sub>4</sub>	
Scale House	Sierra 2001 011813	7-21-16	1.0% by vol. CH <sub>4</sub>	1
Training Room	Sierra 2001 043130490M	7-21-16	1.0% by vol. CH <sub>4</sub>	
Scale House	Sierra 2001 043130409	7-21-16	1.0% by vol. CH <sub>4</sub>	
Men's Locker Room	Sierra 2001 043130409	7-21-16	1.0% by vol. CH <sub>4</sub>	L
New Office North Hall	Sierra 2001 043130409	74-16	1.0% by vol. CH <sub>4</sub>	
New Office South Hall	Sierra 2001 043130409	7-27-16	1.0% by vol. CH <sub>4</sub>	

Technician:	



### NEXT MONTH 9-20-16

### SUNSHINE CANYON LANDFILL – CITY PERIMETER PROBE MONITORING DATA

TECHNICI DATE: 8	AN: Ruk -16-16	2 827	Juhns		WEATH	ER CON	E: 750 NDITIONS	5 5 4 m	ny actem
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH,	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS
213						7.6	63.3		
A - 13	1155		0,0	1,04	3,4	15,4	81,2	2	· consequent
B - 29	1157		00	4,04	0,0		80,4	3	
C - 45	1159		0.0	158	0.0	196	8013	4	
D - 61 E - 77	1202		0.0	-16.93	0,0	19,5	80,5	4	
214	111.00		A .	+05	1,6	160	81.6	2	
A - 13 B - 30	1145		0.0	-1,67	0,8	100	81.0	2	
C - 48	1147		0,0	-15,80	0,0	18:0	81,2	3	
215									
A - 13	1127		0,0	+104	6:5	565	88.0	2	
B - 30	1129		0.0	1 109	0,4	(71	82,5	2	
C - 47	1131		0,0	11,04	0,6	19,5	80,4	3	
D - 64	1134		0.0	1,04	0.7	197	806	4	
E-81	1138		0,0	1.10	4.9	9,0	86,1	4	
216						60.0			
A - 14	1110		0.0	1,05		19,6	80,3	2	
B - 43	1112		0.0	1,08	0,1	19.5	80,4	2 3	INAMES - CONTRACTOR - CONTRACTO
C - 62	1114		0.0	1,04	0,0	19,6	60/3	4	
D - 86	1117		0.0	1,09	000	19,4	80,5	4	
E - 110	1/21		0,0	11/2	011	1714	2017		1
217				6.02	7.2	1100	(A.)	2	
A - 13	1100		0.0	1,03	the same transmission of the same and	16/8	600	- S - LANCE TO THE PROPERTY OF THE PARTY OF	
B - 30	1102		0.0	1.12	2.2	1/15	80,4		
218			1 1						Removed Mue
7.5								2	to Constructu

RES SIGNATURE:		
	All.	
LEA SIGNATURE:	ATT-	



TECHNIC DATE: 8	Duhns		WEATHER CONDITIONS: Sungallar- INST & SERIAL #: Gen 500/ 950530						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	'COMMENTS
219									-700 police and -200 police -2
A - 13	1040		0,0	107	0,5	18.6	8018	2	
B - 64	1042	A44001110001110111011	0.0	+112	011		80,5	2	
C - 115	1044		0.0	11/1	80	19,6	80,4	3	
D - 166	1047		0,0	1,07			80,3	4	
E - 217	1057		8,0	1.06	0,0	1917	80.3	4	
220									The second of th
A - 14	1020		00	1,05	1,2	18.1	80,8	2	
B - 40	1022	NO.	0,0	1,06	0,0	19,5	80,6	2	
C - 87	1014		0,0	4,07	0,0	19,5	80,5	3	
D - 124	1027		0,0	1,10	010	19,4	80,6	4	
E - 158	1031		0,0	4.04	0.0	19,5	80,4	-1	
220B						,	,		
A - 14	0457		0,0	1108	1,6	17,3	80,6	2	
B - 38	0959		0.0	1,03	0.0	19,3	80,6	2	
C - 62	1001		0.0	20:	618	16,6	81.7	3	
D - 86	1004		0,0	7.07	2,2	16,2	8/13	4	
E - 110	1008		00	1,06	0,4	1614	81,1	-4	
221									
A = 13	0920		0,0	+101	0,7	191	80,3	2	
B - 56	0912		0,0	1,02	0.3	19,2	80,5	2 2 3	
C - 99	0924		0.0	717	0,4	1915	8012		
D - 142	0427		0.0	-108	0,0	1.05		4	
E - 185	0931		0.0	(0 _	00	201	79.8	4	
222									
A - 13	0940		0.0	105	2,2		80,3	2	
B - 54.8	0942		0:0	1,04	0,0	20.1	79.9	2	2,22,000
C - 96.5	0944		0,0	1,08	0.3	19,7	80,0	3	1
D - 138.3	0947		0.0	1,04	0,6	19,2	80,2	4	
E - 180	0951		1010	101	0,0	20,0	80,0	-1	

RESSIGNATURE: 1/2



TECHNICIA DATE: 8-	10 - 16	ext JU	hus	11	EATHE	ATURE R CON ERIAL	DITIONS	5000 p	8C186-
PROBE NUMBER	TIME	PPM CH.	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
223				onnua a					
A - 13	0900		0,0	6,04	5.7	4,5	89.7	2	
B - 37.5	0902		0.0	4.12	4.6	8,0	87,4	2	
C - 62	0904		0,0	4.11	1.9	15,2	8,58	3	
D - 86.5	090>		0,0	107	116	16,2	82.1	.‡	
E-111	0911		0,0	1,07	3,3		84,9	4	
224									
A - 13	0630		0,0	1111	0,0	1,05	79,8	$\frac{2}{2}$	
B - 67.5	0832		0,0	-102	0.0	7011	79,8		
C - 122	0834		0,0	704	0,0	2011	79.8	3	
D - 177.5	0831		0.0	-13.12	0.0	20,1	79,8	1	
E - 232	0841	40-	0,0	9,31	0,0	20,1	79.8	- 4	
225	0	- UIII (m. 1-111-			4	16.3			And the second s
A - 13	0815		0,0	715	0,6	19,2		2 2	
B - 72	0817		0,0	-6,89	0,1	20,0	39.9	3	
C - 131	0819		0,0	72,23	0,0	20,0	17.9	1	
D - 190	0822		0.0	-11,42	0,0	20,0	79,9	A control of the cont	1
E - 244	0826		0.0	70.19	0,0	1,05	79,9	1	
226			0 10		0 (	197	80,3	2	
A - 13	0718		0,0	1/01	01	166	80,3	2	
B - 64	0720		0.0	-13.69	1	196	80,3	3	
C-114	0722		0,0	-11.96		1917	50,2	_	
D - 164	0725		0.0	-13,16	0,1	1967	80,2	-	
E - 208	0729		0.0	-12,01	011	10/0/	30/2		4187 × 18
227	0710		100	-105	1.3	15.4	870	+ 2	(
A - 13	0735		0.0		5,3	2,8	87.8	2	
B - 48.7	0737		0,0	110	1312	170	- 266	7 3	-
C - 84,4	0759		0,0	7.16	3,6	12,5	82,9		
D-114	0743		0,0	1-101	000	14	82,7	7 4	
E - 115.7	0746		010	170/	101/	101/	0-11		

RESSIGNATURE: Bu



TECHNICIA DATE: 8-	N: 16-16	72 - )	ulins					n 5000	n-1 8C114-
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH.	PRES (+/-)	%CO2	%O2	%BAL	PURGE '	COMMENTS
228						10.4			
A - 13	0800		0,0	-,03	011		80,2	2	
B - 63	0802		0.0	-,28	117	15,8	62.6	2	
C - 113	0804		0.0	10	011	1912	80,2	3	
D - 163	0807		0.0	-1/2	0.3	1914	6013	4	
E - 213	0811		0.0	-,24	0,2	19,6	80,2	4	
229				100	0.00	100	1.12	2	
A - 13	6700		0,0	-1.99	0.8		39.6	2	
B - 48.7	0703		0.0	15,86	0.1	2013		3	
C - 84.4	0704		0.0	-17,41	Ort	70,2	790	4	
D - 114	0707	10.00	0.0	-19,17	0.1	20,0		4	
E - 155.7	07/1		0,0	-27,09	5 0,1	COIO	80,0		
230								2	Removed Dye
A - 16								2	to Constracts
B - 33				-		1		3	10 - 21 21 21 21 21 21 21 21 21 21 21 21 21
C - 50									
231								2	Removed Pie
A - 13						-		1 2	to Construnio
B - 26		-			-			3	1
C - 39				-	-		1	1 .	(AN) I COMMAND TO THE COMMAND THE COMMAND TO THE COMMAND THE COMMAND THE COMMAND THE COMMAND THE COMMAND THE COMMAND THE COMMAND THE COMMAND THE COMMAND THE
D - 51						+		1	
F - 66									
241	1711-		0.0	-15,50	00	19.6	80,4	2	
A - 13	1215		0.0		0,0	1916			
B - 28	1			7.09	0,0	19.6	80.4	3	
C - 47	1219		800	-28,78	000	196	- Carried States	-1	
D - 64 E - 85	1222		000		000	19.6			

RES SIGNATURE: 1500



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
8-16-16	Gem scoo	G500530	1540044
Application (12-10)			
		818	

SIGNATURE:



#### NEXT MONTH 9-22-16

### SUNSHINE CANYON – COUNTY PERIMETER PROBE MONITORING DATA

TECHNIC DATE: 8		heart.	Juhus		WEATHER CONDITIONS: 34nny & Clear INST & SERIAL #: Gen 500 / G500530						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS		
	and the second section of the section of t				EMIL II		P. (17)				
202					TO THE RESIDENCE OF THE PARTY O		wommer (American		Removad		
A - 10								2	Muc to		
B - 25				(4)*****(1)**				2 2	Con Structul		
C - 38				-				3			
203											
A - 10	0629		0.0	F105	1.6	19,2	79.2	2			
B - 25	0631		0.0	10	011	20,4	79.5	2			
C - 40	0633		0.0	t.01	1.4	19,3	79,3	3			
206								l I	0.000		
A - 10	0650		0.0	11,07	9,7	12,2	78,1	2 2			
B - 25	0652		0.0	4,01	12,3	9.9	77.8				
C - 38	0654		0,0	1,04	19,3	11,1	69.6	3			
207											
A - 10	0700		0.0	7,51	0,1	20,5	79,4	2			
B - 25	0702			-,43		17,1	81,8	3			
C-40	0704	·	0.0	1,02	01/	70,5	79.5	3			
208					0.0						
A - 9.1	0640		0.0	14.06	3,0	18,3	78,7	2			
B - 25	0643		0.0	1,02	8.9	1217	78.4	3			
C - 40	0645		0,0	103	9,2	11.8	78,9	3			
210					-	-		E CHICAGO MINING			
A - 10	0715		0.0	-137	0,1	20,5	79,4	2			
B - 25	0717		0,0		011	12015	7914	2			
C - 39	0719		0.0	37	011	20,4	79,5	3			

RES SIGNATURE: 1984



TECHNICI DATE:			Juhns		TEMPE WEATH INST &	ER CO	NDITION		4 4 Clehr
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>1</sub>	PRES (+/-)	% CO2	%iO2	%BAL	PURGE TIME (min)	
			-					-	
242			1		1				
C - 42	0600		0,0	1105	41	13,5	82,4	3	
D - 60	CSUL		0,0	1,05	6,5	8.2		4	
E - 78	0804	apage (1)	010	1,04	7,7	7.1	85,2	4	
243									
A - 11	0900		000	404	4.3	15,0	80,7	2	
B - 20	0900		0.0	-,01	4,8	11,9	83,3	2	
C - 33	0905		0.0	1./3	3.6	14,3	2128	3	
244									
A - 11	0810		0,0	1,06	9,1	11.8	79.1	2	
B - 21	0612		0.0	tiol	11,6	9.9	1912	2	
C - 36	. 0814		0.0	1,05	11,6	11,5	77,0	3	Landing of the communication o
245	e r				- III-IIII				J
A-11	0915		0,0	1112	8,0	12,0	80,1	2	
B = 20	0917		0,0	14,15	6.9	14,4	78,7	3	
C - 35	0919		0,0	1115	7.2	13,4	19,0		
D - 50	10922		0,0	1,06	5,4	14.9	75,7	4	100 mars of the contract of th
E - 64	0926		0,0	7,13	011	19,8	2011	4	
246		1			1				Removed Due
A - 9								2	to Construction
B - 16								2	
205R								1	
A - 11	0827		0,0	1108	13,0	9,1	77,9	2	
B - 20	0829		0.3	1,03	31,4	0,2	168,2	_ 2	
C - 33	0831			1,06	31,4	8.C	158,5	Section and street enterior ( ) designs	
D - 48	0835		2,1	1,18	45,5	0,0	52,6	4	
E - 62	0830		1,9	+,10	44.4	0,0	53,7	4	1

RES SIGNATURE: STATE LEA SIGNATURE:



TECHNIC DATE: {			Julius		TEMPERATURE: 61° WEATHER CONDITIONS: 5 4nn + 4Llen- INST & SERIAL #: Gem 5000 / G500530					
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH.	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	CÓMMENTS	
239		,								
A-11	0727		0,0	1,01	4,6	16,9	78,4	2		
B - 20	0729		0.0	4,05	011	20,7		2		
C - 35	0731		0.0	.0	0.1	2018		3		
D - 50	0754		0.0	1,05	0,1	20,7		4		
E - 64	0738		0,0	1.04	011	2018	79,1			
240						-				
A -11	10742		00	50,00	14.4	8,3	76,9	7		
B ~ 20	0744		0.0	14.07	5,0	70,6	79.2	2		
C - 33	0746		0,0	1,08		2018	79.1	3		
D - 49	0749		0.0	-,40	011	7019	A CONTRACTOR OF THE PARTY OF TH	4		
E - 61	0754		0.9	1,04	011	2017	78,3	4		
								14002-1400	***************************************	
				1						
- (A-1)	1						j			

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TECHNICIA DATE: &		itut )	chas	V	VEATHE	R CON	16 0 40 DITION!	S: Shuh	-1 4Klen-
PROBE NUMBER	TIME	PPM CH <sub>3</sub>	%VOL CH4		%CO2		%BAL.	PURGE TIME	COMMENTS
VADOSE ZONE							1000		
203D	0935		0,0	-6,75	0,/	70,0	79,9	2	
2041)	0710		0,0	-2,36	0,4	20,2	79,4	2	
211D	0945		0:0	-3,14	0.1	70,0	79.9	2	
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>						COMMENTS
	- 1 man				1111 - 11		1		1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1
Regress (Action Control of Contro									
									AND THE SECOND STATE OF TH

RES SIGNATURE: 1900 C. LEA SIGNATURE:



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
8-18-16	Gen Suco	9500530	15% CIty
ALLA CAMBRIDA CONTRACTOR OF THE CONTRACTOR OF TH			

SIGNATURE:



NEXT MONTH 10-18-16

#### SUNSHINE CANYON LANDFILL – CITY PERIMETER PROBE MONITORING DATA

TECHNICI DATE:		WEATHER CONDITIONS: Sonn 79 Clar INST & SERIAL #: Gran 5000/ G500530							
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS
213									
A - 13	1218		010	1,08	2,0	17.5	80,6	2	
B - 29	1220		0.0	1,05	0,1	19,2	80,8	2	
C - 45	1222		0.0	67	0,0	19,6	80,4	3	
D - 61	1215		0,0	-65	0,0	196	80,4	4	
E - 77	1229		0,0	-1764	0,00	19,6	80,3	4	
214		EE				December			
A - 13	1205		0,0	315	1,6	16.8	81,6	2	
B - 30	1207		0,0	-460	0,0	16.8	81,2	2	
C - 48	1209		0.0	-14.70	0,0	19,3	81,6	3	
215									
A - 13	1150		0.0	1,08	6.7	5.1	8812	2	
B - 30	1152		0,0	102	717	8,4	83.8	2	
C - 47	1154		0.0	1,10	0,2	15,6	84,2	3	
D - 64	1157		0,0	4,07	0,2	19,0		4	
E - 81	1207		0.0	1,15	4.8	9,8	85,3	4	
216		X							
A - 14	1130	Viene.	0,0	1,07	0,0	19,8	80,2	2	
B - 43	1132		0,0	1,07	0,0	19.9	80.1	2	
C - 62	1134		0.0	1.06	0,0	19.9	801	3	NET -
D - 86	1/37		0.0	1.07	0.0	19.8	8012	4	
E - 110	1/41		0,0	+.11	0,0	19.6	80.3	4	
217									
A - 13	1120		0,0	1,09	4.6	15, 2	80,2	2	G-
B - 30	1122		0.0	605	20		801	2	
218				2-2-8					Removed Pri
7.5		100	1					2	to Construction

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LEA SIGNATURE:	



TECHNIC DATE: 9			chns		WEATHER CONDITIONS: Sunny & Cleir INST & SERIAL #: (Jem 5000/ G500530						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	COMMENTS		
219				100000							
A - 13	1100	7 10 70	0.0	1,14	0,2	1914	80,5	2			
B - 64	1102		0,0	1,08	4,5	917	85.8	2			
C - 115	1/04	I Land	0,0	1,10	011	18:9	81,1	3			
D - 166	1107		00	1,09	0,2	1913	80,6	4			
E - 217	1/2/		0.0	107	013	19,1	80,6	4			
220	CEAL						7 = 1	) S = 5/			
A - 14	1030		0.0	1,09	10	16,4	80,6	2			
B - 40	1032	. = =	0.0	4,08	0,3	19,2	80,5	2			
C - 87	1034		0.0	1,17	1,2	1916	80,3	3			
D - 124	1037		0.0	11,14	1/2	17,7	80,7	4	IL .		
E - 158	1041		0.0	1,14	0.1	19,2	80,7	4			
220B			NAME OF THE PERSON OF THE PERS	0,1,1	N. A. I						
A - 14	1000		0.0	1,07	1.1	18.6	80,4	2	1		
B - 38	1012		0.0	1,27	0.1	19.9		2			
C - 62	1014		0,0	1,07	3.6	14,3	82,1	3			
D - 86	1017		0,0	1,14	7,6	15.7	8/17	4			
E - 110	1021		0.0	4,05	1.9	15,9	82,2	4			
221											
A - 13	0950	122-	10.0	1,02	1,0	18.8		2			
B - 56	0952		10,0	1,07	0./	19,9	80,0	2			
C-99	0954		00	-,05	7,3	49	87.8	3			
D - 142	0457	W	0.0	4.09	00	70.0	80,0	4			
E - 185	1001	Marie 1	0.0	105	011	20,0	79,9	4			
222		A		1573	7.55						
A - 13	1010		0.0	105	2.0	17.8		2			
B - 54.8	1012		0.0	1,05	0.0	1917	80,3	2			
C - 96.5	1014		0,0	1,08	013	19,6	80,1	3			
D - 138.3	1017	144	0:0	1,07	011	20,0	79.9	4			
E - 180	1501		000	102	00	1,05		4			

RES SIGNATURE:_	VIVI
LEA SIGNATURE:_	



DATE: 9~				1	NST & S	ERIAL	#: 4		1 ( Clenz 0/ 650530
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME	COMMENTS
223							18.57		
A - 13	0920		0,0	1,03	5.4	5,0	8917	2	
B - 37.5	0922		0.0	1,03	6.8	3,20	70,0	2	Y-LET
C - 62	0425		0.0	1,20	1,8	15.4	828	3	
D - 86.5	0928		0,0	1,10	0,4	18.4	81.7	4	
E - 111	0942		0.0	1.10	10	18,0	81,2	4	
224				5 - 1	T man				
A - 13	0800		0.0	+107	0,5	19,3	80,2	2	
B - 67.5	0902		0.0	1,12	0,0	19,8	8012	2	
C - 122	0904		000	1,07	0,0	19.9	801	3	
D - 177.5	1907		0,0	-13.03	0,0	119.9	8011	4	
E - 232	091	Total	0.0	-9,52		19,9	80,0	4	
225									
A - 13	0830		00	7,05	0,4	18.8	80.8	2	
B - 72	0832		00	-6,73	018	19.1	80,7	2	
C - 131	0834	le V	0.0	-1199	017	166	80,7	3	Name of the
D - 190	0837		0,0	-11.29	0.0	19,5	80,4	4	
E - 244	0841		0,0	-10.08		19,6	80,3	4	
226	T. H								
A - 13	6735		0,0	1,08	01/	19,5	80,1	2	
B - 64	0737		0.0	4106	0.1	199	801	2	
C-114	0739		0,0	1,06	01	199	80.1	3	
D - 164	0742		0.0	14,79	011		80,0	4	
E - 208	0746		0.0	-12.80		19,9	60,0	4	
227									
A - 13	0750		0.0	1,04	0,7	19,2	8011	2	
B - 48.7	0752	4.3.	0,0	-134	0,2	196	80,1	2	E.S. Me.S
C - 84.4	0754		0.0	-132	0,8	16,8		3	
D - 114	0757		0,0	7,51	0,5	18,9	80,6	4	
E - 115.7	0801		0.0	-,31	0.1	18,9	81,0	4	

RES SIGNATURE:_	Much
LEA SIGNATURE:	



DATE: 9-	20-16		٧	I	NST & S	ERIAL	#: Gc	un succ	7401ear 5/4500530
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
228				print.			12.74-11		
A - 13	0810		0,0	1.38	01	18:8	87.1	2	
B - 63	0512		0,0	702	Oi>	17.4	81.9	2	
C - 113	0814		0.0	-,23	0,0	1818	8/1	3	
D - 163	0817		0.0	-0,38	0,3		8111	4	
E - 213	0621		0.0	49	0,3	16.7	81.0	4	
229		7533							
A - 13	0770	1244	0,0	1,01	0,1	201	79.8	2	
B - 48.7	0722		0.0	4,03	0,1	20,0	79.9	2	
C - 84.4	0724		0.0	1,06	011	199	80.0	3	) 5 E SI
D - 114	0727		0.0	1.03	0,1	199	80,1	4	
E - 155.7	0731		0.0	404	0,1	19.9	80,9	4	
230									Ramoved
A - 16					(I STATE	7.53	1/	2	Due to
B - 33				AL THE		H BI		2	Construction
C - 50				ME TE				3	
231				DE - T				12.2.1	Kemuzed Pins
A - 13	De in			A.C				2	to Construction
B - 26		12 2 2	C E	N.E.S.			le di	2	
C - 39			Tre S	1.53.5	1.24.3			3	
D - 51							NE S	4	
E - 66								4	
241	I T	107			1 = 1		172.74		F 2 2 2 2 1
A - 13	1235	11.00	0.0	-15,46		19,7	80,3	2	
B - 28	1237	1 =	0,0	-22,58	0,0	19.7	80,2	2	
C - 47	1238		0,0	-3,22	0,0	19,8	18012	3	
D - 64	1241	15	0.0	-28,03		19,8	80,2	4	
E - 85	1245		0.0	-27,23	0,0	1918	80,2	4	

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LEA SIGNATURE:		



#### GAS MONITORING EQUIPMENT CALIBRATION

UNIT	SERIAL#	CAL GAS
Gen: 5000	G18 80530	15 40 CH4

SIGNATURE:





TECHNICIAN: Robert Johns DATE: 9-22-16					WEATHER CONDITIONS: Obe- Cust INST & SERIAL #: Gran 5000/ Cosoo530					
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)		%O2	%BAL	PURGE TIME (min)	COMMENTS	
					*					
	-									
			-			***************************************			A Maria A Andrews	
202									Removed	
A - 10								2	Due to	
B - 25				1441	E-1()	**************************************		2	Constrution	
C - 38				4				2 3	CON STRUMENTS	
Aberra - ser										
203		i minuma i i i i i i i i i i i i i i i i i i i								
A-10	0640		0.0	1,01	1.4	1917	78.9	2		
B-25	0642			7.01	1,5	19,1	79,4	2 2		
C - 40	0644		0.0	1,05	2,0	19,1	79,4	3		
206										
A - 10	0700	4	0.0	1104	7,5	11.4	75:1	2 2		
B-25	0702		0,0	4,04	9,5	10.7	75:2			
C - 38	0704	<u> </u>	0.0	ial	1615	813	15,2	3		
207						-			-	
A - 10	5710	,	0,0	-,46	0.4	70.0	79.2	2		
B - 25			The Barrier of the Control of the Co	-000	13	107	80.7	2		
C - 40	0712	21 10-10-10	0,0	+105	01	701	82.7	3		
L 70	0/17		010	1103	011	C-16	1 713		***************************************	
208		1							- I was a constant of the cons	
A = 9.1	0650		0.0	1,08	3.5	17:9	78,7	2	· · · · · · · · · · · · · · · · · · ·	
B-25	0652		0.0	D	11.8	10,5	77.8	2 3	Front Marchael Co. Co. Co. Section Co. Helicana.	
C - 40	0654		0.0		140	7,3	77.8	3		
210			100-10-11		ei)-		10.0			
210	ML :		0.0	2 2 1	8 -		76 -	, ,		
A - 10	08/0	-	0.0	7,23	0,2	2015	79,3	2		
B - 25	0812	-	0.0	04	0,2	2016	SOU	3		
C - 39	0814		0.0	-,01	0,2	1 6014	79.4	1 2		

RES SIGNATURE:\_\_



	TECHNICIAN: Robert Johns DATE: 9-12-16					TEMPERATURE: 670 WEATHER CONDITIONS: Obtainst INST & SERIAL #: Gem 5000/4500530						
PROBE. NUMBER	TIME PPM CH.	%VOL CH <sub>4</sub>	PRES (+/-)	CO2	1% O2	%BAI.	PURGE TIME (min)	COMMENTS				
								e entremental de la constant de la c				
242			-		_							
C - 42	DGIA	0,0	+0.08	511	10,1	84.8	3					
D - 60	0910	0.0	1,07	6.1	9.7	84,2	4					
E - 78	0917	0.0	1,09	8.8	3,5	87.7	4	0 II II II II II II II II II II II II II				
243							onomonos-sumas-					
A - 11	0945	0,0	1,08	5,4		8319	2					
B - 20	0547	0,0	1.16	3,9	7.7	85,0	2					
C - 33	0950	0,0	1,20	3,9	12.8	83.3	3					
244						OLARI)						
A - 11	0935	0,0	* O	10,2	1/1/	78,7	2					
B - 21	0937	0,0	112	1014	144	19,0	3	-1)				
C - 36	0939	0,0	705	1,9	14.4	_///_						
245												
A - 11	1000	0,0	+,10	13.4	6.6	80,0	2					
B - 20	1000	0.0	4,06	24.3	1.4	7413	2					
C - 35	1004	0.0	1,03	6,3	13.4	78,6	3 4					
D - 50	1007	0.0	10	0.1	70,0	79,3	4					
E - 64	1011	0.0	-,24	0:1	0,0	79.8						
246					**************************************		4	Removed Pue				
A - 9							2	to Construction				
B - 16							2					
205R												
A - 11	0730	0.0	4109	17,2	10,1		2					
B - 20	0752	0.4	701	32,0		167,5	2	A				
C - 33	0734	1,2	-, 23	40.9	0.0	57.8	3					
D - 48	0.737	2,2	715	45.8		5210	4					
E - 62	0741	118	14	43,6	0,0	54,6	4					

RES SIGNATURE: My CC



TECHNICI DATE: <b>9</b>	shus		TEMPERATURE: 67° WEATHER CONDITIONS: Over cost INST & SERIAL #: Gen 5000 / 4500530						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2			PURGE TIME (min)	COMMENTS
239	Junure								And the last of th
A - 11	0830	1 2 2 2 E	0,0	1,03	5.3	16.1	7815	2	
B - 20	0832		0,0	4102	0,2	20,4	79,9	2	
C - 35	0634		0.0	1.08	011	70.7	7413	3	91 1001 10100 (+: 01300) (+: 0
D - 50	0837		0.0	+104	Oil	20,6	7912	4	
F 64	0541		0.0	401	0.1	20,7	79,2	4	
240			- 100	1					
A -11	0850		0,0	1.01	73.5	0.4	75,8	2	
B 20	6852		0,0	1,04	011	70:7	79.2	3	
C - 33	0854		0,0	1,07	0./	70,8	75,2		
D - 49	0857		0.0	107	0.1	20,8	751	4	201
E 61	0901		2,0	4,03	0.1	60,8	75,0	4	Land of the first of the same of
			100	<del> </del>			Ì		

RES SIGNATURE:



27-16	ert )	ohns	1,	VEATILE	R CON	DITION	: Over	21 as T
TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
							-1000	
1020		0.0	-6.55	0.7	70,3	79,7	2	
07,20		0,0	-2,56	0,2	70,5	79,3	2	
1030		0.0	-3,35	0.1	70,2	79.7	2	
TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>		i .				COMMENTS
100 No. 100 No			- PERSONAL PROPERTY.					
						1		
							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	1020 0720	27-16  TIME   PPM   CH <sub>4</sub> 1(020   0720   1030   TIME   PPM	27-16  TIME PPM %VOL CH4 CH4  1020 0.0  0720 0.0  1030 0.0  TIME PPM %VOL	1020 0.0 -6.55  1030 0.0 -3,35  TIME PPM %VOL	1020 0.0 -6.55 0.1  1030 0.0 -3,35 0.1  TIME PPM %VOL.	TIME   PPM   %VOL   PRES   %CO2   %O2   %O2   CH4   CH4   (+/-)   CO30   O O O O O O O O O O O O O O O O O O	INST & SERIAL#: Gra TIME PPM %VOL PRES %CO2 %O2 %BAL CH4 (+/-)  1020 0.0 -6.55 0.1 70,3 79,7  0720 0.0 -1.56 0.2 70,5 79,3  1030 0.0 -3,35 0.1 70.2 79,7  TIME PPM %VOL	TIME   PPM   %VOL   PRES   %CO2   %O2   %BAL   PURGE   TIME   CH4   (+/-)   CH5   O1   CO30   CO3
RES SIGNATURE: 1912



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS		
9-22-16	Gem 5000	Grosso	15% C/14		

SIGNATURE: Pyl



#### NEXT MONTH 11-15-16

#### SUNSHINE CANYON LANDFILL – CITY PERIMETER PROBE MONITORING DATA

TECHNICIAN: Robert Johns DATE: 10-18-16					TEMPERATURE: 700 WEATHER CONDITIONS: Sunny Eclemoficial INST & SERIAL #: Gem 500/ 520550					
PROBE NUMBER	TIME	PPM CH,	%VOL CH <sub>3</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGÉ TIME (min)	COMMENTS	
213										
A - 13	12-15		0,0	1102	40	15,3	80,6	2		
B - 29	1217		0,0	4,01	0.1	19.6	8013	2		
C - 45	1219		0.0	-,45	0.1	20.1	799	3		
D - 61	1222		0.0	-,58	01	202	79.7	4		
E - 77	1226		10,0	-16,33	0.1	20,2	79,7	-1		
214								weepullnohre-gu-	and the second s	
A - 13	1202	n-comment -	0,0	1103	7,3	14,2	83.5	2		
B - 30	1204		0.0	- ,01	0,3	1811	81,6	2		
C - 48	1206		0.0	tion	014	19,4	8014	3		
215										
A - 13	1146		0,0	1/12	61	7,8	861	2		
B - 30	1148		0.0	-114	7,2	9,7	82.1			
C - 47	1150		0,0	1,46	011	19,4	80,4	3		
1) - 64	1153		0.0	7,05	0,2	19,8	1 60,0	4		
E - 81	1157		0.0	1,10	510	10,2	84,8			
216	1					<u> </u>				
A - 14	1130		0.0	1,05	117	17,0	81,3	2		
B - 43	1/32		0,0	.0	0,2	19.7	80,1	2		
C - 62	11134	jam.	0,0	1103	011	120,0	79,9	3		
D - 86	1/36		0,0	1,05		200	79.8	4		
E - 110	1141		0.0	4,06	0,3	19,7	80,0	1		
217										
A - 13	1110		0.0	1,04	4,2	165	79.3	2		
B - 30	1112		0.0	702	3,2	17.5	79.3	2	(-)	
218								7	Removed Du	
7.5								2	to constructor	

RES SIGNATURE:\_



TECHNICI DATE: 10	Dung		WEATHER CONDITIONS: Windy INST & SERIAL #: Gem Sugo / GSOSSO						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH,	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	COMMENTS
219									
A - 13	1050		0,0	+105_	0,9	19,2	800	2	
B - 64	1052		0,0	1110	8.0	7,0	86,9	2	
C - 115	1054		0,0	1,08	011		79,7	3	
D - 166	1057		0.0	+,03	0,1		79,5	4	a(1)
E - 217	1/0/		0.0	1105	0.1	2017	74.3	4	
220			nes Impomi						
A - 14	1032		0.0	4,04	16	18,5	79.9	2 2	!
13 - 40	1034		0,0	1,02	018	19,6	79.7		
C-87	1036		0,0	4,04	01	70,6			
D - 134	1039	1	0.0	-103	0.1	70,0	80.0	1	W
E - 158	1042		0.0	01	213	17.7	80,0		
220B						10			
A - 14	1010		0,0	1,04	5,0	19.8	50,0	2	
B - 38	1012		0.0	11,01	01/	70,0	80,0	3	
C - 63	1014		0.0	7115	4.9	(12.1	830	1	
D - 86	1016		0,0	-117	7.6	16.1		1	
E-110	1021	00-0-0	0.0	-129	119	17,5	80,6	1	1 1 10 10 100 100 100 100 100
221									
A - 13	0930		0,0	+101	012	20,2		$\frac{2}{2}$	- Additional and the control of the
B - 56	0932		0.0	7111	012	70,2			
( - 99	0954		0.0	-121	0.4	199	79.8	3	
9 - 142	0957		0.0	109	0,1	2016	79.9		
F - 185	0941		00	+119_	Oct	19.9	801		
222	- 1 A.A. A.				10.		-		
A = 13	0950	1	0.0	11,30	115	18,2		2	
B - 54.8	0952		0.0	101	0.1		5 80,4	2	
C - 96.5	0454		0,0	+103	0,2	19,4	80,3	3	
1) - 138.3	0957		0.0	100		16.4		-1	
E - 180	1001	1	0.0	10	011	191	1 8012	4	

RES SIGNATURE:\_\_\_



ECHNICIA )ATE: 10-	18-16 Robe	ut l	hus	14	EATHE		DITIONS	: Win	
				17	VST & S	ERIAL	: Gern	5000/	G520536
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH,	PRES (**/*)	%CO2		%BAL	PURGE. TIME	COMMENTS
223									
A - 13	0910		0,0	-101	5,2	4,8	0,0,0	2	
B - 37.5	0912		0.0	7,03	6.1	4.6	8913	2	
C - 62	0414		0,0	-,18	2,5	143	831	3	
D - 86.5	0916		0.0	.0	0,9	18,5		, <u>i</u>	
E - 111	0921	200	0.0	-0.1	0,9	14,6	4311	4	
224							:=01 to		100
A - 13	0850		0,0	-1/2	0.1	70,9		2 2	
B - 67.5	0552		0,0	1.05	0.1	21,0	74,0		· · · · · · · · · · · · · · · · · · ·
C - 122	0854	6	0,0	701	0.1	21,0	79.0	3	
D - 177.5	0857		0.0	-12.91	011	71,0	19,0	4	
E - 232	6901		0,0	-9,26	0.1	210	17,0		
225			10.0	11.4	1.		791		
A - 13	0830		0.0	-118	0.6	2011	79,3	2	
B - 72	0832		0,0	-6.90	03	20,0	531	3	4
C - 131	0834		0.0	-11.90	0,1		300	1	+
1) - 19([	0837		0,0	-11.05	011	20.9	79,0		
1 - 244	1580		0.0	9,88	34	50,9	790	+	
226	10720		0,0	-,10	(f) j	20,5	79.1	2	
A - 13 B - 64			0,0	-13,22		20.)	75,2	2	
	0722	- Inner	0,0	-11.53		70,7	7912	3	
C - 114 D - 164	0714		0.0	12,71		2018	79,2	and the same of th	
E - 208	0727		0.0	-12,0		2018		.1	
1, - 2UA	0731		0,0	10,0	1011				
227							0.01		
A - 13	0845		0.0	1,04	3,0	116	85,4	2	
B - 48.7	08-17		0,0	1,10	61	4.7	812	$\frac{1}{1}$ $\frac{2}{3}$ $\frac{2}{3}$	
C - 84.4	0849		0,0	14,02	1513	314	91.3	3	
i) - 114	075	2	0.0	+,13	4,2	115	74.3		
E - 115.7	0996		0.0	10	4.1	3.6	92.3		

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DATE: 10		- Internative and the second		Ĭ [	VST & S	ERIAL	#: Gen	s: win	(G500530
PROBE	TIME	PPM	%VOL	PRES	%CO2	%02	%BAL	PURGE	COMMENTS
NUMBER		CH <sub>4</sub>	CH.	(+/-)				TIEVIE.	
228					C (2)		100 =	7	
1 - 13	0810		0,0	101	0,9	15,7	80,2	2	
3 - 63	0815		010	1.01	1.8	1116	81,0	3	_
C - 113	0614		0.3	+, 76	5.4	5.4	88,9	1 4	
0 - 163	0817		0.0	1,05		6.8	871/	+	
E - 213	0821		0.0	-109	3.8	7,0	8412		
229							incompletions		
A - 13	0700		0,0	1-1.70	1.0	17.9	81.1	2	
13 - 48 7	0702		0.0	-1516	0,1	160,5	1917	2	
C - 84.4	10704		0.0	-16,44	01	20,3	796	3	- Marchite desentation ( Committee of State of Marchite of
0 - 114	0707		0.0.	-16,33		2014	79.5	4	
E - 155.7	0711		0.0	-25,81	011	2015	75,5	1	
230	1								Remove 2
A - 16								2	Due to
B - 33								2	Construction
C - 50					100			3	
231	1			+					Removed Du
A - 13								2	to constant
B - 26								2	
C - 39								3	
0 - 51								4	
E 66					***			4	
						1			
241					0.0	201	700		
A - 13	1232	-	0,0	73.32		2011	79,8		10-01
13 - 28	1234		0.0	19:32	0.0		79.18		
( 1 "	1236		0.0	-2,5/	0,0	2012	79,8		
1) - 64	1239	-	00	-24,42			79.8	1 4	
E - 85	1242	-	010	-22,79	1010	1012	71.8	- 1	

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#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
10-18-16	Gen 5000	4500530	15 40 cH4
10-18-16	TVA 1000B	1030945322	Sooppn Uty
The second secon			

SIGNATURE:





TECHNIC DATE:	0-20-1	6		17.5	WEATHER CONDITIONS: WINDY CASUAS 30					
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS	
202									Removed Due	
A - 10		N.		To a Total			1	2	to Constrainty	
B - 25		70 = 0	6 2 5	11====			K.E.	2	COA) TOUTH	
C - 38						PE E		3	DA W.	
203										
A - 10	0650		0.0	10	117	18.9	79.4	2		
B-25	0652		0.0	4,03	21	185		2		
C - 40	0654		0,0	-,03	1,5	18.5	79.4	3	/ La Tale -	
206										
A-10	0730	17.39	0,0	14:04	(0,1	10.7	79,2	2		
B-25	0732		0,0	7,02	13,2	9.1				
C-38	0754		0.0	10	18.2	7.0	77.7	3	LLE .	
207					7.73					
A-10	0720	F	0.0	7,54	011	20,3	7917	2		
B-25	0766	1	0.0	751	0,3	19,2	80,5	2		
C – 40	0724		0.0	T10Z	011	20,2		3		
208										
A - 9.1	0710		0.0	07	013	19.9	79.8	2		
B - 25	0712		0.0	1-104	7.2	14.1	78,7	2	It a market to the same of the	
C - 40	0714		0,0	7,03	7,5	13.1	79,4	3		
210								5.4-1		
A – 10	0810		0.0	1-,42		20,1	79.8	2		
B - 25	0812		0.0	-110	Oil	105	79.8	2	I The state of the	
C - 39	0814		0,0	4114	011	1.05	79.9	3		

RES SIGNATURE:



TECHNIC DATE: (						WEATHER CONDITIONS: Windy INST & SERIAL #: Gen 5000/ Cy500550						
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS			
242												
C - 42	0920		0,0	10	3.4	13.2	67.2	3				
D - 60	OCIZ		0.4	703	8,3	4,2	83,3	4				
E - 78	0924		0,0	101	5,6	90	85,4	4				
243	2.55							T-E				
A - 11	0940	102	0,0	701	3,5	12,3	84,2	2				
B - 20	0992	E 3	0.0	701	7,8	1317	83.5	2				
C - 33	0044		0,0	-112	711	15,8	82,0	3				
244	DUBLIN		U_0 E		1.2.2	1882	4,12	45 EV				
A - 11	0930	II SET	0,0	7,04	11,3	7,9	80,8	2				
B - 21	0933	1 = 1	0,0	7,04	9.7	11.0	793	2				
C - 36	0934		010	4.08	11,4	11,4	77,2	3				
245						13.1	16-38					
A - 11	0950		0.0	107	917	9,8	80,5	2				
B - 20	0952		0.0	1,05	3.3	17,5	79,1	2				
C - 35	0954		0.0	1109	7,9	13,3	78.4	3				
D - 50	0957		0.0	,0	4,6	150	80,1	4				
E - 64	1001		0.0	-,06	0,1	19,8	801	4				
246									Removed Due			
A-9	TA TA	42-00				4 - 4		2	to Construction			
B - 16	PER							2				
205R		DE L	T E de de	H.E.		ILE.						
A - 11	0740		0,0	10	10,4	11.5		2				
B - 20	0742	117-	0,2	7,22	79,5		68,4	2				
C - 33	0744	15.	113	757	40,5	0,0	58,2	3				
D - 48	07478		2:1	06	44.8	0.0	53.1	4				
E - 62	0751		1,6	-,93	42,7	0.0	155.7	4				

RES SIGNATURE:\_\_



TECHNICI DATE: 10		WEATHER CONDITIONS: windy INST & SERIAL #: Gen Swo / 45wx30							
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS
239									
A-11	0830		00	-18	146	8,0	77.4	2	
B - 20	0832		0.0	504		19.8	80,0	2	
C-35	0834		0.0	01	0,2	78,4	79,5	3	
D - 50	0837		0,0	4.08	0.1	2014	79,5	4	
E - 64	0641	- 54	0,0	+105	0.1	20,3	79.6	4	
240									
A -11	0900		0.0	-106	12.3	10,3	77.4	2	The state of the s
B - 20	0902	S CEE	0.0	7,05	013	20,0	79,7	2	
C-33	0904		0,0	1-,01	0.1	7,05	79,6	3	
D - 49	0907	KEE	0,0	104	0,1	20,4		4	
E - 61	0911	14.28	0.9	101	0.,	20.3	75.7	4	
	/===	IFEE							

RES SIGNATURE:



AN: Rob -20-16	DATE: 10-20-16 WEATHER CONDITIONS: MINLY INST & SERIAL #: Green 5000 / GSG0530									
TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME	COMMENTS		
1										
1050		0,0	-6,58	011	701	79.1	2			
1043	1	0.0	-2,18	012	70,1	79,7	2			
1035		0,0	-2,48	0.1	20,0	79,8	2			
TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>						COMMENTS		
150										
	1050 1043	1050 1043 1035 TIME PPM	1050 O.O  1043 O.O  TIME PPM %VOL  CH4  1043 O.O  1043 O.O	TIME PPM %VOL PRES CH4 (+/-)  1050 0,0 -6,58  1043 0.0 -2,148  TIME PPM %VOL	TIME   PPM   %VOL   PRES   %CO2   CH4   CH4   (+/-)	WEATHER CON   INST & SERIAL   TIME   PPM   %VOL   PRES   %CO2   %O2   %O2   CH4   CH4   (+/-)	WEATHER CONDITIONS   INST & SERIAL #: CT-4,   TIME   PPM   %VOL   PRES   %CO2   %O2   %BAL   (+/-)	WEATHER CONDITIONS:   Wind INST & SERIAL #:   Green   Second   Column   Second   Column   C		

RES SIGNATURE: LEA SIGNATURE:



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
10-20-16	TVA 1000B	10300,45322	500 jepin City
10-20-16	Gem 5000	6,500 530	15 % CHy

SIGNATURE: 121



#### L.T.F. MONITORING

CKGROUND	Molacer Toll 16: 31 ppm TIME		INST & SERIA	L#: TVA-10	COMMENTS
	TÍME	cing frim			COMMENTS
GAC #1	0630	3,4 ppin			
				- Contraction	
					For any other lands of the second sec
			1(1)		
		4 1			

RES SIGNATURE:



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
10-18-16	Gen 5000	4500530	15 40 c/4
10-18-16	TVA 1000B	1030945322	Sooppn Uty
			k - 1000
And the second s			
The second secon			
	A AMERICAN CONTRACTOR		

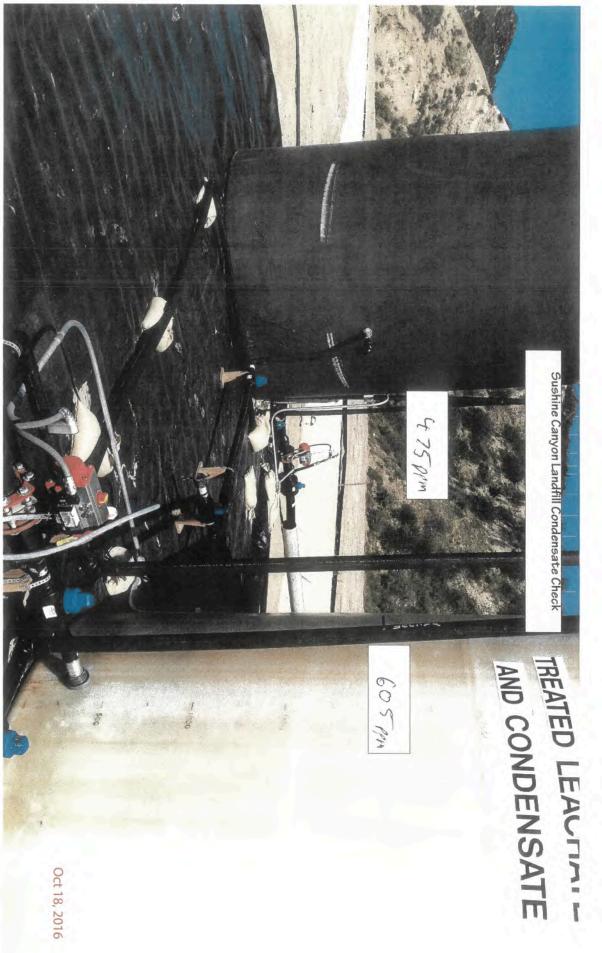
SIGNATURE:

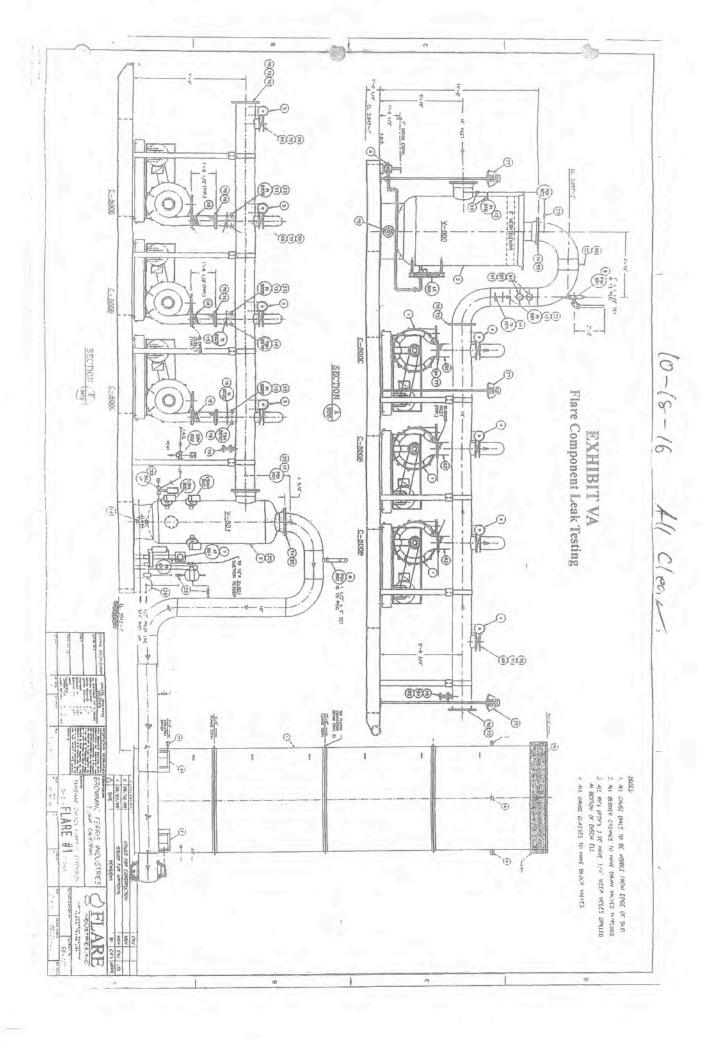


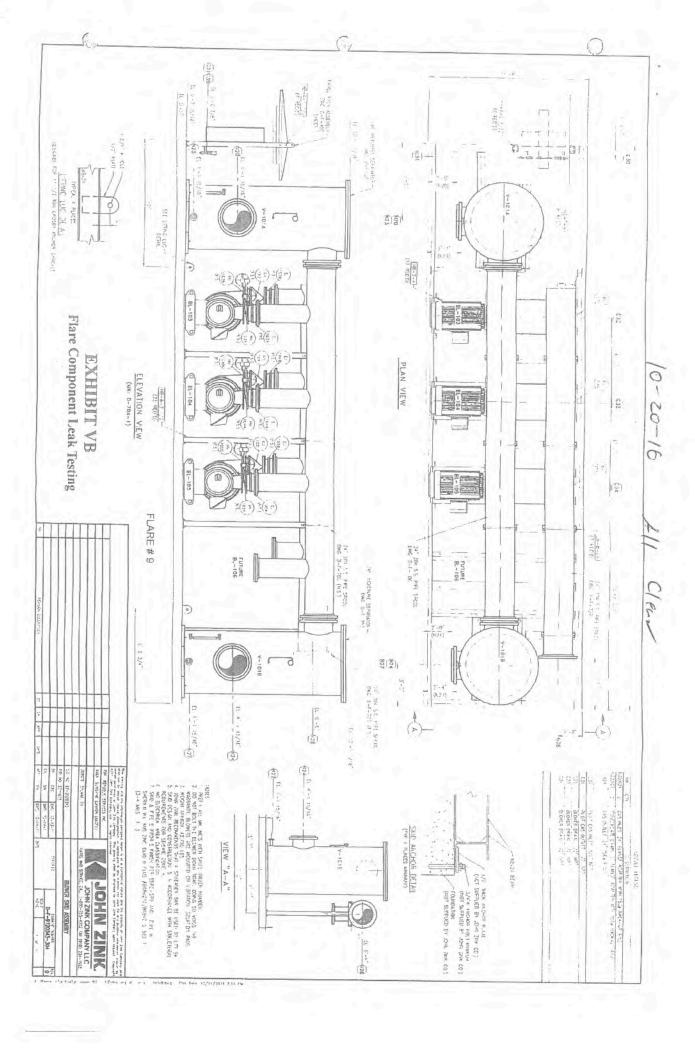
#### SUNSHINE CANYON BUILDING METER CALIBRATION CONTINUOUS BUILDING MONITORING

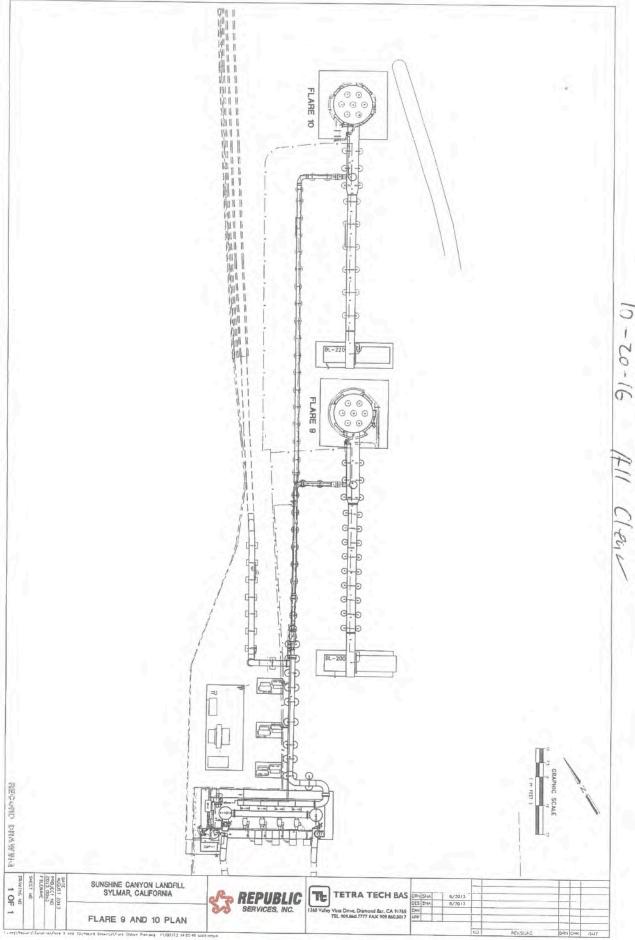
LOCATION	SERIAL NUMBER	DATE	CALIBRATION GAS	NOTES
LTP Trailer	Sierra 2001 0305501	10-20-16	1.0% by vol. CH <sub>4</sub>	
LEA Office	Sierra 2001 011853	10-20-16	1.0% by vol. CH <sub>4</sub>	
Scale House	Sierra 2001 011813	10-20-16	1.0% by vol. CH <sub>4</sub>	
Training Sierra 2001 Room 043130490M		10-20-16	1.0% by vol. CH <sub>4</sub>	
Scale House	Sierra 2001 043130409	10-20-16	1.0% by vol. CH <sub>4</sub>	
Men's Locker Room	Sierra 2001 043130409	10-20-16	1.0% by vol. CH <sub>4</sub>	
New Office North Hall	Sierra 2001 043130409	10-20-16	1.0% by vol. CH <sub>4</sub>	
New Office South Hall	Sierra 2001 043130409	10-20-16	1.0% by vol. CH <sub>4</sub>	

Technician: Br











#### NEXT MONTH 12-13-16

#### SUNSHINE CANYON LANDFILL – CITY PERIMETER PROBE MONITORING DATA

TECHNICI DATE: [ ]	AN: Ro	bert	Johns		TEMPE WEATH INST &	ER CO	E: 83° NDITION L#: 6	S: 5 44n	y 10/en-
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH.	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	COMMENTS
213	10			ALT.H	1.33.5	-	ZELO: N		
A - 13	1145		0,0	-,06	3.0	15.8	81,2	2	
B - 29	1147		0.0	-105	011	19,9	40,0	2	
C - 45	1149		0,0	7,37	0,0	2018	79.4	3	
D - 61	1152		0.0	-,42	011	20,6	7914	4	
E - 77	1156		0.0	-20,91	0,0	50,6	79,4	4	
214						I made			
A - 13	1135		0.0	1,04	8.1	7,3	84.6	2	
B - 30	1137		0,0	4,04	3,1	111,4	85.6	2	
C - 48	1139		0,0	1,74	716	6.9	85,4	3	
215								72	
A - 13	1179		0,0	701	7,2	3,1	89.6	2	
B - 30	1121		8,0	+101	7,2	7,9	83.9	2	
C - 47	1123	-	0,0	-,06	0.1	2014	79.6	3	
D - 64	1126		0.0	-,04	0,2	1,05	79.7	4	
E - 81	1/30		0.0	4.01	0.1	20,6	79,4	4	
216				IX.SI				-515	
A - 14	1103		0.0	+,03	011	20,3	79.6	2	
B - 43	1103		0,0	7.02	0,0	70,5	74,5	2	
C - 62	1107		0,0	+03	0,0	20,5	79,5	3	
D - 86	1110	77.60	1010	4,03	0,0	20,5	79,5	4	
E - 110	1914		0,0	4,04	0,0	2015		4	
217	La . M			L-E-				(125 =	
A - 13	1056		0,0	-103	3,8	16.6	79.6	2	
B - 30	1058		0,0	-101	3,8	17,6	79,5		
218						Rat	155.7		Pribe Removed
7.5		11.5				W. T. 1		2	Due to Construct

RES SIGNATURE:\_



TECHNIC DATE: ((	IAN: Rob	vert.	thus		WEATHER CONDITIONS: SAMUY & Clear INST & SERIAL #: Gen San / Crass							
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME (min)	COMMENTS			
219	7.7.4						5 T. C.	1000				
A - 13	1041		0.0	10	0,3	19,8	79,9	2				
B - 64	1042		0.0	101	4,4	9,7	85,7	2				
C-115	10044		0,0	1,03	6.1	20,3	79,7	3				
D - 166	1047		0.0	+16	0,0	0,05	80.0	4				
E - 217	1051		0:0	10	110	18.3	80,7	4				
220		<b>V</b>			BLAS			MESS	A			
A - 14	1025	1. 15.21	000	T.04	000	18,8	80.1	2				
B - 40	1027		0.0	1,03	001	19,9	808	2				
C - 87	1029		0,0	-101	190	19.9	80,0	3				
D - 124	1032		0.0	1,06	0,1	20,0	79.9	4				
E - 158	1036		0,0	1,05	011	20,0	79.9	4				
220B			1.3.1		DEST		DETEN					
A-14	100		0,0	10	01/	19.8	80,1	2				
B - 38	1012		0,0	10Z	0,3	19,5	80,2	2				
C - 62	1014		0.0	1,03	0.9	18.8	80,2	3				
D - 86	1017		0,0	7.01	7:1	16,9	810	4				
E - 110	1020		0.0	10	(1)	18.8	80,6	4				
221	E		LE BI									
A - 13	0938	N. E.	0,0	501	0,3	20,0	7917	2				
B - 56	0940	bev	0.0	+120	3.9	2012	79,7	2				
C-99	0942	1	0.0	1,12	3.9	13.2	82,8	3				
D - 142	0945		0.0	1,08	1,2	16.7	82,1	4				
E - 185	0949		0.0	+112	0,4	19,5	8011	4				
222							LEA A					
A - 13	0955		0.0	+110	1.9	18.0	80,1	2				
B - 54.8	0957	10000	0.0	1,00	0.1	70,0	80.0	2				
C - 96.5	0959		0.0	+,H	0.4	19,6	80,0	3				
D - 138.3	1002	10	0,0	+111	0.1	19,8	80,0	4				
E - 180	1006		0.0	1.07	0.0		80,0	4				

RES SIGNATURE: LEA SIGNATURE:



TECHNICIA DATE: []	AN: Roh -15-16	ent.	Johns	V	EMPER VEATHE NST & S	ER CON	DITIONS	s: Sunny	11/eu/
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
223									
A - 13	0922		0.0	1.15	4,5	6.9	886	2	
B - 37.5		TAI	00	1.14	10	15.1	83,0	2	
C - 62	0924		0.0	1.09	3,2	11,6	85,3	3	
D - 86.5	0929		0.0	1.08	ZI	14.6	63,3	4	
E - 111	0433		0.0	1./7	3,2	12,3	849	4	
224			721				<b>元</b> 一		
A - 13	0907	Let	0,0	4,06	0.0	19.8	40,2	2	
B - 67.5	0409		00	+113	0.0	19.8	80,2	2	
C - 122	0911	27.5	0.0	+,05	0,0	19,9	800	3	
D - 177.5	0414		0,0	-12,25	0,0	19.9	800	4	
E - 232	10418		0,0	-8.74	0,0	20,0	79,9	4	
225				T-A-S				720	
A - 13	0857		0:0	708	0,3	14,2	8015	2	
B - 72	0854		0.0	-6,45	0,2	19,3	805	2	
C - 131	0856		0.0	71138	0.1	19,5	80,4	3	
D - 190	0859		0.0	-10,52	00	19,6	804	4	
E - 244	0402		010	-9,36	00	19,6	80/3	4	
226							L T		
A - 13	0805		0.0	1103	001	20.0		2	
B - 64	0807		0,0	6.91	01	70,0	79.9	2	
C - 114	0809	Die e	0,0	-11.34	011	20,0	79,01	3	
D - 164	10812		0.0	-12,44	0.1	200	79,9	4	
E - 208	0516		0.0	11.90	01	2010	79.9	4	
227	I LE WATE	7					VA COST	L = 3	
A - 13	0820	·	0.0	107	0.1	20,0	79,9	2	
B - 48.7	10822		0.0	101	0.1	19,9	80,0	2	
C - 84.4	0824		0,0	1-12	01	20,0		3	
D - 114	0827	10	0.0	21	0,3	19.8	80,0	4	
E - 115.7	0651		0.0	-:04	0,3	19,6	80,0	4	

RES SIGNATURE:\_



TECHNICIA DATE: //-	AN: Roba	erg Du	hus	V	VEATHE	ER CON	E & 3° DITIONS #: Ge	S: 544n	y Allen
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
228	Francisco I		TITT		V To A				
A - 13	0836		0,0	4,10	012	1916	80,0	2	
B - 63	0833		0.0	+,44	09	18.1	81.0	2	
C - 113	0840			1,15	0.7	17.7	82.1	3	
D - 163	0343		0.0	7/1	0,7	19.5	82.1	4	
E - 213	0547		0.0	08	0,2	19.6	80,3	4	
229									
A - 13	0750		0,0	-1,50	014	18:9	8014	2	
B - 48.7	0752		0.0	-14.92	011	70,2	79.8	2	
C - 84.4	0754			-16.11	01/	2013	79,7	3	
D - 114	0757		0.0	-17,98	01	70,2	7917	4	
E - 155.7	0801		0.0	-25.61	011	2012	79,7 79,7 79,8	4	
230									Remixed Due
A - 16			DE LE					2	to constructive
B - 33	I TO	16.7						2	
C - 50								3	
231									Removed Due
A - 13	7257		I TE			10.30		2	to Constinuto
B - 26			REE N			125		2	
C - 39		150		UT. II	العقيرا	IVE II		3	
D - 51		MEDI		[B. 1-3]				4	
E - 66							1.4.4	4	
241			( )					VEST	
A - 13	1201	44 = 7,1	0.0	-15,08	0,0	20,6	7914	2	
B - 28	1203		0.0	-21,17	010	70.6	79,4	2	
C - 47	1205		0.0	-3,06		20,6	79,3	3	
D - 64	1208		0,0	-25,35		20,6	79.3	4	
E - 85	1212	0.6(	0.0	2470		20.6	79,3	4	

RES SIGNATURE:\_



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
11-15-16	Gem 5000	4500530	15 % C/ty
11-15-16	TVA 1000B	1030945322	Sur ppm

SIGNATURE:





DATE: /				کے یا۔	INST &	SERIAL	J#: G+	in sviz	16+50030
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	'COMMENTS
					VEL	2 a G			
						MEET.			
202						E T			Remired Pue
A - 10		JI ST		Reserve				2	to construction
B - 25		V		ET-			21	2	
C - 38								3	
203	EE X				1.5	TEE:			
A - 10	0650		0.0	10	117	19,3	79,0	2	
B-25	0652	1	0.0	-,04	3,0	15.5	79,0	2	
C - 40	0654		0.0	-105	3,0	15.1	79.0	3	
206									
A - 10	0725		0.0	1,02	917	11.0	79,3	2	
B-25	0727		0.0	10	14.1	8,0	77.9	2	
C-38	0729	E	0.0	-,05	17.8	7.9	743	3	0
207									
A-10	0705	Me	0,0	-,40	0.1	20,01	79.0	2	
B-25	0710		0.0	1,03	0,1		79,0	2	
C – 40	0712	114	0,0	-,38	510	7.2	87.5	3	
208				LE Q			022124		
A - 9.1	0700		0.0	-,04	0.6	20.4	79.0	2	
B - 25	5070		0,0	-:05	6.4	156	78.1	2	
C - 40	0704		0,01	-103	10,3	11.1	78.6	3	
210		11 (							
A - 10	0830	12-1	0,0	-,09	0.1	2018	79.1	2	
B - 25	0852		0,0	752	0.1		79,2	2	
C - 39	0834		0.0	1,09	0,1	70,6	79,3	3	

RES SIGNATURE:\_\_



TECHNIC DATE: //	IAN: Roi	7 Px + )	chus			ER CO			YEC/Ph -
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS
			<u> </u>						
242									
C - 42	0430		0.0	-,01	4.0	11,4	84.5	3	
D - 60			0.0	05-	2.8	15.8	XILI	4	
E - 78	0934		0.0	-,02	7.6	5.1	87.3	4	
243									
A - 11	1000		0,0	-,03	6.1	8.7	85,2	2	
B - 20	1002		0,0	37		9,1	44.8	2	
C - 33	1004		0.0	1.01	3.0	15,2	81,5	3	
244									
A - 11	0947		0,0	-,04	13,1	7,5	74,5	2	
B - 21	0949		0.0	- 11	19.7	2.9	77.3	2	
C - 36	0951		0.0	-1.10	15,2	9,1	75.5	3	
245									
A - 11	1009	16.5	0,0	704	8,4	12,4	79.2	2	
B - 20	1011		0.0	1,0C	0,2	20,5	>7.3	2	
C - 35	1013		0,0	701	6.7	15,5	77,9	3	
D - 50	1014		0,0	1-,01	418	16.4	75.5	4	
E - 64	1015		0.0	-,07	101	20,6	79,3	4	
246									Removed Due
A-9	lice.					I E		2	NO CONSTRUCTE
B - 16		Adr					4	2	
205R					107				U
A - 11	0740		0.0	-,04	10,7	11,5	77.8	2	
B - 20	0742		0,2	-,40	30,9	0.7	68,2	2	
C - 33	0744		11.1	-,83	40,2	10.0	58,6	3	
D - 48	0747	-	2,0	75,-	44,2		53,9	4	
E - 62	0751		1.4	-,74	43.9	0,0	54.2	4	

RES SIGNATURE:\_



TECHNICI DATE: (		brut	Johns		WEATHER CONDITIONS: Sunry of Clear INST & SERIAL #: Green Sour / Sunsac					
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2			PURGE <sup>(</sup> TIME (min)	COMMENTS	
239										
A-11	0840		0,0	-,06	6,0	16,3	77.8	2		
B-20	0242		0.0	-102	0.1	70.7	79,1	2		
C-35	0844		0.0	-104	011	7.05		3		
D - 50	0847		0,0	-104	0.1	70,8	79,1	4		
E - 64	0551		10107	-,04	0.1	20.9	79,0	4		
240										
A -11	0900		0.0	705	12.5	11.2	T6.4	2		
B - 20	OGOL		0,0	-,16	0,2	20,8	79.0	2		
C - 33	0904		0.0	1111	0,1	20.9		3		
D - 49	0907		0.0	1,04	0.1	Zho	78.9	4	TE -	
E - 61	0911	10 35	0,6	706	0.1	209	78.4	4		

RES SIGNATURE: Rollin



s: 541	USO / CISTOS 30 E   COMMENTS
PURGE TIME	E COMMENTS
2	
2	
2	
	COMMENTS

RES SIGNATURE: 1500 Z

LEA SIGNATURE: 1000 Z



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
11-17-16	Geps 5000	G-500530	15 % CHC/
11-17-16	TVA 1000B	1030945322	500 ppmCH4
		7.7.7.5.7	

SIGNATURE:



NEXT MONTH 1-17-1>

### SUNSHINE CANYON LANDFILL – CITY PERIMETER PROBE MONITORING DATA

TECHNIC DATE:	IAN: KO 12-13-16	hert	Johns		WEATH	ER CO	E: 52° NDITION: 4: Gan	s: Overea	5+/00/15 G500515
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE' TIME (min)	COMMENTS
213									
A - 13	1209		0.0	-,08	0,9	18.8	80,3	2	
B - 29	1711		0,0	-,03	01	201	79.8	2	
C - 45	12/3		000	744	01	70,4	79.6	3	
D - 61	1216		0.0	-,53	0,1	20,4	79,5	4	
E - 77	1220		0,0	-8.84	011	20,5		4	
214	5.2		Qead.			1			
A - 13	1200		0,0	-0	6.8	5.4	27.8	2	
B - 30	1702		0.0	-102	9,2	5.8	84.9	2	
C - 48	1204		0,0	-10	4.5	13.3	82.2	3	
215	1.3 74								
A - 13	1140		0.0	4.30	6.1	7.1	86.8	2	
B - 30	1142		0,0	1,22	7,3	7.1	83.3	2	
C - 47	1144		0,0	7,05	0,1	199	80.0	3	
D - 64	1147	15 - 3	0.0	1,18	0,2	19,9	79,9	4	
E - 81	1151		0.0	+118	3,0	18.4	78,6	4	4
216									
A - 14	1120	16	0.0	102	0,2	2012	79.6	2	
B - 43	1122		0.0	7,15	0.6	19,9	79.5	2	
C - 62	1124		0,0	1,03	0.1	2014	79.6	3	
D - 86	1127		0.0	-,01	0,1	20,3	79.6	4	
E - 110	1131		0.0	1,05	0.1	20,3		4	
217	<b>10. 6.</b> 6		IL E						
A - 13	1110		000	-102	410		79,2	2	
B - 30	1112		0.0	-02	214	18.4	79,3	2	
218 A									
7.5	1240		0.0	1,02	25.9	5.9	68,3	2	
DECCION	1242		0,0	1103	35,0	10	64,0		70.37



TECHNICI DATE: / Z	IAN: Kob 2-13-16	nert	Johns		WEATHER CONDITIONS: Over Cast/ Eags/ INST & SERIAL #: Gen 5000/ G500530							
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGÉ TIME (min)	COMMENTS			
219		Larra		3 3 - 1								
A - 13	1050		0,0	10	0,4	20.1	79,5	2				
B - 64	1052		0,0	-,03	1.7	16,9	81.4	2				
C - 115	1054		0,0	1,02	0.1	20,4	79,5	3				
D - 166	1057		0.0	10	0,1	70,4	79,5	4				
E - 217	1101		0.0	0,0	0,9	18.9	80,2	4				
220					Tr.							
A - 14	10 30		0.0	7,03	1,3	19,6	79.1	2				
B - 40	1032		0,0	1,05	0.4	20,2	79.4	2				
C - 87	1034		0,0	-101	0,2	2015	79,3	3				
D - 124	1037		0.0	107	013	2013	79.4	4				
E - 158	1041		0.0	t,11	0.1	70,4	79.4	4				
220B				127.11								
A-14	1000		0.0	03	117	19.1	79.2	2				
B - 38	1002		0,0	1:03	011	20,7	79,2	2				
C - 62	1004		0.0	1-113	4,4	13.9	81.7	3				
D - 86	1007		0,0	7.04	4,2	14,7	812	4				
E - 110	1011		0.0	7.05	2.0	16,5	81.5	4				
221		E										
A - 13	0910		0,0	-,05	0,5	1,05	79,4	2				
B - 56	1912		0,0	705	0,2	2015	79,3	2	N			
C-99	0914		0,0	-35	0.3	20,5	79,2	3				
D - 142	0917		0.0	-108	0.1	7.05	75.3	4				
E - 185	0921		0,0	-,03	0.1	20,7		4				
222				1000			N.A	E E				
A - 13	0940		0.0	1-,02	1.8	19,0	793	2				
B - 54.8	10942		0.0	-104	0.1	7012	79.7	2				
C - 96.5	0949		0,0	-105	0.1	20,6	79,3	3				
D - 138.3	0947		0.0	103	0.1	20,6	79,3	4				
E - 180	0951		0.0	704	0.1	20,5	79,3	4				

RES SIGNATURE: WWW



TECHNICIA DATE: 17	-13-16			N II	VEATHE	ERIAL:	DITIONS	5000 1	1650530
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME	COMMENTS
223			The second		E T	165 V.	De 11	TITLE	
A - 13	0830		0,0	69	5.1	3.8	91.0	2	
B - 37.5	0832		0.0	15.4	6.5	2.8	90,7	2	
C - 62	0834		0,0	-01	5,0	8,7	86.3	3	
D - 86.5	0637		0.0	+105	113	17,5	81.3	4	
E - 111	0841		0.0	-102	2.8	12.4	84.8	4	
224								× = = 1	
A - 13	0809		0.0	-107	01	70.8	791	2	
B - 67.5	0811		010	09	0.1	20.8	791	2	
C - 122	10813		0.0	-103	0.1	20,8	79.1	3	
D - 177.5	0816		0.0	-13.06	0.1	2018	79.1	4	
E - 232	0620		0.0	-9.61	0.1	20.8	79.1	4	
225								3.55	
A - 13	0750		0,0	-17	0.5	20,4	79,1	2	
B - 72	0756		0,0	-3.60	0.3	70,6	79.1	2	
C - 131	0754	V.	0.0	-9.70	0.7	70,2	79.1	3	
D - 190	0757		0.0	-9.84	0.1	70.8		4	
E - 244	0801		0.0	-6,48	0,1	20.8	79.1	4	
226	Mar S M		Lago		18 8 7 7		4353		
A - 13	0650	1207	0.0	-02	0.1	20,2	79,7	2	
B - 64	0652		0,0	-13.23	0.1	20,2	79.6	2	
C-114	0650 0652 0654 0657	II.	0.0	-11.70		20,3	79.6	3	
D - 164	0657	1	0.0	-12186	0.1	20,4	79.5	4	7
E - 208	0701		0.0	-12,47	0.2	20.8	79.0	4	
227			100	W. H.		1084			
A - 13	0705		0.0	-,05	0.5	20,4	79.0	2	
B - 48.7	0707		0.0	-,30	0,5	20,4	79.1	2	
C - 84.4	0709	DI-P	0.0	-,69	0.6	20,4	79.0	3	
D - 114	2150	1	0.0	60	0.4	20.6		4	
E - 115.7	0716	2.3	0.0	36	0.4	20,5	79.1	4	

RES SIGNATURE:



TECHNICIA DATE: 12	AN: Roh -13-16	ext Ji	hus	V	EMPER VEATHI NST & S	ER CON	: 520 DITIONS #: Gev	s: Over	0/650536
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH <sub>4</sub>	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME	COMMENTS
228	De a di		11.5	TEET!		LELLY			
A - 13	0730		0.0	.0	0.1	20,9	79.1	2	
B - 63	0732		0.0	- 42	0.1	20,4	79,0	2	
C - 113	0734		0.0	23	0,2	20,8	79.0	3	
D - 163	0734		0.0	- 47	0,3	20,7	17.0	4	
E - 213	0741	ET	0.0	60	0,3	70.7	79,0	4	
229								15-1	
A - 13	0630		0.0	-1:41	0.5	19.8	79.6	2	
B - 48.7	0652		0.0	-14,90	0.1	70.1	79.8	2	
C - 84.4	0634		0.0	-16.13	0.1	105	79.8	3	
D - 114	0677		0.0	-18,48	0,1	20,1	79,9	4	
E - 155.7	0637	162	0.0	-25197	0.1	20.1	79.9	4	
230						TO ES			Removed Di
A - 16								2	to Construction
B - 33								2	CONTRACTOR OF THE PARTY OF THE
C - 50					1223			3	
231					B- 1	127.5		EIST	Removed Du
A - 13					0.00			2	to Constructi
B - 26					Ve e			2	
C - 39					6.4.			3	
D - 51						W. See		4	
E - 66								4	
241		, <u> </u>		R.A.					
A - 13	1224		0.0	-14.56		20,5		2	
B - 28	1226		0,0	18,52	Oil	20,5		2	
C - 47	1228	1	000	-27.40	0.1	20,5			
D - 64	1231		0,0	-27Ho	1011	20,5	79,4	4	
E - 85	1235	1	0,0	-19,7	3 0,1	20,5	79.4	4	

RES SIGNATURE: ROME



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL#	CAL GAS
12-13-16	Gen 5000	4500530	15 % CHY

SIGNATURE:	Me



NEXT MONTH 1-19-17

#### SUNSHINE CANYON – COUNTY PERIMETER PROBE MONITORING DATA

TECHNICI DATE: /			Johns		WEATHER CONDITIONS: Quer Cugt INST & SERIAL #: Grun suco / G500530					
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH,	PRES (+/-)	% CO2	%O2	%BAL	PURGE / TIME (min)	COMMENTS	
		<u> </u>								
202									Removed	
A - 10						F1-71	7	2	Due to Constant	
B - 25								2	- Lamates	
C - 38		77 5.7		Pre-A				3		
				130.00		Lary.		I A STORY		
203							ALTER			
A - 10	0650		0,0	1001	1.5	19,2	7913	2		
B - 25	0653		0.0	1.0	7.7	18,2	79,2	2		
C 40	0656		0.0	-103	1,9	18,7	79,4	3		
					No. 2					
206			0.0		1	1/ 0				
A - 10	0732		0.0	10,1	6.4	14.0	79,6	2		
B - 25	0735		0.0	101	10,1	143	77.7	2 3		
C-38	0738		0,0	-10	16.0	9.0	75.0	3		
207										
207	0720		0.0	7,02	0,2	70.1	79.4	2		
$\frac{A-10}{B-25}$	0728		0.0	-130			84,0	2		
$\frac{B-25}{C-40}$	0724		0.0	1,02		20,5	79,4	3		
C = 40	0109		0.0	1100	0//	2-13	711			
208						10-4	E0 10			
A - 9.1	0709	1	0,0	1,02	2,0	18.4	79.5	2		
B - 25	0712			01	7.9	13.1	79,0	2		
C - 40	0715		0.0	1.03	7.5	13,Z	79.5	3		
210										
A - 10	0800		0,0	751	1012		79,3	2		
B - 25	0803		8.0	1-,35	0,2	20,5	79,4	2		
C-39	0806		0,0	1.11	0,3	20,2	79.5	3		

RES SIGNATURE:



-15-16		shns		WEATHER CONDITIONS: One Cast INST & SERIAL #: Green 5000 / Cosos30						
TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	% CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS		
Decres		00	1.123	31	131	82 U	3			
						47.2	4			
0839		0,0	7,00	3 10	116	3 / 1				
0940		0.0	+,19	5.1	9.6	85,4	2			
		0,0	-,03		11,6	840				
0944			1,30	1.6	11.4	87,0	3			
0920	L	0.0	trol	18.0	O1	81.9	2			
0932	L	0.1	104	70,7	118	77,4				
0934		0,0	1,10	9,2	13,3	77,5	3			
N. M. E.			MA	201	71111					
		I NE TO A								
0450		0,0								
0952		0.0	1,05	12.4	11.1					
0954		0.0	752	7.4	14.1	786				
0957		0.0	1,03	4.1	16.9	79.1				
1001	TE-E	0.0	-,0	0,1	20,4	79.4	4			
				I E W Y				0 01		
								Remork		
								Due to Consmo		
10 3.57		1 ===					2			
1771.7		0.0	107	10,0	10.7	785	2			
0/9	-			COURT OF THE PARTY		687	The second secon			
0743		1.7	-11	79 3	0.1	69.1				
074/							-			
							-			
	0850 0853 0853 0853 0940 0944 0944 0932 0932 0932 0952 0952 0952 0957	0850 0850 0853 0853 0853 0940 0940 0944 0944 0932 0932 0932 0932 0952 0952 0953 1001	TIME PPM %VOL CH4  O850	TIME PPM %VOL PRES CH, CH, (+/-)  0850	TIME PPM %VOL PRES % CH4 CH4 (+/-) CO2  0850	NST & SERIAL	TIME PPM %VOL PRES % %02 %BAL  ORSO 0.0 1.03 3.1 13.1 83.8  ORS\$ 0.1 -15 7.1 7.4 85.4  ORS\$ 0.0 1.06 5.6 7.7 47.2  O940 0.0 1.06 5.6 7.7 47.2  O944 0.003 4.4 11.6 84.0  O944 0.0 1.30 1.6 11.4 87.0  O944 0.0 1.30 1.6 11.4 87.0  O932 0.1 1.00 7.2 13.3 7).5  O950 0.0 1.00 1.10 9.2 13.3 7).5  O950 0.0 1.03 9.7 9.3 80.9  O951 0.0 1.00 9.5 12.4 11.1 76.5  O951 0.0 1.03 4.1 16.9 75.1  O957 0.0 1.03 4.1 16.9 75.1  O957 0.0 1.03 4.1 16.9 75.1  O957 0.0 1.03 4.1 16.9 75.1  O957 0.0 1.03 4.1 16.9 75.1  O957 0.0 1.03 4.1 16.9 75.1  O957 0.0 1.03 4.1 16.9 75.1  O747 0.0 7.0 0.1 20.4 79.4  O747 1.1 7.11 39.7 0.1 59.1  O750 7.1 1.09 44.3 0.0 53.6	TIME PPM %VOL PRES % %O2 %BAL PURGE TIME (min)  0850		

RES SIGNATURE:



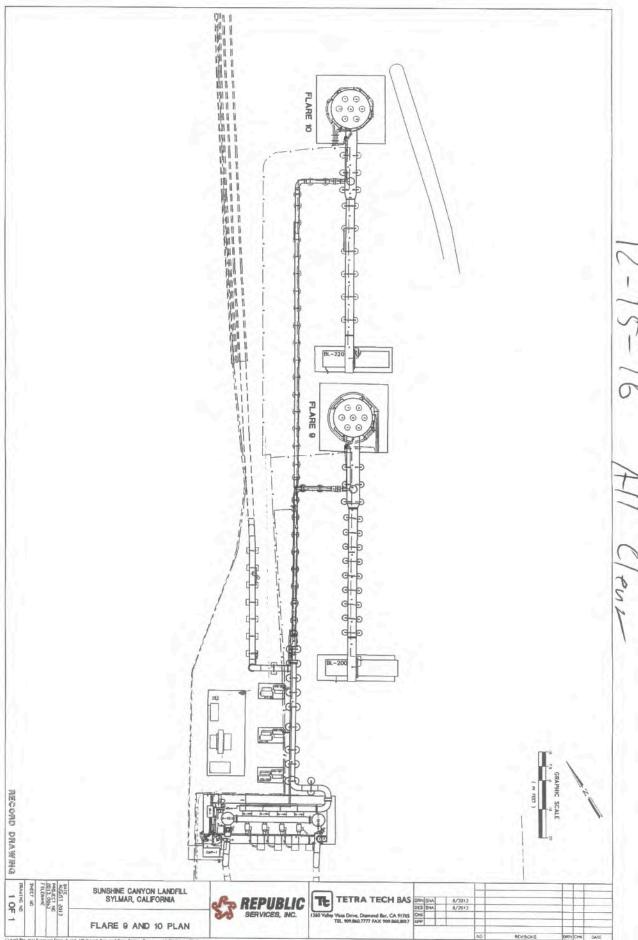
TECHNICIAN: Rober lehus DATE: 12-15-16						TEMPERATURE: SO " WEATHER CONDITIONS: Over Cast INST & SERIAL #: Gem Swo / G500550				
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2	%O2	%BAL	PURGE TIME (min)	COMMENTS	
239										
A – 11	0815		0,0	1.04	5.3	16,4	78.4	2		
B - 20	0817		0.0	4,04	0,2	2016		2		
C - 35	0819		0.0	1,03	011	20,6		3		
D - 50	0822		0.0	1,05	0,2	70,6		4		
E - 64	0856		0,0	1.0/	0.1	20,7	79,3	4		
240										
A -11	0830		0,0	1,04	143	8,2	77.6	2		
B - 20	0832		0.0	1,031	0,3	70,9		2		
C - 33	0834		0.0	1,01	Oil	20,5		3		
D - 49	0837		0.0	1.01	0.1	20,6		4		
E - 61	0841		0,2	1.03	6,1	20,6	79.1	4		

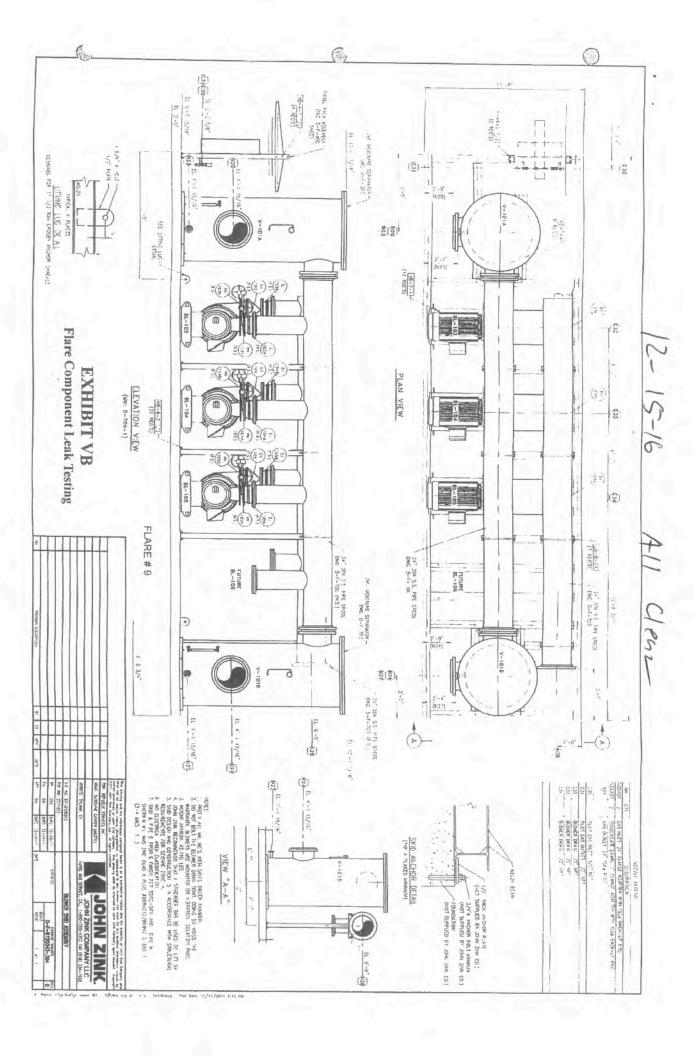
RES SIGNATURE: 19.201



TECHNICIA DATE: 12-	N: Robe -15-16	r4 )0	hus	V	EMPER VEATHE NST & S	R CON	DITIONS	n 5000	16500530 COMMENTS
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL CH4	PRES (+/-)	%CO2	%02	%BAL	PURGE TIME	COMMENTS
VADOSE ZONE									
203D	1006		0.0	-5,76	0.1	20,6	79,3	2	
204D	0728		0,0	-1.47	0.6	70.1	79,5	2	
211D	1010		0,0	-1,71	0,2	2014	79,4	2	
PROBE NUMBER	TIME	PPM CH <sub>4</sub>	%VOL						COMMENTS

RES SIGNATURE: 1





3000 1-0 1/4 tt 2045-1 @ 13(3) ( tan) 3/1 8-11 (3) G-300B (3) BEE! (BIE) (a) 13 25 25 31 369 (3) C-3008 (1-13 (1-13)) (1-13) (1-13) (1-13) (1-13) (1-13) THE OF C-800C SECTION (B) SECTION A (1)03 10-0 Flare Component Leak Testing **EXHIBIT VA** G-SDOE (B) (F) # C-BDOR 1 (B) DON'TH MOLTIES W. W. W. W. The state of the s (1) 1 1 chr (EXEXE) 333-44 C Designation Manage Com Q NOTES:

1. ALL GROBE DALE TO BE WEIGHT FROM ENGE OF SHO.

2. ALL BLOWER CASINGS TO HAVE DRAW MALVES INTRODUCES. I ALL CAUGE GLASSES TO MAVE BLOCK VALVES. IN BOTTOM OF DISCH ELL. BROWNING FERRIS INCUSTRIC Sec. FLARE #1 ---(E) (3)



#### L.T.F. MONITORING

ECHNICIAN: ATE: しししら ACKGROUNI	Kher) 0 16 D: Z,3 TIME	lus	TEMPERATURE WEATHER COM INST & SERIAL	VDITIONS OF	COMMENTS
	TIME	CH4(PPM) 7,2ppm	1		COMMENTS
GAC #1	0630	7,2 ppin			
		v . = = = = = = = = = = = = = = = = = =			
	New Automatic				

RES SIGNATURE:

Sushine Canyon Landfill Condensate Check

AND CONDENSATE

180 ppm

305 ppm

Dec 13, 2016



#### GAS MONITORING EQUIPMENT CALIBRATION

DATE	UNIT	SERIAL #	CAL GAS
12-15-16	TVA 1000B	1030945322	500 ppm CH4
12-15-16	Gem Swo	G500630	1540 CHY

SIGNATURE: Mull

# APPENDIX D NPDES CERTIFICATION OF COMPLETION



#### **SUNSHINE CANYON LANDFILL**



February 13, 2017

Operating Records Sunshine Canyon Landfill 14747 San Fernando Road Sylmar, CA 91342

Please be advised that all standard observations for the landfill were done in accordance with the NPDES monitoring and reporting requirements. Records of observations are kept at the Sunshine Canyon Landfill's Operating Records and are submitted to the RWQCB in the storm water table due annually by July 1<sup>st</sup>.

Sincerely,

Rob Sherman General Manager

Sunshine Canyon Landfill