

August 24, 2018

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**Groundwater Monitoring Report – Third Quarter 2018**  
**Automasters**  
**6200 Shattuck Avenue**  
**Oakland, California**  
**ACDEH Case #RO2935**

I declare, that to the best of my knowledge at the present time, the information and recommendations contained in the attached document are true and correct.

Submitted by,



Johnny Browning  
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**GROUNDWATER MONITORING REPORT  
THIRD QUARTER 2018**

**Automasters  
Leaking Underground Tank Site  
6200 Shattuck Avenue  
Oakland  
Case No. RO2935**

***Prepared for:***

**6200 Shattuck Partners LLC  
Oakland**

***Submitted to:***

**Alameda County Department of Environmental Health  
Oakland**

***Prepared by:***

**West & Associates Environmental Engineers, Inc.  
Vacaville**

**August 2018**

## ACKNOWLEDGMENTS

This Groundwater Monitoring Report was prepared under authorization of our client, the Automasters property owner, and is intended for his exclusive use.

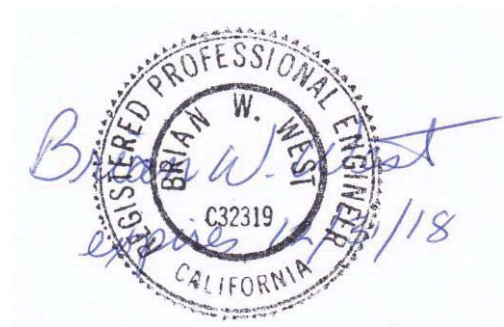
Groundwater investigation at the Automasters site is under jurisdiction of Alameda County Department of Environmental Health; 5550 Skyline Blvd., Suite A, Oakland, California 95403. The case has been assigned No. RO0002935.

In the preparation of this Site Assessment reliance was made on previous environmental investigation performed by Pangea in 2006.

The Automasters site has been assigned the GeoTracker Global ID T0619748201.

In the completion of this project reliance was made on chemical analytical testing performed by McCampbell Analytical in Pittsburg. McCampbell is certified by the State of California for the analyses performed.

This Report was prepared by West & Associates Environmental Engineers, Inc.; 630 Eubanks Ct., Unit G, Vacaville, California 95688. Principal author is Mr. Brian W. West, PE, (707) 761-2307; RCE 32319, expires 12/31/18.



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## 1.0 INTRODUCTION

This Groundwater Monitoring Report presents results of field measurements, hydrologic evaluation and groundwater analysis activities completed at the Automasters leaking underground fuel tank site located at 6200 Shattuck Avenue in Oakland, CA.

The Automasters site regional setting is shown on *Figure 1*. An aerial view of the property is presented on *Figure 2*. Both figures are included in *Appendix A*.

### 1.1 Scope

The scope of this project consisted of performing groundwater monitoring in the first encountered groundwater zone at the subject site. Specific scope items include:

- Hydrologic measurement to determine the local groundwater gradient direction and magnitude
- Collection of representative groundwater samples from three existing wells
- Proper management of investigative derived wastes (IDW)
- Arrange for groundwater sample analysis in a State certified laboratory
- Quality Control/ Quality Assurance Measures
- Prepare and submit this written monitoring report
- Data upload to GeoTracker

### 1.2 Summarized Background

The Automasters facility is located at the northeast corner of Shattuck Avenue and 62<sup>nd</sup> Street in an area of mixed residential and commercial land use. The elevation of the Site is 131 feet above mean sea level, with local topography sloping gently to the southwest (US Geological Survey [USGS], Oakland West Quadrangle, California). Surrounding properties are primarily single-family and multi-family residences with a few commercial buildings located along Shattuck Avenue to the south and northwest of the Site.

Shortly after purchasing the Site in 1986, Mr. Glenn Logan contracted with Ray Walker Hydraulics of Pleasanton, CA to remove two small underground gasoline storage tanks (USTs) from the southern portion of the Site. W&A contacted Mr. Walker in December 2014 to gather more information on these USTs and determine whether any contaminated soil was encountered during their removal. Mr. Walker searched his archived files but did not have any written information on this Site as the work was performed almost 30 years ago. To the best of his recollection both USTs were used for gasoline and either 500 or 1,000 gallons in size.

Mr. Logan distinctly remembers that contaminated soil between the USTs was removed and transported offsite for disposal. Attempts to contact the Oakland Fire Department regarding this Site were unsuccessful, so there is no written documentation of the quantity of soil removed or where it was taken.

The initial site assessment activities at this Site were performed by Pangea in 2006. Three soil borings were advanced across the Site at the locations shown on *Figure 2*. Borings SB-1 and SB-3 were clean, i.e. there were no detectable concentrations of TPH-g, , BTEX compounds, fuel oxygenates, lead scavengers, TPH-d or TPH-motor oil detected in any of

the soil samples collected from these borings. The sample collected from boring SB-2 at 11 feet below ground surface (bgs) was reported to contain TPH-g at 3,000 mg/kg, TPH-d at 850 mg/kg, naphthalene at 10 mg/kg, and negligible concentrations of BTEX compounds and fuel additives. The 8-foot and 16-foot deep samples from SB-2 had insignificant concentrations of TPH-g and TPH-d, indicating that the zone of contamination was very limited in vertical extent. Total lead concentrations in all samples were typical of background levels in the vicinity.

No groundwater was encountered during the drilling of this 48-foot deep borehole. The SB-2 borehole was left open overnight with a 10-foot screen placed near the bottom and a groundwater "grab" sample was collected from SB-2 the following day. The depth to groundwater in this borehole was 8 feet bgs. TPH-g at 1,700 µg/L, TPH-d at 1,000 µg/L, TPH-motor oil at 1,100 µg/L, and naphthalene at 440 µg/L were reported in this sample along with modest concentrations of BTEX compounds and fuel additives. This groundwater was in direct contact with the sand and gravel layer at 11-12 feet bgs, so it is unclear whether these results are indicative of actual groundwater concentrations.

A more extensive site investigation program was conducted in December 2015. Sub-surface conditions encountered during the 2015 remedial investigation were consistent with those reported by Pangea in 2006. There is a relatively permeable silty sand strata (USCS 'GM') found between 7 to 12 feet BGS. The silty sand strata is overlain and underlain by a much less permeable clayey silt strata (USCS 'ML').

Soil borings advanced to 20 feet BGS are observed to be dry. However, when these borings are converted to groundwater monitoring wells the potentiometric groundwater surface rises to 4-7 feet bgs, indicating that shallow groundwater is at least partially confined.

The soil sample analytical results obtained by West & Associates in 2015 from 7 boreholes sampled to 20 feet bgs are also consistent with the results reported during the limited site investigation program conducted by Pangea. Both sampling activities reported significant concentrations of TPH-g and TPH-d in the vicinity of the former fuel dispenser island. Contamination is predominantly found in the permeable silty sand strata between 7 to 12 feet BGS.

Two of the groundwater monitoring wells installed in 2015 had significant concentrations of TPH-g, TPH-d, BTEX compounds and naphthalene when first sampled on December 31<sup>st</sup>. MW-101, the well located west of the former USTs and dispenser island, was reported to contain TPH-g at 18,000 µg/L, TPH-d at 5,100 µg/L, benzene at 1,000 µg/L, and naphthalene at 170 µg/L. MW-103, south of the former USTs, was reported to contain TPH-g at 4,700 µg/L, TPH-d at 1,400 µg/L, benzene at 110 µg/L, and naphthalene at 78 µg/L. The groundwater sample from upgradient well MW-102 was clean.

All three wells were monitored quarterly from June 2016 through July 2017. Sample results from these five quarterly monitoring events were consistent, with the highest concentrations being reported in MW-101 (TPH-g ranging from 14,000 to 17,000 µg/L, benzene ranging from 810 to 990 µg/L, and naphthalene ranging from 130 to 210 µg/L). MW-103 was reported with lower but nonetheless actionable concentrations of these COCS; MW-102 has remained clean.

Additional site investigation activities were performed in March 2017. These activities included collecting groundwater “grab” samples from four offsite locations in the parking lanes southwest of the property, two in 62<sup>nd</sup> Street and two in Shattuck Avenue. The concentrations of TPH-g and benzene in these samples ranged up to 1,100 µg/L and 14 µg/L, respectively, in groundwater at B-20 located in Shattuck Avenue directly south of MW-1. Therefore the full magnitude and extent of offsite groundwater contamination remains undefined.

## 2.0 SITE CHARACTERISTICS

This section presents, physical site characteristics pertinent to the hydrogeologic assessment.

### 2.1 Physical Setting

The Automasters site is located at 6200 Shattuck Avenue, Oakland, California. It is an active motor vehicle repair facility approximately 0.1 acres in size. The site is surrounded by individual and multi-family private residences along with a few small commercial establishments. *Figure 3* shows the locations of the former USTs and dispenser island at the site.

The lead regulatory agency for UST and groundwater issues at the site is Alameda County Department of Environmental Health Services (ACDEH), the LOP for Alameda County. The site is also in the jurisdiction of the Regional Water Quality Control Board, San Francisco Bay Region.

### 2.2 Subsurface Conditions

Soil types encountered during the 2006 and 2015 site investigation activities consisted predominantly of silty clay to clayey silt with some sands and gravels to 36 feet below ground surface (bgs) and stiff clay from 36 feet to 48 feet bgs. The two borings advanced in 2006 closest to the former USTs and dispenser islands had a distinct sand and gravel lens at 10 to 12 feet bgs. The 2015 remedial investigation confirmed that shallow soils are predominately silty clay to clayey silt with a sand and gravel lens at 10 to 12 feet bgs.

The depth to first groundwater ranges from approximately 3 to 8 feet bgs. This shallow groundwater appears to comprise a perched aquifer that is not capable of providing a sustained yield of 200 gallons per day (the threshold for beneficial use designation).

## 3.0 HYDROLOGIC MONITORING

Hydrologic measurements were made at the Automasters site on July 16, 2018. The static depth to groundwater (dtw) on that date was measured in each of the wells using a Solinst electronic sounding meter with a measurement accuracy of +/- 0.01 feet.

*Table 1* presents top-of-casing (TOC) elevations, dtw measurements and groundwater elevations for the July 16, 2018 monitoring event. Hydrologic field data is presented on the “Purge Data Record Forms” included in *Appendix B*.

Groundwater elevations from this sampling event are plotted on *Figure 4*. The local groundwater gradient direction as calculated using the July 6, 2017 data is to the WSW @ 256° with a gradient of 0.006 feet per foot.

**TABLE 1  
HYDROLOGIC MEASUREMENTS  
Automasters  
July 16, 2018**

*(all measurements in feet)*

<b>Well ID</b>	<b>TOC</b>	<b>DTW</b>	<b>GWE</b>
MW-101	128.84	5.40	123.44
MW-102	130.35	6.53	123.82
MW-103	130.03	6.41	123.62

Abbreviations:  
 TOC: Top of Casing  
 DTW: Depth to Groundwater  
 GWE: Groundwater Elevation

**4.0 GROUNDWATER SAMPLE COLLECTION**

Groundwater monitoring wells MW-101, MW-102, and MW-103 were purged and sampled on July 16, 2018. All techniques, equipment and procedures used in the collection of groundwater samples conformed to West & Associates “Standard Field Procedures”. Groundwater purging data was recorded on the “Purge Data Record Forms” included in *Appendix B*.

Groundwater samples were collected using new, disposable plastic bailers. Upon retrieval to the surface, each water sample was transferred to laboratory-supplied containers for analysis of petroleum compounds as described below. All water samples were labeled, placed into an ice chilled cooler and transported under EPA chain-of-custody protocol to a State certified analytical laboratory for testing.

**4.1 Purge Water**

Monitoring well purge water was stored on site in a labeled 55-gallon drum pending laboratory chemical analysis results and subsequent proper disposal.

**4.2 Groundwater Sample Analysis**

On July 17, 2018 the Automasters groundwater sample set was submitted under chain of custody protocol to McCampbell Laboratories for chemical analysis. McCampbell is certified by the State of California for the analyses performed.

Each groundwater sample was analyzed for the following:

- Total Petroleum Hydrocarbons as gasoline (TPH-g) by Method 8015b
- Total Petroleum Hydrocarbons as diesel (TPH-d) by Method 8015b
- Total Petroleum Hydrocarbons as motor oil (TPH-mo) by Method 8015b
- Volatile Organic Compounds (VOCs) by EPA Method 8260 (including BTEX, MtBE and naphthalene)

Minimum laboratory detection limits for all analyses are presented in the original laboratory reports appearing in *Appendix C*.



**4.3 Groundwater Sample Analytical Results**

Groundwater sample analytical results for contaminants of concern are presented in *Table 2*.

A summary of historical groundwater sample analytical results is presented in *Appendix D*.

**Table 2  
Groundwater Sample Analysis  
Automasters  
July 16, 2018**

*(all values in micrograms per liter, i.e. ug/l or ppb)*

Sample ID	TPH-g	B	T	E	X	M	N	TPH-d	TPH-mo	Other VOCs
MW-101	13,000	670	<25	470	250	<25	72	2,900	5,200	*
MW-102	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250	No
MW-103	7,100	120	<10	210	100	<5	24	1,800	<250	*

Notes & Abbreviations:

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total Xylenes

M = MtBE

N = Naphthalene

\* See Table 2.1

**TABLE 2.1  
VOC GROUNDWATER RESULTS  
Automasters**

*(all values in micrograms per liter, i.e. ug/l or ppb)*

*(Other than BTEX, MtBE & Naphthalene)*

Sample ID	Isopropyl benzene	n-Propyl benzene	1,2,4 Trimethyl benzene	1,3,5 Trimethyl benzene	n-Butyl benzene	sec-Butyl benzene
MW-101	70	150	350	100	36	<25
MW-102	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-103	28	62	130	20	18	<10

Groundwater quality data for this reporting period is displayed graphically on *Figure 3*.

#### 4.4 Quality Assurance/Quality Control

QA/QC measures employed on the Automasters groundwater monitoring project conformed to West & Associates Standard Field Procedures. To summarize, QA/QC measures included:

- Assigning experienced and capable staff
- Following approved procedures and techniques
- Utilizing appropriate equipment and supplies
- Thorough and frequent decontamination of field equipment
- Maintaining detailed field notes
- Utilizing laboratory supplied sample containers
- Timely delivery of samples to the testing laboratory
- Keeping an unbroken Chain of Custody Record
- Adhering to EPA approved analytical procedures

All QA/QC procedures for this project were within acceptable parameters. A QA/QC review of the data set generated during this project reveals no anomalies. Analytical results are consistent with field observations and previously generated site data. The QA/QC report provided by the testing laboratory exhibits no flagged items. It is concluded that the data presented in this Report has an acceptable level of credibility and can be relied upon to accurately represent prevailing environmental conditions at the site.

#### 5.0 DISCUSSION

The Automasters 3<sup>rd</sup> Quarter 2018 groundwater monitoring project was completed in conformance with the ACDEH and San Francisco Bay RWQCB guidelines for groundwater sampling and analysis. No deviations from the standard QA/QC protocols occurred during this monitoring activity. The data presented in this report is considered representative of prevailing site conditions.

Hydrologic measurements made at the Automasters site on July 16, 2018 were interpreted to represent a groundwater gradient flowing to the WSW at 256 degrees. The gradient magnitude was calculated to be 0.006 feet per foot. This hydrologic data is consistent with previous site measurements.

Elevated concentrations of gasoline constituent contaminants were reported in groundwater samples collected from wells MW-101 and MW-103. This data is consistent with results of the previous monitoring activities in 2016 and 2017.

#### 6.0 CONCLUSIONS AND RECOMMENDATIONS

No anomalies were observed during the 3<sup>rd</sup> quarter 2018 Automasters groundwater monitoring event. Hydrologic conditions were found to be very similar to those measured during the previous four quarterly monitoring events. Contaminant concentrations in groundwater at wells MW-101 and MW-103 were within the range previously reported. No detectable groundwater contamination was again observed at well MW-102.

The information generated during the 3<sup>rd</sup> quarter 2018 groundwater monitoring event confirms that additional site investigation will be required at this Site in order to achieve case closure. In particular, groundwater samples will need to be collected across Shattuck Avenue to the west, as it is impractical to do so in Shattuck Avenue itself. This Site has recently been placed in the ECAP program, with an established budget to install two additional groundwater monitoring wells in the sidewalk or parking lane on the west side of Shattuck Avenue, across from the southwest corner of the Site.

## 7.0 ELECTRONIC DATA SUBMITTAL COMPLIANCE

This Groundwater Monitoring Report has been uploaded to the ACDEH web site per instructions included with the ACDEH letter requesting it. Once approved by ACDEH, it will be uploaded to the Automasters GeoTracker Domain, Global ID T0619748201. The upload certificate is presented in *Appendix E*. Selected future work products will be uploaded to the GeoTracker database in conformance with State requirements.

Monitoring data from the Automasters Leaking Underground Tank site can be accessed through the ACDEH web site or through GeoTracker at <http://www.geotracker.swrcb.ca.gov/>.



**APPENDIX A**

**Figures**



**WEST & ASSOCIATES ENVIRONMENTAL ENGINEERS**

PO Box 5891, Vacaville, CA 95696

Project Name: Automasters

Date: February 2016

Location: 6200 Shattuck Avenue, Oakland, CA

Drawing By: DLG

Scale: No Scale

**Legend**



Site Location

**FIGURE 1**  
Regional Site Location



**WEST & ASSOCIATES ENVIRONMENTAL ENGINEERS**

PO Box 5891, Vacaville, CA 95696

Project Name: Automasters

Date: February 2016

Location: 6200 Shattuck Avenue, Oakland, CA

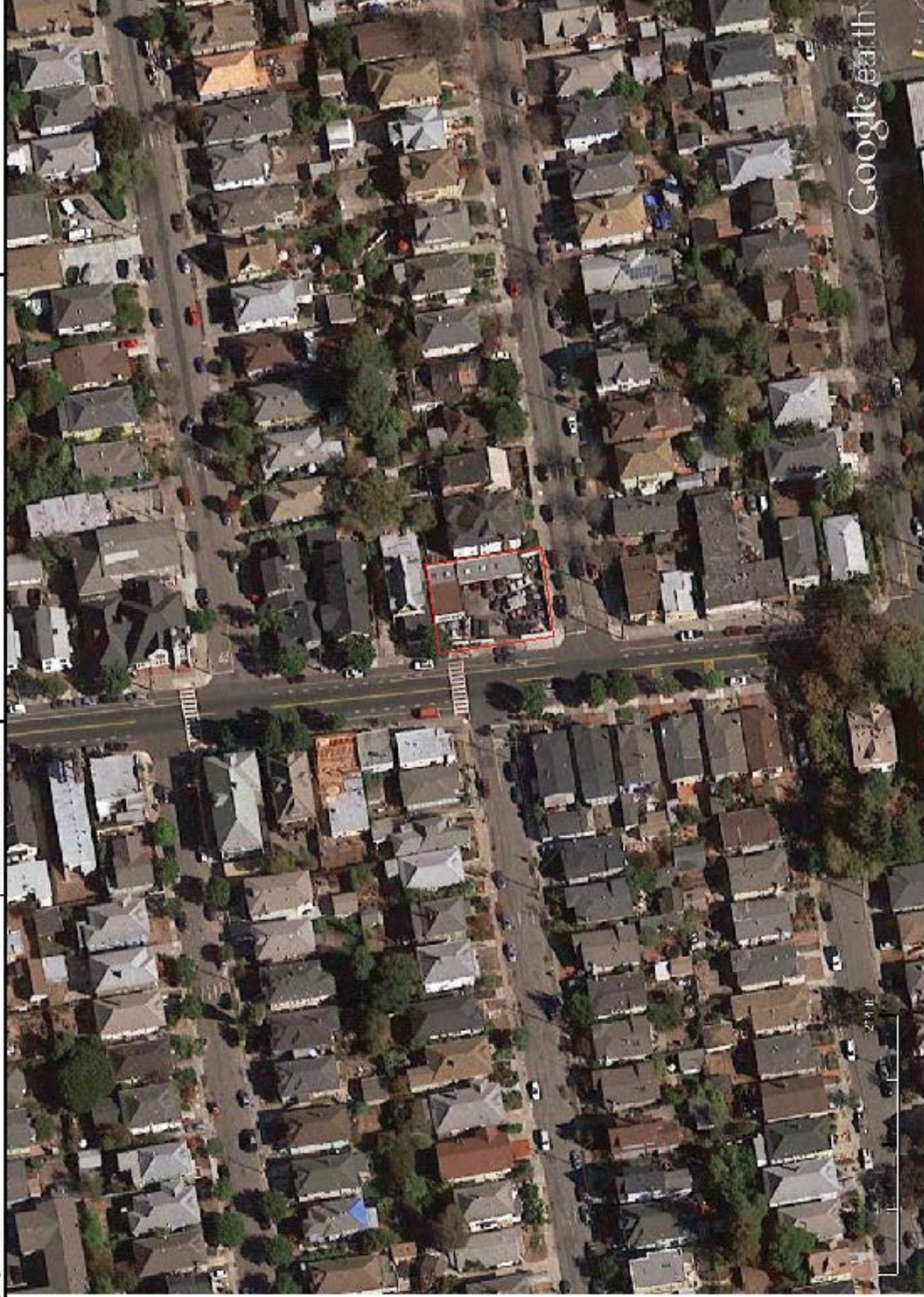
Drawing By: DLG

Scale: No Scale

**Legend**

 Site Location

**FIGURE 2**  
**Aerial Photo**



**WEST & ASSOCIATES ENVIRONMENTAL ENGINEERS**

PO Box 5891, Vacaville, CA 95696

Project Name: Automasters

Date: July 2018

Location: 6200 Shattuck Avenue, Oakland, CA

Drawing By: DLG

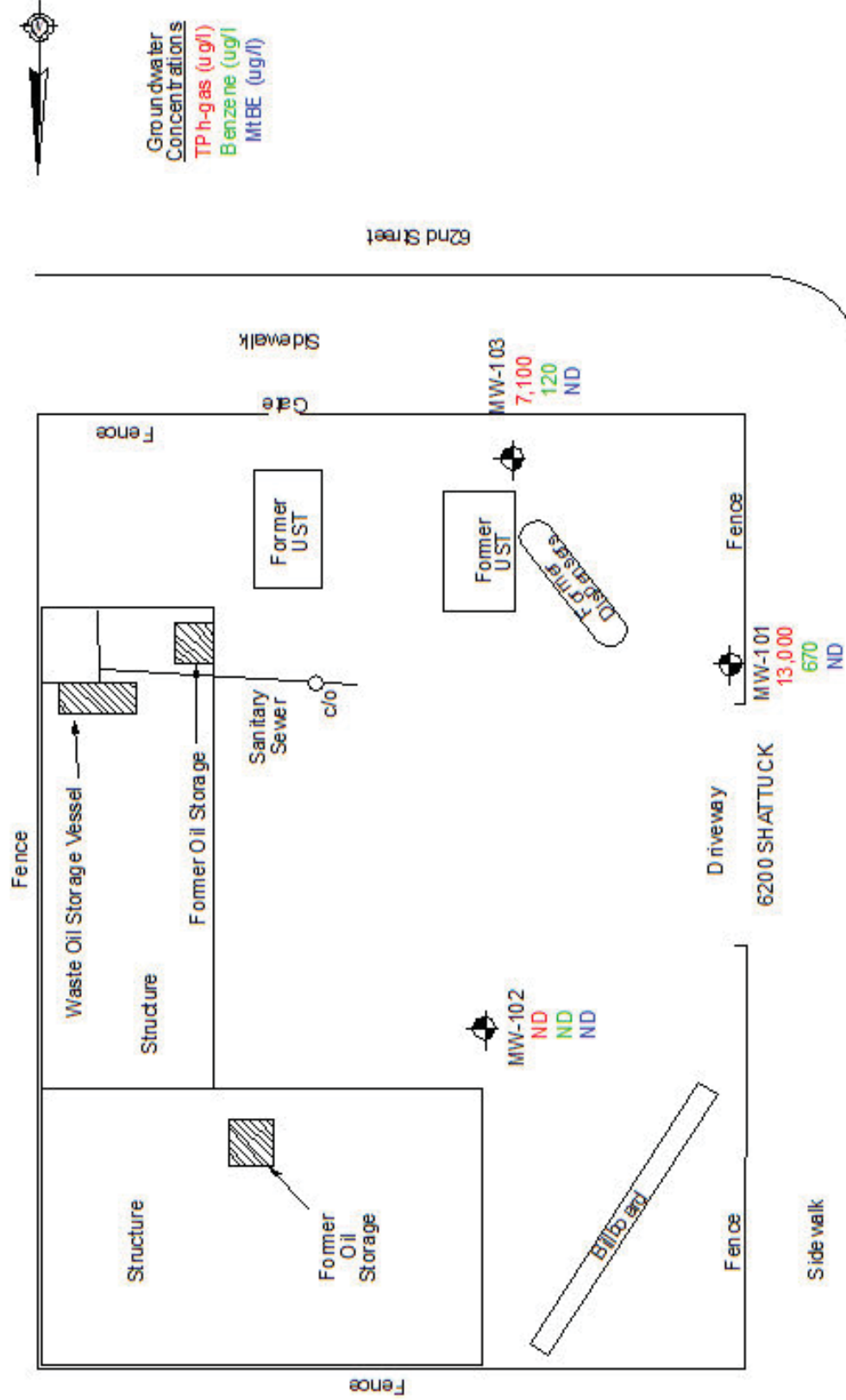
Scale: NS

**Legend**



Monitoring Well

**FIGURE 3**  
Contaminant Concentrations  
3rd Quarter 2018



**WEST & ASSOCIATES ENVIRONMENTAL ENGINEERS**

PO Box 5891, Vacaville, CA 95696

Project Name: Automasters

Date: July 2018

Location: 6200 Shattuck Avenue, Oakland, CA

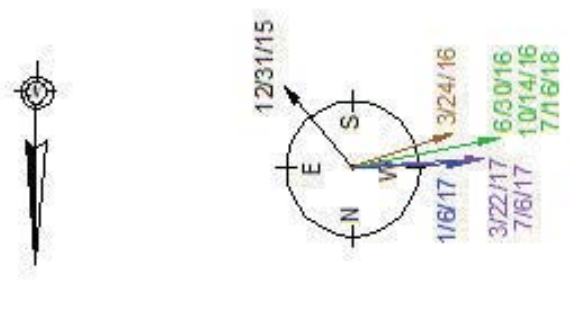
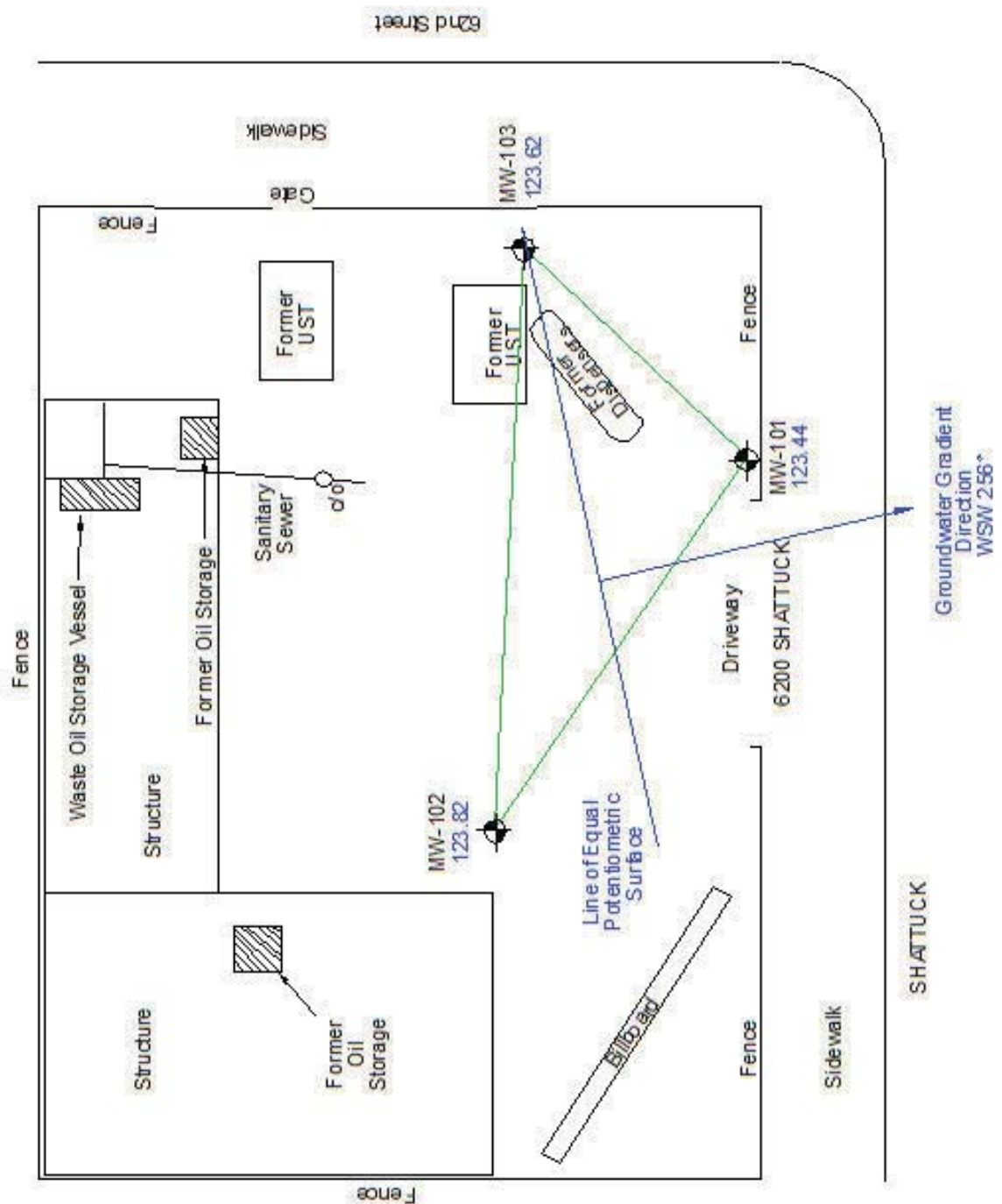
Drawing By: DLG

Scale: NS

**Legend**

-  Monitoring Well
-  Well Triangle
-  Line of Equal Potentiometric Surface
-  Groundwater Gradient Direction
-  123.82 Groundwater Elevation Relative to MSL

**FIGURE 4**  
Groundwater Elevations & Gradient  
July 16, 2018



Groundwater Gradient  
Rose Diagram  
Dec 2015 - July 2018





**APPENDIX B**

**Purge Data Record Forms**

**GROUNDWATER SAMPLING  
 PURGE DATA RECORD FORM**

PROJECT: Automasters

PROJECT LOCATION: 6200 Shattuck Avenue, Oakland

MONITORING WELL ID: MW-101 SAMPLER: BAJ

MONITORING WELL LOCATION: \_\_\_\_\_

DATE: 7.16.2018 TIME: 3:20 AM  PM

DISSOLVED OXYGEN CONCENTRATION: \_\_\_\_\_ N/A \_\_\_\_\_ Mg/L – BEFORE PURGE

\_\_\_\_\_ N/A \_\_\_\_\_ Mg/L – AFTER PURGE

FREE PHASE PRODUCT: Y  N INCHES \_\_\_\_\_ PETROLEUM SHEEN: Y  N

ODOR/APPEARANCE: Petroleum odor/clear – medium turbidity

$$\frac{20'}{WELL\ DEPTH} - \frac{5.40}{DTGW} \times \frac{2''}{.17} \frac{4''}{.66} = \frac{2.48}{CASING\ VOLUME\ (GALS)}$$

**PURGE MEASUREMENTS**

TIME	PURGE VOLUME GALLONS	CUMULATIVE GALLONS	TEMP. °C	CONDUCTIVITY μS	pH	Turbidity
3:24	0	0	19.9	677	6.36	338
3:37	2.5	2.5	19.5	746	6.35	373
3:49	2.5	5.0	19.1	704	6.46	351
4:01	2.5	7.5	18.9	708	6.46	354

REMARKS: Sample collected at 4:05 pm

**GROUNDWATER SAMPLING  
 PURGE DATA RECORD FORM**

PROJECT: Automasters

PROJECT LOCATION: 6200 Shattuck Avenue, Oakland

MONITORING WELL ID: MW-102 SAMPLER: BAJ

MONITORING WELL LOCATION: \_\_\_\_\_

DATE: 7.16.2018 TIME: 1:00 AM  PM

DISSOLVED OXYGEN CONCENTRATION: \_\_\_\_\_ N/A \_\_\_\_\_ Mg/L – BEFORE PURGE

\_\_\_\_\_ N/A \_\_\_\_\_ Mg/L – AFTER PURGE

FREE PHASE PRODUCT: Y  N INCHES \_\_\_\_\_ PETROLEUM SHEEN: Y  N

ODOR/APPEARANCE: No odor/clear – Mild turbidity

$$\frac{20'}{WELL\ DEPTH} - \frac{6.53}{DTGW} \times \frac{2''}{.17} \cdot \frac{4''}{.66} = \frac{2.29}{CASING\ VOLUME\ (GALS)}$$

**PURGE MEASUREMENTS**

TIME	PURGE VOLUME GALLONS	CUMULATIVE GALLONS	TEMP. °C	CONDUCTIVITY μS	pH	Turbidity
1:01	0	0	21.8	576	6.39	287
1:22	2.5	2.5	21.7	590	6.30	295
1:51	2.5	5.0	20.5	601	5.88	299
2:12	2.5	7.5	19.7	583	6.02	275

REMARKS: Sample collected at 2:21 pm

**GROUNDWATER SAMPLING  
 PURGE DATA RECORD FORM**

PROJECT: Automasters

PROJECT LOCATION: 6200 Shattuck Avenue, Oakland

MONITORING WELL ID: MW-103 SAMPLER: BAJ

MONITORING WELL LOCATION: \_\_\_\_\_

DATE: 7.16.2018 TIME: 2:25 AM  PM

DISSOLVED OXYGEN CONCENTRATION: \_\_\_\_\_ N/A \_\_\_\_\_ Mg/L – BEFORE PURGE

\_\_\_\_\_ N/A \_\_\_\_\_ Mg/L – AFTER PURGE

FREE PHASE PRODUCT: Y  N INCHES \_\_\_\_\_ PETROLEUM SHEEN: Y  N

ODOR/APPEARANCE: Mild petroleum odor/clear – mild turbidity

$$\frac{20'}{\text{WELL DEPTH}} - \frac{6.41}{\text{DTGW}} \times \frac{2''}{.17} \frac{4''}{.66} = \frac{2.31}{\text{CASING VOLUME (GALS)}}$$

**PURGE MEASUREMENTS**

TIME	PURGE VOLUME GALLONS	CUMULATIVE GALLONS	TEMP. °C	CONDUCTIVITY μS	pH	Turbidity
	0	0	20.8	621	6.16	310
	2.5	2.5	19.6	740	6.47	369
	2.5	5.0	19.0	709	6.65	354
	2.5	7.5	18.9	746	6.67	372

REMARKS: Sample collected at 3:15 pm



**APPENDIX C**

**Analytical Lab Reports  
McC Campbell WO #1807729**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1807729

**Report Created for:** West & Associates

630 Eubanks Ct, Unit #G  
Vacaville, CA 95688

**Project Contact:** Bruce Jacobsen

**Project P.O.:**

**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**Project Received:** 07/17/2018

Analytical Report reviewed & approved for release on 07/30/2018 by:

Jennifer Lagerbom  
Project Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** West & Associates  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA  
**WorkOrder:** 1807729

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** West & Associates  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA  
**WorkOrder:** 1807729

### Analytical Qualifiers

S Surrogate spike recovery outside accepted recovery limits  
c4 Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.  
d1 Weakly modified or unmodified gasoline is significant  
e2 Diesel range compounds are significant; no recognizable pattern  
e4 Gasoline range compounds are significant.  
e8 Pattern resembles kerosene/kerosene range/jet fuel range





## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/24/18-7/27/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-102	1807729-001B	Water	07/16/2018 14:21	GC16 07231826.D	161994
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	10	1	07/24/2018 01:50	
tert-Amyl methyl ether (TAME)	ND	0.50	1	07/24/2018 01:50	
Benzene	ND	0.50	1	07/24/2018 01:50	
Bromobenzene	ND	0.50	1	07/24/2018 01:50	
Bromochloromethane	ND	0.50	1	07/24/2018 01:50	
Bromodichloromethane	ND	0.50	1	07/24/2018 01:50	
Bromoform	ND	0.50	1	07/24/2018 01:50	
Bromomethane	ND	0.50	1	07/24/2018 01:50	
2-Butanone (MEK)	ND	2.0	1	07/24/2018 01:50	
t-Butyl alcohol (TBA)	ND	2.0	1	07/24/2018 01:50	
n-Butyl benzene	ND	0.50	1	07/24/2018 01:50	
sec-Butyl benzene	ND	0.50	1	07/24/2018 01:50	
tert-Butyl benzene	ND	0.50	1	07/24/2018 01:50	
Carbon Disulfide	ND	0.50	1	07/24/2018 01:50	
Carbon Tetrachloride	ND	0.50	1	07/24/2018 01:50	
Chlorobenzene	ND	0.50	1	07/24/2018 01:50	
Chloroethane	ND	0.50	1	07/24/2018 01:50	
Chloroform	ND	0.50	1	07/24/2018 01:50	
Chloromethane	ND	0.50	1	07/24/2018 01:50	
2-Chlorotoluene	ND	0.50	1	07/24/2018 01:50	
4-Chlorotoluene	ND	0.50	1	07/24/2018 01:50	
Dibromochloromethane	ND	0.50	1	07/24/2018 01:50	
1,2-Dibromo-3-chloropropane	ND	0.20	1	07/24/2018 01:50	
1,2-Dibromoethane (EDB)	ND	0.50	1	07/24/2018 01:50	
Dibromomethane	ND	0.50	1	07/24/2018 01:50	
1,2-Dichlorobenzene	ND	0.50	1	07/24/2018 01:50	
1,3-Dichlorobenzene	ND	0.50	1	07/24/2018 01:50	
1,4-Dichlorobenzene	ND	0.50	1	07/24/2018 01:50	
Dichlorodifluoromethane	ND	0.50	1	07/24/2018 01:50	
1,1-Dichloroethane	ND	0.50	1	07/24/2018 01:50	
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	07/24/2018 01:50	
1,1-Dichloroethene	ND	0.50	1	07/24/2018 01:50	
cis-1,2-Dichloroethene	ND	0.50	1	07/24/2018 01:50	
trans-1,2-Dichloroethene	ND	0.50	1	07/24/2018 01:50	
1,2-Dichloropropane	ND	0.50	1	07/24/2018 01:50	
1,3-Dichloropropane	ND	0.50	1	07/24/2018 01:50	
2,2-Dichloropropane	ND	0.50	1	07/24/2018 01:50	

(Cont.)



## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/24/18-7/27/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-102	1807729-001B	Water	07/16/2018 14:21	GC16 07231826.D	161994
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.50	1	07/24/2018 01:50	
cis-1,3-Dichloropropene	ND	0.50	1	07/24/2018 01:50	
trans-1,3-Dichloropropene	ND	0.50	1	07/24/2018 01:50	
Diisopropyl ether (DIPE)	ND	0.50	1	07/24/2018 01:50	
Ethylbenzene	ND	0.50	1	07/24/2018 01:50	
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	07/24/2018 01:50	
Freon 113	ND	0.50	1	07/24/2018 01:50	
Hexachlorobutadiene	ND	0.50	1	07/24/2018 01:50	
Hexachloroethane	ND	0.50	1	07/24/2018 01:50	
2-Hexanone	ND	0.50	1	07/24/2018 01:50	
Isopropylbenzene	ND	0.50	1	07/24/2018 01:50	
4-Isopropyl toluene	ND	0.50	1	07/24/2018 01:50	
Methyl-t-butyl ether (MTBE)	ND	0.50	1	07/24/2018 01:50	
Methylene chloride	ND	0.50	1	07/24/2018 01:50	
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	07/24/2018 01:50	
Naphthalene	ND	0.50	1	07/24/2018 01:50	
n-Propyl benzene	ND	0.50	1	07/24/2018 01:50	
Styrene	ND	0.50	1	07/24/2018 01:50	
1,1,1,2-Tetrachloroethane	ND	0.50	1	07/24/2018 01:50	
1,1,2,2-Tetrachloroethane	ND	0.50	1	07/24/2018 01:50	
Tetrachloroethene	ND	0.50	1	07/24/2018 01:50	
Toluene	ND	0.50	1	07/24/2018 01:50	
1,2,3-Trichlorobenzene	ND	0.50	1	07/24/2018 01:50	
1,2,4-Trichlorobenzene	ND	0.50	1	07/24/2018 01:50	
1,1,1-Trichloroethane	ND	0.50	1	07/24/2018 01:50	
1,1,2-Trichloroethane	ND	0.50	1	07/24/2018 01:50	
Trichloroethene	ND	0.50	1	07/24/2018 01:50	
Trichlorofluoromethane	ND	0.50	1	07/24/2018 01:50	
1,2,3-Trichloropropane	ND	0.50	1	07/24/2018 01:50	
1,2,4-Trimethylbenzene	ND	0.50	1	07/24/2018 01:50	
1,3,5-Trimethylbenzene	ND	0.50	1	07/24/2018 01:50	
Vinyl Chloride	ND	0.50	1	07/24/2018 01:50	
Xylenes, Total	ND	0.50	1	07/24/2018 01:50	

(Cont.)



# Analytical Report

Client: West & Associates

WorkOrder: 1807729

Date Received: 7/17/18 14:35

Extraction Method: SW5030B

Date Prepared: 7/24/18-7/27/18

Analytical Method: SW8260B

Project: Automasters; 6200 Shattuck Ave. Oakland, CA

Unit: µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-102	1807729-001B	Water	07/16/2018 14:21	GC16 07231826.D	161994

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Dibromofluoromethane	119	78-134		07/24/2018 01:50
Toluene-d8	102	82-120		07/24/2018 01:50
4-BFB	96	69-131		07/24/2018 01:50

Analyst(s): KF



## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/24/18-7/27/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-103	1807729-002B	Water	07/16/2018 15:15	GC18 07271821.D	161994
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		200	20	07/27/2018 21:13
tert-Amyl methyl ether (TAME)	ND		10	20	07/27/2018 21:13
Benzene	<b>120</b>		10	20	07/27/2018 21:13
Bromobenzene	ND		10	20	07/27/2018 21:13
Bromochloromethane	ND		10	20	07/27/2018 21:13
Bromodichloromethane	ND		10	20	07/27/2018 21:13
Bromoform	ND		10	20	07/27/2018 21:13
Bromomethane	ND		10	20	07/27/2018 21:13
2-Butanone (MEK)	ND		40	20	07/27/2018 21:13
t-Butyl alcohol (TBA)	ND		40	20	07/27/2018 21:13
n-Butyl benzene	<b>18</b>		10	20	07/27/2018 21:13
sec-Butyl benzene	ND		10	20	07/27/2018 21:13
tert-Butyl benzene	ND		10	20	07/27/2018 21:13
Carbon Disulfide	ND		10	20	07/27/2018 21:13
Carbon Tetrachloride	ND		10	20	07/27/2018 21:13
Chlorobenzene	ND		10	20	07/27/2018 21:13
Chloroethane	ND		10	20	07/27/2018 21:13
Chloroform	ND		10	20	07/27/2018 21:13
Chloromethane	ND		10	20	07/27/2018 21:13
2-Chlorotoluene	ND		10	20	07/27/2018 21:13
4-Chlorotoluene	ND		10	20	07/27/2018 21:13
Dibromochloromethane	ND		10	20	07/27/2018 21:13
1,2-Dibromo-3-chloropropane	ND		4.0	20	07/27/2018 21:13
1,2-Dibromoethane (EDB)	ND		10	20	07/27/2018 21:13
Dibromomethane	ND		10	20	07/27/2018 21:13
1,2-Dichlorobenzene	ND		10	20	07/27/2018 21:13
1,3-Dichlorobenzene	ND		10	20	07/27/2018 21:13
1,4-Dichlorobenzene	ND		10	20	07/27/2018 21:13
Dichlorodifluoromethane	ND		10	20	07/27/2018 21:13
1,1-Dichloroethane	ND		10	20	07/27/2018 21:13
1,2-Dichloroethane (1,2-DCA)	ND		10	20	07/27/2018 21:13
1,1-Dichloroethene	ND		10	20	07/27/2018 21:13
cis-1,2-Dichloroethene	ND		10	20	07/27/2018 21:13
trans-1,2-Dichloroethene	ND		10	20	07/27/2018 21:13
1,2-Dichloropropane	ND		10	20	07/27/2018 21:13
1,3-Dichloropropane	ND		10	20	07/27/2018 21:13
2,2-Dichloropropane	ND		10	20	07/27/2018 21:13

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## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/24/18-7/27/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-103	1807729-002B	Water	07/16/2018 15:15	GC18 07271821.D	161994
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		10	20	07/27/2018 21:13
cis-1,3-Dichloropropene	ND		10	20	07/27/2018 21:13
trans-1,3-Dichloropropene	ND		10	20	07/27/2018 21:13
Diisopropyl ether (DIPE)	ND		10	20	07/27/2018 21:13
Ethylbenzene	<b>210</b>		10	20	07/27/2018 21:13
Ethyl tert-butyl ether (ETBE)	ND		10	20	07/27/2018 21:13
Freon 113	ND		10	20	07/27/2018 21:13
Hexachlorobutadiene	ND		10	20	07/27/2018 21:13
Hexachloroethane	ND		10	20	07/27/2018 21:13
2-Hexanone	ND		10	20	07/27/2018 21:13
Isopropylbenzene	<b>28</b>		10	20	07/27/2018 21:13
4-Isopropyl toluene	ND		10	20	07/27/2018 21:13
Methyl-t-butyl ether (MTBE)	ND		10	20	07/27/2018 21:13
Methylene chloride	ND		10	20	07/27/2018 21:13
4-Methyl-2-pentanone (MIBK)	ND		10	20	07/27/2018 21:13
Naphthalene	<b>24</b>		10	20	07/27/2018 21:13
n-Propyl benzene	<b>62</b>		10	20	07/27/2018 21:13
Styrene	ND		10	20	07/27/2018 21:13
1,1,1,2-Tetrachloroethane	ND		10	20	07/27/2018 21:13
1,1,2,2-Tetrachloroethane	ND		10	20	07/27/2018 21:13
Tetrachloroethene	ND		10	20	07/27/2018 21:13
Toluene	ND		10	20	07/27/2018 21:13
1,2,3-Trichlorobenzene	ND		10	20	07/27/2018 21:13
1,2,4-Trichlorobenzene	ND		10	20	07/27/2018 21:13
1,1,1-Trichloroethane	ND		10	20	07/27/2018 21:13
1,1,2-Trichloroethane	ND		10	20	07/27/2018 21:13
Trichloroethene	ND		10	20	07/27/2018 21:13
Trichlorofluoromethane	ND		10	20	07/27/2018 21:13
1,2,3-Trichloropropane	ND		10	20	07/27/2018 21:13
1,2,4-Trimethylbenzene	<b>130</b>		10	20	07/27/2018 21:13
1,3,5-Trimethylbenzene	<b>20</b>		10	20	07/27/2018 21:13
Vinyl Chloride	ND		10	20	07/27/2018 21:13
Xylenes, Total	<b>100</b>		10	20	07/27/2018 21:13

(Cont.)



# Analytical Report

Client: West & Associates

WorkOrder: 1807729

Date Received: 7/17/18 14:35

Extraction Method: SW5030B

Date Prepared: 7/24/18-7/27/18

Analytical Method: SW8260B

Project: Automasters; 6200 Shattuck Ave. Oakland, CA

Unit: µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-103	1807729-002B	Water	07/16/2018 15:15	GC18 07271821.D	161994

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Dibromofluoromethane	107	78-134		07/27/2018 21:13
Toluene-d8	116	82-120		07/27/2018 21:13
4-BFB	103	69-131		07/27/2018 21:13

Analyst(s): TK



## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/24/18-7/27/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-101	1807729-003B	Water	07/16/2018 16:05	GC18 07271822.D	161994
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		500	50	07/27/2018 21:53
tert-Amyl methyl ether (TAME)	ND		25	50	07/27/2018 21:53
Benzene	<b>670</b>		25	50	07/27/2018 21:53
Bromobenzene	ND		25	50	07/27/2018 21:53
Bromochloromethane	ND		25	50	07/27/2018 21:53
Bromodichloromethane	ND		25	50	07/27/2018 21:53
Bromoform	ND		25	50	07/27/2018 21:53
Bromomethane	ND		25	50	07/27/2018 21:53
2-Butanone (MEK)	ND		100	50	07/27/2018 21:53
t-Butyl alcohol (TBA)	ND		100	50	07/27/2018 21:53
n-Butyl benzene	<b>36</b>		25	50	07/27/2018 21:53
sec-Butyl benzene	ND		25	50	07/27/2018 21:53
tert-Butyl benzene	ND		25	50	07/27/2018 21:53
Carbon Disulfide	ND		25	50	07/27/2018 21:53
Carbon Tetrachloride	ND		25	50	07/27/2018 21:53
Chlorobenzene	ND		25	50	07/27/2018 21:53
Chloroethane	ND		25	50	07/27/2018 21:53
Chloroform	ND		25	50	07/27/2018 21:53
Chloromethane	ND		25	50	07/27/2018 21:53
2-Chlorotoluene	ND		25	50	07/27/2018 21:53
4-Chlorotoluene	ND		25	50	07/27/2018 21:53
Dibromochloromethane	ND		25	50	07/27/2018 21:53
1,2-Dibromo-3-chloropropane	ND		10	50	07/27/2018 21:53
1,2-Dibromoethane (EDB)	ND		25	50	07/27/2018 21:53
Dibromomethane	ND		25	50	07/27/2018 21:53
1,2-Dichlorobenzene	ND		25	50	07/27/2018 21:53
1,3-Dichlorobenzene	ND		25	50	07/27/2018 21:53
1,4-Dichlorobenzene	ND		25	50	07/27/2018 21:53
Dichlorodifluoromethane	ND		25	50	07/27/2018 21:53
1,1-Dichloroethane	ND		25	50	07/27/2018 21:53
1,2-Dichloroethane (1,2-DCA)	ND		25	50	07/27/2018 21:53
1,1-Dichloroethene	ND		25	50	07/27/2018 21:53
cis-1,2-Dichloroethene	ND		25	50	07/27/2018 21:53
trans-1,2-Dichloroethene	ND		25	50	07/27/2018 21:53
1,2-Dichloropropane	ND		25	50	07/27/2018 21:53
1,3-Dichloropropane	ND		25	50	07/27/2018 21:53
2,2-Dichloropropane	ND		25	50	07/27/2018 21:53

(Cont.)



## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/24/18-7/27/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-101	1807729-003B	Water	07/16/2018 16:05	GC18 07271822.D	161994
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		25	50	07/27/2018 21:53
cis-1,3-Dichloropropene	ND		25	50	07/27/2018 21:53
trans-1,3-Dichloropropene	ND		25	50	07/27/2018 21:53
Diisopropyl ether (DIPE)	ND		25	50	07/27/2018 21:53
Ethylbenzene	<b>470</b>		25	50	07/27/2018 21:53
Ethyl tert-butyl ether (ETBE)	ND		25	50	07/27/2018 21:53
Freon 113	ND		25	50	07/27/2018 21:53
Hexachlorobutadiene	ND		25	50	07/27/2018 21:53
Hexachloroethane	ND		25	50	07/27/2018 21:53
2-Hexanone	ND		25	50	07/27/2018 21:53
Isopropylbenzene	<b>70</b>		25	50	07/27/2018 21:53
4-Isopropyl toluene	ND		25	50	07/27/2018 21:53
Methyl-t-butyl ether (MTBE)	ND		25	50	07/27/2018 21:53
Methylene chloride	ND		25	50	07/27/2018 21:53
4-Methyl-2-pentanone (MIBK)	ND		25	50	07/27/2018 21:53
Naphthalene	<b>72</b>		25	50	07/27/2018 21:53
n-Propyl benzene	<b>150</b>		25	50	07/27/2018 21:53
Styrene	ND		25	50	07/27/2018 21:53
1,1,1,2-Tetrachloroethane	ND		25	50	07/27/2018 21:53
1,1,2,2-Tetrachloroethane	ND		25	50	07/27/2018 21:53
Tetrachloroethene	ND		25	50	07/27/2018 21:53
Toluene	ND		25	50	07/27/2018 21:53
1,2,3-Trichlorobenzene	ND		25	50	07/27/2018 21:53
1,2,4-Trichlorobenzene	ND		25	50	07/27/2018 21:53
1,1,1-Trichloroethane	ND		25	50	07/27/2018 21:53
1,1,2-Trichloroethane	ND		25	50	07/27/2018 21:53
Trichloroethene	ND		25	50	07/27/2018 21:53
Trichlorofluoromethane	ND		25	50	07/27/2018 21:53
1,2,3-Trichloropropane	ND		25	50	07/27/2018 21:53
1,2,4-Trimethylbenzene	<b>350</b>		25	50	07/27/2018 21:53
1,3,5-Trimethylbenzene	<b>100</b>		25	50	07/27/2018 21:53
Vinyl Chloride	ND		25	50	07/27/2018 21:53
Xylenes, Total	<b>250</b>		25	50	07/27/2018 21:53

(Cont.)





# Analytical Report

Client: West & Associates

WorkOrder: 1807729

Date Received: 7/17/18 14:35

Extraction Method: SW5030B

Date Prepared: 7/24/18-7/27/18

Analytical Method: SW8260B

Project: Automasters; 6200 Shattuck Ave. Oakland, CA

Unit: µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-101	1807729-003B	Water	07/16/2018 16:05	GC18 07271822.D	161994

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Dibromofluoromethane	107	78-134		07/27/2018 21:53
Toluene-d8	119	82-120		07/27/2018 21:53
4-BFB	105	69-131		07/27/2018 21:53

Analyst(s): TK



## Analytical Report

<b>Client:</b> West & Associates	<b>WorkOrder:</b> 1807729
<b>Date Received:</b> 7/17/18 14:35	<b>Extraction Method:</b> SW5030B
<b>Date Prepared:</b> 7/20/18	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Project:</b> Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Unit:</b> µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-102	1807729-001A	Water	07/16/2018 14:21	GC3 07191844.D	161891

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	07/20/2018 06:08
MTBE	---	5.0	1	07/20/2018 06:08
Benzene	---	0.50	1	07/20/2018 06:08
Toluene	---	0.50	1	07/20/2018 06:08
Ethylbenzene	---	0.50	1	07/20/2018 06:08
Xylenes	---	0.50	1	07/20/2018 06:08

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	100	90-117	07/20/2018 06:08

**Analyst(s):** HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-103	1807729-002A	Water	07/16/2018 15:15	GC3 07201816.D	161973

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	<b>7100</b>	500	10	07/20/2018 16:55
MTBE	---	50	10	07/20/2018 16:55
Benzene	---	5.0	10	07/20/2018 16:55
Toluene	---	5.0	10	07/20/2018 16:55
Ethylbenzene	---	5.0	10	07/20/2018 16:55
Xylenes	---	5.0	10	07/20/2018 16:55

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
aaa-TFT	154	S	90-117	07/20/2018 16:55

**Analyst(s):** HD

**Analytical Comments:** d1,c4



## Analytical Report

**Client:** West & Associates      **WorkOrder:** 1807729  
**Date Received:** 7/17/18 14:35      **Extraction Method:** SW5030B  
**Date Prepared:** 7/20/18      **Analytical Method:** SW8021B/8015Bm  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA      **Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-101	1807729-003A	Water	07/16/2018 16:05	GC3 07201821.D	161973

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	13,000	500	10	07/20/2018 19:36
MTBE	---	50	10	07/20/2018 19:36
Benzene	---	5.0	10	07/20/2018 19:36
Toluene	---	5.0	10	07/20/2018 19:36
Ethylbenzene	---	5.0	10	07/20/2018 19:36
Xylenes	---	5.0	10	07/20/2018 19:36

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	140	S	90-117	07/20/2018 19:36

**Analyst(s):** HD      **Analytical Comments:** d1,c4



## Analytical Report

**Client:** West & Associates  
**Date Received:** 7/17/18 14:35  
**Date Prepared:** 7/17/18  
**Project:** Automasters; 6200 Shattuck Ave. Oakland, CA

**WorkOrder:** 1807729  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8015B  
**Unit:** µg/L

### Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-102	1807729-001A	Water	07/16/2018 14:21	GC6A 07201828.D	161663

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	50	1	07/20/2018 23:33
TPH-Motor Oil (C18-C36)	ND	250	1	07/20/2018 23:33

Surrogates	REC (%)	Limits
C9	99	61-139

Analyst(s): JIS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-103	1807729-002A	Water	07/16/2018 15:15	GC6A 07201834.D	161663

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	1800	50	1	07/21/2018 01:30
TPH-Motor Oil (C18-C36)	ND	250	1	07/21/2018 01:30

Surrogates	REC (%)	Limits
C9	109	61-139

Analyst(s): JIS

Analytical Comments: e4,e8,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-101	1807729-003A	Water	07/16/2018 16:05	GC6A 07201846.D	161663

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	2900	50	1	07/21/2018 05:23
TPH-Motor Oil (C18-C36)	ND	250	1	07/21/2018 05:23

Surrogates	REC (%)	Limits
C9	108	61-139

Analyst(s): JIS

Analytical Comments: e4,e8,e2



## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/23/18	<b>BatchID:</b>	161994
<b>Date Analyzed:</b>	7/23/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161994 1807729-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	10	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.50	-	-	-
Benzene	ND	0.50	-	-	-
Bromobenzene	ND	0.50	-	-	-
Bromochloromethane	ND	0.50	-	-	-
Bromodichloromethane	ND	0.50	-	-	-
Bromoform	ND	0.50	-	-	-
Bromomethane	ND	0.50	-	-	-
2-Butanone (MEK)	ND	2.0	-	-	-
t-Butyl alcohol (TBA)	ND	2.0	-	-	-
n-Butyl benzene	ND	0.50	-	-	-
sec-Butyl benzene	ND	0.50	-	-	-
tert-Butyl benzene	ND	0.50	-	-	-
Carbon Disulfide	ND	0.50	-	-	-
Carbon Tetrachloride	ND	0.50	-	-	-
Chlorobenzene	ND	0.50	-	-	-
Chloroethane	ND	0.50	-	-	-
Chloroform	ND	0.50	-	-	-
Chloromethane	ND	0.50	-	-	-
2-Chlorotoluene	ND	0.50	-	-	-
4-Chlorotoluene	ND	0.50	-	-	-
Dibromochloromethane	ND	0.50	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.20	-	-	-
1,2-Dibromoethane (EDB)	ND	0.50	-	-	-
Dibromomethane	ND	0.50	-	-	-
1,2-Dichlorobenzene	ND	0.50	-	-	-
1,3-Dichlorobenzene	ND	0.50	-	-	-
1,4-Dichlorobenzene	ND	0.50	-	-	-
Dichlorodifluoromethane	ND	0.50	-	-	-
1,1-Dichloroethane	ND	0.50	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.50	-	-	-
1,1-Dichloroethene	ND	0.50	-	-	-
cis-1,2-Dichloroethene	ND	0.50	-	-	-
trans-1,2-Dichloroethene	ND	0.50	-	-	-
1,2-Dichloropropane	ND	0.50	-	-	-
1,3-Dichloropropane	ND	0.50	-	-	-
2,2-Dichloropropane	ND	0.50	-	-	-
1,1-Dichloropropene	ND	0.50	-	-	-

(Cont.)



## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/23/18	<b>BatchID:</b>	161994
<b>Date Analyzed:</b>	7/23/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161994 1807729-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
cis-1,3-Dichloropropene	ND	0.50	-	-	-
trans-1,3-Dichloropropene	ND	0.50	-	-	-
Diisopropyl ether (DIPE)	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.50	-	-	-
Freon 113	ND	0.50	-	-	-
Hexachlorobutadiene	ND	0.50	-	-	-
Hexachloroethane	ND	0.50	-	-	-
2-Hexanone	ND	0.50	-	-	-
Isopropylbenzene	ND	0.50	-	-	-
4-Isopropyl toluene	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Methylene chloride	ND	0.50	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.50	-	-	-
Naphthalene	ND	0.50	-	-	-
n-Propyl benzene	ND	0.50	-	-	-
Styrene	ND	0.50	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.50	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.50	-	-	-
Tetrachloroethene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
1,2,3-Trichlorobenzene	ND	0.50	-	-	-
1,2,4-Trichlorobenzene	ND	0.50	-	-	-
1,1,1-Trichloroethane	ND	0.50	-	-	-
1,1,2-Trichloroethane	ND	0.50	-	-	-
Trichloroethene	ND	0.50	-	-	-
Trichlorofluoromethane	ND	0.50	-	-	-
1,2,3-Trichloropropane	ND	0.50	-	-	-
1,2,4-Trimethylbenzene	ND	0.50	-	-	-
1,3,5-Trimethylbenzene	ND	0.50	-	-	-
Vinyl Chloride	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	25.7	25	103	91-133
Toluene-d8	26.3	25	105	87-127
4-BFB	2.11	2.5	84	66-140

(Cont.)



## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/23/18	<b>BatchID:</b>	161994
<b>Date Analyzed:</b>	7/23/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161994 1807729-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acetone	167	171	200	84	85	47-122	2.33	20
tert-Amyl methyl ether (TAME)	8.42	8.71	10	84	87	62-121	3.30	20
Benzene	8.84	9.14	10	88	91	74-121	3.30	20
Bromobenzene	9.10	9.47	10	91	95	63-127	3.96	20
Bromochloromethane	8.67	8.76	10	87	88	70-126	1.00	20
Bromodichloromethane	8.13	8.37	10	81	84	66-127	2.97	20
Bromoform	8.59	8.41	10	86	84	60-119	2.09	20
Bromomethane	12.8	12.2	10	128	122	32-155	4.64	20
2-Butanone (MEK)	35.1	36.5	40	88	91	51-117	3.89	20
t-Butyl alcohol (TBA)	28.7	29.5	40	72	74	41-122	3.00	20
n-Butyl benzene	9.97	10.3	10	100	103	73-137	3.03	20
sec-Butyl benzene	9.12	9.28	10	91	93	71-137	1.76	20
tert-Butyl benzene	7.45	7.94	10	74	79	61-136	6.49	20
Carbon Disulfide	9.12	9.36	10	91	94	61-139	2.66	20
Carbon Tetrachloride	8.31	8.63	10	83	86	69-137	3.75	20
Chlorobenzene	8.94	9.17	10	89	92	71-122	2.50	20
Chloroethane	8.33	8.06	10	83	81	54-132	3.31	20
Chloroform	8.57	8.80	10	86	88	73-122	2.69	20
Chloromethane	8.39	8.41	10	84	84	48-136	0	20
2-Chlorotoluene	9.00	9.68	10	90	97	65-134	7.23	20
4-Chlorotoluene	8.55	8.91	10	86	89	65-130	4.08	20
Dibromochloromethane	8.38	8.47	10	84	85	65-121	1.04	20
1,2-Dibromo-3-chloropropane	2.68	2.83	4	67	71	41-132	5.42	20
1,2-Dibromoethane (EDB)	8.49	8.72	10	85	87	67-125	2.63	20
Dibromomethane	8.66	8.95	10	87	90	68-121	3.37	20
1,2-Dichlorobenzene	9.03	9.34	10	90	93	69-128	3.43	20
1,3-Dichlorobenzene	9.00	9.22	10	90	92	71-131	2.41	20
1,4-Dichlorobenzene	8.53	8.83	10	85	88	70-128	3.41	20
Dichlorodifluoromethane	7.62	7.76	10	76	78	21-158	1.73	20
1,1-Dichloroethane	9.08	9.20	10	91	92	73-123	1.25	20
1,2-Dichloroethane (1,2-DCA)	8.14	8.36	10	81	84	61-127	2.60	20
1,1-Dichloroethene	8.88	9.00	10	89	90	68-130	1.44	20
cis-1,2-Dichloroethene	8.73	8.69	10	87	87	72-123	0	20
trans-1,2-Dichloroethene	8.92	9.27	10	89	93	64-138	3.84	20
1,2-Dichloropropane	9.01	9.26	10	90	93	71-121	2.72	20
1,3-Dichloropropane	8.58	8.87	10	86	89	69-120	3.31	20
2,2-Dichloropropane	7.76	7.92	10	78	79	64-142	2.11	20
1,1-Dichloropropene	8.78	9.09	10	88	91	70-130	3.43	20

(Cont.)



## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/23/18	<b>BatchID:</b>	161994
<b>Date Analyzed:</b>	7/23/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161994 1807729-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	8.58	8.86	10	86	89	58-136	3.16	20
trans-1,3-Dichloropropene	8.74	9.00	10	87	90	66-119	2.91	20
Diisopropyl ether (DIPE)	8.97	9.12	10	90	91	66-123	1.70	20
Ethylbenzene	9.32	9.95	10	93	99	71-125	6.55	20
Ethyl tert-butyl ether (ETBE)	8.63	8.85	10	86	88	67-122	2.48	20
Freon 113	8.96	9.18	10	90	92	68-132	2.46	20
Hexachlorobutadiene	8.42	8.95	10	84	90	56-155	6.09	20
Hexachloroethane	9.30	9.58	10	93	96	61-129	2.89	20
2-Hexanone	7.87	8.27	10	79	83	51-115	4.96	20
Isopropylbenzene	9.43	10.4	10	94	103	66-134	9.23	20
4-Isopropyl toluene	9.18	9.15	10	92	92	70-136	0	20
Methyl-t-butyl ether (MTBE)	8.55	8.75	10	86	87	64-118	2.24	20
Methylene chloride	9.52	10.1	10	95	101	62-121	5.73	20
4-Methyl-2-pentanone (MIBK)	8.49	9.02	10	85	90	51-115	6.06	20
Naphthalene	9.77	10.2	10	98	101	55-137	3.84	20
n-Propyl benzene	8.30	8.98	10	83	90	63-140	7.86	20
Styrene	8.80	9.53	10	88	95	62-133	7.91	20
1,1,1,2-Tetrachloroethane	8.30	8.45	10	83	85	69-128	1.77	20
1,1,2,2-Tetrachloroethane	9.38	9.36	10	94	94	60-118	0	20
Tetrachloroethene	8.45	8.72	10	84	87	63-136	3.13	20
Toluene	8.27	8.69	10	83	87	67-124	4.94	20
1,2,3-Trichlorobenzene	9.58	9.67	10	96	97	57-145	0.927	20
1,2,4-Trichlorobenzene	9.47	9.66	10	95	97	60-144	2.03	20
1,1,1-Trichloroethane	8.21	8.48	10	82	85	70-133	3.30	20
1,1,2-Trichloroethane	7.99	8.29	10	80	83	65-125	3.62	20
Trichloroethene	8.53	8.80	10	85	88	67-133	3.09	20
Trichlorofluoromethane	8.36	8.62	10	84	86	59-145	3.06	20
1,2,3-Trichloropropane	9.01	8.83	10	90	88	65-115	2.12	20
1,2,4-Trimethylbenzene	9.15	8.95	10	91	89	67-136	2.21	20
1,3,5-Trimethylbenzene	9.33	9.15	10	93	91	68-135	1.99	20
Vinyl Chloride	8.18	8.01	10	82	80	53-146	2.02	20
Xylenes, Total	25.9	28.3	30	86	94	68-128	8.87	20

#### Surrogate Recovery

Dibromofluoromethane	26.1	26.2	25	104	105	91-133	0.543	20
Toluene-d8	26.0	26.2	25	104	105	87-127	1.10	20
4-BFB	2.66	2.79	2.5	106	112	66-140	4.89	20

(Cont.)





## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/23/18	<b>BatchID:</b>	161994
<b>Date Analyzed:</b>	7/23/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161994 1807729-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	190	197	200	ND	95	99	56-141	3.95	20
tert-Amyl methyl ether (TAME)	9.59	10.1	10	ND	96	101	78-120	5.52	20
Benzene	9.12	9.66	10	ND	91	97	81-118	5.69	20
Bromobenzene	10.0	10.3	10	ND	100	103	71-119	2.61	20
Bromochloromethane	9.40	9.76	10	ND	94	98	80-124	3.72	20
Bromodichloromethane	8.84	9.39	10	ND	88	94	78-124	6.13	20
Bromoform	9.06	9.34	10	ND	91	93	65-127	3.12	20
Bromomethane	12.0	12.6	10	ND	120	126	22-175	4.85	20
2-Butanone (MEK)	40.9	41.8	40	ND	102	104	50-152	2.19	20
t-Butyl alcohol (TBA)	34.8	36.4	40	ND	87	91	49-141	4.61	20
n-Butyl benzene	10.7	11.3	10	ND	107	113	77-127	5.31	20
sec-Butyl benzene	7.91	8.45	10	ND	79	84	74-123	6.53	20
tert-Butyl benzene	6.87	7.20	10	ND	69	72	68-122	4.68	20
Carbon Disulfide	9.25	9.73	10	ND	91	96	74-123	5.04	20
Carbon Tetrachloride	8.46	8.96	10	ND	85	90	78-124	5.83	20
Chlorobenzene	9.25	9.71	10	ND	92	97	79-116	4.86	20
Chloroethane	8.04	8.38	10	ND	80	84	56-134	4.24	20
Chloroform	9.04	9.48	10	ND	90	95	82-119	4.76	20
Chloromethane	8.69	8.75	10	ND	87	87	39-147	0	20
2-Chlorotoluene	9.04	9.27	10	ND	90	93	69-124	2.55	20
4-Chlorotoluene	8.29	8.71	10	ND	83	87	71-121	4.90	20
Dibromochloromethane	9.21	9.59	10	ND	92	96	76-119	4.04	20
1,2-Dibromo-3-chloropropane	3.11	3.33	4	ND	78	83	48-138	6.86	20
1,2-Dibromoethane (EDB)	9.52	9.80	10	ND	95	98	81-122	2.89	20
Dibromomethane	9.60	10.1	10	ND	96	101	83-121	4.70	20
1,2-Dichlorobenzene	9.97	10.4	10	ND	100	104	77-122	4.09	20
1,3-Dichlorobenzene	9.29	9.61	10	ND	93	96	76-125	3.35	20
1,4-Dichlorobenzene	8.84	9.29	10	ND	88	93	78-120	5.01	20
Dichlorodifluoromethane	7.51	7.93	10	ND	75	79	38-135	5.50	20
1,1-Dichloroethane	9.34	9.84	10	ND	93	98	80-120	5.23	20
1,2-Dichloroethane (1,2-DCA)	8.96	9.46	10	ND	90	95	78-122	5.46	20
1,1-Dichloroethene	8.94	9.45	10	ND	89	95	77-120	5.57	20
cis-1,2-Dichloroethene	9.13	9.57	10	ND	91	96	79-123	4.73	20
trans-1,2-Dichloroethene	9.16	9.57	10	ND	92	96	77-125	4.35	20
1,2-Dichloropropane	9.60	10.0	10	ND	96	100	80-121	4.46	20
1,3-Dichloropropane	9.50	9.91	10	ND	95	99	80-120	4.24	20
2,2-Dichloropropane	7.56	7.89	10	ND	76	79	70-132	4.24	20
1,1-Dichloropropene	8.92	9.45	10	ND	89	94	78-122	5.69	20

(Cont.)



## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/23/18	<b>BatchID:</b>	161994
<b>Date Analyzed:</b>	7/23/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC16	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161994 1807729-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	9.20	9.57	10	ND	92	96	73-121	3.97	20
trans-1,3-Dichloropropene	9.46	9.82	10	ND	95	98	77-116	3.73	20
Diisopropyl ether (DIPE)	9.78	10.2	10	ND	98	102	77-125	3.73	20
Ethylbenzene	9.48	9.88	10	ND	93	97	77-119	4.15	20
Ethyl tert-butyl ether (ETBE)	9.73	10.1	10	ND	97	101	81-122	3.85	20
Freon 113	8.98	9.48	10	ND	90	95	77-120	5.41	20
Hexachlorobutadiene	8.42	8.91	10	ND	84	89	57-141	5.67	20
Hexachloroethane	10.1	10.3	10	ND	97	99	26-168	2.02	20
2-Hexanone	8.80	9.34	10	ND	88	93	58-135	5.98	20
Isopropylbenzene	9.21	9.40	10	ND	92	94	74-120	2.07	20
4-Isopropyl toluene	9.00	9.56	10	ND	90	96	75-124	6.08	20
Methyl-t-butyl ether (MTBE)	9.77	10.2	10	ND	98	102	74-128	4.16	20
Methylene chloride	8.82	9.31	10	ND	88	93	55-130	5.32	20
4-Methyl-2-pentanone (MIBK)	9.82	10.3	10	ND	98	103	59-131	5.10	20
Naphthalene	11.9	12.4	10	ND	119	124	65-136	4.49	20
n-Propyl benzene	7.78	8.26	10	ND	78	83	67-128	5.96	20
Styrene	8.24	8.56	10	ND	82	86	64-133	3.86	20
1,1,1,2-Tetrachloroethane	8.85	9.21	10	ND	89	92	78-122	3.98	20
1,1,2,2-Tetrachloroethane	10.4	11.0	10	ND	104	110	72-123	5.15	20
Tetrachloroethene	8.74	9.11	10	ND	86	90	72-123	4.23	20
Toluene	8.60	9.08	10	ND	85	90	74-117	5.45	20
1,2,3-Trichlorobenzene	11.2	11.5	10	ND	112	115	61-141	3.12	20
1,2,4-Trichlorobenzene	10.8	11.4	10	ND	108	114	69-136	5.07	20
1,1,1-Trichloroethane	8.40	8.85	10	ND	84	89	78-122	5.26	20
1,1,2-Trichloroethane	8.94	9.31	10	ND	89	93	79-120	3.99	20
Trichloroethene	8.72	9.25	10	ND	87	92	76-122	5.91	20
Trichlorofluoromethane	8.45	8.89	10	ND	85	89	72-125	5.11	20
1,2,3-Trichloropropane	9.74	10.7	10	ND	97	107	72-123	8.98	20
1,2,4-Trimethylbenzene	9.29	9.70	10	ND	93	97	74-123	4.27	20
1,3,5-Trimethylbenzene	9.36	9.82	10	ND	94	98	73-123	4.81	20
Vinyl Chloride	8.22	8.03	10	ND	82	80	57-134	2.37	20
Xylenes, Total	25.6	26.4	30	ND	83	86	76-119	2.94	20

#### Surrogate Recovery

Dibromofluoromethane	27.0	27.0	25		108	108	78-134	0	20
Toluene-d8	26.0	25.9	25		104	104	82-120	0	20
4-BFB	2.75	2.78	2.5		110	111	69-131	0.791	20



## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/19/18 - 7/20/18	<b>BatchID:</b>	161891
<b>Date Analyzed:</b>	7/19/18 - 7/20/18	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC3	<b>Analytical Method:</b>	SW8021B/8015Bm
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161891

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	50	-	-	-
MTBE	ND	5.0	-	-	-
Benzene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Xylenes	ND	0.50	-	-	-

#### Surrogate Recovery

aaa-TFT	9.81		10	98	89-116
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	64.7	64.4	60	108	107	78-116	0.369	20
MTBE	9.00	9.01	10	90	90	72-122	0	20
Benzene	11.0	10.2	10	110	102	81-123	7.33	20
Toluene	11.3	10.4	10	113	104	83-129	8.36	20
Ethylbenzene	11.0	10.4	10	110	104	88-126	6.05	20
Xylenes	33.0	31.4	30	110	105	87-131	5.08	20

#### Surrogate Recovery

aaa-TFT	10.1	9.49	10	101	95	89-116	5.78	20
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## Quality Control Report

<b>Client:</b> West & Associates	<b>WorkOrder:</b> 1807729
<b>Date Prepared:</b> 7/20/18	<b>BatchID:</b> 161973
<b>Date Analyzed:</b> 7/20/18	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC3	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Matrix:</b> Water	<b>Unit:</b> µg/L
<b>Project:</b> Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b> MB/LCS/LCSD-161973

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	50	-	-	-
MTBE	ND	5.0	-	-	-
Benzene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Xylenes	ND	0.50	-	-	-

**Surrogate Recovery**

aaa-TFT	9.85	10	99	89-116
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	62.2	63.5	60	104	106	78-116	2.02	20
MTBE	8.93	9.08	10	89	91	72-122	1.70	20
Benzene	10.5	10.2	10	105	102	81-123	2.65	20
Toluene	10.8	10.5	10	108	105	83-129	2.22	20
Ethylbenzene	10.4	10.4	10	104	104	88-126	0	20
Xylenes	31.3	31.1	30	104	104	87-131	0	20

**Surrogate Recovery**

aaa-TFT	9.72	9.72	10	97	97	89-116	0	20
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## Quality Control Report

<b>Client:</b>	West & Associates	<b>WorkOrder:</b>	1807729
<b>Date Prepared:</b>	7/17/18	<b>BatchID:</b>	161663
<b>Date Analyzed:</b>	7/18/18	<b>Extraction Method:</b>	SW3510C
<b>Instrument:</b>	GC6B	<b>Analytical Method:</b>	SW8015B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	Automasters; 6200 Shattuck Ave. Oakland, CA	<b>Sample ID:</b>	MB/LCS/LCSD-161663

### QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
<b>Surrogate Recovery</b>					
C9	537		625	86	68-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1380	1270	1000	138	127	86-142	7.91	30
<b>Surrogate Recovery</b>								
C9	545	537	625	87	86	68-127	1.60	30

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1807729 ClientCode: WAA

WaterTrax    WriteOn    EDF    Excel    EQulS    Email    HardCopy    ThirdParty    J-flag  
 Detection Summary    Dry-Weight

**Report to:** Bruce Jacobsen   Accounts Payable  
 West & Associates   West & Associates  
 630 Eubanks Ct, Unit #G   630 Eubanks Ct, Unit #G  
 Vacaville, CA 95688   Vacaville, CA 95688  
 (707) 688-4404   FAX: (707) 447-0631

**Bill to:** Automasters; 6200 Shattuck Ave.  
 Oakland, CA

**Requested TAT:** 5 days;   **Date Received:** 07/17/2018  
**Date Logged:** 07/17/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)													
					1	2	3	4	5	6	7	8	9	10	11	12		
1807729-001	MW-102	Water	7/16/2018 02:21	<input type="checkbox"/>	B	A	A											
1807729-002	MW-103	Water	7/16/2018 03:15	<input type="checkbox"/>	B	A	A											
1807729-003	MW-101	Water	7/16/2018 04:05	<input type="checkbox"/>	B	A	A											

**Test Legend:**

1	8260B_W	2	G-MBTX_W	3	TPH(DMO)_W
5		6		7	
9		10		11	
				12	

Prepared by: Nancy Palacios

The following SampleIDs: 001A, 002A, 003A contain testgroup Multi Range\_W.

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** WEST & ASSOCIATES **Project:** Automasters; 6200 Shattuck Ave. Oakland, CA **Work Order:** 1807729  
**Client Contact:** Bruce Jacobsen **QC Level:** LEVEL 2  
**Contact's Email:** bjacobsen@astound.net; dganzer@westengineers.com **Comments:** **Date Logged:** 7/17/2018

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1807729-001A	MW-102	Water	Multi-Range TPH(g,d,mo)	4	2 VOAs w/HCL + 2-a VOAs (multi-range)	<input type="checkbox"/>	7/16/2018 2:21	5 days	Present	<input type="checkbox"/>	
1807729-001B	MW-102	Water	SW8260B (VOCs)	2	VOA w/ HCL	<input type="checkbox"/>	7/16/2018 2:21	5 days	Present	<input type="checkbox"/>	
1807729-002A	MW-103	Water	Multi-Range TPH(g,d,mo)	4	2 VOAs w/HCL + 2-a VOAs (multi-range)	<input type="checkbox"/>	7/16/2018 3:15	5 days		<input type="checkbox"/>	
1807729-002B	MW-103	Water	SW8260B (VOCs)	2	VOA w/ HCL	<input type="checkbox"/>	7/16/2018 3:15	5 days		<input type="checkbox"/>	
1807729-003A	MW-101	Water	Multi-Range TPH(g,d,mo)	4	2 VOAs w/HCL + 2-a VOAs (multi-range)	<input type="checkbox"/>	7/16/2018 4:05	5 days		<input type="checkbox"/>	
1807729-003B	MW-101	Water	SW8260B (VOCs)	2	VOA w/ HCL	<input type="checkbox"/>	7/16/2018 4:05	5 days		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
 - MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

18007729

MCCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD  
PITTSBURG, CA 94565-1701

Website: www.mccampbell.com Email: main@mccampbell.com  
Telephone: (877) 252-9262 Fax: (925) 252-9269

Report To: Bruce Jacobsen Bill To: W+A  
Company: West + Associates  
630 G Eubanks Ct., Vacaville, CA  
E-Mail: bjacobsen@astounding.net  
Tele: (925) 705-1400 Fax: ( )  
Project #: Project Name: Automasters  
Project Location: 6200 Shattuck Ave., Oakland, CA  
Sampler Signature: Bruce Jacobsen

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

24 HR  48 HR  72 HR  5 DAY

RUSH  PDF  Excel  Write On (DW)

GeoTracker EDF  Check if sample is effluent and "J" flag is required

Comments

Analysis Request

Other

Filter Samples for Metals analysis: Yes / No

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX				METHOD PRESERVED				
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL (4)	HNO <sub>3</sub>	Other
MW-102	MW-102	7-16	2:21	6	WA	✓						✓	✓	
MW-103	MW-103	"	3:15	6	"	✓						✓	✓	
MW-101	MW-101	"	4:05	6	"	✓						✓	✓	

Analysis Request	Other	Comments
BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE		
TPH as Diesel (8015) + TPH.g + TPH.m		
Total Petroleum Oil & Grease (1664 / 5520 E/B&F)		
Total Petroleum Hydrocarbons (418.1)		
EPA 502.2 / 601 / 8010 / 8021 (HVOCS)		
MTBE / BTEX ONLY (EPA 602 / 8021)		
EPA 505 / 608 / 8081 (CI Pesticides)		
EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners		
EPA 507 / 8141 (NP Pesticides)		
EPA 515 / 8151 (Acidic CI Herbicides)		
EPA 524.2 / 624 / 8260 (VOCs)	✓	
EPA 525.2 / 625 / 8270 (SVOCs)	✓	
EPA 8270 SIM / 8310 (PAHs / PNAs)		
CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)		
LUFF 5 Metals (200.7 / 200.8 / 6010 / 6020)		
Lead (200.7 / 200.8 / 6010 / 6020)		

ICE/P COMMENTS: 6.0 WET

GOOD CONDITION  
HEAD SPACE ABSENT  
DECHLORINATED IN LAB  
APPROPRIATE CONTAINERS  
PRESERVED IN LAB

PRESERVATION VOAS O&G METALS OTHER pH<2

Relinquished By: Bruce Jacobsen	Date: 7-17-18	Time: 14:35	Received By: Nancy Talaveros
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

+ + +





## Sample Receipt Checklist

Client Name: **West & Associates**  
 Project: **Automasters; 6200 Shattuck Ave. Oakland, CA**  
 WorkOrder No: **1807729** Matrix: Water  
 Carrier: Client Drop-In

Date and Time Received: **7/17/2018 14:35**  
 Date Logged: **7/17/2018**  
 Received by: Nancy Palacios  
 Logged by: Nancy Palacios

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC agrees with Quote?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

Sample/Temp Blank temperature	Temp: 6°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

UCMR Samples:

pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
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Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
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Comments:



**APPENDIX D**

**Historical Groundwater Analytical Results**

**HISTORICAL GROUNDWATER ELEVATIONS & ANALYTICAL DATA**  
**TPH-g, BTEX, MtBE, Naphthalene, TPH-d & TPH-mo**  
**Automasters, 6200 Shattuck Ave., Oakland**

*(All concentrations in micrograms per liter, i.e. ug/l or ppb)*

Monitoring Well	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Observed Sheen*	TPH-g	Benzene	Toluene	Ethyl Benzene	Xylenes	MtBE	Naphthalene	TPH-d	TPH-mo
MW-101 TOC = 128.84 ft	12/31/15	3.70	125.14	None	18,000	1,000	64	320	1,800	<200	210	5,100	<250
	6/30/16	5.35	123.49	None	14,000	980	<50	780	1,000	<50	210	3,000	<250
	10/4/16	6.17	122.67	None	15,000	990	<50	890	1,400	<5	190	3,900	<250
	1/6/17	3.53	125.31	None	17,000	900	35	680	1,100	<5	190	6,200	<250
	3/22/17	3.20	125.64	None	17,000	810	<25	600	810	<25	160	3,300	<250
	7/6/17	5.49	123.35	None	17,000	860	<25	650	960	<25	130	4,800	5,200
	7/16/18	5.40	123.44	None	13,000	670	<25	470	250	<25	72	2,900	<250
MW-102 TOC = 130.35 ft	12/31/15	5.20	125.15	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
	6/30/16	6.90	123.45	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
	10/4/16	7.51	122.84	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
	1/6/17	4.68	125.67	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
	3/22/17	4.56	125.79	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
	7/6/17	6.53	123.82	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
	7/16/18	6.53	123.82	None	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<250
MW-103 TOC = 130.03 ft	12/31/15	5.10	124.93	None	4,700	110	11	140	430	<5	78	1,400	<250
	6/30/16	6.56	123.47	None	3,200	70	6.7	160	150	<5	47	750	<250
	10/4/16	7.37	122.76	None	6,400	160	16	340	320	<5	69	1,300	<250
	1/6/17	4.51	125.52	None	5,800	97	10	220	310	<5	47	1,100	<250
	3/22/17	3.76	126.27	None	3,600	110	12	230	270	<5	54	840	<250
	7/6/17	6.31	123.72	None	2,900	46	<5	100	73	<5	20	970	<250
	7/16/18	6.41	123.62	None	7,100	120	<10	210	100	<5	24	1,800	<250

\* No free product has been encountered in any of the wells during these seven monitoring events. The lab report for MW-101 on July 6, 2017 noted on the sample container for TPH-d analysis that "a lighter than water immiscible sheen/product is present".

# HISTORICAL VOC GROUNDWATER RESULTS

## Other VOCs

**Automasters, 6200 Shattuck Ave., Oakland**

*(All concentrations in micrograms per liter, i.e. ug/l or ppb)*

Sample ID	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)	N-Butyl Benzene	Isopropyl Benzene	4-Isopropyl Toluene	N-Propyl Benzene	1,2,4-Trimethyl Benzene	1,3,5-Trimethyl Benzene
MW-101 TOC = 128.84 ft	12/31/15	3.70	125.14	<50	<50	<50	<50	770	160
	6/30/16	5.35	123.49	<50	58	<50	160	620	150
	10/04/16	6.17	122.67	<50	71	<50	150	780	150
	1/6/17	3.53	125.31	55	64	<25	150	850	160
	3/22/17	3.20	125.64	26	40	<25	98	680	92
	7/6/17	5.49	123.35	35	69	<25	150	810	130
	7/16/18	5.40	123.44	36	70	<25	150	350	100
MW-102 TOC = 130.35 ft	12/31/15	5.20	125.15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	6/30/16	6.90	123.45	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/04/16	7.51	122.84	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1/6/17	4.68	125.67	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	3/22/17	4.56	125.79	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	7/6/17	6.53	123.82	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	7/16/18	6.53	123.82	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-103 TOC = 130.03 ft	12/31/15	5.10	124.93	<10	10	15	12	150	58
	6/30/16	6.56	123.47	9	19	<5	47	130	10
	10/04/16	7.37	122.76	18	35	<12	81	310	28
	1/6/17	4.51	125.52	22	25	<5	64	260	35
	3/22/17	3.76	126.27	20	33	<5	77	230	35
	7/6/17	6.31	123.72	16	21	<5	49	86	11
	7/16/18	6.41	123.62	18	28	<10	62	130	20

\* No free product has been encountered in any of the wells during these seven monitoring events. The lab report for MW-101 on July 6, 2017 noted on the sample container for TPH-d analysis that "a lighter than water immiscible sheen/product is present".



**APPENDIX E**

**Electronic Data Submittal Confirmations**