associated
earth sciences
incorporated

August 6, 2014
Project No. TV130367F

Turnaround, Inc.
3415 A Street Northwest
Gig Harbor, Washington 98335

Attention: Mr. Miles Stover

Subject: June 2014 Ground Water Monitoring Report
Clear Lake Industrial Park
12785 State Route 9 and 12827 South Front Street
12713 Sawyer Court
Clear Lake, Washington

Dear Mr. Stover:

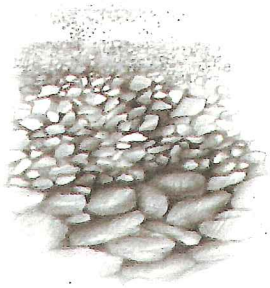
This letter accompanies a report by Associated Earth Sciences, Inc. (AESI) documenting the results of a recent ground water monitoring event for the Clear Lake Industrial Park and the east-adjoining property in June 2014. This sampling event represents the fourteenth instance of ground water sampling from the existing monitoring well network to characterize the release of chlordane to the site soil and ground water that was identified in 1994, and the second event of 2014. The findings and conclusions in this report are based on our interpretation of information currently available and are subject to the limitations in the attached report.

We appreciate the opportunity to work with you on this project. If you have any questions regarding the scope of our study or our conclusions, please do not hesitate to contact us at (253) 722-2992.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Tacoma, Washington

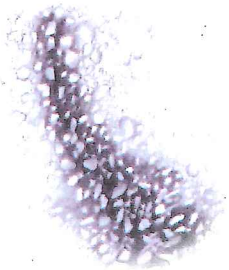
Elizabeth Rachman, L.G., L.Hg.
Senior Hydrogeologist

EAR/pc - TV130367F1 - Projects\20130367\TV\WP



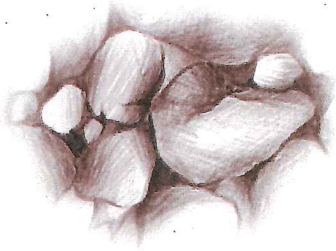
Geotechnical Engineering

Water Resources



Environmental Assessments and Remediation

Sustainable Development Services



Geologic Assessments

Associated Earth Sciences, Inc.

Serving the Pacific Northwest Since 1981

June 2014 Ground Water Monitoring Report

CLEAR LAKE INDUSTRIAL PARK

Clear Lake, Washington

Prepared for

Turnaround, Inc.

Project No. TV130367F
August 6, 2014

JUNE 2014 GROUND WATER MONITORING REPORT

CLEAR LAKE INDUSTRIAL PARK

Clear Lake, Washington

Prepared for:
Turnaround, Inc.
3415 A Street Northwest
Gig Harbor, Washington 98335

Prepared by:
Associated Earth Sciences, Inc.
1552 Commerce Street, Suite 102
Tacoma, Washington 98402
253-722-2992
Fax: 253-722-2993

August 6, 2014
Project No. TV130367F

TABLE OF CONTENTS - CONTINUED

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

The Clear Lake Industrial Park is located at 12785 State Route 9 and 12827 South Front Street in Clear Lake, Washington. Please refer to Figure 1, "Vicinity Map." Associated Earth Sciences, Inc. (AESI) has performed this ground water monitoring event at client request. Thirteen ground water sampling events have previously been performed by AESI and others from the existing monitoring well network at the site. The fourteenth ground water sampling event (and the second event in 2014) is summarized herein.

1.1 Site Description

The property is located within the city limits of Clear Lake, Skagit County, Washington. The site is located in Section 1, Township 34 North, Range 4 East on Tax Parcels P74820, P74823, P74826, P74833, and P23293. The site is situated on the northeast corner of the intersection of State Route 9 and South Front Street. The surrounding properties include:

North of site: Jackson Street, beyond which are several single-family residences.

East of site: A single-family residence and vacant land.

South of site: Several single-family residences.

Southwest of site: South Front Street, beyond which is a single-family residence.

West of site: The intersection of South Front Street and State Route 9, beyond which vacant land.

Northwest of site: From south to north the Clear Lake General Store, several single-family residences, and the Clear Lake Fire Department.

1.2 Project Background

Previous subsurface investigations at the site by others identified releases of chlordane to the soil and ground water at the site. Several subsurface investigations and remedial excavations have historically been performed by others at the site. Although the adversely-affected soils have been successfully removed from the subject property, residual ground water impacts remain on the site and east-adjoining property. The subject property was formerly enrolled into Washington State Department of Ecology's (Ecology's) Voluntary Cleanup Program (VCP) and a No Further Action (NFA) determination from Ecology was obtained for the subject property in 2004 after the placement of a Restrictive Covenant on the site that restricted exposure to the affected ground water. No such covenant was placed on the east-adjoining property, which was not included in the NFA. After a periodic review conducted by Ecology in 2011, the NFA was rescinded by Ecology since the institutional control in place (the Restrictive Covenant) was deemed ineffective in restricting exposure to the adversely-affected ground water on the east-adjoining property.

Subsequent subsurface characterization work was performed by others at the subject and east-adjoining properties in 2012 and 2013. The subject property has since been re-enrolled in the VCP program and the recent studies submitted to Ecology in an effort to reinstate the NFA by placing an additional Restrictive Covenant on the east-adjoining property.

A Remedial Investigation was performed by AESI in 2014, the results of which successfully defined the vertical and horizontal extents of the chlordane contaminated ground water and revealed that the chlordane is present in the ground water in discontinuous hot spots rather than one plume. In addition, chlordane concentrations in the ground water in the existing wells that were sampled were below the US Environmental Protection Agency (EPA) and State Maximum Contaminant Level (MCL) of 2 micrograms per liter (µg/L). AESI also prepared a Disproportionate Cost Analysis to illustrate that the MCL should be accepted as the site-specific ground water cleanup level (rather than the Model Toxics Control Act [MTCA] Method B cleanup level of 0.25 µg/L), and that the cost of active remediation or monitored natural attenuation without the use of an institutional control (Restrictive Covenant) outweighed the benefits of such an approach.

Ecology determined that there was no clear downward trend in chlordane concentrations at the site, despite the documented decreases in chlordane concentrations (e.g., from 17 to 0.326 µg/L since 1996 in MW-3). Furthermore, although Ecology concurred with the use of the MCL as the site-specific cleanup level, it suggested that active cleanup would be recommended at the site, even though the most recent concentrations were all below the MCL. Based on communications with the Ecology Project Manager, it appears that Ecology is concerned that the concentrations may increase to levels above 2 µg/L over the next few rounds of monitoring.

Therefore, at client request, AESI collected and analyzed ground water samples from nine of the 13 existing on-site ground water monitoring wells. This report summarizes AESI's ground water monitoring activities from June 2014.

2.0 MONITORING WELLS

A release of chlordane to the soil and ground water was identified at the site during several subsurface investigations performed by others beginning in 1994. Fourteen ground water monitoring wells (MW-1 through MW-14) were installed and sampled at the subject and east-adjoining properties during various subsurface investigations performed by others from 1995 through the present. Monitoring well MW-5 was subsequently decommissioned since its integrity was suspected to have been compromised. Based on calculations of the historical ground water elevation data, the historical ground water flow directions have been measured to the northwest or north-northwest.

Well completion information for these wells is summarized in Table 1. The approximate locations of the monitoring wells are shown on the attached Figure 2, "Site Plan."

Table 1
Well Survey Data

Site ID	Completion Date	Borehole Depth[2] (feet)	Top of Casing Elevation (feet)
MW-1	4/25/1995	17	41.83
MW-2	4/25/1995	20	47.37
MW-3	4/19/1996[1]	17.72[3]	47.14
MW-4	2/2/1999[1]	20	44.49
MW-6	4/19/1996[1]	Unknown	41.415
MW-7	2/2/1999[1]	Unknown	41.585
MW-8	9/10/2012	12	45.70
MW-9	9/10/2012	12	44.775
MW-10	9/10/2012	12	43.15
MW-11	9/10/2012	15	46.42
MW-12	5/24/2013	20	46.035
MW-13	5/24/2013	20	44.79
MW-14	5/24/2013	20	43.225

[1] Completion dates are unknown. The date listed is the first known date the monitoring well was sampled.
[2] Depths are below ground surface.
[3] Construction details for the well are unknown. The depth listed is the depth of the well measured on June 17, 2014.

3.0 GROUND WATER MONITORING PROGRAM

The most recent ground water sampling event was performed in June 2014, and represents the fourteenth sampling event at the site since discovery of the release and the second one of 2014. Not all of the monitoring wells were sampled during each of the 13 events; monitoring wells MW-1 and MW-3 have been sampled the most often, likely due to the fact that the highest chlordane concentrations have historically been detected in those wells. Ground water condition and quality during both the wet and dry seasons have historically been represented.

3.1 Ground Water Elevation Monitoring

Monitoring of the ground water elevations has been performed on numerous occasions since 1995. All monitoring wells are screened within the shallow Quaternary alluvium aquifer. The reported flow direction has consistently been to the north, northwest, or northeast, away from Clear Lake (Figure 3).

3.2 Ground Water Sample Collection Procedure

Ground water sampling activities were performed on nine of the 13 ground water monitoring wells at the site, including MW-1, MW-3, MW-4, MW8, MW-9, MW-11, MW-12, MW-13, and MW-14. The other wells have either been abandoned (MW-5) or have historically exhibited non-detect or low detection analytical results. Each ground water monitoring well was accessed and allowed to equilibrate prior to measurement and sample collection activities. Depth to

water measurements were collected using an audible, electronic water level meter, after which the sensor was allowed to descend to the bottom of the well. The length of the water column was used to determine the volume of water in the well for purging purposes. After the measurements were collected at each well, the water level meter was decontaminated using an Alconox® wash and rinsed with distilled water. Three well volumes of water were purged from each well prior to sampling. Ground water samples were obtained at each location using a peristaltic pump under low-flow conditions.

Samples were placed in laboratory-provided containers with the appropriate preservatives and stored in iced coolers. The samples were delivered to Friedman and Bruya, Inc. (F&BI) of Seattle, Washington, for analysis. F&BI subcontracted the analysis to Fremont Analytical (Fremont) of Seattle, Washington. Standard chain-of-custody procedures were followed from sample collection to delivery to the laboratories.

3.3 Ground Water Sample Analysis

All ground water samples collected in June 2014 were analyzed for chlordane using U.S. Environmental Protection Agency (EPA) Method 8081.

4.0 ANALYTICAL RESULTS

The ground water results from the ground water monitoring well sampling are summarized in Table 2, "Laboratory Analysis Results for Ground Water Samples," which is attached to this letter-report. The laboratory analytical report is included in Appendix A. A historical summary of laboratory analytical results from the monitoring well sampling events performed to-date is provided on Figure 4.

Chlordane concentrations were reported by the laboratory as alpha- and gamma-chlordane. The two concentrations were summed to determine the total chlordane concentration for each sample. Total chlordane concentrations detected in the ground water samples collected at the subject and east-adjoining properties during the June 2014 monitoring event ranged from non-detect to 1.18 µg/L. The highest total chlordane concentration detected during this investigation was in monitoring well MW-8, which is located on the northwest exterior corner of the greenhouse building.

Total chlordane was not detected in six of the nine monitoring wells sampled, including MW-1, MW-4, MW-9, MW-12, MW-13, and MW-14. Total chlordane in three of the monitoring wells (MW-3, MW-8, and MW-11) was above the MTCA Method B cleanup level for chlordane (0.25 µg/L). However, all of the chlordane concentrations detected were below the State MCL of 2 µg/L. The laboratory analytical report is included in Appendix A.

5.0 CONCLUSIONS

The following summary is based on review of the laboratory analyses performed to date:

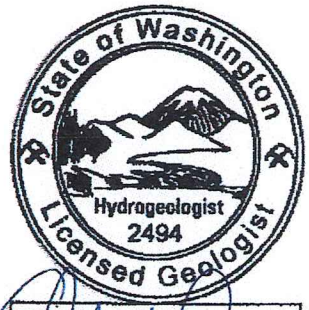
- The chlordane concentrations observed during this ground water monitoring event were all below 2 µg/L, which is the state (and federal) MCL used to determine threshold contaminant values in drinking water, and the Ecology-approved site-specific ground water cleanup level.
- To date, both quarterly events in 2014 (February, June) have shown chlordane concentrations to be below the MCL.
- Measured ground water flow directions continue to be generally to the north, away from Clear Lake.

6.0 RECOMMENDATIONS

Two remaining quarterly monitoring events are planned for 2014 (August and November). If chlordane concentrations remain below the MCL for all four quarters of 2014, an NFA should be requested from Ecology.

We have enjoyed working with you on this study. If you should have any questions or require further assistance, please do not hesitate to call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Tacoma, Washington



Jon N. Sondergaard, L.G., L.E.G.
Senior Principal Engineering Geologist

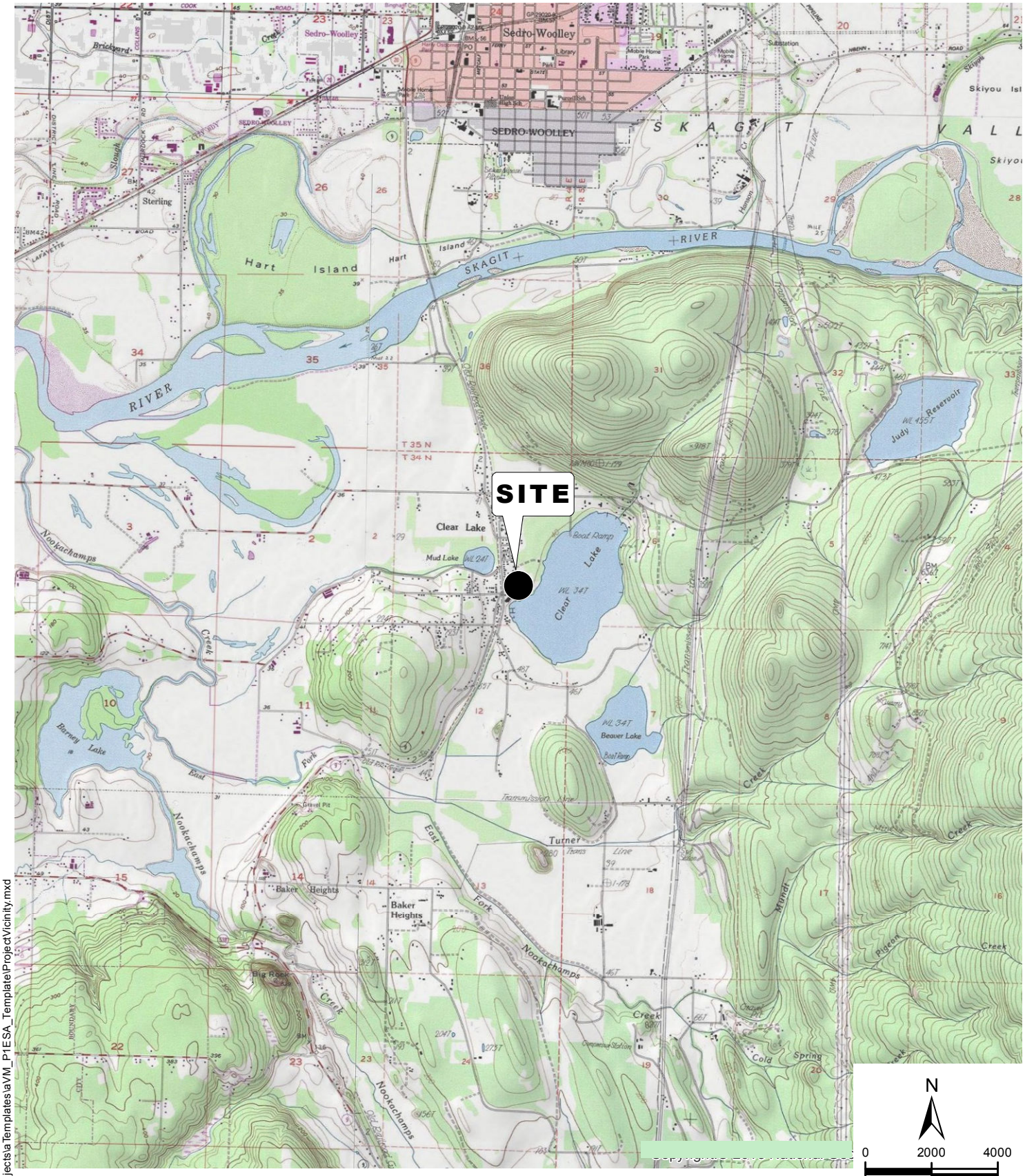
Elizabeth Rachman, L.G., L.Hg.
Senior Hydrogeologist

Table 2: Laboratory Analysis Results for Ground Water Samples

Sample ID	Sample Location	gamma-Chlordane (ug/L)	alpha-Chlordane (ug/L)	Total Chlordane (ug/L)
MW 1 GW	MW 1	ND	ND	ND
MW 3 GW	MW 3	0.301	0.474	0.775
MW 4 GW	MW 4	ND	ND	ND
MW 8 GW	MW 8	0.341	0.839	1.18
MW 9 GW	MW 9	ND	ND	ND
MW 11 GW	MW 11	0.18	0.277	0.457
MW 12 GW	MW 12	ND	ND	ND
MW 13 GW	MW 13	ND	ND	ND
MW 14 GW	MW 14	ND	ND	ND
MTCA Method B Cleanup Levels		---	---	*0.25* [1]
WA State and Federal MCL		---	---	*2*

Notes: Results above the State and Federal MCL level, if any, are in **bold**.
ug/L = micrograms per Liter (equivalent to parts per billion).
ND = non detect.
MCL = maximum contaminant level.

[1] The current Method B Carcinogen Standard Value was used in the table. No Method A value has been established for this parameter.



REFERENCE: USGS

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.

Document Path: H:\GIS_Projects\a Templates\aVM_P1ESA_Template\ProjectVicinity.mxd

associated earth sciences incorporated

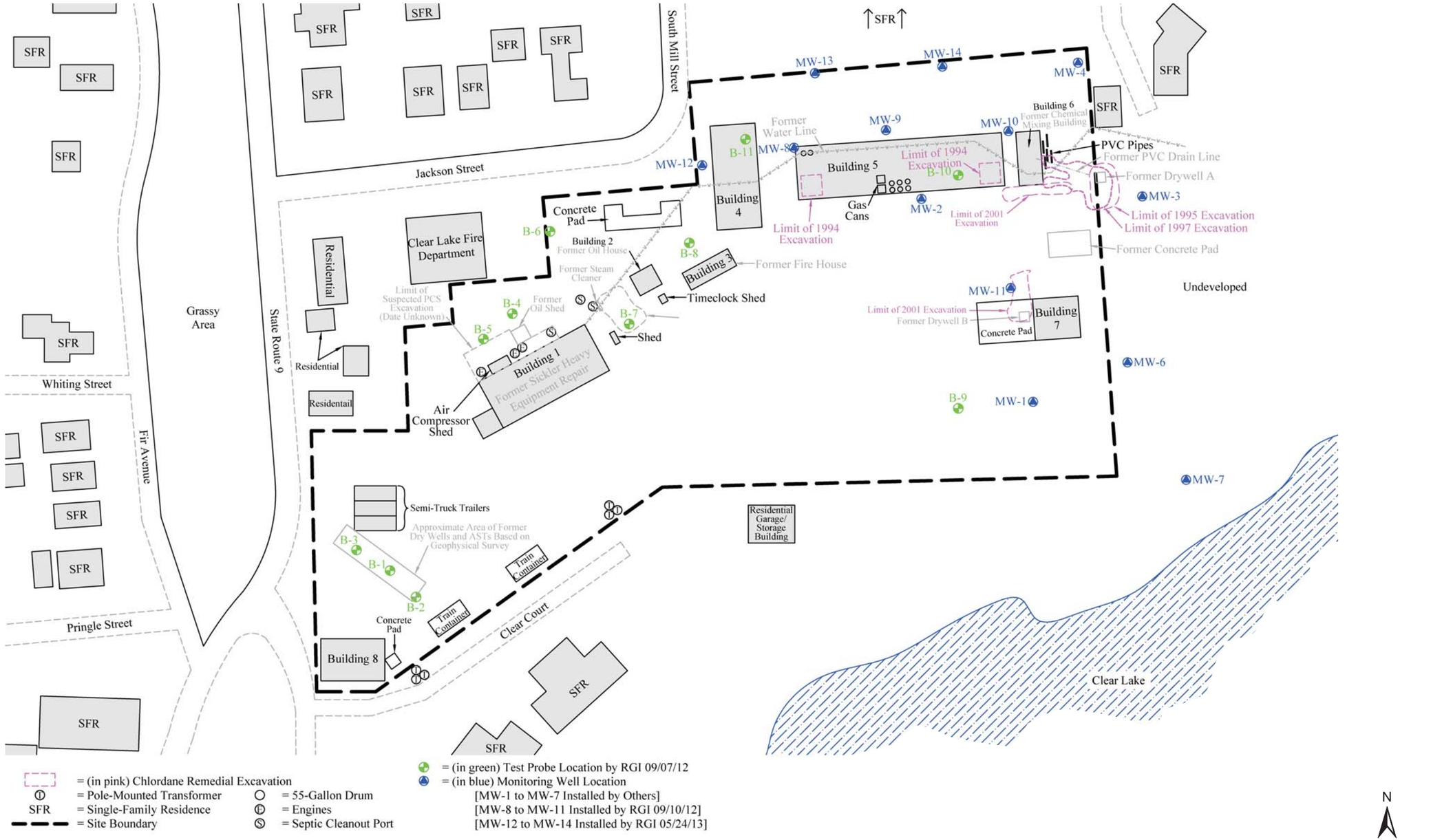
VICINITY MAP

CLEAR LAKE INDUSTRIAL PARK
CLEAR LAKE, WASHINGTON

FIGURE 1

DATE 7/14

PROJ. NO. TV130367F



REFERENCE: THE RILEY GROUP

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.

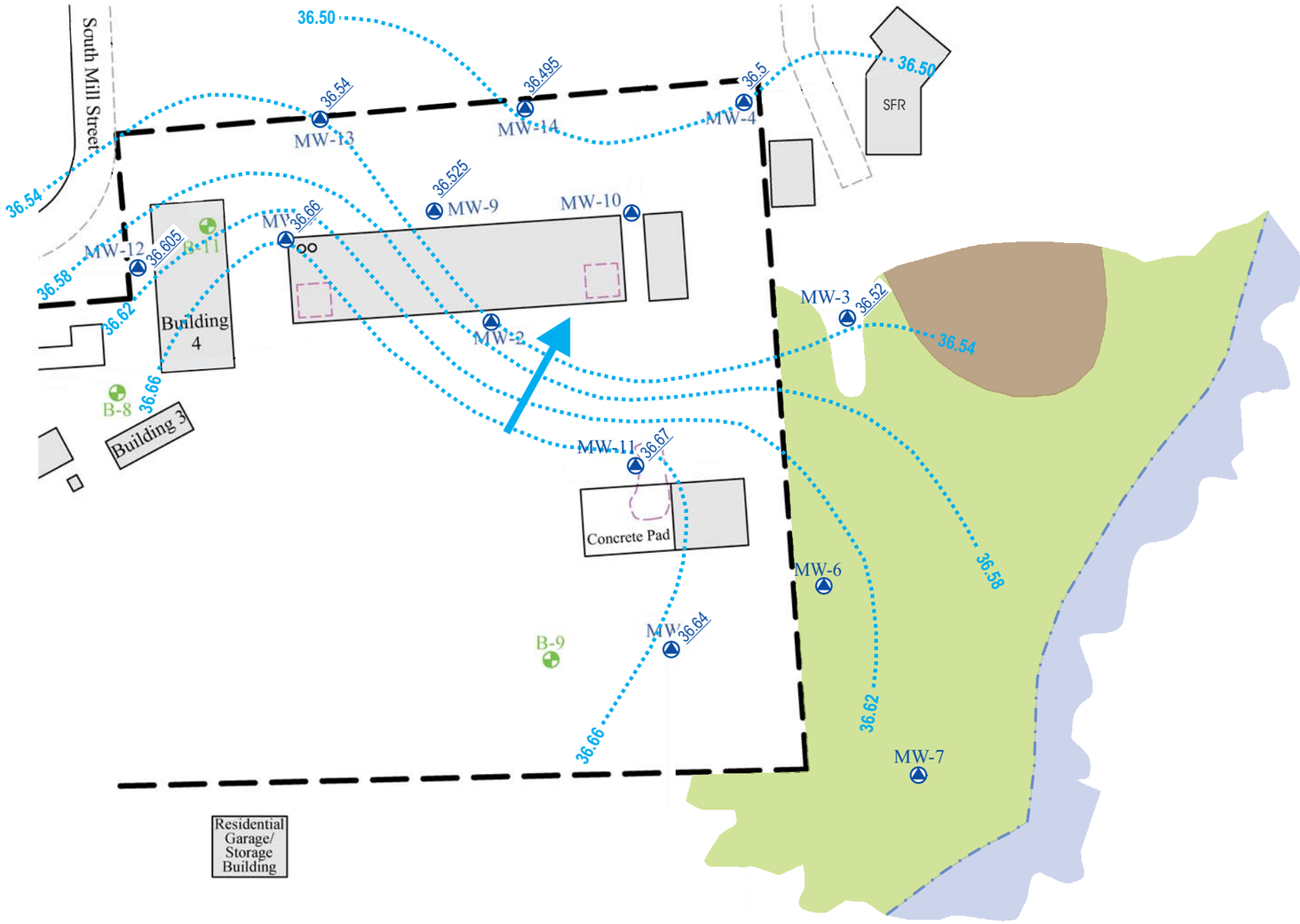
130367 Clear lake Industrial Pk \ 130367 Site -1 7-14.cdr

associated earth sciences incorporated

SITE PLAN

CLEAR LAKE INDUSTRIAL PARK
CLEAR LAKE, WASHINGTON

FIGURE 2
DATE 7/14
PROJ. NO. TV130367F



LEGEND:

- SITE BOUNDARY
- SFR — SINGLE-FAMILY RESIDENCE
- CHLORDANE REMEDIAL EXCAVATION
- MONITORING WELL LOCATION BY OTHERS - GROUND WATER LEVEL MEASURED 6/17/14
- GROUND WATER FLOW CONTOUR MEASURED 6/17/14
- GROUND WATER FLOW DIRECTION
- TEST PROBE LOCATION BY OTHERS 9/7/12
- SHORELINE
- HEAVY VEGETATION
- AREA FILLED WITH LARGE PIECES OF CONCRETE COVERED BY A THIN LAYER OF SOIL AND GRASS

REFERENCE: THE RILEY GROUP

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.

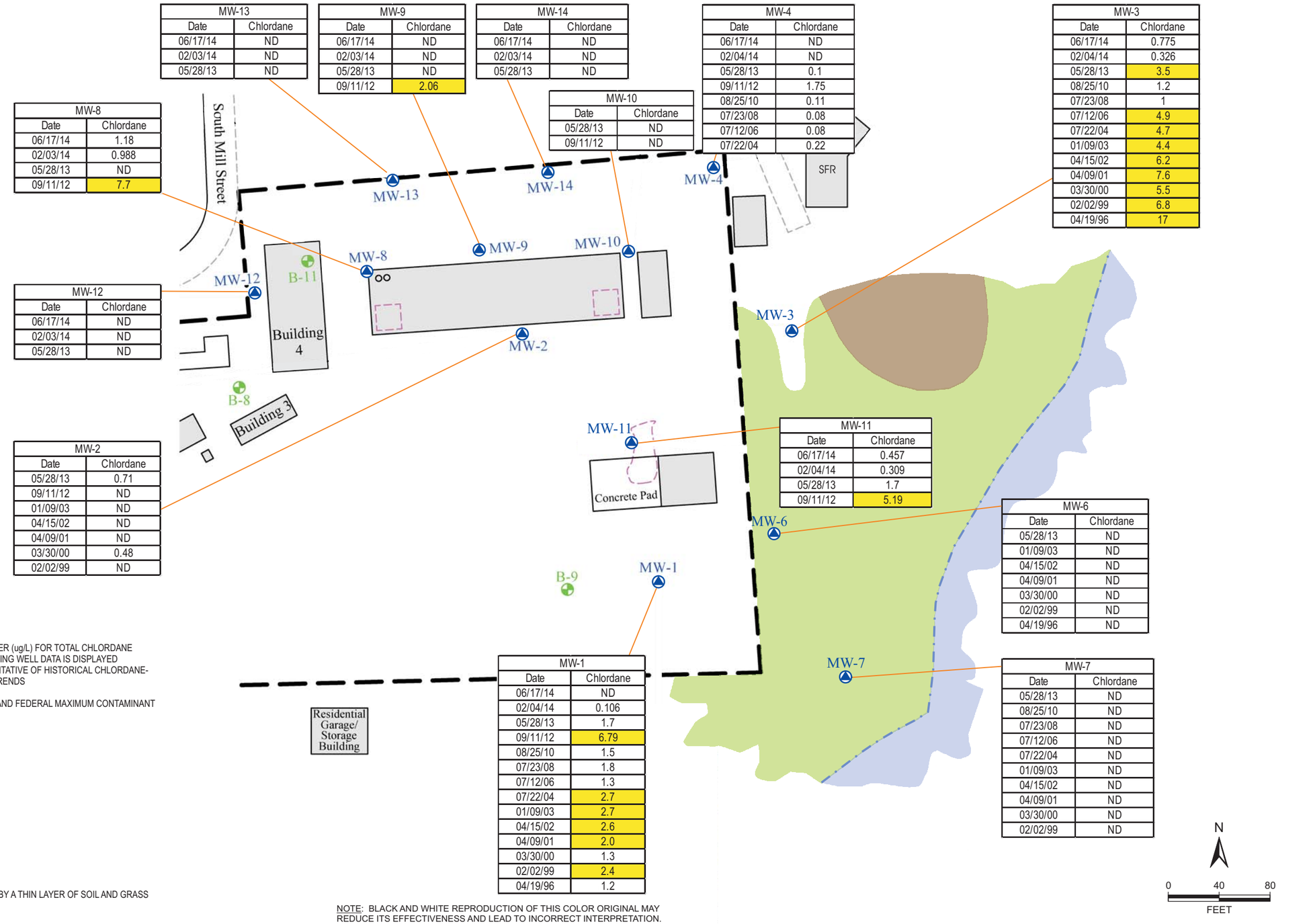
130367 Clear lake Industrial Pk \ 130367 Site -3 7-14.cdr PAGE 1: GW

associated earth sciences incorporated

GROUND WATER FLOW ELEVATIONS AND FLOW DIRECTION - JUNE 17, 2014

CLEAR LAKE INDUSTRIAL PARK
CLEAR LAKE, WASHINGTON

FIGURE 3
DATE 7/14
PROJ. NO. TV130367F



LEGEND:

- SITE BOUNDARY
- SFR — SINGLE-FAMILY RESIDENCE
- CHLORDANE REMEDIAL EXCAVATION
- GROUND WATER ANALYTICAL DATA IN MICROGRAMS PER LITER (ug/L) FOR TOTAL CHLORDANE
  NOT ALL HISTORICAL GROUND WATER MONITORING WELL DATA IS DISPLAYED
  DATA DISPLAYED IS INTENDED TO BE REPRESENTATIVE OF HISTORICAL CHLORDANE-IMPACTED GROUND WATER CONCENTRATION TRENDS
- CHLORDANE CONCENTRATION ABOVE WASHINGTON STATE AND FEDERAL MAXIMUM CONTAMINANT LEVEL (2ug/L) - HIGHLIGHTED IN YELLOW
- ND — NOT DETECTED
- MONITORING WELL LOCATION BY OTHERS
- TEST PROBE LOCATION BY OTHERS 9/7/12
- TEST PROBE LOCATION BY AESI FEBRUARY-MARCH 2014
- DEEP BORING LOCATION BY AESI FEBRUARY-MARCH 2014
- SHORELINE
- HEAVY VEGETATION
- AREA FILLED WITH LARGE PIECES OF CONCRETE COVERED BY A THIN LAYER OF SOIL AND GRASS

REFERENCE: THE RILEY GROUP

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.

130367 Clear lake Industrial Pk \ 130367 Site -2 8-14.cdr PAGE 2: Historical

associated earth sciences incorporated

HISTORICAL GROUND WATER DATA

CLEAR LAKE INDUSTRIAL PARK
CLEAR LAKE, WASHINGTON

FIGURE 4

DATE 8/14

PROJ. NO. TV130367F

APPENDIX A

Laboratory Analytical Report

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 27, 2014

Liz Rachman, Project Manager
Associated Earth Sciences, Inc.
1552 Commerce St., Suite 102
Tacoma, WA 98402

Dear Ms. Rachman:

Included are the results from the testing of material submitted on June 18, 2014 from the TV130367F, F&BI 406315 project. There is 1 page included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
AE10627R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 18, 2014 by Friedman & Bruya, Inc. from the Associated Earth Sciences TV130367F, F&BI 406315 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Associated Earth Sciences
406315 -01	MW-12 GW
406315 -02	MW-13 GW
406315 -03	MW-14 GW
406315 -04	MW-4 GW
406315 -05	MW-9 GW
406315 -06	MW-8 GW
406315 -07	MW-11 GW
406315 -08	MW-1 GW
406315 -09	MW-3 GW

The samples were sent to Fremont for chlordane analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 406315
Lab ID: 1406185

June 26, 2014

Attention Michael Erdahl:

Fremont Analytical, Inc. received 9 sample(s) on 6/18/2014 for the analyses presented in the following report.

Organochlorine Pesticides by EPA Method 8081

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *06/26/2014*

CLIENT: Friedman & Bruya
Project: 406315
Lab Order: 1406185

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1406185-001	MW-12 GW	06/17/2014 10:10 AM	06/18/2014 2:20 PM
1406185-002	MW-13 GW	06/17/2014 11:00 AM	06/18/2014 2:20 PM
1406185-003	MW-14 GW	06/17/2014 11:50 AM	06/18/2014 2:20 PM
1406185-004	MW-4 GW	06/17/2014 12:50 PM	06/18/2014 2:20 PM
1406185-005	MW-9 GW	06/17/2014 1:20 PM	06/18/2014 2:20 PM
1406185-006	MW-8 GW	06/17/2014 1:40 PM	06/18/2014 2:20 PM
1406185-007	MW-11 GW	06/17/2014 2:10 PM	06/18/2014 2:20 PM
1406185-008	MW-1 GW	06/17/2014 3:10 PM	06/18/2014 2:20 PM
1406185-009	MW-3 GW	06/17/2014 4:10 PM	06/18/2014 2:20 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1406185**
Date: **6/26/2014**

CLIENT: Friedman & Bruya
Project: 406315

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1406185**
Date Reported: **6/26/2014**

CLIENT: Friedman & Bruya
Project: 406315

Lab ID: 1406185-001 **Collection Date:** 6/17/2014 10:10:00 AM
Client Sample ID: **MW-12 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	ND	0.100		µg/L	1	6/24/2014 7:05:00 PM
alpha-Chlordane	ND	0.100		µg/L	1	6/24/2014 7:05:00 PM
Surr: Decachlorobiphenyl	85.6	53.2-135		%REC	1	6/24/2014 7:05:00 PM
Surr: Tetrachloro-m-xylene	64.4	27.7-104		%REC	1	6/24/2014 7:05:00 PM

Lab ID: 1406185-002 **Collection Date:** 6/17/2014 11:00:00 AM
Client Sample ID: **MW-13 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	ND	0.100		µg/L	1	6/24/2014 7:44:00 PM
alpha-Chlordane	ND	0.100		µg/L	1	6/24/2014 7:44:00 PM
Surr: Decachlorobiphenyl	76.2	53.2-135		%REC	1	6/24/2014 7:44:00 PM
Surr: Tetrachloro-m-xylene	51.7	27.7-104		%REC	1	6/24/2014 7:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1406185**
Date Reported: **6/26/2014**

CLIENT: Friedman & Bruya
Project: 406315

Lab ID: 1406185-003 **Collection Date:** 6/17/2014 11:50:00 AM
Client Sample ID: **MW-14 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	ND	0.100		µg/L	1	6/24/2014 8:23:00 PM
alpha-Chlordane	ND	0.100		µg/L	1	6/24/2014 8:23:00 PM
Surr: Decachlorobiphenyl	89.4	53.2-135		%REC	1	6/24/2014 8:23:00 PM
Surr: Tetrachloro-m-xylene	66.7	27.7-104		%REC	1	6/24/2014 8:23:00 PM

Lab ID: 1406185-004 **Collection Date:** 6/17/2014 12:50:00 PM
Client Sample ID: **MW-4 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	ND	0.100		µg/L	1	6/24/2014 8:42:00 PM
alpha-Chlordane	ND	0.100		µg/L	1	6/24/2014 8:42:00 PM
Surr: Decachlorobiphenyl	77.3	53.2-135		%REC	1	6/24/2014 8:42:00 PM
Surr: Tetrachloro-m-xylene	58.6	27.7-104		%REC	1	6/24/2014 8:42:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1406185**
Date Reported: **6/26/2014**

CLIENT: Friedman & Bruya
Project: 406315

Lab ID: 1406185-005 **Collection Date:** 6/17/2014 1:20:00 PM
Client Sample ID: **MW-9 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	ND	0.100		µg/L	1	6/24/2014 9:02:00 PM
alpha-Chlordane	ND	0.100		µg/L	1	6/24/2014 9:02:00 PM
Surr: Decachlorobiphenyl	81.9	53.2-135		%REC	1	6/24/2014 9:02:00 PM
Surr: Tetrachloro-m-xylene	62.7	27.7-104		%REC	1	6/24/2014 9:02:00 PM

Lab ID: 1406185-006 **Collection Date:** 6/17/2014 1:40:00 PM
Client Sample ID: **MW-8 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	0.341	0.100		µg/L	1	6/24/2014 9:21:00 PM
alpha-Chlordane	0.839	0.100		µg/L	1	6/24/2014 9:21:00 PM
Surr: Decachlorobiphenyl	74.2	53.2-135		%REC	1	6/24/2014 9:21:00 PM
Surr: Tetrachloro-m-xylene	69.9	27.7-104		%REC	1	6/24/2014 9:21:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1406185**
Date Reported: **6/26/2014**

CLIENT: Friedman & Bruya
Project: 406315

Lab ID: 1406185-007 **Collection Date:** 6/17/2014 2:10:00 PM
Client Sample ID: **MW-11 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	0.180	0.100		µg/L	1	6/24/2014 9:41:00 PM
alpha-Chlordane	0.277	0.100		µg/L	1	6/24/2014 9:41:00 PM
Surr: Decachlorobiphenyl	86.5	53.2-135		%REC	1	6/24/2014 9:41:00 PM
Surr: Tetrachloro-m-xylene	62.2	27.7-104		%REC	1	6/24/2014 9:41:00 PM

Lab ID: 1406185-008 **Collection Date:** 6/17/2014 3:10:00 PM
Client Sample ID: **MW-1 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	ND	0.100		µg/L	1	6/24/2014 10:00:00 PM
alpha-Chlordane	ND	0.100		µg/L	1	6/24/2014 10:00:00 PM
Surr: Decachlorobiphenyl	73.4	53.2-135		%REC	1	6/24/2014 10:00:00 PM
Surr: Tetrachloro-m-xylene	58.7	27.7-104		%REC	1	6/24/2014 10:00:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1406185**
Date Reported: **6/26/2014**

CLIENT: Friedman & Bruya
Project: 406315

Lab ID: 1406185-009 **Collection Date:** 6/17/2014 4:10:00 PM
Client Sample ID: **MW-3 GW** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 7878		Analyst: MD
gamma-Chlordane	0.301	0.100		µg/L	1	6/24/2014 10:19:00 PM
alpha-Chlordane	0.474	0.100		µg/L	1	6/24/2014 10:19:00 PM
Surr: Decachlorobiphenyl	81.4	53.2-135		%REC	1	6/24/2014 10:19:00 PM
Surr: Tetrachloro-m-xylene	64.2	27.7-104		%REC	1	6/24/2014 10:19:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *6/26/2014*

Work Order: 1406185
CLIENT: Friedman & Bruya
Project: 406315

QC SUMMARY REPORT

Organochlorine Pesticides by EPA Method 8081

Sample ID: **MB-7878** SampType: **MBLK** Units: **µg/L** Prep Date: **6/19/2014** RunNo: **15119**
Client ID: **MBLKW** Batch ID: **7878** Analysis Date: **6/24/2014** SeqNo: **309455**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	ND	0.100									
alpha-Chlordane	ND	0.100									
Surr: Decachlorobiphenyl	0.277		0.4000		69.2	53.2	135				
Surr: Tetrachloro-m-xylene	0.198		0.4000		49.6	27.7	104				

Sample ID: **LCS-7878** SampType: **LCS** Units: **µg/L** Prep Date: **6/19/2014** RunNo: **15119**
Client ID: **LCSW** Batch ID: **7878** Analysis Date: **6/24/2014** SeqNo: **309458**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	0.671	0.100	0.8000	0	83.9	38	129				
alpha-Chlordane	0.670	0.100	0.8000	0	83.8	41.6	127				
Surr: Decachlorobiphenyl	0.401		0.4000		100	53.2	135				
Surr: Tetrachloro-m-xylene	0.254		0.4000		63.4	27.7	104				

Sample ID: **1406185-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **6/19/2014** RunNo: **15119**
Client ID: **MW-12 GW** Batch ID: **7878** Analysis Date: **6/24/2014** SeqNo: **309460**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	ND	0.100						0		30	
alpha-Chlordane	ND	0.100						0		30	
Surr: Decachlorobiphenyl	0.273		0.4000		68.3	53.2	135		0		
Surr: Tetrachloro-m-xylene	0.288		0.4000		72.1	27.7	104		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *6/26/2014*

Work Order: 1406185
CLIENT: Friedman & Bruya
Project: 406315

QC SUMMARY REPORT

Organochlorine Pesticides by EPA Method 8081

Sample ID: **1406185-002AMS** SampType: **MS** Units: **µg/L** Prep Date: **6/19/2014** RunNo: **15119**
Client ID: **MW-13 GW** Batch ID: **7878** Analysis Date: **6/24/2014** SeqNo: **309462**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	0.608	0.100	0.8000	0.0003000	76.0	34.7	126				
alpha-Chlordane	0.603	0.100	0.8000	0.0004320	75.3	38.2	125				
Surr: Decachlorobiphenyl	0.328		0.4000		81.9	53.2	135				
Surr: Tetrachloro-m-xylene	0.327		0.4000		81.8	27.7	104				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1406185**
Logged by:	**Chelsea Ward**	Date Received:	**6/18/2014 2:20:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	Client			

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐	
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑	
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐	
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐	
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑	

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C	Condition
Cooler	8.0	Good
Sample	9.2	Good

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1406185

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont
PROJECT NAME/NO. 406315
PO # C-938
REMARKS Please Email Results

Page # 1 of 1

TURNAROUND TIME
☒ ~~Standard (2 Weeks)~~ 1 week
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	Chlordane				Notes
MW-12 GW		6/17/14	1010	water	2							X				
MW-13 GW			1100		2							X				
MW-14 GW			1150		2							X				
MW-4 GW			1250		2							X				
MW-9 GW			1320		2							X				
MW-8 GW			1340		2							X				
MW-11 GW			1410		2							X				
MW-1 GW			1510		2							X				
MW-3 GW			1610		2							X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	6/18/14	13:30
Received by:	Chelsea Ward	FAI	6/18/14	1420
Relinquished by:				
Received by:				

406815

SAMPLE CHAIN OF CUSTODY

ME 06-18-14 C04

Send Report To Liz Rachman
Company AESI
Address 1552 Commerce St, Suite 102
City, State, ZIP Tacoma, WA 98402
Phone #(253)722-2992 Fax #(253)722-2993

SAMPLERS (signature) Emily Cressman
PROJECT NAME/NO. TV130307F
PO#
REMARKS

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 1 week
Rush charges authorized by

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Chlordane	Notes
MW-12 GW	01A-B	6/17/14	1010	water	2							X	
MW-13 GW	02	"	1100	"	"							X	
MW-14 GW	03		1150									X	
MW-4 GW	04		1250									X	
MW-9 GW	05		1320									X	
MW-8 GW	06		1340									X	
MW-11 GW	07		1410									X	
MW-1 GW	08		1510									X	
MW-3 GW	09	↓	1610	↓	↓							X	

Samples received at 5 °C

ANALYSES REQUESTED

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Emily Cressman	Emily Cressman	AESI	6/18	0915
Received by: John Davy	JOHN DAVY	POSTAL EXPRESS	6/18/14	09:15
Relinquished by:				
Received by: Nhan Phan	Nhan Phan	FEBI	6/18/14	11:15