



northgate  
*environmental management, inc.*

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## RESULTS OF SOIL CHARACTERIZATION

Madrona Pond  
3201 Plaza Del Amo  
Torrance, California

---

***Prepared For:***

**Mr. John Dettle, P.E.  
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City of Torrance  
20500 Madrona Avenue  
Torrance, California 90503**

***Prepared By:***

**Northgate Environmental Management, Inc.  
24411 Ridge Route Drive, Suite 130  
Laguna Hills, California 92653**

**February 4, 2013**

***Project No. 2040.02***

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3201 Plaza Del Amo  
Torrance, California**

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City of Torrance, California 90503

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Principal

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Senior Geologist



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- B Soil Sample Analytical Reports
- C Geotechnical Analysis
- D Soil Transport & Disposal Bids



## LIST OF ABBREVIATIONS AND ACRONYMS

ASTM	American Society for Testing and Materials
bgs	below ground surface
EPA	Environmental Protection Agency
CHHSL	California Human Health Screening Level
DRO	Diesel range organics
GRO	Gasoline range organics
Inc.	Incorporated
mg/kg	milligrams per kilogram
MORO	Motor oil range organics
MRL	Method reporting limit
NA	Not applicable
ND	Not detected
NE	Not established
OCPs	Organochlorine pesticides
PCBs	Polychlorinated biphenyls
PI	Plasticity index
QA/QC	Quality assurance/quality control
RSL	Regional screening level
RWQCB	Regional Water Quality Control Board
SEA	Significant Ecological Area
TPH-cc	Total petroleum hydrocarbons as carbon chain
µg/kg	Micrograms per kilogram
VOCs	Volatile organic compounds



## 1.0 INTRODUCTION

The City of Torrance (the City) retained Northgate Environmental Management, Inc. (Northgate) to perform characterization of soil stockpiled at the Madrona Pond, 3201 Plaza Del Amo, Torrance, California (the Site). The soils are stockpiled on the edges of the pond structure which is located in the southeast corner of the Madrona Marsh Preserve (see Figure 1). The Madrona Marsh Preserve is designated as a Significant Ecological Area (SEA), and home to one of the last natural vernal wetlands in Los Angeles County.

### 1.1 Background

In September, 2012 Mr. Jeffrey Kidd, Associate Engineer with the City reported a recent survey determined the increase in volume of soil/sediment from the original sump conditions is approximately 2,700 cubic yards. Approximately 2,200 yards of pond-bottom material was excavated and stockpiled on higher ground adjacent to the north side of the pond in the summer of 2011. An additional approximately 500 yards of soils were transported to the site from a road construction project within the City (“imported material”), and stockpiled on the south side of the pond in two separate locations (see Figure 2). The City requested characterization of the material to determine potential disposal options, and preliminary cost estimates to transport the material offsite for disposal.

### 1.2 Report Organization

This report consists of the following sections:

- Introduction;
- Field Procedures;
- Sample Analysis and Results;
- Waste Classification; and
- Disposal Options.

Appendix A contains daily field reports, Appendix B includes the soil sample analytical reports, Appendix C includes geotechnical analysis reports, and Appendix D contains subcontractor bids to transport and dispose of the material.



## **2.0 FIELD PROCEDURES**

### **2.1 Field Activities**

Field work for this project was performed on October 30, 2012 according to the scope of work given in the *Proposal to Conduct Soil Sampling, Madrona Marsh, City of Torrance, California* dated September 25, 2012 (Northgate, 2012). Field activities included the following:

- Collection of five (5) discrete soil samples for analytical testing;
- Collection of two (2) additional soil samples for geotechnical analysis; and
- Creation of a site map documenting the positions of soil samples and geometry of the stockpiled materials.

### **2.2 Sample Locations and Naming**

#### ***2.2.1 Soil Boring Locations***

Five (5) hand auger borings were advanced in the stockpiles for the purpose of collecting shallow soil samples. These borings were distributed between the stockpiled soils to provide three samples from the former pond bottom material, and two samples from the imported material (see Figure 2). Samples were collected at depth of the approximate mid-point of each stockpile. Appendix A contains the daily field report from soil sampling activities.

#### ***2.2.2 Sample Naming***

The nomenclature for soil samples included the soil sample location and sample identification. The prefix of SS (soil sample), was followed by the number of the soil sample location (numbers 1 through 5), followed by a hyphen and the relative location of the sample on the Site (i.e. NE is located in the northeastern portion of the Site), followed by a hyphen and the sampling depth in feet. For example, SS3-NW-1.5' was the third soil sample collected from the stockpile along the northwestern portion of Madrona Pond at a depth of 1.5 feet below ground surface (bgs).

### **2.3 Advancement of Borings**

The soil borings were advanced using a hand auger to depths between 1.0 to 1.5 feet bgs within undisturbed soils at five (5) separate locations within the stockpiled materials. When the boring reached target depth, the auger was removed and a slide hammer sampler was used to collect soil samples from undisturbed soils in the bottom of the boring, as discussed in further detail in Section 2.4.1.



## 2.4 Soil Sampling

### 2.4.1 Soil Sample Collection and Analysis

Five (5) soil samples were collected in the shallow soils within the stockpiled area. Soil samples were collected from SS1-NE and SS2-N at a depth of 2 feet bgs, and from SS3-NW, SS4-SE, and SS5-SW at a depth of 1.5 feet bgs. Two additional soil samples were collected for geotechnical analysis from borings SS1-NE at a depth of 2 feet bgs, and SS5-SW at a depth of 1.5 feet bgs.

Soil samples for analysis of volatile organic compounds (VOCs) and the extractable fraction of the total petroleum hydrocarbon-carbon chain (TPH-cc) were collected in accordance with United States Environmental Protection Agency (EPA) Method 5035 protocols using Encore sampling devices. Soil samples for all other analysis were collected in pre-cleaned stainless steel tubes by advancing the sampler into undisturbed soils ahead of the auger bit using a slide hammer and coring assembly. Following retrieval, a representative portion of the sample was placed into a 4 ounce glass jar. For geotechnical analysis, a representative portion of the soil was collected using the hand auger and hand tools and placed in a sealed plastic bag. The samples were labeled, packaged in re-sealable plastic bags, and placed in a cooler on ice maintained at 4 degrees centigrade for transport to the appropriate laboratories under chain-of-custody protocol.

Five (5) soil samples were submitted to SunStar Laboratories (SunStar), a California-certified fixed-based laboratory, located in Lake Forest, California for chemical analysis. The discrete samples prepared using EPA Method 5035 preparation were analyzed for VOCs using EPA Method 8260b and TPH-cc (purgeable fraction). The discrete samples collected were also analyzed for TPH-cc (extractable fraction) using EPA Method 8015B, Title 22 metals using EPA Method 6010B, polychlorinated biphenyls (PCBs) using EPA Method 8082, and organochlorine pesticides (OCPs) using EPA Method 8081.

Two (2) soil samples were submitted to Geo-Logic Associates, Inc. a materials testing laboratory located in Anaheim, California, for geotechnical analysis. The samples were analyzed for geotechnical properties including grain-size analysis using the sieve and #200 wash methods according to American Society for Testing & Materials (ASTM) Method D422 and plasticity index (PI) using ASTM Method D4318.



### ***2.4.2 Soil Sample Holding Times***

The laboratory holding time for soil samples to be analyzed for VOCs by EPA Methods 5035/8260B using Encore™ samplers is 48 hours for extraction and a total of 14 days for analysis. The samples collected during this investigation were submitted to SunStar on October 30, 2012 and were analyzed in the laboratory on November 2, 2012, well within laboratory holding times.

### ***2.4.3 Decontamination Procedures***

The sampling system was cleaned before each use. The sampling system was washed with non-phosphate detergent followed by a tap water rinse and a final, distilled water rinse. New pre-cleaned stainless steel tubes were used for soil sample collection at each boring location.

## **2.5 Quality Assurance and Quality Control (QA/QC)**

SunStar's QA/QC analysis procedures associated with this event included:

- Method blank analysis;
- Matrix spikes/matrix spike duplicates analysis; and
- Laboratory control sample analysis.

Refer to Appendix B for SunStar's soil sample analytical reports containing QA/QC evaluations.

## **2.6 Health and Safety Plan**

Prior to commencement of field activities, a Site-specific *Health and Safety Plan* (HASP) was prepared. The HASP addressed physical, chemical, and biological hazards associated with typical subsurface investigations of this nature, specified the appropriate means to mitigate or control these hazards, and delineated general safety procedures to be followed while conducting field investigations at the Site.



### 3.0 SAMPLE ANALYSIS AND RESULTS

#### 3.1 Soil Sample Analysis and Results

Five soil samples were analyzed for chemical constituents including: VOCs, TPH-cc, PCBs, and OCPs, and two samples were analyzed for Geotechnical parameters as discussed below.

##### 3.1.1 Chemical Analysis

TPH-cc purgeable fraction (C4-C12) was not detected above the laboratory method reporting limit in any of the soil samples analyzed. TPH-cc extractable fraction (C13-C22) was reported in all samples with concentrations of 13 mg/kg (SS1-NE-2'), 72 mg/kg (SS2-N-2'), 52 mg/kg (SS3-NW-1.5'), 170 mg/kg (SS4-SE-1.5'), and 180 mg/kg (SS5-SW-1.5'). TPH-cc extractable fraction (C23-C32) was detected in all five samples at concentrations of 71 mg/kg (SS1-NE-2'), 630 mg/kg (SS2-N-2'), 370 mg/kg (SS3-NW-1.5'), 2,300 mg/kg (SS4-SE-1.5'), and 2,900 mg/kg (SS5-SW-1.5').

No VOCs were detected in any of the soil samples with the exception of sample SS5-SW-1.5', which reported p-Isopropyltoluene at a concentration of 6.5 µg/kg. No OCPs or PCBs were detected above the laboratory reporting limits in any of the samples.

Barium (57 to 86 mg/kg), chromium (8.8 to 16 mg/kg), cobalt (4.0 to 5.6 mg/kg), copper (17 to 31 mg/kg), lead (17 to 24 mg/kg), mercury (0.17 to 0.39 mg/kg), nickel (7.6 to 13 mg/kg), vanadium (16 to 24 mg/kg), and zinc (70 to 150 mg/kg) were reported in all five (5) soil samples collected. Antimony, arsenic, beryllium, cadmium, molybdenum, selenium, silver, and thallium were not detected at concentrations above the laboratory reporting limits. The soil sample analytical results are summarized in Table 1 (Organic Compounds) and Table 2 (Metals). Analytical reports for the samples are presented in Appendix B.

##### 3.1.2 Geotechnical Analysis

Two soils samples were analyzed for geotechnical properties and assigned a soil type using the Unified Soil Classification System (USCS) by Geo-Logic Associates of Anaheim, CA. Sample SS1-NE-2' was classified as a silty sand (SM), with an initial moisture content of 15.4%. Sample SS5-SW-1.5' was classified as a silty sand with gravel (SM) with a moisture content of 9.3%. Geotechnical laboratory reports are presented in Appendix C.



## **4.0 WASTE CLASSIFICATION**

In California, wastes are classified according to their physical nature (liquid or solid) and their degree of hazardous characteristics. The California Environmental Protection Agency (CAL/EPA), Department of Toxic Substances Control (DTSC), and the California State Water Resources Control Board (SWRCB) share the responsibility of regulating wastes in California. Wastes are classified according to the regulations set forth in the California Code of Regulations (CCR), Titles 22 and 23. The classifications used by the DTSC reflect the agency's mandate to protect public health and the environment, while the classifications established by the SWRCB are designed to protect the beneficial uses of water.

### **4.1 Waste Classification**

Soil samples were compared against California and Federally-defined hazardous waste criteria defined in California Code of Regulations, Title 22.66261.24. Results of the evaluation indicated that the soil samples would not be defined as California or Federal hazardous waste.



## 5.0 PROFILING

Based on the non-hazardous levels of petroleum hydrocarbons present in the material, two options are available for handling the disposition of the soil: 1) daily cover material at a Class III landfill, and 2) thermal treatment and recycling.

### 5.1 Class III Landfill - Daily Cover Material

Non-hazardous wastes may be disposed of at Class III waste disposal facilities in California provided that facility-specific permit conditions are met. Soils of that type are normally used as daily cover material at the facility. Each Class III landfill has specific limits for acceptable levels of petroleum compounds in waste, and the level varies between facilities. To determine if soils at the Madrona Pond could be disposed of at nearby Class III landfills, vendors were contacted to obtain bids for transportation and disposal of the soils as described below.

**Chiquita Canyon Landfill, Castaic, CA:** The Chiquita Canyon Landfill is a Class III facility located approximately 46 miles north of the City. The staff at Chiquita Canyon has reviewed the analytical and geotechnical data, and indicated that the material would be acceptable for use as daily cover at the facility. Bids obtained from vendors indicated a cost of \$46/ton to transport the material to Chiquita Canyon and dispose of it as daily cover for the landfill, and an additional \$21,300 to load the material prior to transport (see Appendix D).

Profile requirements for the facility include one 4:1 composite sample per every 500 cubic yards of material. Based on that requirement, additional soil sampling and analysis would be required to generate a disposal profile for the material.

The advantage of this disposal strategy is the cost savings realized when compared to thermal treatment (approximate savings of \$11/ton). The disadvantage of this disposal strategy is the ultimate liability faced by the City if the landfill ever becomes out of compliance in the future.

**Chandler's Landfill, Rolling Hills Estates, CA:** The nearest landfill accepting Class III wastes is the Chandler's Landfill in Rolling Hills Estates. However, Chandler's Landfill accepts only inert debris as an engineered fill operation, and is not accepting petroleum contaminated waste at the time of preparation of this report. Based on that information, the Chandler's Landfill is not a viable option for disposal of petroleum contaminated soils from the Madrona Pond.



## 5.2 Thermal Treatment - Recycling

The thermal treatment method removes petroleum hydrocarbons from the soil allowing the treated material to be used as road base or construction fill. Thermal treatment removes the potential liability related to offsite disposal of contaminants, but is more expensive than Class III landfill disposal.

**Soil Safe of California, Adelanto, CA:** The Soil Safe facility in Adelanto, CA treats hydrocarbon contaminated material using thermal desorption. The thermal desorption process removes the contamination allowing the soil to be recycled rather than disposed of to landfill. This removes potential liability from the generator who is no longer tied to the fate of the landfill should regulations change in the future. Bids obtained from vendors indicated a cost of \$57/ton to transport the material to Soil Safe and perform thermal desorption treatment. An additional \$21,300 is required to load the material prior to transport (see Appendix D).

Profile requirements for the facility require a total of five soil samples per every 1,000 cubic yards of material, with an additional sample required for each additional 500 cubic yards of material. Based on that requirement, additional soil sampling and analysis would be required to generate a disposal profile for the material.

The advantage of this disposal strategy is the reduction of potential liability to the City should laws change in the future. The disadvantage of this disposal strategy is the increased cost vs. disposal at a Class III facility.

Appendix D contains bids submitted by the vendors for that scope of work.



## 6.0 LIMITATIONS

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/ hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable investigation into the site conditions and an exhaustive analysis of each conceivable condition. The following paragraphs discuss the assumptions and parameters under which such a study is conducted.

No investigation is thorough enough to describe all geologic/ hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by the data collected during this investigation. Where subsurface monitoring work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.



## 7.0 REFERENCES

**Northgate Environmental Management, Inc, 2012.** *Proposal to Conduct Soil Sampling, Madrona Marsh, City of Torrance, California, Dated September 25, 2012.*



## TABLES



**TABLE 1**  
**Soil Sample Analytical Results - Organic Compounds**

Sample Code	Sample Depth (ft bgs)	Total Petroleum Hydrocarbons			VOCs		OCPs	PCBs
		C6-C12 (GRO)	C13-C28 (DRO)	C29-C40 (MORO)	p-Isopropyltoluene	Other VOCs	Other Pesticides	Other PCBs
		mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg
SS1-NE-2'	2	<0.180	<b>13</b>	<b>71</b>	<4.4	ND	ND	ND
SS2-N-2'	2	<0.220	<b>72</b>	<b>630</b>	<5.7	ND	ND	ND
SS3-NW-1.5'	1.5	<0.190	<b>52</b>	<b>370</b>	<5.0	ND	ND	ND
SS4-SE-1.5'	1.5	<0.210	<b>170</b>	<b>2,300</b>	<5.0	ND	ND	ND
SS5-SW-1.5'	1.5	<0.170	<b>180</b>	<b>2,900</b>	<b>6.5</b>	ND	ND	ND

Residential CHHSL	NE	NE	NE	NE	NA	NA	NA
Industrial CHHSL	NE	NE	NE	NE	NA	NA	NA
Residential Soil RSL	NE	NE	NE	NE	NA	NA	NA
Industrial Soil RSL	NE	NE	NE	NE	NA	NA	NA
RWQCB TPH Max Soil Screening < 20 ft	100	1,000	NE	NE	NA	NA	NA
RWQCB TPH Max Soil Screening 20-150ft	1,000	10,000	NE	NE	NE	NA	NA

**Notes:**

- bgs: Below ground surface
- DRO: Diesel range organics
- GRO: Gasoline range organics
- MORO: Motor oil range organics
- mg/kg: Milligrams per kilogram
- NA: Not applicable
- ND: Not detected
- NE: Not established
- OCPs: Organochlorine Pesticides
- PCBs: Polychlorinated Biphenyls
- RSL: Regional Screening Level
- RWQCB: Regional Water Quality Control Board
- VOCs: Volatile organic compounds
- mg/kg: Milligrams per kilogram
- µg/kg: Micrograms per kilogram
- <: Not detected at or above the indicated laboratory method reporting limit
- : Not tested
- bold:** Detected above the laboratory method reporting limit

**TABLE 2**  
**Soil Sample Analytical Results - Metals**

Sample ID	Sample Depth (ft bgs)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SS1-NE-2'	2	<3.0	<5.0	<b>78</b>	<1.0	<2.0	<b>14</b>	<b>5.3</b>	<b>17</b>	<b>22</b>	<b>0.26</b>	<5.0	<b>9.5</b>	<5.0	<2.0	<2.0	<b>20</b>	<b>97</b>
SS2-N-2'	2	<3.0	<5.0	<b>74</b>	<1.0	<2.0	<b>14</b>	<b>4.7</b>	<b>31</b>	<b>22</b>	<b>0.39</b>	<5.0	<b>10</b>	<5.0	<2.0	<2.0	<b>19</b>	<b>150</b>
SS3-NW-1.5'	1.5	<3.0	<5.0	<b>86</b>	<1.0	<2.0	<b>16</b>	<b>5.6</b>	<b>22</b>	<b>24</b>	<b>0.39</b>	<5.0	<b>13</b>	<5.0	<2.0	<2.0	<b>24</b>	<b>99</b>
SS4-SE-1.5'	1.5	<3.0	<5.0	<b>57</b>	<1.0	<2.0	<b>11</b>	<b>4.5</b>	<b>20</b>	<b>20</b>	<b>0.22</b>	<5.0	<b>9.4</b>	<5.0	<2.0	<2.0	<b>17</b>	<b>95</b>
SS5-SW-1.5'	1.5	<3.0	<5.0	<b>59</b>	<1.0	<2.0	<b>8.8</b>	<b>4.0</b>	<b>21</b>	<b>17</b>	<b>0.17</b>	<5.0	<b>7.6</b>	<5.0	<2.0	<2.0	<b>16</b>	<b>70</b>
Residential CHHSL		30	0.07	5,200	150	1.7	100,000	660	3,000	150	18	380	1,600	380	380	5	530	23,000
Industrial CHHSL		380	0.24	63,000	1,700	7.5	100,000	3,200	38,000	3,500	180	4,800	46,000	4,800	4,800	63	6,700	100,000
Residential Soil RSL		31	0.39	15,000	160	70	NE	23	3,100	400	10	390	1,500	390	390	0.78	NE	23,000
Industrial Soil RSL		410	1.6	190,000	2,000	800	NE	300	41,000	800	43	5,100	20,000	5,100	5,100	10	NE	310,000

**Notes:**

bgs: Below ground surface

CHHSL = California Human Health Screening Level, Cal/EPA, January 2005

mg/kg: milligrams per kilogram

NE: Not established

RSL = Regional Screening Level

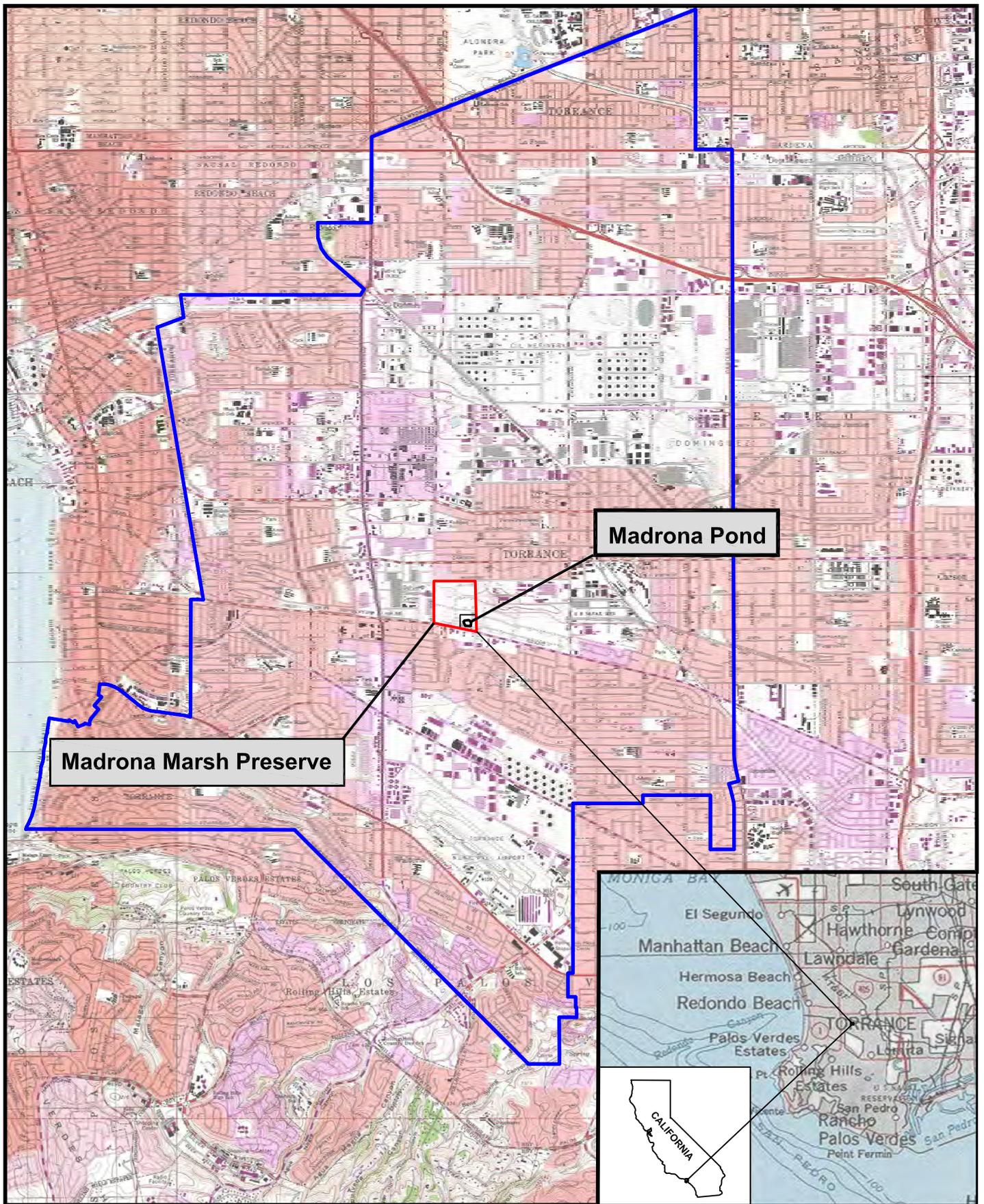
<: Not detected at or above the indicated laboratory method reporting limit

---: Not analyzed

**bold**: Detected above the laboratory method reporting limit

## FIGURES



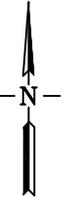
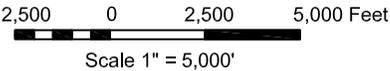


**Madrona Marsh Preserve**

**Madrona Pond**

**LEGEND**

- City of Torrance Boundary
- Madrona Marsh Park Boundary



Source: USGS, 2002

**FIGURE 1**  
**Site Location Map**

Results of Soil Characterization  
Madrona Pond  
3201 Plaza Del Amo  
Torrance, California



Project No. 2040.02



Revision	Design	Drawn	Checked	Date

Scale : 1" = 60'  
 Design : DRB  
 Drawn : DRB  
 Checked : DSW



**Results of Soil Characterization**  
**Madrona Pond**  
 3201 Plaza Del Amo  
 Torrance, California

**Figure 2 Soil Sampling Locations**

Project No.	2040.02
Date	1/7/2013
Sheet	1 of 1
Issue	S1

**APPENDIX A**  
**Daily Field Reports**



## Field Activity Report



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24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653  
 main (949) 716-0050; fax (949) 716-0055

Page 1 of 2

Date: 10/30/2012

Recorded By: Nicky Galloway

Project Name: Madrona Marsh Soil Sampling Project No.: 2040.02

Client Name: City of Torrance

Weather: Foggy & cool AM / Sunny & clear PM Temperature: ~60 - 85°F

Site Conditions: Sump surrounded by vegetated slopes

**NORTHGATE PERSONNEL ON-SITE**

Nicky Galloway

**VISITORS**

Name	Company/Agency	Time Arrived	Time Left
<u>Jeff Kidd</u>	<u>City of Torrance</u>	<u>0810</u>	<u>0840</u>

**CONTRACTORS**

Contractor Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Supervisor: \_\_\_\_\_ Task: \_\_\_\_\_

Company	No. of Supervisors	No. of Workers	Remarks
<u>⊕</u>			

**EQUIPMENT**

Hand auger, slide hammer

**Field Activity Report**



**northgate**

environmental management, inc.

24411 Ridge Route Drive, Suite 130, Laguna Hills, CA 92653

main (949) 716-0050; fax (949) 716-0055

Page 2 of 2

Date: 10/30/2012

Recorded By: Nicky Galloway

Project Name: Madrona Marsh Sampling

Project No.: 2040.02

Client Name: City of Torrance

**ACTIVITIES**

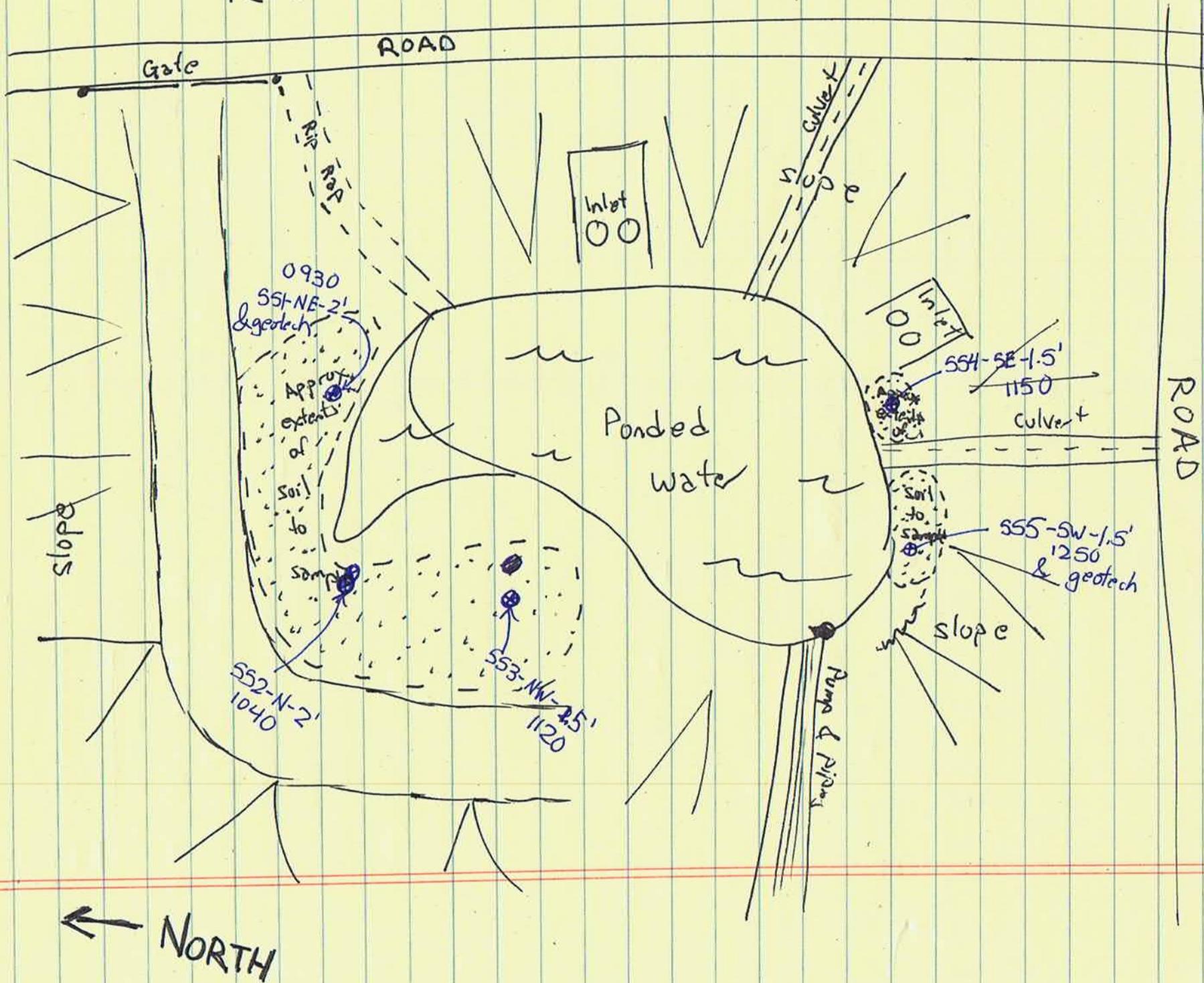
Time:	Activities (include event, time, observations, observers, etc.)
0600	Mob to Site in Torrance
0730	Purchase ice and decon water
0800	Phone calls to City of Torrance to get site access
0810	Jeff Kidd arrives & shows me around site
0840	Jeff Kidd leaves site
0845	Set up & prepare to sample
0930	Collect sample 551-NE-2' & geotech sample
1000	Difficulty hand augering along northern side - tried multiple locations
1040	Collect sample 552-N-2'
1120	Collect sample 553-NW-1.5'
1150	Collect sample 554-SE-1.5'
1250	Collect sample 555-SW-1.5' & geotech sample
1300	Clean up & pack gear
1315	Demob from site
1335	Lunch; fill out COCs & sample labels
1405	Mob to Geologic Inc to drop off samples
1520	Drop of samples at Geologic Inc & mob to SunStar Laboratories
1640	Drop off samples at Sunstar Laboratories & demob to office
1700	End of day

NEG

Print Name: Nicky Galloway

Signature: Nicky Galloway

# RESIDENTIAL



SunStar Laboratories, Inc.  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 949-297-5020

Geologic Inc  
 3921 A East La Palma Ave  
 Anaheim, CA 92807  
 714-666-8445

### Chain of Custody Record

Client: Northgate Environmental Management  
 Address: 24411 Bridge Route Dr, Suite 130, Laguna Hills  
 Phone: (949) 716-0050 Fax: (949) 716-0055  
 Project Manager: Dana Brown

Date: 10/30/2012 Page: 1 Of 1  
 Project Name: Madrona Marsh Sampling  
 Collector: Nicky Galloway Client Project #:  
 Batch #: EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	Washery Vials A-JM D4316 A-JM D4317 A-JM D4318 A-JM D4319 A-JM D4320 A-JM D4321 A-JM D4322	Laboratory ID #	Comments/Preservative	Total # of containers	
551-NF-2	10/30/12	0930	Soil	Bag										XX				2
5-SU-10	↓	1250	↓	↓										XX				1
NFG																		
Relinquished by: (signature)					Date / Time		Received by: (signature)					Date / Time		Total # of containers		Notes		
Nicky Galloway					10/30/12 130									2		Send results to: dana.brown@ngem.com		
Relinquished by: (signature)					Date / Time		Received by: (signature)					Date / Time		Chain of Custody seals Y/N/NA				
D. Rudy					10/30/12									Seals intact? Y/N/NA				
Relinquished by: (signature)					Date / Time		Received by: (signature)					Date / Time		Received good condition/cold				
Turn around time: <u>Normal (5 days)</u>																		

Sample disposal Instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

COC 110458

SunStar Laboratories, Inc.  
 25712 Commercentre Dr  
 Lake Forest, CA 92630  
 949-297-5020

### Chain of Custody Record

Client: Northgate Environmental Management  
 Address: 24411 Ridge Route Dr, Suite 130, Laguna Hills  
 Phone: (949) 716-0050 Fax: (949) 716-0055  
 Project Manager: Dana Brown

Date: 10/30/2012 Page: 1 Of 1  
 Project Name: Madroña Marsh Sampling  
 Collector: Nicky Galloway Client Project #: 2040.02  
 Batch #: \_\_\_\_\_ EDF #: \_\_\_\_\_

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 B	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	TPH-cc by EPA 8082	OCPC by EPA 8081	TPH-cc by EPA 8015M*	Laboratory ID #	Comments/Preservative	Total # of containers
551-NE-2'	10/30/12	0930	Soil	HDPE 20L	X								X	X	X	X		915061, 1210704, 11147A	7
552-N-2'	↓	1040	↓	↓	X								X	X	X	X		↓	↓
553-NW-1.5'	↓	1120	↓	↓	X								X	X	X	X		↓	↓
554-SE-1.5'	↓	1150	↓	↓	X								X	X	X	X		↓	↓
555-SW-1.5'	↓	1250	↓	↓	X								X	X	X	X		↓	↓
NEG																			
Relinquished by: (signature)			Date / Time		Received by: (signature)			Date / Time		Total # of containers		35		Notes					
Nicky Galloway			10/30/12 1640		Sara [Signature]			10/30/12 1640		Chain of Custody seals Y/N/NA		Seals intact? Y/N/NA		*TPH-cc (purgable fraction) using Method 5035 preparation and TPH-cc (extractable fraction) using EPA Method 8015B					
Relinquished by: (signature)			Date / Time		Received by: (signature)			Date / Time		Received good condition/cold									
Relinquished by: (signature)			Date / Time		Received by: (signature)			Date / Time		Turn around time: Normal (5 days)									

Sample disposal Instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

COC 110457

**APPENDIX B**

**Soil Sample Analytical Reports**





25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

07 November 2012

Dana Brown  
Northgate Environmental Management -- Laguna H  
24411 Ridge Route Drive, Suite 130  
Laguna Hills, CA 92653  
RE: Madrona Marsh Sampling

Enclosed are the results of analyses for samples received by the laboratory on 10/30/12 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daniel Chavez  
Project Manager



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Northgate Environmental Management -- Laguna H 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Madrona Marsh Sampling Project Number: 2040.02 Project Manager: Dana Brown	<b>Reported:</b> 11/07/12 09:38
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS1-NE-2'	T121970-01	Soil	10/30/12 09:30	10/30/12 16:40
SS2-N-2'	T121970-02	Soil	10/30/12 10:40	10/30/12 16:40
SS3-NW-1.5'	T121970-03	Soil	10/30/12 11:20	10/30/12 16:40
SS4-SE-1.5'	T121970-04	Soil	10/30/12 11:50	10/30/12 16:40
SS5-SW-1.5'	T121970-05	Soil	10/30/12 12:50	10/30/12 16:40

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Daniel Chavez, Project Manager



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Northgate Environmental Management -- Laguna H  
 24411 Ridge Route Drive, Suite 130  
 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

**Reported:**  
 11/07/12 09:38

**SS1-NE-2'**  
**T121970-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	180	ug/kg	1	2103127	10/31/12	11/02/12	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		93.7 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	<b>13</b>	10	mg/kg	1	2110105	11/01/12	11/03/12	EPA 8015C	
C29-C40 (MORO)	<b>71</b>	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		87.6 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	2103111	10/31/12	11/02/12	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>78</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	11/02/12	"	
Cadmium	ND	2.0	"	"	"	"	11/02/12	"	
<b>Chromium</b>	<b>14</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>5.3</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>17</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>22</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>9.5</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>20</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>97</b>	1.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



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Northgate Environmental Management -- Laguna H  
 24411 Ridge Route Drive, Suite 130  
 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS1-NE-2'**  
**T121970-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cold Vapor Extraction EPA 7470/7471**

Mercury	0.26	0.10	mg/kg	1	2110229	11/02/12	11/05/12	EPA 7471A Soil	
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**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	50	ug/kg	10	2103128	10/31/12	11/02/12	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	50	"	"	"	"	"	"	R-07
beta-BHC	ND	50	"	"	"	"	"	"	R-07
delta-BHC	ND	50	"	"	"	"	"	"	R-07
Heptachlor	ND	50	"	"	"	"	"	"	R-07
Aldrin	ND	50	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	50	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	50	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	50	"	"	"	"	"	"	R-07
Endosulfan I	ND	50	"	"	"	"	"	"	R-07
4,4'-DDE	ND	50	"	"	"	"	"	"	R-07
Dieldrin	ND	50	"	"	"	"	"	"	R-07
Endrin	ND	50	"	"	"	"	"	"	R-07
4,4'-DDD	ND	50	"	"	"	"	"	"	R-07
Endosulfan II	ND	50	"	"	"	"	"	"	R-07
4,4'-DDT	ND	50	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	50	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	50	"	"	"	"	"	"	R-07
Methoxychlor	ND	100	"	"	"	"	"	"	R-07
Endrin ketone	ND	50	"	"	"	"	"	"	R-07
Toxaphene	ND	2000	"	"	"	"	"	"	R-07

Surrogate: Tetrachloro-meta-xylene 52.0% 35-140 " " " "

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Daniel Chavez, Project Manager



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Northgate Environmental Management -- Laguna H  
 24411 Ridge Route Drive, Suite 130  
 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS1-NE-2'**  
**T121970-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Polychlorinated Biphenyls by EPA Method 8082**

PCB-1016	ND	100	ug/kg	10	2103121	10/31/12	11/06/12	EPA 8082	R-01
PCB-1221	ND	100	"	"	"	"	"	"	R-01
PCB-1232	ND	100	"	"	"	"	"	"	R-01
PCB-1242	ND	100	"	"	"	"	"	"	R-01
PCB-1248	ND	100	"	"	"	"	"	"	R-01
PCB-1254	ND	100	"	"	"	"	"	"	R-01
PCB-1260	ND	100	"	"	"	"	"	"	R-01
<i>Surrogate: Tetrachloro-meta-xylene</i>		57.5 %	35-140		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Bromobenzene	ND	4.4	ug/kg	1	2103125	10/31/12	10/31/12	EPA 8260B/5035	
Bromochloromethane	ND	4.4	"	"	"	"	"	"	
Bromodichloromethane	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	4.4	"	"	"	"	"	"	
Bromomethane	ND	4.4	"	"	"	"	"	"	
n-Butylbenzene	ND	4.4	"	"	"	"	"	"	
sec-Butylbenzene	ND	4.4	"	"	"	"	"	"	
tert-Butylbenzene	ND	4.4	"	"	"	"	"	"	
Carbon tetrachloride	ND	4.4	"	"	"	"	"	"	
Chlorobenzene	ND	4.4	"	"	"	"	"	"	
Chloroethane	ND	4.4	"	"	"	"	"	"	
Chloroform	ND	4.4	"	"	"	"	"	"	
Chloromethane	ND	4.4	"	"	"	"	"	"	
2-Chlorotoluene	ND	4.4	"	"	"	"	"	"	
4-Chlorotoluene	ND	4.4	"	"	"	"	"	"	
Dibromochloromethane	ND	4.4	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	4.4	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	4.4	"	"	"	"	"	"	
Dibromomethane	ND	4.4	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	4.4	"	"	"	"	"	"	

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Northgate Environmental Management -- Laguna H  
 24411 Ridge Route Drive, Suite 130  
 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS1-NE-2'**  
**T121970-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Dichlorodifluoromethane	ND	4.4	ug/kg	1	2103125	10/31/12	10/31/12	EPA 8260B/5035	
1,1-Dichloroethane	ND	4.4	"	"	"	"	"	"	
1,2-Dichloroethane	ND	4.4	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.4	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.4	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	4.4	"	"	"	"	"	"	
1,2-Dichloropropane	ND	4.4	"	"	"	"	"	"	
1,3-Dichloropropane	ND	4.4	"	"	"	"	"	"	
2,2-Dichloropropane	ND	4.4	"	"	"	"	"	"	
1,1-Dichloropropene	ND	4.4	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.4	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.4	"	"	"	"	"	"	
Hexachlorobutadiene	ND	4.4	"	"	"	"	"	"	
Isopropylbenzene	ND	4.4	"	"	"	"	"	"	
p-Isopropyltoluene	ND	4.4	"	"	"	"	"	"	
Methylene chloride	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	4.4	"	"	"	"	"	"	
n-Propylbenzene	ND	4.4	"	"	"	"	"	"	
Styrene	ND	4.4	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	4.4	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	4.4	"	"	"	"	"	"	
Tetrachloroethene	ND	4.4	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	4.4	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	4.4	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	4.4	"	"	"	"	"	"	
Trichloroethene	ND	4.4	"	"	"	"	"	"	
Trichlorofluoromethane	ND	4.4	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	4.4	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	4.4	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	4.4	"	"	"	"	"	"	

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**SS1-NE-2'**  
**T121970-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Vinyl chloride	ND	4.4	ug/kg	1	2103125	10/31/12	10/31/12	EPA 8260B/5035	
Benzene	ND	4.4	"	"	"	"	"	"	
Toluene	ND	4.4	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	4.4	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		76.6 %		85.5-116		"	"	"	S-04
<i>Surrogate: 4-Bromofluorobenzene</i>		94.9 %		81.2-123		"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		190 %		95.7-135		"	"	"	S-04

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



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Northgate Environmental Management -- Laguna H 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Madrona Marsh Sampling Project Number: 2040.02 Project Manager: Dana Brown	<b>Reported:</b> 11/07/12 09:38
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**SS2-N-2'**  
**T121970-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	220	ug/kg	1	2103127	10/31/12	11/02/12	EPA 8015C	
<i>Surrogate: 4-Bromofluorobenzene</i>		93.3 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	72	10	mg/kg	1	2110105	11/01/12	11/03/12	EPA 8015C	
C29-C40 (MORO)	630	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		111 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	2103111	10/31/12	11/02/12	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>74</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>14</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>4.7</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>31</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>22</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>10</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>19</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>150</b>	1.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



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Northgate Environmental Management -- Laguna H 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Madrona Marsh Sampling Project Number: 2040.02 Project Manager: Dana Brown	Reported: 11/07/12 09:38
--	---	-----------------------------

**SS2-N-2'**  
**T121970-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cold Vapor Extraction EPA 7470/7471**

Mercury	0.39	0.10	mg/kg	1	2110229	11/02/12	11/05/12	EPA 7471A Soil	
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**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	50	ug/kg	10	2103128	10/31/12	11/02/12	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	50	"	"	"	"	"	"	R-07
beta-BHC	ND	50	"	"	"	"	"	"	R-07
delta-BHC	ND	50	"	"	"	"	"	"	R-07
Heptachlor	ND	50	"	"	"	"	"	"	R-07
Aldrin	ND	50	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	50	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	50	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	50	"	"	"	"	"	"	R-07
Endosulfan I	ND	50	"	"	"	"	"	"	R-07
4,4'-DDE	ND	50	"	"	"	"	"	"	R-07
Dieldrin	ND	50	"	"	"	"	"	"	R-07
Endrin	ND	50	"	"	"	"	"	"	R-07
4,4'-DDD	ND	50	"	"	"	"	"	"	R-07
Endosulfan II	ND	50	"	"	"	"	"	"	R-07
4,4'-DDT	ND	50	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	50	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	50	"	"	"	"	"	"	R-07
Methoxychlor	ND	100	"	"	"	"	"	"	R-07
Endrin ketone	ND	50	"	"	"	"	"	"	R-07
Toxaphene	ND	2000	"	"	"	"	"	"	R-07

Surrogate: Tetrachloro-meta-xylene	44.2 %	35-140	"	"	"	"	"	"	
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Northgate Environmental Management -- Laguna H  
 24411 Ridge Route Drive, Suite 130  
 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS2-N-2'**  
**T121970-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Polychlorinated Biphenyls by EPA Method 8082**

PCB-1016	ND	100	ug/kg	10	2103121	10/31/12	11/06/12	EPA 8082	R-01
PCB-1221	ND	100	"	"	"	"	"	"	R-01
PCB-1232	ND	100	"	"	"	"	"	"	R-01
PCB-1242	ND	100	"	"	"	"	"	"	R-01
PCB-1248	ND	100	"	"	"	"	"	"	R-01
PCB-1254	ND	100	"	"	"	"	"	"	R-01
PCB-1260	ND	100	"	"	"	"	"	"	R-01
<i>Surrogate: Tetrachloro-meta-xylene</i>		60.8 %	35-140	"	"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Bromobenzene	ND	5.7	ug/kg	1	2103125	10/31/12	10/31/12	EPA 8260B/5035	
Bromochloromethane	ND	5.7	"	"	"	"	"	"	
Bromodichloromethane	ND	5.7	"	"	"	"	"	"	
Bromoform	ND	5.7	"	"	"	"	"	"	
Bromomethane	ND	5.7	"	"	"	"	"	"	
n-Butylbenzene	ND	5.7	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.7	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.7	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.7	"	"	"	"	"	"	
Chlorobenzene	ND	5.7	"	"	"	"	"	"	
Chloroethane	ND	5.7	"	"	"	"	"	"	
Chloroform	ND	5.7	"	"	"	"	"	"	
Chloromethane	ND	5.7	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.7	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.7	"	"	"	"	"	"	
Dibromochloromethane	ND	5.7	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.7	"	"	"	"	"	"	
Dibromomethane	ND	5.7	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.7	"	"	"	"	"	"	

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS2-N-2'**  
**T121970-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Dichlorodifluoromethane	ND	5.7	ug/kg	1	2103125	10/31/12	10/31/12	EPA 8260B/5035	
1,1-Dichloroethane	ND	5.7	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.7	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.7	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.7	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.7	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.7	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.7	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.7	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.7	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.7	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.7	"	"	"	"	"	"	
Isopropylbenzene	ND	5.7	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.7	"	"	"	"	"	"	
Methylene chloride	ND	5.7	"	"	"	"	"	"	
Naphthalene	ND	5.7	"	"	"	"	"	"	
n-Propylbenzene	ND	5.7	"	"	"	"	"	"	
Styrene	ND	5.7	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.7	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.7	"	"	"	"	"	"	
Tetrachloroethene	ND	5.7	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.7	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.7	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.7	"	"	"	"	"	"	
Trichloroethene	ND	5.7	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.7	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.7	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.7	"	"	"	"	"	"	

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**SS2-N-2'**  
**T121970-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Vinyl chloride	ND	5.7	ug/kg	1	2103125	10/31/12	10/31/12	EPA 8260B/5035	
Benzene	ND	5.7	"	"	"	"	"	"	
Toluene	ND	5.7	"	"	"	"	"	"	
Ethylbenzene	ND	5.7	"	"	"	"	"	"	
m,p-Xylene	ND	5.7	"	"	"	"	"	"	
o-Xylene	ND	5.7	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		76.2 %		85.5-116		"	"	"	S-04
<i>Surrogate: 4-Bromofluorobenzene</i>		92.9 %		81.2-123		"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		169 %		95.7-135		"	"	"	S-04

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS3-NW-1.5'**  
**T121970-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	190	ug/kg	1	2103127	10/31/12	11/02/12	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		90.2 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	52	10	mg/kg	1	2110105	11/01/12	11/03/12	EPA 8015C	
C29-C40 (MORO)	370	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		104 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	2103111	10/31/12	11/02/12	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>86</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>16</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>5.6</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>22</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>24</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>13</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>24</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>99</b>	1.0	"	"	"	"	"	"	

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS3-NW-1.5'**  
**T121970-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cold Vapor Extraction EPA 7470/7471**

Mercury	0.39	0.10	mg/kg	1	2110229	11/02/12	11/05/12	EPA 7471A Soil	
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**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	50	ug/kg	10	2103128	10/31/12	11/02/12	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	50	"	"	"	"	"	"	R-07
beta-BHC	ND	50	"	"	"	"	"	"	R-07
delta-BHC	ND	50	"	"	"	"	"	"	R-07
Heptachlor	ND	50	"	"	"	"	"	"	R-07
Aldrin	ND	50	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	50	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	50	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	50	"	"	"	"	"	"	R-07
Endosulfan I	ND	50	"	"	"	"	"	"	R-07
4,4'-DDE	ND	50	"	"	"	"	"	"	R-07
Dieldrin	ND	50	"	"	"	"	"	"	R-07
Endrin	ND	50	"	"	"	"	"	"	R-07
4,4'-DDD	ND	50	"	"	"	"	"	"	R-07
Endosulfan II	ND	50	"	"	"	"	"	"	R-07
4,4'-DDT	ND	50	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	50	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	50	"	"	"	"	"	"	R-07
Methoxychlor	ND	100	"	"	"	"	"	"	R-07
Endrin ketone	ND	50	"	"	"	"	"	"	R-07
Toxaphene	ND	2000	"	"	"	"	"	"	R-07

Surrogate: Tetrachloro-meta-xylene	45.3 %	35-140	"	"	"	"	"	"	"
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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS3-NW-1.5'**  
**T121970-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Polychlorinated Biphenyls by EPA Method 8082**

PCB-1016	ND	100	ug/kg	10	2103121	10/31/12	11/06/12	EPA 8082	R-01
PCB-1221	ND	100	"	"	"	"	"	"	R-01
PCB-1232	ND	100	"	"	"	"	"	"	R-01
PCB-1242	ND	100	"	"	"	"	"	"	R-01
PCB-1248	ND	100	"	"	"	"	"	"	R-01
PCB-1254	ND	100	"	"	"	"	"	"	R-01
PCB-1260	ND	100	"	"	"	"	"	"	R-01
Surrogate: Tetrachloro-meta-xylene		50.6 %	35-140	"	"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Bromobenzene	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS3-NW-1.5'**  
**T121970-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Dichlorodifluoromethane	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	

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**SS3-NW-1.5'**  
**T121970-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Vinyl chloride	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		77.0 %		85.5-116		"	"	"	S-04
<i>Surrogate: 4-Bromofluorobenzene</i>		94.6 %		81.2-123		"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		178 %		95.7-135		"	"	"	S-04

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Daniel Chavez, Project Manager



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Northgate Environmental Management -- Laguna H  
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 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS4-SE-1.5'**  
**T121970-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	210	ug/kg	1	2103127	10/31/12	11/02/12	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		92.8 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	170	10	mg/kg	1	2110105	11/01/12	11/03/12	EPA 8015C	
C29-C40 (MORO)	2300	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		104 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	2103111	10/31/12	11/02/12	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>57</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>11</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>4.5</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>20</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>20</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>9.4</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>17</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>95</b>	1.0	"	"	"	"	"	"	

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Daniel Chavez, Project Manager



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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS4-SE-1.5'**  
**T121970-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cold Vapor Extraction EPA 7470/7471**

Mercury	0.22	0.10	mg/kg	1	2110229	11/02/12	11/05/12	EPA 7471A Soil	
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**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	50	ug/kg	10	2103128	10/31/12	11/02/12	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	50	"	"	"	"	"	"	R-07
beta-BHC	ND	50	"	"	"	"	"	"	R-07
delta-BHC	ND	50	"	"	"	"	"	"	R-07
Heptachlor	ND	50	"	"	"	"	"	"	R-07
Aldrin	ND	50	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	50	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	50	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	50	"	"	"	"	"	"	R-07
Endosulfan I	ND	50	"	"	"	"	"	"	R-07
4,4'-DDE	ND	50	"	"	"	"	"	"	R-07
Dieldrin	ND	50	"	"	"	"	"	"	R-07
Endrin	ND	50	"	"	"	"	"	"	R-07
4,4'-DDD	ND	50	"	"	"	"	"	"	R-07
Endosulfan II	ND	50	"	"	"	"	"	"	R-07
4,4'-DDT	ND	50	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	50	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	50	"	"	"	"	"	"	R-07
Methoxychlor	ND	100	"	"	"	"	"	"	R-07
Endrin ketone	ND	50	"	"	"	"	"	"	R-07
Toxaphene	ND	2000	"	"	"	"	"	"	R-07

Surrogate: Tetrachloro-meta-xylene	48.2 %	35-140	"	"	"	"	"	"	"
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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS4-SE-1.5'**  
**T121970-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Polychlorinated Biphenyls by EPA Method 8082**

PCB-1016	ND	10	ug/kg	1	2103121	10/31/12	11/06/12	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
<i>Surrogate: Tetrachloro-meta-xylene</i>		48.3 %	35-140		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Bromobenzene	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS4-SE-1.5'**  
**T121970-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Dichlorodifluoromethane	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	

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**SS4-SE-1.5'**  
**T121970-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Vinyl chloride	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		82.6 %		85.5-116		"	"	"	S-04
<i>Surrogate: 4-Bromofluorobenzene</i>		98.0 %		81.2-123		"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		172 %		95.7-135		"	"	"	S-04

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS5-SW-1.5'**  
**T121970-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	170	ug/kg	1	2103127	10/31/12	11/02/12	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		87.3 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	180	10	mg/kg	1	2110105	11/01/12	11/03/12	EPA 8015C	
C29-C40 (MORO)	2900	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		106 %	65-135		"	"	"	"	

**Metals by EPA 6010B**

Antimony	ND	3.0	mg/kg	1	2103111	10/31/12	11/02/12	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
<b>Barium</b>	<b>59</b>	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
<b>Chromium</b>	<b>8.8</b>	2.0	"	"	"	"	"	"	
<b>Cobalt</b>	<b>4.0</b>	2.0	"	"	"	"	"	"	
<b>Copper</b>	<b>21</b>	1.0	"	"	"	"	"	"	
<b>Lead</b>	<b>17</b>	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
<b>Nickel</b>	<b>7.6</b>	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
<b>Vanadium</b>	<b>16</b>	5.0	"	"	"	"	"	"	
<b>Zinc</b>	<b>70</b>	1.0	"	"	"	"	"	"	

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS5-SW-1.5'**  
**T121970-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Cold Vapor Extraction EPA 7470/7471**

Mercury	0.17	0.10	mg/kg	1	2110229	11/02/12	11/05/12	EPA 7471A Soil	
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**Organochlorine Pesticides by EPA Method 8081A**

alpha-BHC	ND	50	ug/kg	10	2103128	10/31/12	11/02/12	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	50	"	"	"	"	"	"	R-07
beta-BHC	ND	50	"	"	"	"	"	"	R-07
delta-BHC	ND	50	"	"	"	"	"	"	R-07
Heptachlor	ND	50	"	"	"	"	"	"	R-07
Aldrin	ND	50	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	50	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	50	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	50	"	"	"	"	"	"	R-07
Endosulfan I	ND	50	"	"	"	"	"	"	R-07
4,4'-DDE	ND	50	"	"	"	"	"	"	R-07
Dieldrin	ND	50	"	"	"	"	"	"	R-07
Endrin	ND	50	"	"	"	"	"	"	R-07
4,4'-DDD	ND	50	"	"	"	"	"	"	R-07
Endosulfan II	ND	50	"	"	"	"	"	"	R-07
4,4'-DDT	ND	50	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	50	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	50	"	"	"	"	"	"	R-07
Methoxychlor	ND	100	"	"	"	"	"	"	R-07
Endrin ketone	ND	50	"	"	"	"	"	"	R-07
Toxaphene	ND	2000	"	"	"	"	"	"	R-07

Surrogate: Tetrachloro-meta-xylene	46.5 %	35-140	"	"	"	"	"	"	
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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS5-SW-1.5'**  
**T121970-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Polychlorinated Biphenyls by EPA Method 8082**

PCB-1016	ND	10	ug/kg	1	2103121	10/31/12	11/06/12	EPA 8082	
PCB-1221	ND	10	"	"	"	"	"	"	
PCB-1232	ND	10	"	"	"	"	"	"	
PCB-1242	ND	10	"	"	"	"	"	"	
PCB-1248	ND	10	"	"	"	"	"	"	
PCB-1254	ND	10	"	"	"	"	"	"	
PCB-1260	ND	10	"	"	"	"	"	"	
<i>Surrogate: Tetrachloro-meta-xylene</i>		50.9 %	35-140		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Bromobenzene	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	

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Daniel Chavez, Project Manager



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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**SS5-SW-1.5'**  
**T121970-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Dichlorodifluoromethane	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
<b>p-Isopropyltoluene</b>	<b>6.5</b>	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	

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**SS5-SW-1.5'**  
**T121970-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Volatile Organic Compounds by EPA Method 8260B**

Vinyl chloride	ND	5.0	ug/kg	1	2103125	10/31/12	11/01/12	EPA 8260B/5035	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		72.6 %		85.5-116		"	"	"	S-04
<i>Surrogate: 4-Bromofluorobenzene</i>		87.9 %		81.2-123		"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		198 %		95.7-135		"	"	"	S-04

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

**Reported:**  
 11/07/12 09:38

**Purgeable Petroleum Hydrocarbons by EPA 8015C - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103127 - EPA 5035 GC**

**Blank (2103127-BLK1)**

Prepared: 10/31/12 Analyzed: 11/02/12

C6-C12 (GRO)	ND	500	ug/kg							
<i>Surrogate: 4-Bromofluorobenzene</i>	163		"	250		65.0	65-135			

**LCS (2103127-BS1)**

Prepared: 10/31/12 Analyzed: 11/02/12

C6-C12 (GRO)	15100	500	ug/kg	13800		110	75-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	233		"	250		93.3	65-135			

**LCS Dup (2103127-BSD1)**

Prepared: 10/31/12 Analyzed: 11/02/12

C6-C12 (GRO)	14400	500	ug/kg	13800		105	75-125	4.55	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	217		"	250		86.7	65-135			

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Project: Madrona Marsh Sampling  
Project Number: 2040.02  
Project Manager: Dana Brown

**Reported:**  
11/07/12 09:38

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2110105 - EPA 3550B GC**

**Blank (2110105-BLK1)**

Prepared: 11/01/12 Analyzed: 11/03/12

C13-C28 (DRO)	ND	10	mg/kg							
C29-C40 (MORO)	ND	10	"							

Surrogate: <i>p</i> -Terphenyl	99.1		"	100		99.1	65-135			
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**LCS (2110105-BS1)**

Prepared: 11/01/12 Analyzed: 11/03/12

C13-C28 (DRO)	430	10	mg/kg	500		86.7	75-125			
Surrogate: <i>p</i> -Terphenyl	84.1		"	100		84.1	65-135			

**Matrix Spike (2110105-MS1)**

Source: T121976-03

Prepared: 11/01/12 Analyzed: 11/03/12

C13-C28 (DRO)	560	10	mg/kg	500	19	108	75-125			
Surrogate: <i>p</i> -Terphenyl	107		"	100		107	65-135			

**Matrix Spike Dup (2110105-MSD1)**

Source: T121976-03

Prepared: 11/01/12 Analyzed: 11/03/12

C13-C28 (DRO)	490	10	mg/kg	500	19	94.5	75-125	13.2	20	
Surrogate: <i>p</i> -Terphenyl	95.1		"	100		95.1	65-135			

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**Metals by EPA 6010B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103111 - EPA 3051**

**Blank (2103111-BLK1)**

Prepared: 10/31/12 Analyzed: 11/02/12

Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

**LCS (2103111-BS1)**

Prepared: 10/31/12 Analyzed: 11/02/12

Arsenic	84.2	5.0	mg/kg	100		84.2	75-125
Barium	88.6	1.0	"	100		88.6	75-125
Cadmium	85.2	2.0	"	100		85.2	75-125
Chromium	87.6	2.0	"	100		87.6	75-125
Lead	88.2	3.0	"	100		88.2	75-125

**Matrix Spike (2103111-MS1)**

Source: T121975-01

Prepared: 10/31/12 Analyzed: 11/02/12

Arsenic	80.2	5.0	mg/kg	100	1.33	78.9	75-125
Barium	216	1.0	"	100	105	111	75-125
Cadmium	81.4	2.0	"	100	3.70	77.7	75-125
Chromium	107	2.0	"	100	16.8	90.3	75-125
Lead	223	3.0	"	100	99.7	123	75-125

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**Metals by EPA 6010B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103111 - EPA 3051**

Matrix Spike Dup (2103111-MSD1)	Source: T121975-01			Prepared: 10/31/12	Analyzed: 11/02/12					
Arsenic	79.0	5.0	mg/kg	100	1.33	77.6	75-125	1.54	20	
Barium	198	1.0	"	100	105	93.0	75-125	8.67	20	
Cadmium	85.0	2.0	"	100	3.70	81.3	75-125	4.30	20	
Chromium	101	2.0	"	100	16.8	83.8	75-125	6.28	20	
Lead	188	3.0	"	100	99.7	88.0	75-125	17.2	20	

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**Cold Vapor Extraction EPA 7470/7471 - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2110229 - EPA 7471A Soil**

<b>Blank (2110229-BLK1)</b>				Prepared: 11/02/12 Analyzed: 11/05/12						
Mercury	ND	0.10	mg/kg							
<b>LCS (2110229-BS1)</b>				Prepared: 11/02/12 Analyzed: 11/05/12						
Mercury	0.381	0.10	mg/kg	0.417		91.4	80-120			
<b>Matrix Spike (2110229-MS1)</b>				Source: T121970-01 Prepared: 11/02/12 Analyzed: 11/05/12						
Mercury	0.685	0.10	mg/kg	0.417	0.263	101	75-125			
<b>Matrix Spike Dup (2110229-MSD1)</b>				Source: T121970-01 Prepared: 11/02/12 Analyzed: 11/05/12						
Mercury	0.689	0.10	mg/kg	0.417	0.263	102	75-125	0.626	20	

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103128 - EPA 3550 ECD/GCMS**

**Blank (2103128-BLK1)**

Prepared: 10/31/12 Analyzed: 11/02/12

alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4'-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4'-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4'-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							

*Surrogate: Tetrachloro-meta-xylene*      64.9      "      100      64.9      35-140

**LCS (2103128-BS1)**

Prepared: 10/31/12 Analyzed: 11/02/12

gamma-BHC (Lindane)	43.6	5.0	ug/kg	100		43.6	40-120
Heptachlor	44.3	5.0	"	100		44.3	40-120
Aldrin	42.2	5.0	"	100		42.2	40-120
Dieldrin	43.2	5.0	"	100		43.2	40-120
Endrin	41.7	5.0	"	100		41.7	40-120
4,4'-DDT	40.0	5.0	"	100		40.0	33-147

*Surrogate: Tetrachloro-meta-xylene*      63.1      "      100      63.1      35-140

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**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103128 - EPA 3550 ECD/GCMS**

<b>LCS Dup (2103128-BSD1)</b>		Prepared: 10/31/12 Analyzed: 11/02/12								
gamma-BHC (Lindane)	45.4	5.0	ug/kg	100		45.4	40-120	4.19	30	
Heptachlor	61.2	5.0	"	100		61.2	40-120	31.9	30	QR-02
Aldrin	45.9	5.0	"	100		45.9	40-120	8.55	30	
Dieldrin	44.1	5.0	"	100		44.1	40-120	2.20	30	
Endrin	42.4	5.0	"	100		42.4	40-120	1.74	30	
4,4'-DDT	42.5	5.0	"	100		42.5	33-147	6.26	30	
Surrogate: Tetrachloro-meta-xylene	66.2		"	100		66.2	35-140			

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**Polychlorinated Biphenyls by EPA Method 8082 - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103121 - EPA 3550 ECD/GCMS**

**Blank (2103121-BLK1)**

Prepared: 10/31/12 Analyzed: 11/06/12

PCB-1016	ND	10	ug/kg							
PCB-1221	ND	10	"							
PCB-1232	ND	10	"							
PCB-1242	ND	10	"							
PCB-1248	ND	10	"							
PCB-1254	ND	10	"							
PCB-1260	ND	10	"							
<i>Surrogate: Tetrachloro-meta-xylene</i>	4.60		"	10.0		46.0	35-140			

**LCS (2103121-BS1)**

Prepared: 10/31/12 Analyzed: 11/06/12

PCB-1016	50.0	10	ug/kg	100		50.0	40-130			
PCB-1260	56.5	10	"	100		56.5	40-130			
<i>Surrogate: Tetrachloro-meta-xylene</i>	4.81		"	10.0		48.1	35-140			

**Matrix Spike (2103121-MS1)**

Source: T121933-05

Prepared: 10/31/12 Analyzed: 11/06/12

PCB-1016	5740	10	ug/kg	100	11700	NR	40-130			QM-4X
PCB-1260	96.2	10	"	100	ND	96.2	40-130			
<i>Surrogate: Tetrachloro-meta-xylene</i>	7.44		"	10.0		74.4	35-140			

**Matrix Spike Dup (2103121-MSD1)**

Source: T121933-05

Prepared: 10/31/12 Analyzed: 11/06/12

PCB-1016	5520	10	ug/kg	100	11700	NR	40-130	3.94	30	QM-4X
PCB-1260	95.8	10	"	100	ND	95.8	40-130	0.397	30	
<i>Surrogate: Tetrachloro-meta-xylene</i>	7.61		"	10.0		76.1	35-140			

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Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103125 - EPA 5035 GCMS**

**Blank (2103125-BLK1)**

Prepared & Analyzed: 10/31/12

Bromobenzene	ND	5.0	ug/kg							
Bromochloromethane	ND	5.0	"							
Bromodichloromethane	ND	5.0	"							
Bromoform	ND	5.0	"							
Bromomethane	ND	5.0	"							
n-Butylbenzene	ND	5.0	"							
sec-Butylbenzene	ND	5.0	"							
tert-Butylbenzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Chloroethane	ND	5.0	"							
Chloroform	ND	5.0	"							
Chloromethane	ND	5.0	"							
2-Chlorotoluene	ND	5.0	"							
4-Chlorotoluene	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Dibromomethane	ND	5.0	"							
1,2-Dichlorobenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	5.0	"							
Dichlorodifluoromethane	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
1,1-Dichloroethene	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,3-Dichloropropane	ND	5.0	"							
2,2-Dichloropropane	ND	5.0	"							
1,1-Dichloropropene	ND	5.0	"							
cis-1,3-Dichloropropene	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Hexachlorobutadiene	ND	5.0	"							
Isopropylbenzene	ND	5.0	"							

SunStar Laboratories, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Daniel Chavez, Project Manager



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Northgate Environmental Management -- Laguna H  
 24411 Ridge Route Drive, Suite 130  
 Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
 Project Number: 2040.02  
 Project Manager: Dana Brown

Reported:  
 11/07/12 09:38

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2103125 - EPA 5035 GCMS**

**Blank (2103125-BLK1)**

Prepared & Analyzed: 10/31/12

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
o-Xylene	ND	5.0	"							
Surrogate: Toluene-d8	38.9		"	40.0		97.2	85.5-116			
Surrogate: 4-Bromofluorobenzene	43.0		"	40.0		108	81.2-123			
Surrogate: Dibromofluoromethane	52.0		"	40.0		130	95.7-135			

**LCS (2103125-BS1)**

Prepared & Analyzed: 10/31/12

Chlorobenzene	113	5.0	ug/kg	100		113	75-125			
1,1-Dichloroethene	108	5.0	"	100		108	75-125			
Trichloroethene	114	5.0	"	100		114	75-125			
Benzene	111	5.0	"	100		111	75-125			
Toluene	115	5.0	"	100		115	75-125			
Surrogate: Toluene-d8	36.1		"	40.0		90.2	85.5-116			
Surrogate: 4-Bromofluorobenzene	42.2		"	40.0		106	81.2-123			
Surrogate: Dibromofluoromethane	48.2		"	40.0		120	95.7-135			

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager



25712 Commercentre Drive  
 Lake Forest, California 92630  
 949.297.5020 Phone  
 949.297.5027 Fax

Northgate Environmental Management -- Laguna H 24411 Ridge Route Drive, Suite 130 Laguna Hills CA, 92653	Project: Madrona Marsh Sampling Project Number: 2040.02 Project Manager: Dana Brown	Reported: 11/07/12 09:38
--	---	-----------------------------

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 2103125 - EPA 5035 GCMS**

**LCS Dup (2103125-BSD1)**

Prepared & Analyzed: 10/31/12

Chlorobenzene	112	5.0	ug/kg	100	112	75-125	1.51	20		
1,1-Dichloroethene	110	5.0	"	100	110	75-125	1.70	20		
Trichloroethene	117	5.0	"	100	117	75-125	2.04	20		
Benzene	112	5.0	"	100	112	75-125	0.941	20		
Toluene	113	5.0	"	100	113	75-125	1.10	20		
Surrogate: Toluene-d8	36.3		"	40.0	90.8	85.5-116				
Surrogate: 4-Bromofluorobenzene	41.8		"	40.0	105	81.2-123				
Surrogate: Dibromofluoromethane	49.4		"	40.0	123	95.7-135				

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Daniel Chavez, Project Manager

Northgate Environmental Management -- Laguna H  
24411 Ridge Route Drive, Suite 130  
Laguna Hills CA, 92653

Project: Madrona Marsh Sampling  
Project Number: 2040.02  
Project Manager: Dana Brown

**Reported:**  
11/07/12 09:38

### Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- R-07 Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
- R-01 The Reporting Limit has been raised to account for dilution necessary due to matrix interference.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

SunStar Laboratories, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Daniel Chavez, Project Manager

# Chain of Custody Record

SunStar Laboratories, Inc.  
 25712 Commerce Centre Dr  
 Lake Forest, CA 92630  
 949-297-5020

Client: Northgate Environmental Management  
 Address: 24111 Ridge Route Dr, Suite 130 Laguna Hills  
 Phone: (949) 716-0050 Fax: (949) 716-7055  
 Project Manager: Dana Brown

Date: 10/30/2012 Page: 1 of 1  
 Project Name: Madrona Marsh Sampling  
 Collector: Nicky Galloway Client Project #: 2040-02  
 Batch #: 71214376 EDF #: \_\_\_\_\_

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 B	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010 Title 22 Metals	PCBs by EPA 8082	OCPs by EPA 8081	TPH-cc by EPA 8015M*	Laboratory ID #	Comments/Preservative	Total # of containers
551-NE-2'	10/30/12	0930	Soil	16100A 01 jar	X	X	X	X	X	X	X	X	X	X	X	X	01	(4) 50B1, (2) MeOH, (1) N/A	7
552-N-2'		1040			X	X	X	X	X	X	X	X	X	X	X	X	02		
553-NW-1.5'		1120			X	X	X	X	X	X	X	X	X	X	X	X	03		
554-SE-1.5'		1150			X	X	X	X	X	X	X	X	X	X	X	X	04		
555-SW-1.5'		1250			X	X	X	X	X	X	X	X	X	X	X	X	05		
NEG																			
Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____																			
Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____																			
Relinquished by: (signature) _____ Date / Time _____ Received by: (signature) _____ Date / Time _____																			

Chain of Custody seals Y/N/NA  
 Received good condition/cold

Turn around time: Normal  
 (5 days)  
 4.2°C

Notes  
 \*TPH-cc (purgeable fraction) using Method 5095 Preparation and TPH-cc (extractable fraction) using EPA Method 8015 B

COC 110457

Sample disposal instructions: Disposal @ \$2.00 each \_\_\_\_\_ Return to client \_\_\_\_\_ Pickup \_\_\_\_\_

## SAMPLE RECEIVING REVIEW SHEET

BATCH # T121970

Client Name: Northgate - Laguna Hills

Project: Madrona Marsh Sampling

Received by: Jacob

Date/Time Received: 10/30/12 1640

Delivered by:  Client  SunStar Courier  GSO  FedEx  Other \_\_\_\_\_

Total number of coolers received 1

Temp criteria = 6°C > 0°C (no frozen containers)

Temperature: cooler #1 4.4 °C +/- the CF (-0.2°C) = 4.2 °C corrected temperature

cooler #2 \_\_\_\_\_ °C +/- the CF (-0.2°C) = \_\_\_\_\_ °C corrected temperature

cooler #3 \_\_\_\_\_ °C +/- the CF (-0.2°C) = \_\_\_\_\_ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.  Yes  No\*  N/A

Custody Seals Intact on Cooler/Sample  Yes  No\*  N/A

Sample Containers Intact  Yes  No\*

Sample labels match COC ID's  Yes  No\*

Total number of containers received match COC  Yes  No\*

Proper containers received for analyses requested on COC  Yes  No\*

Proper preservative indicated on COC/containers for analyses requested  Yes  No\*  N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times.  Yes  No\*

\* Complete Non-Conformance Receiving Sheet if checked

Cooler/Sample Review - Initials and date

M 10/30/12

Comments:

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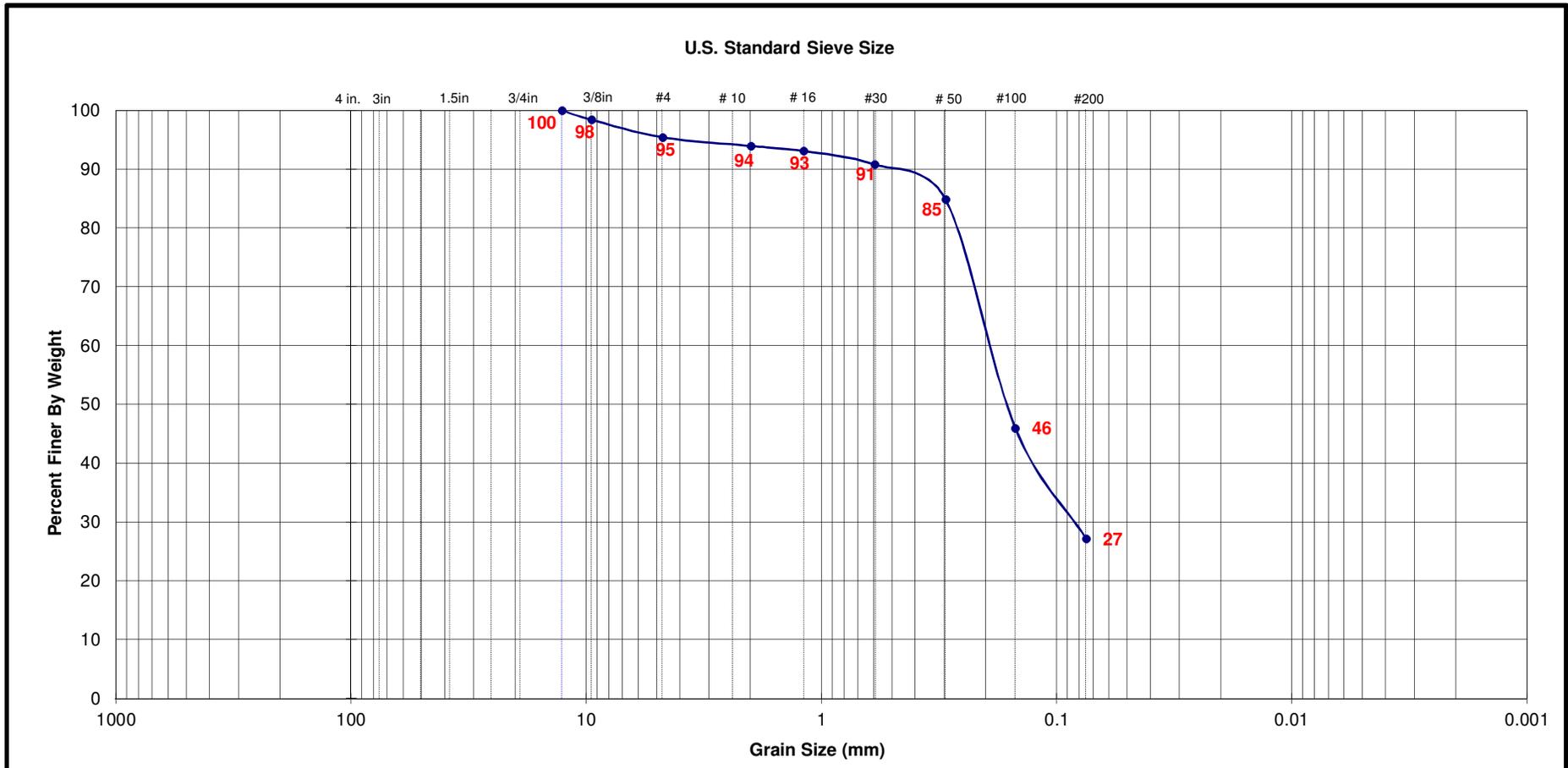


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**APPENDIX C**  
**Geotechnical Analysis**

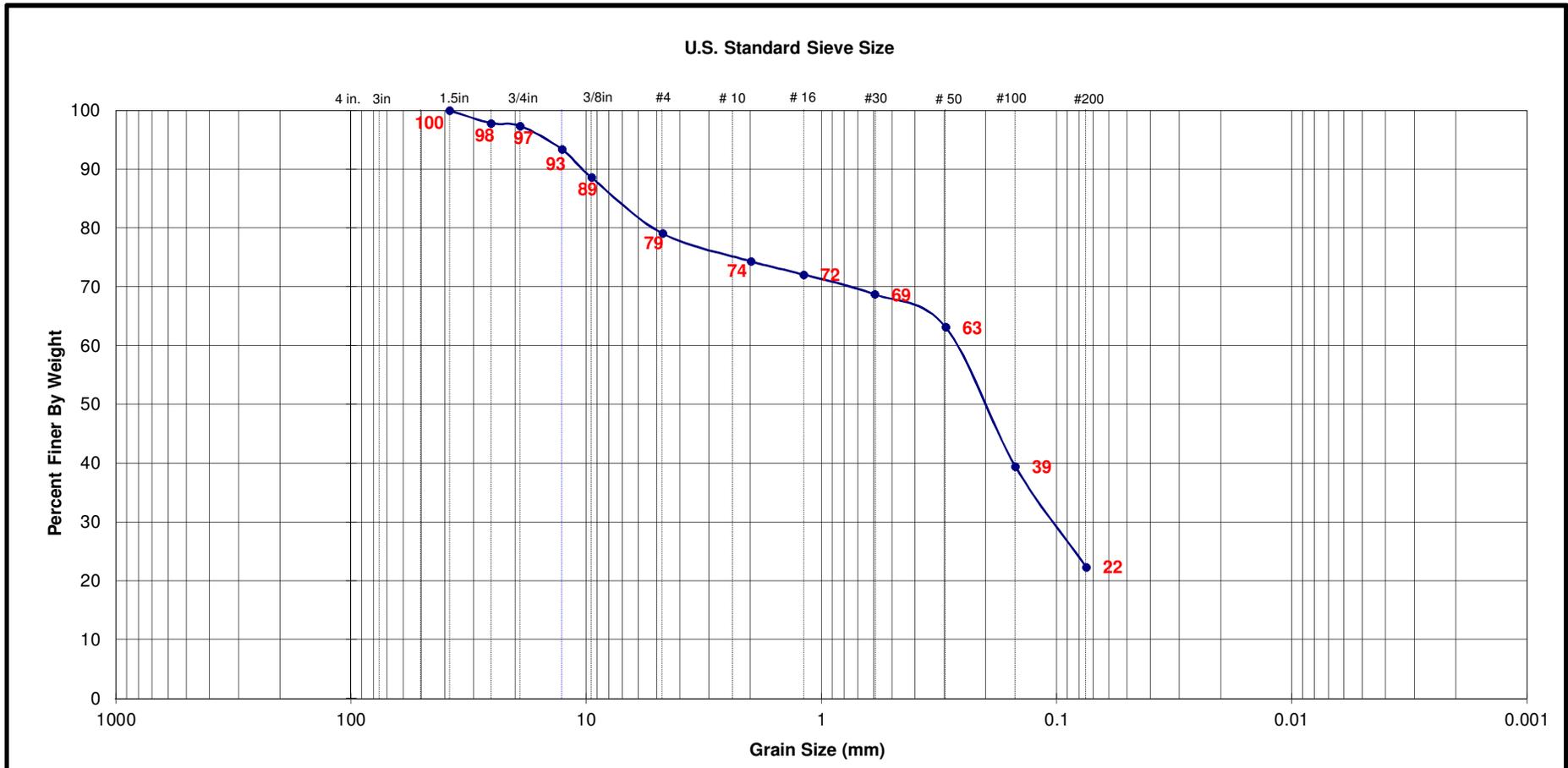


Date: 11/2/12



Boring / Sample No.	Initial Dry Density (pcf)	Initial Moist. (%)	Test Dry Density (pcf)	Test Moist. (%)	Permeabilty, k (cm/sec)	LL	PL	PI	Unified Soil Class.	Description
SS1-NE-2'		15.4				24	N/P	-	SM	Silty Sand

Date: 11/2/12



Boring / Sample No.	Initial Dry Density (pcf)	Initial Moist. (%)	Test Dry Density (pcf)	Test Moist. (%)	Permeabilty, k (cm/sec)	LL	PL	PI	Unified Soil Class.	Description
SS5-SW-1.5'		9.3				21	N/P	-	SM	Silty Sand w. Gravel

**APPENDIX D**

**Soil Transport & Disposal Bids**





January 18, 2013

Dana Brown  
 Northgate Environmental Management  
 1100 Quail Street  
 Suite 102  
 Newport Beach, CA 92660

PROJECT: Soil Removal, Madrona Marsh

Dear Dana,

American Integrated Services, Inc. (AIS) thanks you for the opportunity to provide an estimate of costs for your project based on the scope of work outlined below.

SCOPE OF WORK

Task 1:

Provide labor and equipment to excavate up to 2,200 yards of soil from the lower area of the pond by excavator and place onto existing asphalt access ramp. Move the soil from the ramp to the upper level area and stockpile on asphalt. Stockpile covered with plastic at the end of each day's work.

Task 2:

Provide labor and equipment to excavate up to 500 cubic yards of soil from south side of pond and move to upper level and stockpile. Soil to be excavated using excavator and moved by loader to upper access road and loaded into dump truck and stockpiled along with the soil from the north side of pond.

Project Manager	40.00	hours	\$ 72.00	\$ 2,880.00
Equipment Operators (2)	80.00	hours	\$ 52.00	\$ 4,160.00
Technicians (2)	80.00	hours	\$ 45.00	\$ 3,600.00
Dump Truck Driver	16.00	hours	\$ 45.00	\$ 720.00
Excavator	5.00	days	\$ 750.00	\$ 3,750.00
Loader	5.00	days	\$ 650.00	\$ 3,250.00
Dump Truck (5 yard)	2.00	days	\$ 275.00	\$ 550.00
Mob/Demob of Equipment	1.00	total	\$ 2,400.00	\$ 2,400.00
Total				\$ 21,310.00

Task 3:

Provide labor and equipment to load up to 4,100 tons of soil into end dump trucks and transport for thermal treatment to Soil Safe in Adelanto.

Project Manager	16.00	hours	\$ 72.00	\$ 1,152.00
Equipment Operator	16.00	hours	\$ 52.00	\$ 832.00
Technicians (2)	32.00	hours	\$ 45.00	\$ 1,440.00
Loader	2.00	days	\$ 650.00	\$ 1,300.00
Mob/Demob Equipment	1.00	total	\$ 600.00	\$ 600.00
Transport	4100.00	tons	\$ 25.00	\$ 102,500.00
Disposal	4100.00	tons	\$ 36.00	\$ 147,600.00
				\$ 255,424.00

Assumptions and Conditions:

- All volumes are estimates only. Actual tonnage will be determined by disposal facilities for invoicing.
- Transport based on 23 tons minimum per load and current fuel costs.
- Soil assumed acceptable to Soil Safe. Costs confirmed upon acceptance of completed profile by facility.
- Prevailing wages not included.
- Permits not included.
- Proposal good for 30 days.

If you should have any questions or require further information please do not hesitate to contact me by cell phone at (310) 713-8764 or contact my office at (888) 423-6060.

Sincerely,  
American Integrated Services, Inc.



Ron J. Gentile  
Sr. Project Manager of Field Services

Contractor's License # 757133. Contractors are required by law to be licensed and regulated by the Contractors' State License Board. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, and P.O. BOX 26000, SACRAMENTO, CA 95826.



25971 Towne Centre Drive  
Foothill Ranch, CA 92610  
Office: (949) 460-5200  
Fax: (949) 460-5210  
www.belshire.com

January 21, 2013

Mr. Dana R. Brown  
**NORTHGATE ENVIRONMENTAL MANAGEMENT, INC.**  
24411 Ridge Route Drive, Suite 130  
Laguna Hills, California 92653

Subject: **BULK TRANSPORTATION & DISPOSAL OF NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL  
Madrona Pond 1 & 2 -- 3201 Plaza Del Amo, Torrance, California**

Dear Mr. Brown,

Belshire Environmental Services, Inc. (BESI), a **SMALL WOMAN-OWNED BUSINESS ENTERPRISE (SBE/WBE)**, is pleased to provide Northgate Environmental Management (Northgate) with a cost proposal to provide the following services. This cost proposal is based upon information provided to BESI by Northgate, and is subject to acceptance of all waste as **NON-HAZARDOUS** by the disposal facility selected for the disposal method indicated. BESI will require analytical data reports from Northgate in order to properly profile the waste. The rates quoted in this cost proposal are valid for a period of 30 days. All disposal rates quoted below are subject to change pending a complete review of analytical data reports and all other relevant characteristics of the waste.

---

**PROJECT INFORMATION**

Task: Proper bulk transportation and disposal of approximately 3,200 – 4,100 tons (2,700 cubic yards) of **NON-HAZARDOUS** soil contaminated with petroleum hydrocarbons. Using information and analytical data to be provided by Northgate, BESI will profile and schedule the waste into an appropriate disposal facility(s). BESI to provide all manifests required for transportation and disposal of the waste. This proposal assumes that stockpiled soil will be loaded into BESI trucks by others (not BESI). BESI will contract directly with the disposal facility(s) for all waste profile and disposal fees. This proposal assumes that all local permits required for the project, including any traffic plans and/or permits, will be the responsibility of others (not BESI).

Classification of Waste: **NON-HAZARDOUS**

Quantity of Waste: Approximately 3,200 – 4,100 tons (2,700 cubic yards)

**RATE SCHEDULE**  
**BULK TRANSPORTATION & DISPOSAL OPTIONS**

Option #1:  
**NON-HAZARDOUS:**

**CHIQUITA CANYON LANDFILL**

Castaic, California

- Class III Facility
- Disposal Method: **DAILY COVER MATERIAL**  
(must meet all facility & water board requirements)

<u>DESCRIPTION</u>	<u>UNIT COST</u>
<b><u>TRANSPORTATION &amp; DISPOSAL:</u></b>	
• Transportation* & Disposal:	<b>\$46.00 / ton*</b>
<b><u>ASSOCIATED FEES:</u></b>	
■ BESI Project Management	Waived

BESI will require the following soil analytical data for profiling purposes:

- TPH (EPA Method 8015)
- VOC's (EPA Method 8260) including MTBE
- Title 22 Metals including Mercury (EPA Method 6010B and 7471A)
- PCB's (EPA Method 8082)
- Any other potentially Hazardous Constituents of Concern
- Additional Analysis as Requested by Disposal Facility

Minimum Sampling Frequency required by Chiquita Canyon Landfill:

- One 4:1 composite sample per every 500 cubic yards of soil.

Option #2:  
**NON-HAZARDOUS:**

**SOIL SAFE OF CALIFORNIA (TPST)**

Adelanto, California

- Class II Facility
- Disposal Method: **THERMAL TREATMENT / RECYCLING**

<u>DESCRIPTION</u>	<u>UNIT COST</u>
<b><u>TRANSPORTATION &amp; DISPOSAL:</u></b>	
• Transportation* & Disposal:	<b>\$57.00 / ton*</b>
<b><u>ASSOCIATED FEES:</u></b>	
■ BESI Project Management	Waived

If the contamination is not solely related to a UST release of virgin petroleum product, BESI will require the following soil analytical data for profiling purposes:

- TPH (EPA Method 8015)
- VOC's (EPA Method 8260) including MTBE
- Title 22 Metals including Mercury (EPA Method 6010B and 7471A)
- PCB's (EPA Method 8082) *only if WASTE OIL contamination is involved*
- Any other potential Hazardous Constituents of Concern
- Additional Analysis as Requested by Disposal Facility

Sampling Frequency required by Soil Safe of California (TPST):

- 1 - 100 cubic yards = 1 sample
- 101 - 500 cubic yards = 3 samples
- 501 - 1,000 cubic yards = 5 samples
- 1,001 + cubic yards = 5 samples + 1 additional sample for each additional 500 yards > than 1,000 yards.

*Madrona Pond 1 & 2 -- Torrance, California*

**RATE SCHEDULE NOTES**

**\*TRANSPORTATION:** Transportation of any short load or clean-up load (last/final load available) of less than 23.0 tons will be invoiced as a 23-ton Minimum Load.

Any truck dispatched to a project that does not receive a load for disposal will be invoiced for all travel time incurred, with a minimum charge of 4.0 hours, at a rate of **\$90.00/hour** (plus Fuel Surcharge).

The "Transportation & Disposal" rate quoted above allows for up to 1.0 hour of loading time at the project site and up to 1.0 hour at the disposal facility. Demurrage/Stand-by of **\$90.00/hour** (plus Fuel Surcharge) may be invoiced if a truck's on-site loading time exceeds 1.0 hour past that truck's scheduled loading time. Demurrage/Stand-by of **\$90.00/hour** (plus Fuel Surcharge) may also be invoiced if a truck's time at the disposal facility exceeds 1.0 hours past that truck's actual arrival time at the disposal facility. Any loads requiring a washout, liquid stabilization, or manual assistance for off-loading by the disposal facility will be invoiced at the cost of any disposal facility services, labor and equipment charges plus a 15% surcharge. Any load rejected by the disposal facility will be returned to the project site at the expense of Northgate.

A **FUEL SURCHARGE** of 28% is currently being added to our standard Transportation Equipment rates. This fuel surcharge, which is subject to change on a weekly basis, has already been factored into the "Transportation" rate quoted above.

BESI appreciates the opportunity to provide Northgate with this cost proposal.

This cost proposal is based upon information provided to BESI by Northgate, and is subject to acceptance of all waste as **NON-HAZARDOUS** by the disposal facility(s) selected for the disposal method(s) indicated. If the actual scope of work and/or waste stream varies in content and/or quantity, or is found to have some previously unknown or undisclosed characteristic, then the actual cost and subsequent invoice to Northgate may vary accordingly.

BESI payment terms are **Net 30 Days**, unless otherwise established by contract between BESI and Northgate.

If the rates and terms of this proposal are acceptable to Northgate, and you wish to proceed with the project, please sign this document below and/or provide BESI with a Northgate Project No./Purchase Order No. for billing purposes. Once appropriate work authorization has been received by BESI, removal of the waste can be scheduled.

If you have any questions, or need additional information, please do not hesitate to call me at (949) 460-5200. I can also be contacted by e-mail at [brian@belshire.com](mailto:brian@belshire.com).

Best Regards,  
**BELSHIRE ENVIRONMENTAL SERVICES, INC.**



Brian F. Cass  
Sr. Account Manager /  
V.P. of Business Development

Rates & Terms Accepted by  
**NORTHGATE ENVIRONMENTAL MANAGEMENT, INC.:**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name / Title

\_\_\_\_\_  
Project No. / Purchase Order No.

*Madrona Pond 1 & 2 -- Torrance, California*



Dana Brown <dana.brown@ngem.com>

---

## Torrance - Soil Remediation

4 messages

---

**John Farmer** <jfarmer@icsinc.tv>

Fri, Jan 25, 2013 at 8:39 AM

To: "dana.brown@ngem.com" <dana.brown@ngem.com>

Mr. Brown,

Pleasure speaking with you this morning.

Regarding your Torrance project, the following rough order costs would apply:

Preconstruction Activities (notifications, waste profiling, manifesting and mobilization): \$5,000

Excavation and Stockpiling of TPH/VOC impacted soil (2,700Y): \$25,000

Loading (limited access): \$10,000

T&D of Non-Hazardous Soil:

est. 4,050 tons @ \$42.00 per ton: \$170,100

Total ROM Costs: \$210,000

Drop me a response so that I have your information. Thanks again Dana.

Sincerely,

John Farmer

Senior Project Manager



**InnovativeConstructionSolutions**

4011 West Chandler Avenue  
Santa Ana, CA 92704  
Ph. (714) 893-6366 Fax (714) 893-5122  
Cell (714) 615-5728

[jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)

---

**dana.brown@ngem.com**< [dana.brown@ngem.com](mailto:dana.brown@ngem.com)>  
Reply-To: [dana.brown@ngem.com](mailto:dana.brown@ngem.com)  
To: John Farmer <[jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)>

Fri, Jan 25, 2013 at 8:43 AM

Thanks John. I will call next week when I return to the office.  
Sent from my Verizon Wireless BlackBerry

---

**From:** John Farmer <[jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)>  
**Date:** Fri, 25 Jan 2013 08:39:54 -0800  
**To:** '[dana.brown@ngem.com](mailto:dana.brown@ngem.com)'<[dana.brown@ngem.com](mailto:dana.brown@ngem.com)>  
**Subject:** Torrance - Soil Remediation  
[Quoted text hidden]

---

**John Farmer**< [jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)>  
To: "dana.brown@ngem.com" <[dana.brown@ngem.com](mailto:dana.brown@ngem.com)>

Fri, Jan 25, 2013 at 8:44 AM

Have a great weekend Mr. Brown

Sincerely,

John Farmer  
Senior Project Manager



**InnovativeConstructionSolutions**

4011 West Chandler Avenue  
Santa Ana, CA 92704  
Ph. (714) 893-6366 Fax (714) 893-5122  
Cell (714) 615-5728

[jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)

**From:** [dana.brown@ngem.com](mailto:dana.brown@ngem.com) [mailto:[dana.brown@ngem.com](mailto:dana.brown@ngem.com)]  
**Sent:** Friday, January 25, 2013 8:43 AM  
**To:** John Farmer  
**Subject:** Re: Torrance - Soil Remediation

[Quoted text hidden]

---

**John Farmer**<[jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)>  
To: "[dana.brown@ngem.com](mailto:dana.brown@ngem.com)" <[dana.brown@ngem.com](mailto:dana.brown@ngem.com)>

Fri, Jan 25, 2013 at 9:13 AM

Dana,

Got the file from Hiram with the data and info.

We are good on this end.

Talk next week or at your convenience.

Sincerely,

John Farmer  
Senior Project Manager



**InnovativeConstructionSolutions**

4011 West Chandler Avenue  
Santa Ana, CA 92704  
Ph. (714) 893-6366 Fax (714) 893-5122  
Cell (714) 615-5728

[jfarmer@icsinc.tv](mailto:jfarmer@icsinc.tv)

**From:** [dana.brown@ngem.com](mailto:dana.brown@ngem.com) [mailto:[dana.brown@ngem.com](mailto:dana.brown@ngem.com)]  
**Sent:** Friday, January 25, 2013 8:43 AM  
**To:** John Farmer  
**Subject:** Re: Torrance - Soil Remediation

Thanks John. I will call next week when I return to the office.

[Quoted text hidden]