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U. S. Army Corps of Engineers
Los Angeles Regulatory Branch
Ventura Field Office
2151 Alessandro Drive, Suite 110
Ventura, California 93001-3748

Attention: Mr. Antal Szijj

California Regional Water
Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Attention: Mr. Michael Lyons

U. S. Environmental Protection Agency
Wetlands Regulatory Office (WR-8)
75 Hawthorne Street
San Francisco, CA 94105-3901

Attention: Mr. Alan Ota

Final Report
Sampling and Analysis - 2015
Ventura Harbor Sediment Investigation, Ventura, California

1.0 Introduction

Applied Environmental Technologies, Inc. has prepared this report on behalf of the Ventura Port District (VPD) to document sediment sampling and analysis performed on December 15 and 16, 2015. Ventura Harbor requires periodic maintenance dredging to keep the channel and berthing areas open to private and commercial vessels (see Plate 1). The VPD is proposing to conduct maintenance dredging of the inner harbor in the future. This report includes the results of the sampling and analysis conducted, according to the AET workplan dated November 2, 2015, and approved by the U. S. Army Corps of Engineers Regulatory Division on November 18, 2015 after review by the DMMT.

The dredging will be conducted under the requirements and conditions of the Los Angeles District U. S. Army Corps of Engineers, Department of the Army Permit SPL-2011-1154-AJS dated August 13, 2012 and the Regional Water Quality Control Board, Los Angeles Region Order Number R4-2012-0027 dated February 2, 2012 (File No. 76-59). These permits allow the Ventura Port District to conduct maintenance dredging operations over multiple years in the areas shown on Plates 2 through 7.

In order to confirm that the deposition sites authorized by the above referenced permits continue to be appropriate sites for the dredged material from the harbor, the Ventura Port District had this sampling and analysis of the harbor sediments conducted. The volumes of proposed dredging in each of the areas in the harbor are shown in Table 1.

The referenced permits provide for the various channel areas within Ventura Harbor to be dredged between September 1 and April 1. The dredged material would usually be transported south by a combination of floating and submerged pipe and deposited in the surf zone below the high tide line and at least 300 feet north or south from the point at which the Santa Clara River flows into the ocean. The material is mixed by current and wave action with the river's average annual discharge of 2,500,000 cubic yards of sediment with a similar grain size. A summary of the information for the discharge of sediments from the Santa Clara River is provided in the April 7, 2012 workplan. In addition, the permit allows for the transport of the dredged material to 3 inner harbor deposition sites and also within 4,000 ft of the near shore area, approximately 1,000 ft south of the Santa Clara River mouth.

2.0 Background

2.1 Previous Sediment Sampling

Sediment sampling was conducted in the Ventura Harbor during February 1994, March 1997, November 1998, May 2002, July 2005, March 2009 and October 2012. Analysis for chemical compounds and physical parameters were conducted during all surveys. It was the conclusion of all reports that the chemical concentrations measured in the Ventura Harbor sediments are not environmentally significant. Additionally, it was the opinion of the reports that no significant impact would occur from the deposition of Ventura Harbor sediments to waters offshore the Santa Clara River mouth. A description of the individual sampling episodes is contained in Attachments A through F.

It was also the conclusion of all reports that the sediment in the Ventura Harbor is comparable with sediments regularly discharged by the Santa Clara River. Additionally, it was the conclusion of the reports that the sediments dredged from the Ventura Harbor could be placed near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth.

2.2 Previous Intertidal Infaunal Sampling

In addition to sediment sampling of potential dredge areas, the Ventura Port District has in the past conducted Intertidal Infaunal Biological Characterizations for the State of California Department of Parks & Recreation, Channel Coast District on the McGrath State Park Sandy Beach. The Characterization was performed at McGrath only when material was deposited during Ventura Harbor's annual dredging and beach replenishment. The dredged sediment is deposited onto the intertidal sandy beach of McGrath State Beach. The biological characterization is conducted at the point of deposition and at a control site down coast.

The sediment deposition site was similar to the control site in both species composition and abundance over 10 survey episodes from 1996 to 2001. Based on numerous research documents, the variability of the beach's fauna is correlated with season, substrate, and the organism's own productivity. Based on AET's observations over 10 survey episodes (5 years), no impact to the beach fauna was attributed to the deposition of dredge material to marine waters.

In 2002, the State agreed that additional surveys of infaunal biota would not be expected to generate any substantial new information. Based on this premise, the State Parks and Recreation Department decided to modify the characterization at this beach. The modified characterization stresses the observation of infauna used as a food source for shore birds.

Based on our observations for the years 2002 to 2005, the deposition of dredged materials onto the McGrath State Beach has had no impact on the presence or absence of invertebrate organisms in the substrate.

3.0 Current Sampling and Analysis Methodology

3.1 Collection of Sediment Core Samples in Proposed Dredging Areas

The sediment core samples were collected on December 15 and 16, 2015 using an electric vibracore from a boat. The collection of sediment cores was conducted in five discrete sample areas (Areas A through E) in Ventura Harbor (see Plates 2 through 7). Area F was not expected to be dredged in the near future and therefore was not sampled. Within Areas B and D four sediment samples were collected. In Areas A and C five sediment samples were collected. In Area E one sediment sample was collected. The cores were advanced approximately 5 feet into sediment encountered at depths ranging from 12.6 to 25.5 feet below sea level (see Table 1). Sediment cores were initiated at depths of 12.9 to 19.9 feet (Area A), 22 to 25.5 feet (Area B), 14.4 to 19.9 feet (Area C), 14.6 to 20.8 feet (Area D), and 6 feet (Area E).

Samples collected from each of the locations in Areas A through E were extruded from the liners and photographed. Each area (with the exception of Area E with a single discrete sample) had a composite sample created for analysis. The extruded samples collected from each of the locations in Areas A through D were placed in a bucket and composited to get a representative sample for each Area. The samples for chemical analyses were placed in appropriate glassware, labeled and stored on blue ice pending transport to a state certified analytical laboratory. Strict chain-of-custody documentation was followed, and normal quality control/quality assurance protocols were followed. Sub samples were separated into plastic bags and submitted to a soils laboratory for grain size analysis.

3.2 Sample Analyses

3.2.1 Grain Size Analysis

Grain size analyses are used to determine general size classes that make up sediment (gravel, sand, silt, clay) and were measured using nested sieves and pipette method for small particle sizes.

The grain size distribution sieve analysis was performed in accordance with ASTM C117, C136, D1557, D2419, D4824, and D2487.

3.2.2 Organic and Inorganic Analyses

The objective of the sediment chemical analyses is to characterize the composition of sediment to be dredged from Ventura Harbor, and identify any compounds that may potentially be released as dissolved constituents to potential receiving water.

The samples were analyzed for constituents generally accepted for determination of hazardous or toxic conditions within the sediments. A composite sample was collected at each sample area. The composite sample will be analyzed for the conventional groups identified in the Southern California Dredged Materials Management Team Sampling and Analysis Plan/Results Report Guidelines, 2015. The samples will be analyzed for constituents identified in the guidelines referenced above.

The analysis of each sample will include those shown on Table 2.

4.0 Findings

4.1 Grain Size Analyses and Core Photographs

The sediments investigated in the Ventura Harbor consisted of saturated sandy silt to sandy clay in Areas A, B, C, D, and E (see Table 3). Gravels were detected in Area E up to 7%. Gravel was not found in any of the other samples. The percentages of sand retained on a #200 sieve are approximately 80% for Area A, 93% for Area B, 94% for Area C, 83% for Area D, and 98% for Area E. The grain size analytical report is included as Attachment G.

4.2 Analytical Results

The certified analytical reports are included as Attachment I. Trace concentrations of semi VOCs, phthalates, and PCBs were detected in all samples (see Tables 4 and 5). No phthalates were measured in sample A.

Organochlorine pesticides chlordane (alpha-, gamma- and total) were detected in samples B, D and E (see Table 6). Areas A and C did not contain concentrations of chlordane. Area B sample also contain Dieldrin at 4.27 µg/kg. DDD and DDE were not detected in samples from A, C and E. DDT was not identified in any samples. DDD was detected in sample B at 7.01 µg/kg. DDE was detected in sample C at 7.17 µg/kg (see Table 6). As a check of pesticide concentrations in a small portion of Area B that needs maintenance dredging, discrete Sample B-1 was analyzed for organochlorine pesticides (including chlordane). No detectable concentrations were measured (see attached analytical in Attachment I).

Pyrethroids were identified in all samples with the exception of Sample B. Bifenthrin was measured at 2.1, 1.0, 5.0 and 3.6 µg/kg in samples A, C, D and E, respectively. Permethrin was

measured at 4.8, 1.9, 21 and 2.6 µg/kg in samples A, C, D and E, respectively. In addition, the pyrethroids, fenpropathrin and fenvalerate/esfenvalerate were identified in Sample D at concentrations of 4.9 and 1.9 µg/kg, respectively. (see attached analytical)

Dibutyltin was detected in samples C, D and E at 30, 14 and 10 µg/kg, respectively as shown in Table 7. Tributyltin was only detected in sample C at 10 µg/kg.

Metals were detected in all samples (see Table 8). Detected metals include: arsenic (ranging from 3.54 to 7.68 mg/kg); cadmium (ranging from 0.372 to 0.7398 mg/kg); chromium (ranging from 15.8 to 31.8 mg/kg); copper (ranging from 17.1 to 68.2 mg/kg); lead (ranging from 6.51 to 17.5 mg/kg); nickel (ranging from 16.7 to 33.2 mg/kg); selenium (ranging from 0.302 to 0.715 mg/kg); and zinc (ranging from 51.5 to 137 mg/kg).

Mercury was not detected in any of the samples (see Table 8). Ammonia was detected in all samples (ranging from 17.7 to 40.4 mg/kg), as shown in Table 8.

Percent total solids ranged from 60.4 to 75.8 (see attached analytical results).

5.0 Discussion and Conclusions

Based on existing regulatory standards and guidelines the chemical concentrations measured in the Ventura Harbor sediments are not considered to be environmentally significant. In addition, no significant impact is expected to occur from the deposition of Ventura Harbor sediments to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom.

No semi VOC, PCB, pesticide, insecticide, organotin, or metal concentrations were detected that exceed the total threshold limit concentrations (TTLCs) which identifies the material as hazardous. TTLC values are contained in the California Code of Regulations (CCR) Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24. Minor concentrations of pesticides were measured, however no concentrations were detected that exceed the EPA Region 9 Regional Screening Levels (RSL) for exposure to these compounds.

Total chlordane was measured at 3,430 µg/kg in Sample B. Chlordane has a regional screening level set by the EPA Region 9 at 1,600 µg/kg for residential soil. This is a guidance concentration and is not a regulation. No impact is expected from this compound to discharge to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom. However, since a small area within Area B now requires maintenance dredging, the discrete sample B-1 for said area was analyzed for chlordane and other organochlorine pesticides. No detectable concentrations of chlordane or other pesticides were measured. No impact is expected from extraction of sediments in area B-1 to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom.

In addition, no semi VOC, PCB, insecticide, organotin, or metal concentrations were detected that exceed the EPA Region 9 Regional Screening Levels (RSL) for exposure to these compounds.

The results of the sampling during this period and previous sampling episodes discussed at the beginning of this report are consistent. No significant changes were observed between the current and past sampling events. The permits currently in effect are considered to be adequate to protect the waters along the Ventura Coast.

Sediment grain size remains consistent with the river discharge. The grain size is predominantly sandy silts and sandy clays, however, based on previous studies of the Santa Clara River Mouth area, the grain size remains consistent with that discharged by the river. The Santa Clara River discharges approximately 21 percent of their sediment volume as sands that could be retained on the 200 sieve , whereas, the sediment volume consisting of sandy silts and sandy clays from this Ventura Harbor sampling episode is an average of approximately 89.6% (ranging from 80 to 98%) which can be retained on the 200 sieve.

Based on studies conducted by R. P. Williams (1978, "Sediment Discharge in the Santa Clara River Basin, Ventura County, California", USGS Water Resources Investigation 79-78), the sediment grain sizes discharged by the Santa Clara River range from clays and silts to gravel. Particle size measurements were collected during the years 1969 to 1975. Silts and clays comprised a majority (over 79 percent) of the sediments discharged by the Santa Clara River during these years. The river has discharged between 0.4 and 40,200,000 tons per day (estimated to be between 0.3 and 30,000,000 cubic yards) from the river mouth into the marine environment. The estimated mean daily total sediment discharge during the period 1950 to 1975 for the Santa Clara River was 9,720 tons (estimated at approximately 7,200 cubic yards). This can be estimated to consist of over 2.5 million cubic yards of sediment per year. The discharge of river sediments is highly variable depending on rainfall and flooding. The dispersement of harbor sediments in the vicinity of the river mouth or to authorized depressions on the harbor bottom are not expected to have any significant affect on the marine ecosystem.

In addition the previous studies conducted on the sediments offshore the Santa Clara River mouth show the materials present in the Ventura Harbor are comparable to those discharged from the Santa Clara River. No apparent environmental concerns were observed during previous placement of Ventura Harbor sediments to the surf zone of the beaches near the Santa Clara River mouth. During the period from 1982 to 2012, 19 episodes of dredging saw the deposition of 950,802 cubic yards (ranging from 2,000 to 149,000 cubic yards per episode) of inner harbor sediment to the area of the Santa Clara River mouth. The average deposition is calculated at 50,042 cubic yards per episode. No adverse impacts were recorded.

The estimated average dredge volume of 50,042 cubic yards is considered to be an insignificant volume when compared to the annual discharge from the Santa Clara River (2.5 million cubic yards per year). No affect to the marine environment would be expected from the placement of the Harbor sediments to the area near the Santa Clara River mouth.

It is the conclusion of this report that the sediment in the Ventura Harbor (approximately 89.6 percent retained on the 200 sieve) is considered optimal for placement on the adjacent beaches. Sediments regularly discharged by the Santa Clara River contain only 21 percent retained on the 200 sieve. It is the conclusion of the report that the sediments dredged from the Ventura Harbor could be

placed near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth. The effects of weather; wave action, and the Santa Clara River discharge are considered to have significantly more impact on the beaches than dredging activities.

6.0 Limitations

This report has been prepared as a field assessment of sediment conditions in Ventura Harbor. In performing our professional services, we have applied present engineering and scientific judgment and used a level of effort consistent with the standard of practice measured on the date of this report and in the locale of the project site for similar type studies. Applied Environmental Technologies, Inc., makes no warranty, expressed or implied, in fact or by law, whether of merchantability, fitness for any particular purpose, or otherwise, concerning any of the materials or "services" furnished by Applied Environmental Technologies, Inc., to the client.

The results of this report have been developed based on a limited number of sediment sample analyses from discrete depths and locations. It should be recognized that sediment conditions could vary laterally and with depth below a given location.

* * * * *

Should you have any questions or comments concerning this report, please contact us.

Very truly yours,
Applied Environmental
Technologies, Inc.

Harry C. Finney
Senior Marine Ecologist

Attachment A - May 2012 Sediment Investigation
Attachment B - March 2009 Sediment Investigation
Attachment C - July 2005 Sediment Investigation on
Attachment D - May 2002 Sediment Investigation
Attachment E – November 1998 Sediment Investigation
Attachment F – March 1997 Sediment Investigation
Attachment G – February 1994 Sediment Investigation
Attachment H – Grain Size Analytical Report
Attachment I – Certified Analytical Reports

cc: Mr. Richard Parsons, Ventura Port District, Dredging Program Manager

PLATES

Legend

Bathymetry Contours (Feet, MLLW)

- Major (Contour Interval = 5')
- Minor (Contour Interval = 1')
- Shoreline and Docks
- Area used for Volume Calculations

Grid: NAD83, CA State Plane, Zone 5, US Survey Feet

Notes:

1. Multibeam data were collected on 8/26/15 to 8/31/15.
2. Bathymetric contours are in feet and reference to MLLW.
3. Horizontal and vertical positioning achieved using RTK (Real-Time Kinematic) and POS M/V Inertial System integrated with Hypack navigation software.
4. Survey equipment utilized for data collection included:
   a. R2 Sonic 2024 Multibeam Sonar
   b. Applanix POSMV System
   c. Odom Digibar Sound Velocity Profiler

SCALE : 1:1,800

FUGRO PELAGOS, INC.

VENTURA HARBOR MULTIBEAM CONDITION SURVEY BATHYMETRIC CONTOURS

Ventura Port District, California

JOB NUMBER: 04.00007143 | SURVEY DATE: September 2015 | CHART NO.: 1

PLATE 1

PLATE 2

North

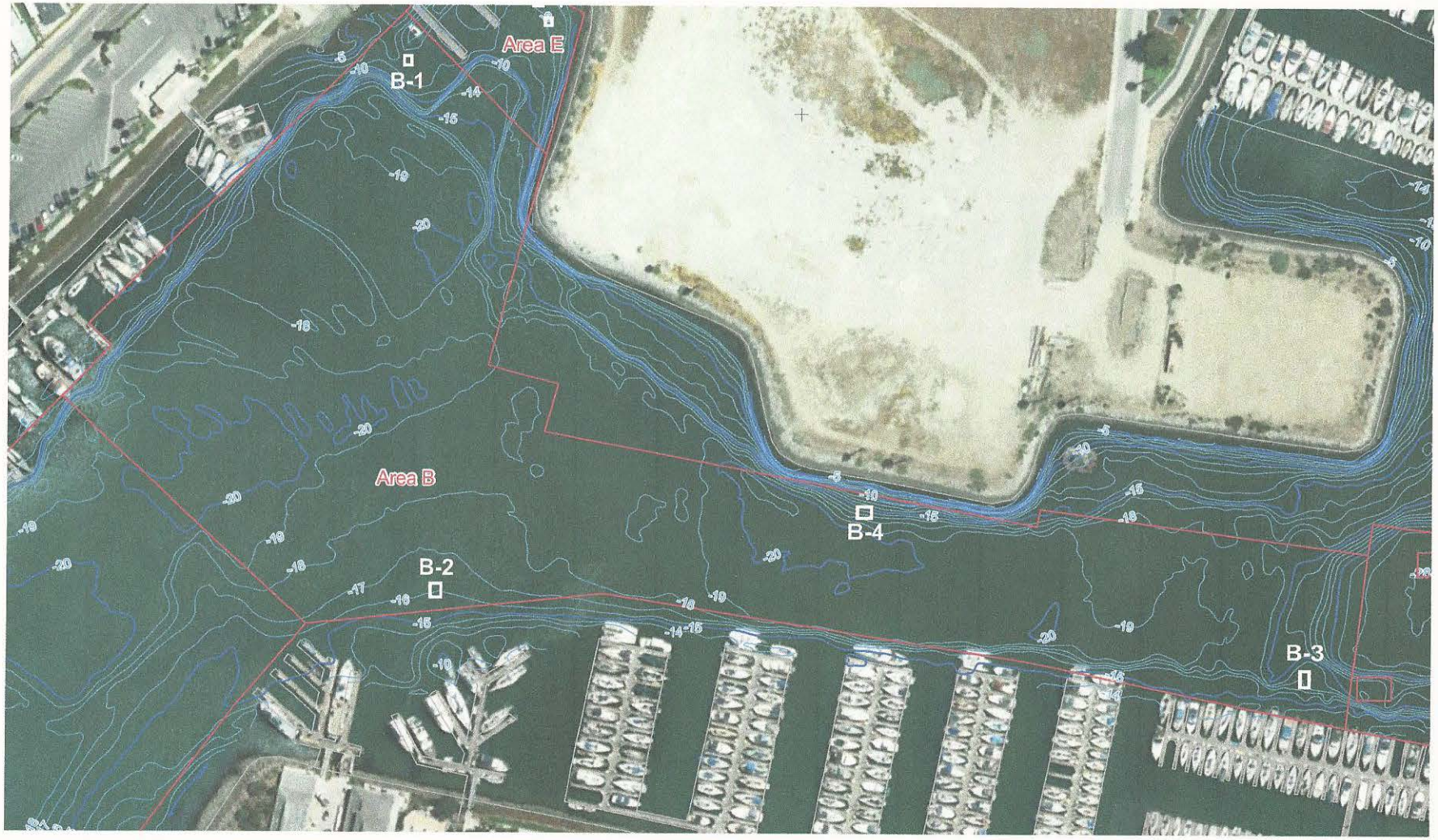

PLATE 3

North

PLATE 4

North

PLATE 5

PLATE 6

TABLES

Table 1
Core Sample Information Ventura Harbor November 2015

Sample ID	Depth (ft)	Lat/Long	Sample depth	Core length	Comp ID	Comments
A-1	15.2	34°15.663 119°15.996	-20	4	A	Sand
A-2	16.3	34°15.158 119°16.075	-20	4	A	
A-3	16.5	34°15.028 119°16.037	-20	4	A	
A-4	15.8	34°15.005 119°15.987	-20	4	A	
A-5	16.3	34°15.073 119°.16.050	-20	4	A	
B-1	19	34°14.956 119°15.827	-20	4	B	Sand
B-2	17.5	34°14.923 119°15.924	-20	3.7	B	Sand/Small Shells
B-3	19.1	34°14.732 119°15.864	-20	3.6	B	Sand
B-4	21.5	34°14.843 119°15.878	-20	3.5	B	Sand
C-1	18	34°14.654 119°15.840	-20	3.8	C	Sand
C-2	16.7	34°14.558 119°15.850	-20	3.6	C	Sand
C-3	20.6	34°14.491 119°15.728	-20	3.8	C	Sand
C-4	17.4	34°14.472 119°15.765	-20	3	C	Sand/gravel/rocks
C-5	16.5	34°14.479 119°15.840	-20	3.7	C	sand
D-1	14.2	34°14.718 119°15.519	-17	4	D	
D-2	13.9	34°14.716 119°15.574	-17	4	D	
D-3	15	34°14.712 119°15.664	-17	3.6	D	sand
D-4	15.9	34°14.714 119°15.763	-17	3.8	D	sand
E-1	14.9	34°14.942 119°15.799	-16	3.5	E	

Table 2 - Analyses

1. Metals

Cadmium	Chromium	Copper	Lead	Mercury
Nickel	Selenium	Silver	Zinc	Arsenic

2. Pesticides

Aldrin	Alpha, beta, delta & gamma (Lindane)
hexachlorocyclohexane (BHC)	Chlordane
Dieldrin	DDT and Derivatives (DDE & DDD)
Endrin and Derivatives	Endosulfan I
Endosulfan II	Endosulfan Sulfate
Heptachlor	Heptachlor epoxide
Methoxychlor	Toxaphene

3. Organics

Organotin Compounds (Mono, Di, Tri, and tetrabutyltin)

Total Phenols

2-Methylphenol	2-Nitrophenol
3,4-Methylphneol	4,6-Dinitro-2-Methylphenol
4-Chloro-3-Methylphenol	Bisphenol A

Polychlorinated Biphenyls (including total PCBs, PCB 018, 028, 037, 044, 049, 052, 066, 070, 074, 077, 081, 087, 099, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, 206)

Polynuclear Aromatic Hydrocarbons Including:

Total PAHs

Acenaphthene	Acenaphthylene
Anthracene	Benzo(a)anthracene
Benzo(a)Pyrene	Benzo(g,h,i)perylene
Benzo(k)fluoranthene	Benzo(b)fluoranthene
2-Chlorophenol	Chrysene
Dibenz(a,h)anthracene	2,4-Dichlorophenol
2,4-Dimethylphenol	2,4-Dinitrophenol
Fluoranthene	Fluorene
Indeno(1,2,3,-c,d)Pyrene	1-Methylnapthalene
2-Methylnapthalene	2,4,5-Trichlorophenol
2,4,6-Trichlorophenol	Naphthalene
Pentachlorophenol	Phenanthrene
Pyrene	

Total Phthalates

Di-n-butyl phthalate, Di-n-octyl phthalate,
Diethyl phthalate, Dimethyl phthalate,
Bis(2-Ethylhexyl)Phthalate, Butylbenzyl Phthalate

Pyrethroids

Allethrin (Bioallethrin)	Bifenthrin
Cyfluthrin-beta (Baythroid)	Cyhalothrin-Lamba
Cypermethrin	Deltamethrin (Decamethrin)
Esfenvalerate	Fenpropathrin (Danitol)
Fenvalerate (sanmarton)	Fluvalinate
Permethrin (cis and trans)	Resmethrin (Bioresmethrin)
Resmethrin	Sumithrin (Phenothrin)
Tetramethrin	Tralomethrin

4.

Ammonia

Table 3
Sediment Sample Grain Size Distribution Data November 2015
Ventura Harbor, Ventura, CA

Sieve Size	Soil Type	A			B			C			D			E		
		Weight Retained (grams)	Percent Retained %	Percent Passed %	Weight Retained (grams)	Percent Retained %	Percent Passed %	Weight Retained (grams)	Percent Retained %	Percent Passed %	Weight Retained (grams)	Percent Retained %	Percent Passed %	Weight Retained (grams)	Percent Retained %	Percent Passed %
1-1/2 inch (37mm)	coarse gravel	0	0%	100%	0	0%	100%	0	0%	100%	0	0%	100%	0	0%	100%
1 inch (25mm)	coarse gravel	0	0%	100%	0	0%	100%	0	0%	100%	0	0%	100%	16.2	4%	96%
3/4 inch (19 mm)	fine gravel	0	0%	100%	0	0%	100%	0	0%	100%	0	0%	100%	31.4	7%	93%
1/2 inch (12.5 mm)	fine gravel	0	0%	100%	0	0%	100%	0	0%	100%	0	0%	100%	31.4	7%	93%
3/8 inch (9.5 mm)	fine gravel	0	0%	100%	0	1%	99%	0	0%	100%	0	0%	100%	31.4	7%	93%
#4 (4.75 mm)	coarse sand	1.1	0%	100%	0.9	4%	97%	3.6	1%	99%	0	0%	100%	34.8	8%	92%
#8 (2.36 mm)	coarse sand	1.9	0%	100%	3.9	5%	95%	7.5	3%	98%	1.2	0%	100%	39.1	9%	91%
#16 (1.18 mm)	medium sand	2.9	1%	99%	8.5	9%	91%	15.2	5%	95%	9.1	3%	97%	45.2	10%	90%
#30 (0.6 mm)	medium sand	7.9	2%	98%	17.1	17%	83%	35.6	12%	88%	84.6	26%	74%	54.1	12%	88%
#50 (0.3 mm)	fine sand	36.7	9%	91%	47.4	34%	66%	108.5	36%	64%	153.7	48%	53%	84.9	19%	81%
#100 (0.15 mm)	fine sand	122.1	31%	69%	139.5	75%	25%	238.6	78%	22%	214.3	66%	34%	269.9	60%	40%
#200 (0.075 mm)	fine sand	313.1	80%	18%	204.1	93%	16%	286.7	94%	6%	269.7	83%	18%	440.6	98%	18%
description		Sandy Silt or Sandy Clay			Sandy Silt or Sandy Clay			Silty or Clayey Sand			Sandy Silt or Sandy Clay			Sandy Silt or Sandy Clay		
Wet Weight (grams)		392.9			307.2			305.6			323.6			449.2		
Dry Weight (grams)		392.9			307.2			305.6			323.6			449.2		

Table 4
Summary of Soil Sample Analytical Results - Semi Volatile Organic Compounds
Ventura Harbor, Ventura, CA November 2015

Analyte	Sample Designation					Regulatory Levels	
	A-C (mg/kg)	B-C (mg/kg)	C-C (mg/kg)	D-C (mg/kg)	E-C (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)
1-Methylnapthalene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
2-Chlorophenol	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	390
2-Methylnaphthalene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
3/4-Methylphenol	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
4-Chloro-3-Methylphenol	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Acenapthene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Acenapthylene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Anthracene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Benzo (a) Anthracene	0.016	ND(<0.013)	0.017	ND(<0.016)	0.11	- -	- -
Benzo (a) Pyrene	ND(<0.014)	ND(<0.013)	0.015	ND(<0.016)	0.92	- -	- -
Benzo (b) Fluoranthene	0.021	ND(<0.013)	0.023	ND(<0.016)	0.11	- -	- -
Benzo (g,h,i) Perylene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	0.35	- -	- -
Benzo (k) Fluoranthene	ND(<0.014)	ND(<0.013)	0.02	ND(<0.016)	0.12	- -	- -
Bis (2-Ethylhexyl) Phthalate	0.21	0..055	0.28	0.16	0.29	- -	35
Butyl Benzyl Phthalate	0.028	ND(<0.013)	0.014	0.03	0.08	- -	260
Chrysene	0.026	ND(<0.013)	0.027	0.02	0.16	- -	- -
Di-n-Butyl Phthalate	0.059	0.013	0.018	0.27	0.24	- -	- -
Dibenz (a,h) Anthracene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Diethyl Pthalate	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	49,000
Dimethyl Phthalate	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	0.25	- -	- -
Fluoranthene	0.039	ND(<0.013)	0.028	0.023	0.32	- -	- -
Fluorene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Indeno (1,2,3-c,d) Pyrene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	0.054	- -	- -
Naphthalene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Phenanthrene	0.016	ND(<0.013)	0.014	0.021	0.14	- -	- -
Phenol	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	18,000
Pyrene	0.046	0.017	0.056	0.035	0.31	- -	- -
Benzoic Acid	ND(<0.014)	ND(<0.013)	0.016	ND(<0.016)	0.092	- -	240,000
Benzo (e) Pyrene	0.038	0.017	0.019	0.024	0.056	- -	- -
Perylene	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -
Biphenyl	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	0.02	- -	51
2,6-Dimethylnaphthalene	ND(<0.014 to 0.72)	ND(<0.013 to 0.66)	ND(<0.014 to 0.69)	ND(<0.016 to 0.82)	ND(<0.016 to 0.31)	- -	- -
Other semi-VOCs	ND(<0.014)	ND(<0.013)	ND(<0.014)	ND(<0.016)	ND(<0.016)	- -	- -

Table 4
Summary of Soil Sample Analytical Results - Semi Volatile Organic Compounds
Ventura Harbor, Ventura, CA November 2015

Analyte	Sample Designation					Regulatory Levels	
	A-C (mg/kg)	B-C (mg/kg)	C-C (mg/kg)	D-C (mg/kg)	E-C (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)

Notes:

1 = Semi-volatile organic compounds analyzed by EPA Method 8270C SIM

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
Ventura Harbor, Ventura, CA November 2015

Analyte	Sample Designation					Regulatory Levels	
	A (mg/kg)	B (mg/kg)	C (mg/kg)	D (mg/kg)	E (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)
PCB003	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB005/008	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB015	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB018	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB027	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB028	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB029	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB031	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB033	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB037	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB044	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB049	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB052	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB056	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB060	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB066	ND(<0.29)	ND(<0.26)	**0.28**	ND(<0.33)	**0.48**	- -	- -
PCB070	ND(<0.29)	**0.73**	ND(<0.28)	ND(<0.33)	**0.5**	- -	- -
PCB074	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB077	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB081	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB087	ND(<0.29)	ND(<0.26)	ND(<0.28)	**2.9**	**1.1**	- -	- -
PCB095	ND(<0.29)	**0.43**	**0.51**	**0.58**	**0.65**	- -	- -
PCB097	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB099	ND(<0.29)	**0.34**	**0.32**	**0.53**	**0.57**	- -	- -
PCB101	ND(<0.29)	**0.42**	**0.82**	**0.84**	**0.83**	- -	- -
PCB105	ND(<0.29)	**0.89**	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	**110**
PCB110	ND(<0.29)	**0.55**	**0.48**	**0.83**	**1.4**	- -	- -
PCB114	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	**110**
PCB118	ND(<0.29)	**0.59**	**0.62**	**0.99**	**1.1**	- -	**110**
PCB119	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB123	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB126	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)	ND(<0.29)		
PCB128	ND(<0.29)	ND(<0.26)	ND(<0.28)	ND(<0.33)	ND(<0.31)	- -	- -
PCB132/153	ND(<0.29)	ND(<0.29)	0.89	1.4	1.2		

Table 5
Summary of Soil Sample Analytical Results
Polychlorinated Biphenyls
Ventura Harbor, Ventura, CA November 2015

Analyte	Sample Designation A (mg/kg)	B (mg/kg)	C (mg/kg)	D (mg/kg)	E (mg/kg)	Regulatory Levels TTLC (mg/kg)	RSL Soil (mg/kg)
PCB137	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB138/158	$ND_{(<0.58)}$	**0.61**	**0.86**	**1.6**	**1.4**	- -	**110**
PCB141	$ND_{(<0.58)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB149	$ND_{(<0.29)}$	**0.42**	**0.54**	**1.2**	**0.81**	- -	- -
PCB151	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB156	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB157	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB167	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB168	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB170	$ND_{(<0.29)}$	$ND_{(<0.26)}$	$ND_{(<0.28)}$	$ND_{(<0.33)}$	$ND_{(<0.31)}$	- -	- -
PCB174	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	0.61	$ND_{(<0.29)}$		
PCB177	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB180	$ND_{(<0.29)}$	$ND_{(<0.26)}$	$ND_{(<0.28)}$	$ND_{(<0.33)}$	$ND_{(<0.31)}$	- -	- -
PCB183	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB184	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB187	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	- -	- -
PCB189	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB194	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB195	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB200	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB201	$ND_{(<0.29)}$	$ND_{(<0.26)}$	$ND_{(<0.28)}$	$ND_{(<0.33)}$	$ND_{(<0.31)}$		
PCB203	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB206	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$	$ND_{(<0.29)}$		
PCB209	$ND_{(<0.29)}$	$ND_{(<0.26)}$	$ND_{(<0.28)}$	$ND_{(<0.33)}$	$ND_{(<0.31)}$		
						- -	- -

Notes:

1 = Polychlorinated biphenyls analyzed by EPA Method 8270C.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

Table 6
Summary of Soil Sample Analytical Results
Organochlorine Pesticides and Pyrethroids
Ventura Harbor, Ventura, CA November 2015

	Sample Designation					Regulatory Levels	
Analyte	A (µg/kg)	B (µg/kg)	C (µg/kg)	D (µg/kg)	E (µg/kg)	TTLC (µg/kg)	RSL Soil (µg/kg)
Orgaonchlorine Pesticides[1]							
Gamma-Chlordane	ND(<2.0)	**279**	ND(<2.0)	**2.89**	**2.3**	**- -**	**1,700**
alpha-Chlordane	ND(<2.0)	**375**	ND(<2.0)	**4.7**	**4.89**	**- -**	**1,700**
Total Chlordane	ND(<13)	3430	ND(<14)	ND(<14)	ND(<17)	**2,500,000**	**1,600**
4,4'-DDD	ND(<4.0)	**7.01**	ND(<4.0)	ND(<4.0)	ND(<4.0)	**1,000,000**	**2,300**
4,4'-DDE	ND(<4.0)	ND(<4.0)	ND(<4.0)	**7.17**	ND(<4.0)	**1,000,000**	**2,000**
4,4'-DDT	ND(<4.0)	ND(<4.0)	ND(<4.0)	ND(<4.0)	ND(<4.0)	**1,000,000**	**1,900**
Dieldrin	ND(<4.0)	4.27	ND(<4.0)	ND(<4.0)	ND(<4.0)	**- -**	**34**
other pesticides	ND(<1.3 to 33)	ND(<1.6 to 39)	ND(<1.4 to 36)	ND(<1.5 to 38)	ND(<1.7 to 42)	**- -**	**- -**
							- -
Pyrethroids[2]							**- -**
Bifenthrin	**2.1**	ND(<1.4)	1	5	3.6	**- -**	**- -**
Fenpropathrin	ND(<1.4)	ND(<1.4)	ND(<1.4)	4.9	ND(<0.78)	**- -**	**- -**
Fenvalerate/Esfemvalerate	ND(<1.4)	ND(<1.4)	ND(<1.4)	1.9	ND(<0.78)	**- -**	**- -**
Permethrin (cis/trans)	**4.8**	ND(<1.4)	**1.9**	**21**	**2.6**	**- -**	**- -**
other insecticides	ND(<0.65)	ND(<0.77)	ND(<0.71)	ND(<0.76)	ND(<0.83)	**- -**	**- -**

Notes:

1 = Organo-chlorine pesticides analyzed by EPA Method 8081A

2 = Pyrethroids analyzed by EPA Method 8270D.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 7
Summary of Soil Sample Analytical Results - Organotins
Ventura Harbor, Ventura, CA November 2015

	Sample Designation					Regulatory Levels	
Analyte	A (µg/kg)	B (µg/kg)	C (µg/kg)	D (µg/kg)	E (µg/kg)	TTLC (µg/kg)	RSL Soil (µg/kg)
Dibutyltin	$ND_{(<4.3)}$	$ND_{(<3.9)}$	**30**	**14**	**10**	**- -**	**18,000**
Monobutylin	$ND_{(<4.3)}$	$ND_{(<3.9)}$	$ND_{(<4.1)}$	$ND_{(<4.9)}$	$ND_{(<4.6)}$	**- -**	**- -**
Tetrabutyltin	$ND_{(<4.3)}$	$ND_{(<3.9)}$	$ND_{(<4.1)}$	$ND_{(<4.9)}$	$ND_{(<4.6)}$	**- -**	**- -**
Tributyltin	$ND_{(<4.3)}$	$ND_{(<3.9)}$	**10**	$ND_{(<4.9)}$	$ND_{(<4.6)}$	**- -**	**18,000**

Notes:

1 = Organotins analyzed by Method Krone et al.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 8
Summary of Soil Sample Analytical Results - Metals, Mercury, and Ammonia
Ventura Harbor, Ventura, CA November 2015

	Sample Designation					Regulatory Levels	
Analyte	A (mg/kg)	B (mg/kg)	C (mg/kg)	D (mg/kg)	E (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)
Metals[1]							
Arsenic	6.24	3.54	4.98	7.17	7.68	500	0.39
Cadmium	0.563	0.372	0.469	0.673	0.739	100	7.0
Chromium	28.7	15.8	18.1	31.8	31.5	2,500	- -
Copper	30	17.1	53.6	58.8	68.2	2,500	3,100
Lead	12.1	6.51	9.75	17.5	15.8	1,000	400
Nickel	31.2	16.7	18.4	33.2	29.7	2,000	3,800
Selenium	0.449	0.302	0.47	0.715	0.694	100	390
Silver	$ND_{(<.145)}$	$ND_{(<.132)}$	$ND_{(<.139)}$	$ND_{(<.166)}$	$ND_{(<.157)}$	500	390
Zinc	94	51.5	82.3	131	137	5,000	23,000
Mercury[2]	$ND_{(<0.05)}$	$ND_{(<0.05)}$	$ND_{(<0.05)}$	$ND_{(<0.05)}$	$ND_{(<0.05)}$	20	10
Ammonia as N[3]	29.8	17.7	27	32	40.4	- -	- -

Notes:

1 = Metals analyzed by EPA Method 6020.

2 = Mercury analyzed by EPA Method 7471A.

3 = Ammonia analyzed by EPA Method SM4500-NH3-D.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Attachment A

May 2012 Sediment Sampling

May 2012 Sediment Sampling

The collection of sediment cores was conducted in six (6) discrete sample areas (Areas A through F) in Ventura Harbor (see Plates 2A through D). Within Areas A through D, 4 sediment samples were collected (Plates 2A through 2D). In Areas E and F, single discrete samples were collected (Plates 2B and 2C).

The cores were collected using an electric vibracore from a barge. The depth of the samples within Areas A, B and C were approximately a maximum depth of -20 feet MLLW (design depth is –18 feet MLLW). In Area D, the maximum depth of dredging was -17 feet MLLW (design depth is –15 feet MLLW). Area E (vicinity of the small boat ramp) was sampled to a depth of approximately -14 feet (design depth of -12 feet). The Area E is an addition to previous dredging plans and had not been sampled or dredged in over 20 years. Area F was extended to a maximum depth of -30 feet MLLW (design depth is -28 feet MLLW). This area was a natural depression previously used to contain minor quantities of inner harbor sediments. The material in this area is a composite of dredged sediments previously sampled within the inner harbor and do not represent externally developed fill.

In summary, the sediments investigated in the Ventura Harbor consisted generally of saturated silty clay. Fine to coarse grain sand were encountered at all locations sampled in the areas investigated.

The percent of the individual grain sizes (i.e., gravel, sand, silt and clay) of the Ventura Harbor samples retained on a 200 sieve are approximately 42.7% for Area A, 53.8% for Area B, 62.8% for Area C and 39.1% for Area D.

The sediment samples were measured for total percent solids. The range of solids measured for the core samples was 66.9 (Area D) to 74.7 (Area C) percent.

The sediment samples were analyzed for total organic carbon (TOC). The results showed that between 0.51 and 0.80 percent of the samples in the core samples contained organic carbon.

The samples contained concentrations of volatile organics as acetone. Concentrations ranged from 34 to 146 µg/kg.

The sediment samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs). Three constituents were identified. Bis(2-ethylhexyl) phthalate was identified above the method detection limit and below the practical quantification limit (marked with a J) in areas A, B and C. Chrysene and fluorene were also identified below there practical quantification limits in Area B. The concentrations of constituents measured are shown on Table.

The chemical analyses conducted on the samples resulted in no detectable concentrations of polychlorinated biphenyls (PCBs), phenols, or cyanide. The laboratory results are attached in Appendix B. The volatile organic, acetone, was measured in all samples ranging from 34.0J (Area E) to 146 µg/kg (Area C).

Organochlorine pesticides were detected in all samples (see Table 4). DDD ranged from 1.06J in the Area A sample to 15.7 µg/kg in the Area D sample. DDE ranged from not detected in areas A, B and E samples to 13.8 µg/kg in the Area D sample. DDT was detected in Areas C and D at 0.450J and 0.980J µg/kg, respectively.

No detectable concentrations of Monobutyltin or Dibutyltin were measured. Tributyltin was detected in all samples ranging from 1.03 µg/kg in Area A to 7.20 µg/kg in Area E.

Metals analyses were conducted on the sediment samples. No silver concentrations were detected in the samples. A summary of the concentrations of metals measured is shown on Table 5. A complete copy of the metal analyses is shown in Appendix C. No concentrations were measured that exceed the total threshold limit concentration (TTLC) which identifies the material as hazardous (see Table 5). No concentrations were measured that were 10 times the soluble threshold limit concentration (STLC), which would infer that the sediments do not contain hazardous levels of a metal (see Table 5).

It was the conclusion of the report that the chemical concentrations measured in the Ventura Harbor sediments are not environmentally significant. Additionally, it was our opinion that no significant impact would occur from the disposal of Ventura Harbor sediments to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom.

The results of the sampling during this period and previous sampling episodes discussed at the beginning of this report are consistent. No significant changes have been observed between this sampling period and previous ones. The permits currently in effect are adequate to protect the waters along the Ventura Coast.

Table 5
Summary of Soil Sample Analytical Results
Petroleum Hydrocarbons and Total Organic Carbon
Ventura Harbor, Ventura, CA

Analyte	Sample Designation					Regulatory Levels	
	A-C (mg/kg)	B-C (mg/kg)	C-C (mg/kg)	D-C (mg/kg)	E-C (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)
Oil and Grease[1] (mg/kg)	ND (<20)	ND (<20)	ND (<20)	ND (<20)	ND (<20)	- -	- -
THOd[2] (mg/kg)	ND (<10)	ND (<10)	ND (<10)	ND (<10)	ND (<10)	- -	- -
TPHo[2] (mg/kg)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	- -	- -
TOC[3] (mg/kg)	**1,590**	**5,050**	**4,470**	**9,250**	**9,390**	- -	- -

Notes:

1 = Oil and Grease analyzed by EPA Method 1664.

2 = Total Petroleum Hydrocarbons as Diesel and Oil analyzed by EPA Method 8015B.

3 = Total Organic Carbon analyzed by EPA Method 9060.

ND = Not detected at laboratory method Practical Quantitation Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 6
Summary of Soil Sample Analytical Results - Semi Volatile Organic Compounds
Ventura Harbor, Ventura, CA

Analyte	Sample Designation					Regulatory Levels	
	A-C (mg/kg)	B-C (mg/kg)	C-C (mg/kg)	D-C (mg/kg)	E-C (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)
1-Methylnapthalene	ND (<0.013)	0.0053	0.0038	0.0033	0.0031	- -	- -
2-Chlorophenol	0.0053	0.0053	ND (<0.014)	ND (<0.015)	ND (<0.017)	- -	390
2-Methylnaphthalene	0.0026	0.0049	0.0039	0.004	ND (<0.017)	- -	- -
3/4-Methylphenol	0.003	0.0034	0.006	0.0045	ND (<0.017)	- -	- -
4-Chloro-3-Methylphenol	ND (<0.013)	0.0092	ND (<0.014)	ND (<0.015)	ND (<0.017)	- -	- -
Acenapthene	0.0074	0.0069	ND (<0.014)	ND (<0.015)	ND (<0.017)	- -	- -
Acenapthylene	0.0065	0.0058	0.0039	ND (<0.015)	ND (<0.017)	- -	- -
Anthracene	0.0027	ND (<0.016)	0.0066	ND (<0.015)	ND (<0.017)	- -	- -
Benzo (a) Anthracene	0.0097	0.0051	0.012	0.0037	0.0075	- -	- -
Benzo (a) Pyrene	0.012	0.0052	0.023	0.005	0.0083	- -	- -
Benzo (b) Fluoranthene	0.017	0.0073	0.027	0.0072	0.0097	- -	- -
Benzo (g,h,i) Perylene	0.015	0.0064	0.013	0.0059	0.0064	- -	- -
Benzo (k) Fluoranthene	0.014	0.0069	0.028	0.005	0.0082	- -	- -
Bis (2-Ethylhexyl) Phthalate	0.097	0.038	0.079	0.045	0.018	- -	35
Butyl Benzyl Phthalate	0.027	0.012	0.0093	0.0093	0.0089	- -	260
Chrysene	0.019	0.0085	0.02	0.0072	0.01	- -	- -
Di-n-Butyl Phthalate	0.0049	0.0058	0.0056	0.005	0.0093	- -	- -
Dibenz (a,h) Anthracene	0.0034	ND (<0.016)	0.0046	ND (<0.015)	ND (<0.017)	- -	- -
Diethyl Pthalate	0.0043	0.004	0.0038	0.0038	0.0042	- -	49,000
Dimethyl Phthalate	0.38	0.5	0.47	0.43	0.52	- -	- -
Fluoranthene	0.028	0.01	0.022	0.0081	0.016	- -	- -
Fluorene	0.0077	0.0061	ND (<0.014)	ND (<0.015)	ND (<0.017)	- -	- -
Indeno (1,2,3-c,d) Pyrene	0.012	0.0047	0.013	0.0042	0.0066	- -	- -
Naphthalene	0.0098	0.012	0.0048	0.0035	0.0035	- -	- -
Phenanthrene	0.016	0.01	0.0098	0.0071	0.0098	- -	- -
Phenol	ND (<0.013)	0.083	ND (<0.014)	ND (<0.015)	ND (<0.017)	- -	18,000
Pyrene	0.034	0.022	0.053	0.012	0.019	- -	- -
Benzoic Acid	0.041	0.047	0.062	0.047	0.052	- -	240,000
Benzo (e) Pyrene	0.015	0.0083	0.022	0.0067	0.0082	- -	- -
Perylene	0.026	0.025	0.023	0.018	0.02	- -	- -
Biphenyl	0.0028	0.0033	0.0034	0.0023	ND (<0.017)	- -	51
2,6-Dimethylnaphthalene	0.0085	0.0096	0.017	0.0081	0.0029	- -	- -
Other semi-VOCs	ND (<0.013 to 0.65)	ND (<0.016 to 0.78)	ND (<0.014 to 0.72)	ND (<0.015 to 0.76)	ND (<0.017 to 0.83)	- -	- -

Notes:

1 = Semi-volatile organic compounds analyzed by EPA Method 8270C SIM

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Analyte	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
PCB044	ND (<0.65)	**0.4**	**0.32**	**0.37**	ND (<0.83)	- -	- -
PCB049	**0.52**	**0.48**	**0.67**	**0.3**	**0.34**	- -	- -
PCB052	ND (<0.65)	**0.58**	ND (<0.72)	ND (<0.76)	ND (<0.83)	- -	- -
PCB060	ND (<0.65)	**0.2**	ND (<0.72)	ND (<0.76)	ND (<0.83)	- -	- -
PCB066	ND (<0.65)	**0.28**	**0.2**	**0.16**	ND (<0.83)	- -	- -
PCB070	ND (<0.65)	**0.37**	**0.29**	**0.25**	ND (<0.83)	- -	- -
PCB074	ND (<0.65)	**0.18**	ND (<0.72)	ND (<0.76)	ND (<0.83)	- -	- -
PCB087	ND (<0.65)	**0.4**	**0.27**	ND (<0.76)	ND (<0.83)	- -	- -
PCB095	ND (<0.65)	**0.69**	**0.4**	**0.51**	ND (<0.83)	- -	- -
PCB097	**0.25**	**0.46**	**0.28**	**0.42**	ND (<0.83)	- -	- -
PCB099	ND (<0.65)	**0.25**	**0.24**	**0.13**	ND (<0.83)	- -	- -
PCB101	**0.13**	**0.75**	**0.58**	**0.57**	**0.14**	- -	- -
PCB105	ND (<0.65)	**0.44**	**0.33**	**0.34**	ND (<0.83)	- -	**110**
PCB110	ND (<0.65)	**0.86**	**0.46**	**0.51**	**0.2**	- -	- -
PCB114	**0.56**	**0.28**	**0.18**	**0.25**	**0.26**	- -	**110**
PCB118	ND (<0.65)	**0.71**	**0.41**	**0.46**	ND (<0.83)	- -	**110**
PCB128	ND (<0.65)	ND (<0.78)	**0.17**	ND (<0.76)	ND (<0.83)	- -	- -
PCB138/158	ND (<1.3)	**0.83**	**0.55**	**0.64**	ND (<1.7)	- -	**110**
PCB149	**0.15**	**0.46**	**0.32**	**0.39**	ND (<0.83)	- -	- -
PCB153	**0.14**	**0.59**	**0.5**	**0.48**	ND (<0.83)	- -	- -
PCB170	ND (<0.65)	**0.28**	ND (<0.72)	**0.17**	ND (<0.83)	- -	- -
PCB180	ND (<0.65)	**0.25**	**0.3**	**0.29**	ND (<0.83)	- -	- -
PCB187	ND (<0.65)	**0.21**	**0.17**	ND (<0.76)	ND (<0.83)	- -	- -
Other PCB's	ND (<0.65)	ND (<0.78)	ND (<0.72)	ND (<0.76)	ND (<0.83)	- -	- -

Notes:

1 = Polychlorinated biphenyls analyzed by EPA Method 8270C.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 8
Summary of Soil Sample Analytical Results
Organochlorine Pesticides and Pyrethroids
Ventura Harbor, Ventura, CA

	Sample Designation					Regulatory Levels	
Analyte	A-C (µg/kg)	B-C (µg/kg)	C-C (µg/kg)	D-C (µg/kg)	E-C (µg/kg)	TTLC (µg/kg)	RSL Soil (µg/kg)
Orgaonchlorine Pesticides[1]							
Chlordane	ND (<13)	ND (<16)	ND (<14)	**11**	ND (<17)	**2,500,000**	**1,600**
2,4'-DDD	ND (<1.3)	**0.77**	ND (<1.4)	**1.4**	ND (<1.7)	**1,000,000**	**2,000**
2,4'-DDE	**8**	ND (<1.6)	ND (<1.4)	**1.9**	ND (<1.7)	**1,000,000**	**1,400**
4,4'-DDD	**3.4**	**20**	**5.4**	**0.47**	**2.9**	**1,000,000**	**2,000**
4,4'-DDE	**9.3**	**12**	**13**	**14**	**4.1**	**1,000,000**	**1,400**
4,4'-DDT	**0.8**	**1.2**	**1.4**	**33**	ND (<1.7)	**1,000,000**	**1,700**
Endosulfan II	ND (<1.3)	ND (<1.6)	ND (<1.4)	**0.85**	ND (<1.7)	**- -**	**370,000**
other pesticides	ND (<1.3 to 33)	ND (<1.6 to 39)	ND (<1.4 to 36)	ND (<1.5 to 38)	ND (<1.7 to 42)	**- -**	**- -**
							- -
Pyrethroids[2]							**- -**
Permethrin (cis/trans)	**5.5**	**4.4**	**4.1**	**4.7**	**5.2**	**- -**	**3,100,000**
other insecticides	ND (<0.65)	ND (<0.77)	ND (<0.71)	ND (<0.76)	ND (<0.83)	**- -**	**- -**

Notes:

1 = Organo-chlorine pesticides analyzed by EPA Method 8081A

2 = Pyrethroids analyzed by EPA Method 8270D.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 9
Summary of Soil Sample Analytical Results - Organotins
Ventura Harbor, Ventura, CA

	Sample Designation					Regulatory Levels	
Analyte	A-C (µg/kg)	B-C (µg/kg)	C-C (µg/kg)	D-C (µg/kg)	E-C (µg/kg)	TTLC (µg/kg)	RSL Soil (µg/kg)
Dibutyltin	ND(<3.9)	ND(<4.7)	**19**	**10**	ND(<5)	**- -**	**18,000**
Monobutylin	ND(<3.9)	ND(<4.7)	ND(<4.3)	ND(<4.6)	ND(<5)	**- -**	**- -**
Tetrabutyltin	ND(<3.9)	ND(<4.7)	ND(<4.3)	ND(<4.6)	ND(<5)	**- -**	**- -**
Tributyltin	**1.4**	**2.3**	**15**	**4.3**	**4.8**	**- -**	**18,000**

Notes:
1 = Organotins analyzed by Method Krone et al.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.
RSL = Regional Screening Levels for residential soil exposure from EPA Region 9.

Table 10
Summary of Soil Sample Analytical Results - Metals, Mercury, and Ammonia
Ventura Harbor, Ventura, CA

	Sample Designation					Regulatory Levels	
Analyte	A-C (mg/kg)	B-C (mg/kg)	C-C (mg/kg)	D-C (mg/kg)	E-C (mg/kg)	TTLC (mg/kg)	RSL Soil (mg/kg)
Metals[1]							
Arsenic	5.83	5.6	5.17	5.65	8.09	500	0.39
Cadmium	0.563	0.875	0.512	0.705	1.08	100	7.0
Chromium	17.3	21.7	16	20.3	32.4	2,500	- -
Copper	21.3	30.4	54.4	39.3	46.3	2,500	3,100
Lead	10.3	12	10.1	12.3	26.3	1,000	400
Nickel	21.6	25.7	17.9	24.4	40.4	2,000	3,800
Selenium	0.545	0.644	0.323	0.644	0.894	100	390
Silver	0.0832	0.113	0.0909	0.0813	0.017	500	390
Zinc	66.6	83.7	80.4	89.5	125	5,000	23,000
Mercury[2]	$ND_{(<0.05)}$	$ND_{(<0.05)}$	$ND_{(<0.05)}$	$ND_{(<0.05)}$	$ND_{(<0.05)}$	20	10
Ammonia as N[3]	24	11.7	12.2	8.8	23	- -	- -

Notes:

1 = Metals analyzed by EPA Method 6020.

2 = Mercury analyzed by EPA Method 7471A.

3 = Ammonia analyzed by EPA Method SM4500-NH3-D.

ND = Not detected at laboratory method Reporting Limit.

TTLC = Total Threshold Limit Concentration from California Code of Regulations Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.
RSL = Regional Screening Levels for residential soil exposure from EPA Region
9.

Table 11
Summary of Soil Sample Analytical Results
Percent Moisture, Total Volatile Solids, and Total Solids
Ventura Harbor, Ventura, CA

	Sample Designation				
Analyte	A-C (%)	B-C (%)	C-C (%)	D-C (%)	E-C (%)
Percent Moisture[1]	26	28	31.9	36.5	42.1
Solids, Volatile[2]	1.4	1.5	1.5	2	1.6
Solids, Total[3]	76.8	64.2	69.8	65.7	60

Notes:

1 = Percent moisture analyzed by EPA Method SM2540-G.

2 = Total volatile solids analyzed by EPA Method 160.4M

3 = Total solids analyzed by EPA Method SM 2540 B

ND = Not detected at laboratory method Practical Quantitation Limit.

Attachment B

May 2009 Sediment Sampling

May 2009 Sediment Sampling

The collection of sediment cores was conducted in six (6) discrete sample areas (Areas A through F) in Ventura Harbor (see Plates 2A through D). Within Areas A through D, 4 sediment samples were collected (Plates 2A through 2D). In Areas E and F, single discrete samples were collected (Plates 2B and 2C).

The cores were collected using an electric vibracore from a barge. The depth of the samples within Areas A, B and C were approximately a maximum depth of -20 feet MLLW (design depth is –18 feet MLLW). In Area D, the maximum depth of dredging was -17 feet MLLW (design depth is –15 feet MLLW). Area E (vicinity of the small boat ramp) was sampled to a depth of approximately -14 feet (design depth of -12 feet). The Area E is an addition to previous dredging plans and had not been sampled or dredged in over 20 years. Area F was extended to a maximum depth of -30 feet MLLW (design depth is -28 feet MLLW). This area was a natural depression previously used to contain minor quantities of inner harbor sediments. The material in this area is a composite of dredged sediments previously sampled within the inner harbor and do not represent externally developed fill.

In summary, the sediments investigated in the Ventura Harbor consisted generally of saturated silty clay. Fine to coarse grain sand were encountered at all locations sampled in the areas investigated.

The percent of the individual grain sizes (i.e., gravel, sand, silt and clay) of the Ventura Harbor samples are shown on Table 2. The percentages retained on a 200 sieve are approximately 42.7% for Area A, 53.8% for Area B, 62.8% for Area C and 39.1% for Area D.

The sediment samples were measured for total percent solids. The range of solids measured for the core samples was 66.9 (Area D) to 74.7 (Area C) percent.

The sediment samples were analyzed for total organic carbon (TOC). The results showed that between 0.51 and 0.80 percent of the samples in the core samples contained organic carbon.

The samples contained concentrations of volatile organics as acetone. Concentrations ranged from 34 to 146 µg/kg.

The sediment samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs). Three constituents were identified. Bis(2-ethylhexyl) phthalate was identified above the method detection limit and below the practical quantification limit (marked with a J) in areas A, B and C. Chrysene and fluorene were also identified below there practical quantification limits in Area B. The concentrations of constituents measured are shown on Table.

The chemical analyses conducted on the samples resulted in no detectable concentrations of polychlorinated biphenyls (PCBs), phenols, or cyanide. The laboratory results are attached in Appendix B. The volatile organic, acetone, was measured in all samples ranging from 34.0J (Area E) to 146 µg/kg (Area C).

Organochlorine pesticides were detected in all samples (see Table 4). DDD ranged from 1.06J in the Area A sample to 15.7 µg/kg in the Area D sample. DDE ranged from not detected in areas A, B and E samples to 13.8 µg/kg in the Area D sample. DDT was detected in Areas C and D at 0.450J and 0.980J µg/kg, respectively.

No detectable concentrations of Monobutyltin or Dibutyltin were measured. Tributyltin was detected in all samples ranging from 1.03 µg/kg in Area A to 7.20 µg/kg in Area E.

Metals analyses were conducted on the sediment samples. No silver concentrations were detected in the samples. A summary of the concentrations of metals measured is shown on Table 5. A complete copy of the metal analyses is shown in Appendix C. No concentrations were measured that exceed the total threshold limit concentration (TTLC) which identifies the material as hazardous (see Table 5). No concentrations were measured that were 10 times the soluble threshold limit concentration (STLC), which would infer that the sediments do not contain hazardous levels of a metal (see Table 5).

It was the conclusion of the report that the chemical concentrations measured in the Ventura Harbor sediments are not environmentally significant. Additionally, it was our opinion that no significant impact would occur from the disposal of Ventura Harbor sediments to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom.

The results of the sampling during this period and previous sampling episodes discussed at the beginning of this report are consistent. No significant changes have been observed between this sampling period and previous ones. The permits currently in effect are adequate to protect the waters along the Ventura Coast.

Table 2.
Sediment Grain Sizes
Ventura Harbor Dredge Investigation
March 2009

Grain Size	Area A	Area B	Area C	Area D	Area E	Area F
Gravel	1.0%	1.0%	6.0%	1.0%	3.0%	3.0%
Sand	41.7%	52.8%	56.8%	38.1%	44.2%	60.3%
Silt & Clay	57.3%	46.2%	37.2%	60.9%	52.8%	36.7%
Percent Retained on 200 Sieve	42.7%	53.8%	62.8%	39.1%	47.2%	63.3%

Table 5

Metals Concentrations, Sediment Sampling Investigation March 2009

In mg/kg

Constituent	Area A	Area B	Area C	Area D	Area E	Area F	TTLC	STLC*
Arsenic	2.62	2.88	2.77	2.94	3.36	3.11	500	50
Cadmium	0.267	0.344	0.383	0.353	0.384	0.333	500	50
Chromium	10.4	11.5	10.9	11.4	12.7	11.5	500	50
Copper	10.6	12.4	13.9	15.2	22.1	26.0	2500	250
Lead	3.69	6.40	4.89	7.14	9.97	7.94	1000	50
Mercury	0.0355	0.0231	0.0608	0.0293	0.0427	0.0335	20	2
Nickel	9.15	10.0	9.10	9.52	9.93	9.49	2000	200
Selenium	1.02	0.961	0.940	1.09	1.16	1.10	100	10
Silver	ND	ND	ND	ND	ND	ND	500	50
Zinc	28.6	30.0	29.5	34.7	41.8	41.2	5000	2500

ND = not detected at detection limit of 0.2 mg/kg
J = Below the practical quantification limit (PQL) but above the method detection level.

* Incorporates a 10 times dilution to correlate to sample concentrations shown above.

Table 3.
Semivolatile Organic Concentrations, Sediment Sampling Investigation March 2009
in µg/kg

Constituent	Area A	Area B	Area C	Area D	Area E	Area F	Water Quality Goals Maximum Contaminant Level (MCL)
Bis(2-Ethylhexyl)phthalate	42.0J	18.0J	27.0J	ND	ND	ND	None
Chrysene	15.0J	ND	ND	ND	ND	ND	0.2[1]
Fluorene	35.0J	ND	ND	ND	ND	ND	None

ND = not detected
[1] Proposed

Table 4.
Pesticide Concentrations, Sediment Sample Investigation March 2009
in µg/kg

							Regulatory Limits	
Constituents	Area A	Area B	Area C	Area D	Area E	Area F	TTLC	STLC*
4,4'-DDD	1.06J	2.48J	3.38J	15.7	1.26J	2.29J	1000	1000
4,4'-DDE	ND	ND	10.4	13.8	ND	10.3	1000	1000
4,4'-DDT	ND	ND	0.450J0.980 J	ND	ND	ND	1000	1000
Other pesticides	ND	ND	ND	ND	ND	ND		

ND = not detected
J = Below the practical quantification limit (PQL) but above the method detection level.

* Incorporates a 10 times dilution to correlate to sample concentrations shown above.

ATTACHMENT C

July 2005 Sediment Investigation

July 2005 Sediment Sampling

The collection of sediment cores occurred at four (4) discrete sample areas (Areas A through D) in Ventura Harbor (see Plates 2A through 2D). Within each area, 4 sediment samples were collected (Plate 2A through 2D) for compositing into a single sample for analysis.

The cores were collected using a vibracore suspended from the vessel Zypher on July 29, 2005. The cores were collected to a maximum depth of -20 feet MLLW in Areas A, B and part of C. The cores from Area D and part of Area C were collected to a maximum depth of -17 MLLW. The design depth for the harbor ranges from -15 to -18 feet MLLW however, some over dredging (maximum of 2 feet) may occur.

The sediments investigated in the Ventura Harbor consisted generally of saturated silty clay. Fine to coarse grain sand were encountered at all locations sampled in the areas investigated.

The grain sizes of the inner Ventura Harbor samples are shown in Appendix A. The percent of the individual grain sizes (i.e., gravel, sand, silt and clay) of the Ventura Harbor samples are shown on Table 2. The percentages retained on a 200 sieve are approximately 17.6% for Area A, 44.7% for Area B, 42.6% for Area C and 23.5% for Area D.

The sediment samples were measured for total percent solids. The range of solids measured for the core samples was 58.9 (Area D) to 68.3 (Area B) percent. The sediment samples were analyzed for total organic carbon (TOC). The results showed that between 0.53 and 0.70 percent of the samples in the core samples contained organic carbon.

The sediment samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs). All samples contained minor concentrations of pyrene and diethyl phthalate. In addition, 3 areas (A, C & D) contained bis(2-ethylhexyl) phthalate above the method detection limit and below the practical quantification limit. Benzo(a)pyrene, Benzo(b)fluoranthene and Benzo(k)fluoranthene were also found in areas A and D. The concentrations of constituents measured are shown on Table 3.

The chemical analyses conducted on the samples resulted in no detectable concentrations of volatile organic compounds, polychlorinated biphenyls (PCBs), phenols, or cyanide.

Organochlorine pesticides were detected in all samples (see Table 4). DDD ranged from not detected in the Area A sample to 8.16 µg/kg in the Area D sample. DDE ranged from 0.83 µg/kg in the Area A sample to 29.1 µg/kg in the Area D sample. DDT ranged from not detected in the Area A sample to 6.40 µg/kg in the Area D sample.

No detectable concentrations of Monobutyltin or Dibutyltin were measured. Tributyltin was detected in all samples at 22.0 µg/kg (A), 4.0 µg/kg (B), 15.0 µg/kg (C) and 10.0 µg/kg (D).

Metals analyses were conducted on the sediment samples. No selenium concentrations were detected in the samples. A summary of the concentrations of metals measured is shown on Table 5. No concentrations were measured that exceed the total threshold limit concentration (TTLC) which identify the material as hazardous (see Table 5). No concentrations were measured that were 10

times the soluble threshold limit concentration (STLC), which would infer that the sediments do not contain hazardous levels of a metal (see Table 5).

It was the conclusion of the report that the chemical concentrations measured in the Ventura Harbor sediments were not considered significant. Additionally, no significant impact was expected to occur from the deposition of Ventura Harbor sediments to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom.

Sediment grain size remains consistent with the river discharge. The grain size is predominantly silts and clays, however, based on previous studies of the Santa Clara River Mouth area, the grain size remains consistent with that discharged by the river. The Santa Clara River discharges approximately 78 percent of their sediment volume as silts and clays, whereas, the sediment volume consisting of silts and clays from this Ventura Harbor sampling episode is an average of approximately 67.9% (ranging from 55.3 to 82.4%).

It was the conclusion of the report that the sediment in the Ventura Harbor (48.5 percent silts and clays) is comparable with sediments regularly discharged by the Santa Clara River (78 percent silts and clays). Additionally, it is the conclusion of the report that the sediments dredged from the Ventura Harbor could be placed near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth.

ATTACHMENT D

May 2002 Sediment Investigation

May 2002 Sediment Sampling

The collection of sediment cores occurred at (4) discrete sample areas (Areas A through D) in Ventura Harbor (see Plates 8A and B) in May 2002. Within each area, 4 sediment samples were collected (Plate 8A and B).

The cores were collected using a gravity core suspended from a work barge on May 10, 2002. The cores were collected to a maximum depth of -20 feet MLLW in Areas A, B and part of C. The cores from Area D were collected to a maximum depth of -17 or -14 feet MLLW. The design depth for the harbor ranges from -12 to -18 feet MLLW however, some over dredging (maximum of 2 feet) may occur.

The sediments investigated in the Ventura Harbor consisted generally of saturated silty clay in the first 2 feet followed by silty sand or silty clay to the total depth. Fine to coarse grain sand with occasional gravels were encountered at various locations around the Ventura Harbor in the areas investigated.

The percent of the individual grain sizes (i.e., gravel, sand, silt and clay) of the Ventura Harbor samples are shown on Table 2. The percentages retained on a 200 sieve are approximately 43% for Area A, 25.3% for Area B, 38.2% for Area C and 18.9% for Area D.

The sediment samples were measured for total percent solids. The range of solids measured for the core samples was 59 to 70.7 percent. The sediment samples were analyzed for total organic carbon (TOC). The results showed that between 0.6 and 0.7 percent of the samples in the core samples contained organic carbon.

The sediment samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs). All samples contained minor concentrations of some of the constituents. The concentrations of constituents measured are shown on Table 3.

The chemical analyses conducted on the samples resulted in no detectable concentrations of volatile organic compounds, polychlorinated biphenyls (PCBs), phenols, or cyanide.

Organochlorine pesticides were detected in all samples (see Table 4). DDD ranged from not detected in the Area A sample to 9.0 µg/kg in the Area C sample. DDE ranged from 6.1 µg/kg in the Area A sample to 160 µg/kg in the Area D sample. DDT ranged from 3.9 µg/kg in the Area A sample to 17.3 µg/kg in the Area D sample.

With the exception of Sample from Area C, no detectable concentrations of organotin compounds were measured. Tributyltin was detected at 3.0 µg/kg and Dibutyltin Tin was measured at 1.38 µg/kg in the sample from Area C.

Metals analyses were conducted on the sediment samples. No mercury concentrations were detected in the samples. A summary of the concentrations of metals measured is shown on Table 5. No concentrations were measured that exceed the total threshold limit concentration (TTLC) which identify the material as hazardous (see Table 5). No concentrations were measured that were 10 times the soluble threshold limit concentration (STLC), which would infer that the sediments do not contain hazardous levels of a metal (see Table 5).

It was the conclusion of the report that the chemical concentrations measured in the Ventura Harbor sediments were not considered significant. Additionally, no significant impact was expected to occur from the deposition of Ventura Harbor sediments to waters offshore the Santa Clara River mouth or to authorized depressions on the harbor bottom.

Sediment grain size was finer than in past surveys (approximately 68 percent silts and clays). The grain size is predominantly silts and clays, however, based on previous studies of the Santa Clara River Mouth area, the grain size remains consistent with that discharged by the river.

It was the conclusion of the report that the sediment in the Ventura Harbor (68 percent silts and clays) is comparable with sediments regularly deposited by the Santa Clara River (79 percent silts and clays). Additionally, it is the conclusion of the report that the sediments dredged from the Ventura Harbor could be placed near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth.

ATTACHMENT E

November 1998 Sediment Investigation

November 1998 Sediment Investigation

In November 1998, sediment cores were collected from 8 locations in the Ventura Harbor (Plates 6A and 6B). AET collected sediment samples from the areas of proposed dredging within the Ventura Harbor. AET used a pneumatic vibracore system to collect the sediment samples.

A total of two (2) composite samples, for analyses, were removed from the areas investigated. The depth of the samples within the individual areas was approximately -20 feet MLLW for the Pierpont Basin, and -19 feet MLLW for Main Channel II.

One composite grab sample was collected offshore the Santa Clara River mouth (Plate 3). To achieve a representative sample, 3 samples were collected along the range of the expected beach deposition area at water depths of approximately 45 feet (Plate 7). The 3 samples were composited into a single sample for analysis.

The sediments investigated in the Ventura Harbor consisted generally of saturated silty clay in the first 2 feet followed by silty sand or silty clay to the total depth. Fine to coarse grain sand with occasional gravels were encountered at various locations around the Ventura Harbor in the areas investigated.

The grain sizes of the inner Ventura Harbor samples and the offshore sample are shown on Table 3. The percentages retained on a 200 sieve are approximately 56% for the Pierpont Basin and 64.5% for the Main Channel core samples. The offshore sample was approximately 46%.

The sediment samples were analyzed for total organic carbon (TOC). The results showed that between 0.3 and 0.5 percent of the samples in the core samples contained organic carbon. The offshore sample contained 0.25 percent TOC.

The sediment samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs). Samples V-1 and V-2 contained minor concentrations of some of the constituents. Sample V-1 contained 12 µg/kg (parts per billion) Chrysene and 14 µg/kg Pyrene. Sample V-2 contained 22 µg/kg Pyrene. No other detection of PAHs was measured.

The chemical analyses conducted on the samples resulted in no detectable concentrations of volatile organic compounds, polychlorinated biphenyls (PCBs), phenols, or cyanide.

Organochlorine pesticides were detected in all samples. Sample V-1 contained 2.28 and 3.69 µg/kg 4,4' DDD and 4,4'DDE, respectively. Sample V-2 contained 4.26, 7.39 and 3.54 µg/kg 4,4' DDD, 4,4'DDE and 4,4' DDT, respectively. The offshore sample, OS-1, contained 0.68 µg/kg 4,4' DDE.

All samples contained minor concentrations of phthalate esters. Table 4 shows the concentrations of the various phthalate esters measured in the samples. All samples contained concentrations of Bis(2-Ethylhexyl)phthalate, Di-n-butylphthalate, and Diethylphthalate. Sample V-1 also contained Butyl benzyl phthalate.

With the exception of Sample V-2, no detectable concentrations of organotin compounds were measured. Tributyltin was detected at 1 Φg/kg in Sample V-2.

Metals analyses were conducted on the sediment samples. No silver concentrations were detected in the samples. A summary of the concentrations of metals measured is shown on Table 5. No concentrations were measured that exceed the total threshold limit concentration (TTLC) which identify the material as hazardous (see Table 5). No concentrations were measured that were 10 times the soluble threshold limit concentration (STLC), which would infer that the sediments do not contain hazardous levels of a metal (see Table 5).

It was the conclusion of the 1998 report that the chemical concentrations measured in the Ventura Harbor sediments are comparable to the concentrations detected in offshore samples. Additionally, no significant impact was expected to occur from the deposition of inner harbor sediments to waters offshore the Santa Clara River mouth or to waters along the coast near Ventura Harbor.

The sediment grain size results from the Ventura Harbor showed that an average of approximately 60 percent of the material in the core samples would be retained on the 200-sieve. The sample collected from offshore the Santa Clara River mouth, showed a sediment grain size of approximately 46 percent that would be retained on the 200-sieve. The percentage measured in the harbor was greater than observed in the offshore sample.

It was the conclusion of the 1998 report that the sediment in the Ventura Harbor was comparable with sediments regularly discharged by the Santa Clara River. Additionally, it was the conclusion of the report that the sediments dredged from the Ventura Harbor could be deposited near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth.

ATTACHMENT F

March 1997 Sediment Investigation

March 1997 Sediment Investigation

The sampling included the collection of sediment cores from 11 locations in the Ventura Harbor shown on Plates 4A, 4B and 4C. Approximate volumes to be dredged are also shown. The cores were collected using a vibracore mounted on a 36-foot workboat.

AET collected sediment samples from the areas of proposed dredging within the Ventura Harbor waterways and in the Santa Clara River mouth. A total of four (4) composite samples, for analyses, were removed from the areas to be investigated. One composite sample was collected in each of the 3 Ventura Harbor areas (see Plate 4A, B & C), and 1 composite samples was collected within the Santa Clara River mouth (Plate 5).

The depth of the samples was approximately -20 feet MLLW (proposed dredge depth was -18 ft MLLW) in the Stub Channel (see Plate 4A), -19 feet MLLW (proposed dredge depth was -17 feet MLLW) in the Main Channel (see Plate 4B), and -14 feet MLLW (proposed dredge depth was -12 feet MLLW) in the Basin Channel (see Plate 4C).

The composite sample from the river mouth was collected by grab sampling that sample the top 10 cm of the sediment. Three samples were collected within the river mouth (see Plate 5) and handled as discussed above.

During this sediment investigation, the sediments of the Ventura Harbor consisted generally of silty clay up to 6.5 feet thick, followed generally by very fine-to-fine sand to total depth. Gravel layers were encountered at various locations around the Ventura Harbor. Organic debris was encountered in the Stub Channel near the north end.

The percent of the individual grain sizes (i.e., gravel, sand, silt and clay) of the Ventura Harbor and the river mouth are shown on Table 1. The percentages retained on a 200 sieve are approximately 47% for the Stub Channel, 31% for the Main channel and 45% for the Basin Channel. The river mouth contained less than 24% that would be retained on the 200-sieve.

The sediment samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAHs). Samples VH-1 contained minor concentrations of some of the constituents. Sample VH-1 contained 0.06 mg/kg Benzo(a)anthracene, 0.15 mg/kg Benzo(b)fluoranthene, 0.21 mg/kg Benzo(k)fluoranthene, 0.08 mg/kg Fluoranthene, 0.04 Phenanthrene, and 0.12 mg/kg Pyrene (see Appendix C). Sample VH-2 contained 0.05 mg/kg Benzo(b)fluoranthene, and 0.03 mg/kg Phenanthrene. Sample VH-3 contained only 0.02 mg/kg Fluoranthene. No other detection of PAHs was measured.

The chemical analyses conducted on the samples resulted in no detectable concentrations of volatile organic compounds, polychlorinated biphenyls (PCBs), organochlorine pesticides, phenols, phthalate esters, organotin compounds, and cyanide.

Metals analyses were conducted on the sediment samples. No Arsenic, Selenium or Silver concentrations were detected in the samples. A summary of the concentrations of metals measured is shown on Table 2. No concentrations were measured that exceed the total threshold limit concentration (TTLC) which identify the material as hazardous (see Table 2). No concentrations were measured that were 10 times the soluble threshold limit concentration (STLC), which would infer that the sediments do not contain hazardous levels of a metal (see Table 2).

It was the conclusion of the 1997 report that the chemical concentrations measured in the Ventura Harbor sediments were comparable to the concentrations detected in offshore samples. Additionally, no significant impact was expected to occur from the deposition of inner harbor sediments to waters offshore the Santa Clara River mouth.

It was also the conclusion of the 1997 report that the sediment in the Ventura Harbor was comparable with sediments regularly discharged by the Santa Clara River. Additionally, it was the conclusion of the report that the sediments dredged from the Ventura Harbor could be deposited near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth.

ATTACHMENT G

February 1994 Sediment Investigation

February 1994 Sediment Investigation

The sampling included the collection of sediment cores from 4 locations in the area of the inner harbor that was proposed for maintenance dredging (Plate 2). In addition, three samples were collected offshore the Santa Clara River mouth at depths of 45 to 47 feet (Plate 3). At each location within the harbor, a core of sediment was collected. The 3 offshore samples were composited into a single offshore sample.

The core samples from the inner harbor and the composite sample from offshore were analyzed for grain size, total organic carbon (TOC), and total solids. The grain sizes of the individual inner harbor samples and the composite offshore sample are:

Grain Size	Percent Inner Harbor	Percent Offshore
Gravel	0.135	0.000
Sand	36.870	29.926
Silt	42.162	64.794
Clay	20.832	5.280

The average percent that passes the 200-sieve (silt and clay) was calculated to be 62.9% for the inner harbor and 70.0% for offshore.

The sediment grain size results from the inner harbor and offshore reference areas were similar. The sediment that could pass the 200 sieve was approximately 63 percent for the inner harbor and 70 percent for the waters offshore the Santa Clara River mouth. Therefore, the waters, offshore the Santa Clara River mouth, have a greater percentage of the smaller sediment fractions.

The estimated deposition was calculated to be well within the parameters that have been deposited in the past. The estimated maximum deposition of 85,000 cubic yards per year is considered to be an insignificant volume when compared to the annual discharge from the Santa Clara River (2.5 million cubic yards per year). No affect to the marine environment would be expected from the deposition of the Harbor sediments to the area near the Santa Clara River mouth.

It was the conclusion of the 1994 report that the sediment in the Ventura Harbor was comparable with sediments regularly discharged by the Santa Clara River. Additionally, it was the conclusion of the report that the sediments dredged from the Ventura Harbor could be deposited near the river mouth without causing a long-term alteration of the grain size distributions in the area of the river mouth.

The percent by weight for total organic carbon was measured on the individual inner harbor and composite offshore samples. The percents on the inner harbor ranged from 0.42 to 0.47 percent. The offshore sample contained 0.18 percent total organic carbon. The percent by weight for total solids was measured on the individual inner harbor and composite offshore samples. The percents on the inner harbor samples ranged from 62 to 69 percent. The offshore sample contained 69 percent total solids. The analysis for total solids and total organic carbon are comparable for both the inner harbor and offshore areas.

No detectable concentrations of Polynuclear Aromatic Hydrocarbons (PAHs) including total Phthalates, Pesticides, Polychlorinated Biphenyls (PCBs), total recoverable petroleum hydrocarbons (TRPH), Phenols, or oil and grease were observed.

Sulfides were measured in both the inner harbor and offshore samples at 720 and 47 mg/kg, respectively. Although the levels were greater for the inner harbor samples, they were not considered to be significant. The sulfides in the harbor were expected to result from naturally occurring organic materials.

Five metals (Chromium, Copper, Lead, Nickel, and Zinc) were detected in the inner harbor sample at 11.6, 13.8, 17.7, 15.4, and 46.6 mg/kg, respectively. Four of the 5 metals were also detected in the offshore sample. Lead was not detected in the offshore sample. Chromium, Copper, Nickel and Zinc were detected at 8.40, 6.55, 8.45, and 30.4 mg/kg. Arsenic was measured in both the inner harbor and offshore samples at 5.9 and 4.3 mg/kg, respectively.

Various metals were detected in the inner harbor and offshore area samples. None of the concentrations detected exceed Title 22 standards. The report concluded that no metals impacts were expected to occur from deposition of dredged materials from the inner harbor to the marine environment offshore the Santa Clara River.

The inner harbor and offshore samples were analyzed for organic tin. Dibutyltin and Tributyltin were detected at 3 µg/kg in the inner harbor sample. No detectable concentrations of monobutyltin or tetrabutyltin were measured in the inner harbor sample. No organic tin was detected in the offshore sample. The concentrations of organic tin identified in the inner harbor sediments were considered insignificant.

It was the conclusion of the 1994 report that the chemical concentrations measured in the inner harbor sediments were comparable to the concentrations detected in offshore samples. Additionally, no significant impact was expected to occur from the deposition of inner harbor sediments to waters offshore the Santa Clara River mouth.

ATTACHMENT H

Grain Size Analytical Report

Report of Soil Testing

To: Ventura Harbor

Project Name: Bag A

Project Number: 30-1004G **Laboratory Number:**

Sample Data:

Date Sampled: December 22, 2015

Specifications:

Wet Wt:	392.9
Dry Wt:	392.9

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
1-1/2 inch (37 mm)	0.0	0.0	100			
1 inch (25 mm)	0.0	0.0	100			
3/4 inch (19 mm)	0.0	0.0	100			
1/2 inch (12.5 mm)	0.0	0.0	100			
3/8 inch (9.5 mm)	0.0	0.0	100			
#4 (4.75 mm)	1.1	0.3	100			
#8 (2.36 mm)	1.9	0.5	100			
#16 (1.18 mm)	2.9	0.7	99			
#30 (0.6 mm)	7.9	2.0	98			
#50 (0.3 mm)	36.7	9.3	91			
#100 (0.15 mm)	122.1	31.1	69			
#200 (0.075 mm)	313.1	79.7	18			
Sand Equivalent						
Classification						
Maximum Density (pcf)						
Opt. Moist. Content (%)						
R-Value						
LL:PI						

Tested in Accordance with ASTM C117, C136, D1557, D2419, D4824, D2487

Technician: BG Date: December 22, 2015

Reviewed By: Date:

Report of Soil Testing

To: Ventura Harbor

Project Name: Bag B

Project Number: 30-1004G **Laboratory Number:**

Sample Data:

Date Sampled: December 22, 2015

Specifications:

Wet Wt:	307.2
Dry Wt:	307.2

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
1-1/2 inch (37 mm)	0.0	0.0	100			
1 inch (25 mm)	0.0	0.0	100			
3/4 inch (19 mm)	0.0	0.0	100			
1/2 inch (12.5 mm)	0.0	0.0	100			
3/8 inch (9.5 mm)	4.2	1.4	99			
#4 (4.75 mm)	10.7	3.5	97			
#8 (2.36 mm)	16.2	5.3	95			
#16 (1.18 mm)	28.4	9.2	91			
#30 (0.6 mm)	53.4	17.4	83			
#50 (0.3 mm)	104.0	33.9	66			
#100 (0.15 mm)	231.2	75.3	25			
#200 (0.075 mm)	286.7	93.3	18			

Sand Equivalent				
Classification				
Maximum Density (pcf)				
Opt. Moist. Content (%)				
R-Value				
LL:PI				

Tested in Accordance with ASTM C117, C136, D1557, D2419, D4824, D2487

Technician: BG Date: December 22, 2015

Reviewed By: Date:

Report of Soil Testing

To: Ventura Harbor

Project Name: Bag C

Project Number: 30-1004G **Laboratory Number:**

Sample Data:

Date Sampled:

Specifications:

Wet Wt:	305.6
Dry Wt:	305.6

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
1-1/2 inch (37 mm)	0.0	0.0	100			
1 inch (25 mm)	0.0	0.0	100			
3/4 inch (19 mm)	0.0	0.0	100			
1/2 inch (12.5 mm)	0.0	0.0	100			
3/8 inch (9.5 mm)	0.0	0.0	100			
#4 (4.75 mm)	3.6	1.2	99			
#8 (2.36 mm)	7.5	2.5	98			
#16 (1.18 mm)	15.2	5.0	95			
#30 (0.6 mm)	35.6	11.6	88			
#50 (0.3 mm)	108.5	35.5	64			
#100 (0.15 mm)	238.6	78.1	22			
#200 (0.075 mm)	286.7	93.8	18			

Sand Equivalent				
Classification				
Maximum Density (pcf)				
Opt. Moist. Content (%)				
R-Value				
LL:PI				

Tested in Accordance with ASTM C117, C136, D1557, D2419, D4824, D2487

Technician: BG Date: December 23, 2015

Reviewed By: Date:

Report of Soil Testing

To: Ventura Harbor

Project Name: Bag D

Project Number: 30-1004G

Laboratory Number:

Sample Data:

Date Sampled:

Specifications:

Wet Wt:	323.6
Dry Wt:	323.6

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
1-1/2 inch (37 mm)	0.0	0.0	100			
1 inch (25 mm)	0.0	0.0	100			
3/4 inch (19 mm)	0.0	0.0	100			
1/2 inch (12.5 mm)	0.0	0.0	100			
3/8 inch (9.5 mm)	0.0	0.0	100			
#4 (4.75 mm)	0.0	0.0	100			
#8 (2.36 mm)	1.2	0.4	100			
#16 (1.18 mm)	9.1	2.8	97			
#30 (0.6 mm)	84.6	26.1	74			
#50 (0.3 mm)	153.7	47.5	53			
#100 (0.15 mm)	214.3	66.2	34			
#200 (0.075 mm)	269.7	83.3	18			

Sand Equivalent				
Classification				
Maximum Density (pcf)				
Opt. Moist. Content (%)				
R-Value				
LL:PI				

Tested in Accordance with ASTM C117, C136, D1557, D2419, D4824, D2487

Technician: BG Date: December 31, 2015

Reviewed By: Date:

Report of Soil Testing

To: Ventura Harbor

Project Name: Bag E

Project Number: 30-1004G

Laboratory Number:

Sample Data:

Date Sampled:

Specifications:

Wet Wt:	449.2
Dry Wt:	449.2

Sieve Size	Wt. (Grams)	% Retained	% Passing		Specifications	Remarks
1-1/2 inch (37 mm)	0.0	0.0	100			
1 inch (25 mm)	16.2	3.6	96			
3/4 inch (19 mm)	31.4	7.0	93			
1/2 inch (12.5 mm)	31.4	7.0	93			
3/8 inch (9.5 mm)	31.4	7.0	93			
#4 (4.75 mm)	34.8	7.7	92			
#8 (2.36 mm)	39.1	8.7	91			
#16 (1.18 mm)	45.2	10.1	90			
#30 (0.6 mm)	54.1	12.0	88			
#50 (0.3 mm)	84.9	18.9	81			
#100 (0.15 mm)	269.9	60.1	40			
#200 (0.075 mm)	440.6	98.1	18			

Sand Equivalent				
Classification				
Maximum Density (pcf)				
Opt. Moist. Content (%)				
R-Value				
LL:PI				

Tested in Accordance with ASTM C117, C136, D1557, D2419, D4824, D2487

Technician: BG Date: January 7, 2016

Reviewed By: Date:

ATTACHMENT I

Certified Analytical Reports

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone (805)650-1400
Attn Harry Finney

Number of Pages 7
Date Received 12/17/2015
Date Reported 12/29/2015

Job Number	Ordered	Client
66551	12/17/2015	AET

Project ID: 0048-290
Project Name: Ventura Harbor

Enclosed are the results of analyses on 5 samples analyzed as specified on attached chain of custody.

Rojert G. Araghi
Laboratory Director

ASL JOB # 66551

JOB NO.	TASK	PROJECT NAME	PROJECT MANAGER	SAMPLER	LABORATORY	GLOBAL I.D.
0048-290		Ventura Harbor	HF	Erik	ASL	NR

Sample Identification	Date	Time	Sample Container (Size/Material)	Sample Type (Liquid, Soil, etc.)	Preservative	Analyses Requested A	B	C	D	E	F	Laboratory ID#	Comments
A	12/16/15	9:00	8oz glass	Sediment	Refridge	X						341174	
B		10:00				X						341175	
C		11:00				X						341176	
D		1:00				X						341177	
E		2:00				X						341178	

Relinquished By (Signature)	Date	Time	Received By (Signature)
Erik Stevens	12-17-15	9:00	
Amy C R	12-17-15	12:45	Alex

Analyses:
A See attached
B
C
D
E
F

CHAIN OF CUSTODY RECORD

Applied Environmental Technologies, Inc.
(805) 650-1400 • FAX (805) 650-1576 • 4561 MARKET ST., SUITE B, VENTURA, CA 93003

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone: (805)650-1400
Attn: Harry Finney

Project ID: 0048-290
Project Name: Ventura Harbor

ASL Job Number	Submitted	Client
66551	12/17/2015	AET

Method: 7471A, Mercury (CVAA)

QC Batch No: 122515-2

Our Lab I.D.			341174	341175	341176	341177	341178
Client Sample I.D.			A	B	C	D	E
Date Sampled			12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015
Date Prepared			12/22/2015	12/22/2015	12/22/2015	12/22/2015	12/22/2015
Preparation Method							
Date Analyzed			12/23/2015	12/23/2015	12/23/2015	12/23/2015	12/23/2015
Matrix			Sediment	Sediment	Sediment	Sediment	Sediment
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
AA Metals							
Mercury	0.0100	0.0500	0.0250J	0.0409J	0.0295J	0.0303J	0.0361J

QUALITY CONTROL REPORT

QC Batch No: 122515-2

Analytes	LCS % REC	LCS/LCSD % Limit								
AA Metals										
Mercury	99	70-130								

AMERICAN SCIENTIFIC LABORATORIES, LLC
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ANALYTICAL RESULTS

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone: (805)650-1400
Attn: Harry Finney

Project ID: 0048-290
Project Name: Ventura Harbor

ASL Job Number	Submitted	Client
66551	12/17/2015	AET

Method: 8081A, Organochlorine Pesticides

QC Batch No: 122215-1

Our Lab I.D.			341174	341176	341177	341178	
Client Sample I.D.			A	C	D	E	
Date Sampled			12/16/2015	12/16/2015	12/16/2015	12/16/2015	
Date Prepared			12/22/2015	12/22/2015	12/22/2015	12/22/2015	
Preparation Method							
Date Analyzed			12/22/2015	12/22/2015	12/22/2015	12/22/2015	
Matrix			Sediment	Sediment	Sediment	Sediment	
Units			ug/kg	ug/kg	ug/kg	ug/kg	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Aldrin	0.332	2.00	ND	ND	ND	ND	
alpha-Hexachlorocyclohexane (Alpha-BHC)	0.330	2.00	ND	ND	ND	ND	
Beta-Hexachlorocyclohexane (Beta-BHC)	0.530	2.00	ND	ND	ND	ND	
Gamma-Chlordane	0.281	2.00	ND	ND	2.89	2.30	
alpha-Chlordane	0.378	2.00	ND	ND	4.70	4.89	
4,4'-DDD (DDD)	0.273	4.00	ND	ND	ND	ND	
4,4'-DDE (DDE)	0.332	4.00	ND	ND	7.17	ND	
4,4'-DDT (DDT)	0.346	4.00	ND	ND	ND	ND	
delta-Hexachlorocyclohexane (Delta-BHC)	0.367	2.00	ND	ND	ND	ND	
Dieldrin	0.284	4.00	ND	ND	ND	ND	
Endosulfan 1	0.611	2.00	ND	ND	ND	ND	
Endosulfan 11	0.778	4.00	ND	ND	ND	ND	
Endosulfan sulfate	0.522	4.00	ND	ND	ND	ND	
Endrin	0.359	4.00	ND	ND	ND	ND	
Endrin aldehyde	0.308	4.00	ND	ND	ND	ND	
Endrin ketone	0.486	4.00	ND	ND	ND	ND	
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	0.330	2.00	ND	ND	ND	ND	
Heptachlor	0.423	2.00	ND	ND	ND	ND	
Heptachlor epoxide	0.618	2.00	ND	ND	ND	ND	
Methoxychlor	0.673	4.00	ND	ND	ND	ND	
Toxaphene	17.0	170	ND	ND	ND	ND	
Chlordane, Total	17.0	170	ND	ND	ND	ND	

Our Lab I.D.			341174	341176	341177	341178	
Surrogates	**% Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	
Surrogate Percent Recovery							
Decachlorobiphenyl	43-169		84	98	87	83	

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Project ID: 0048-290
Project Name: Ventura Harbor

ASL Job Number	Submitted	Client
66551	12/17/2015	AET

Method: 8081A, Organochlorine Pesticides
QUALITY CONTROL REPORT

QC Batch No: 122215-1

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
Aldrin	111	110	<1	42-122	<30					
4,4'-DDT (DDT)	106	88	18.6	25-160	<30					
Dieldrin	105	104	<1	36-146	<30					
Endrin	112	109	2.7	30-147	<30					
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	95	110	14.6	32-127	<30					
Heptachlor	90	106	16.3	34-111	<30					

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone: (805)650-1400
Attn: Harry Finney

Page: **5**

Project ID: 0048-290
Project Name: Ventura Harbor

ASL Job Number	Submitted	Client
66551	12/17/2015	AET

Method: 8081A, Organochlorine Pesticides

QC Batch No: 122215-2

Our Lab I.D.			**341175**				
Client Sample I.D.			B				
Date Sampled			12/16/2015				
Date Prepared			12/22/2015				
Preparation Method							
Date Analyzed			12/22/2015				
Matrix			Sediment				
Units			ug/kg				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Aldrin	0.332	2.00	ND				
alpha-Hexachlorocyclohexane (Alpha-BHC)	0.330	2.00	ND				
Beta-Hexachlorocyclohexane (Beta-BHC)	0.530	2.00	ND				
Gamma-Chlordane	5.62	40.0	279				
alpha-Chlordane	7.56	40.0	375				
4,4'-DDD (DDD)	0.273	4.00	7.01				
4,4'-DDE (DDE)	0.332	4.00	ND				
4,4'-DDT (DDT)	0.346	4.00	ND				
delta-Hexachlorocyclohexane (Delta-BHC)	0.367	2.00	ND				
Dieldrin	0.284	4.00	4.27				
Endosulfan 1	0.611	2.00	ND				
Endosulfan 11	0.778	4.00	ND				
Endosulfan sulfate	0.522	4.00	ND				
Endrin	0.359	4.00	ND				
Endrin aldehyde	0.308	4.00	ND				
Endrin ketone	0.486	4.00	ND				
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	0.330	2.00	ND				
Heptachlor	0.423	2.00	ND				
Heptachlor epoxide	0.618	2.00	ND				
Methoxychlor	0.673	4.00	ND				
Toxaphene	17.0	170	ND				
Chlordane, Total	340	3400	3430				

Our Lab I.D.			**341175**				
Surrogates	**% Rec.Limit**		**% Rec.**				
Surrogate Percent Recovery							
Decachlorobiphenyl	43-169		87				

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Project ID: 0048-290
Project Name: Ventura Harbor

ASL Job Number	Submitted	Client
66551	12/17/2015	AET

Method: 8081A, Organochlorine Pesticides
QUALITY CONTROL REPORT

QC Batch No: 122215-2

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
Aldrin	111	110	<1	42-122	<30					
4,4'-DDT (DDT)	106	88	18.6	25-160	<30					
Dieldrin	105	104	<1	36-146	<30					
Endrin	112	109	2.7	30-147	<30					
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	95	110	14.6	32-127	<30					
Heptachlor	90	106	16.3	34-111	<30					

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone: (805)650-1400
Attn: Harry Finney

Page: **7**

Project ID: 0048-290
Project Name: Ventura Harbor

ASL Job Number	Submitted	Client
66551	12/17/2015	AET

Method: SM4500-NH3-D, Ammonia-Selective Electrode Method

QC Batch No: 122315-1

Our Lab I.D.			341174	341175	341176	341177	341178
Client Sample I.D.			A	B	C	D	E
Date Sampled			12/16/2015	12/16/2015	12/16/2015	12/16/2015	12/16/2015
Date Prepared			12/23/2015	12/23/2015	12/23/2015	12/23/2015	12/23/2015
Preparation Method							
Date Analyzed			12/23/2015	12/23/2015	12/23/2015	12/23/2015	12/23/2015
Matrix			Sediment	Sediment	Sediment	Sediment	Sediment
Units			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Conventionals							
Ammonia as N	1.00	2.00	29.8	17.7	27.0	32.0	40.4

QUALITY CONTROL REPORT

QC Batch No: 122315-1

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
Conventionals										
Ammonia as N	100	101	<1	80-120	20					

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WORK ORDER NUMBER: 15-12-1639

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: American Scientific Laboratories, LLC

Client Project Name: 66551

Attention: Alen Hosepians
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Approved for release on 01/13/2016 by:
Carla Hollowell
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: 66551
Work Order Number: 15-12-1639

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Work Order Narrative

Work Order: 15-12-1639 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 12/21/15. They were assigned to Work Order 15-12-1639.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Return to Contents

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Sample Summary

Client:	American Scientific Laboratories, LLC	Work Order:	15-12-1639
	2520 North San Fernando Road	Project Name:	66551
	Los Angeles, CA 90065-1324	PO Number:	
		Date/Time Received:	12/21/15 14:20
		Number of Containers:	5
Attn:	Alen Hosepians		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
341174	15-12-1639-1	12/16/15 09:00	1	Sediment
341175	15-12-1639-2	12/16/15 10:10	1	Sediment
341176	15-12-1639-3	12/16/15 11:00	1	Sediment
341177	15-12-1639-4	12/16/15 13:00	1	Sediment
341178	15-12-1639-5	12/16/15 14:00	1	Sediment

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: N/A
Method: SM 2540 B (M)
Units: %

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341174	**15-12-1639-1-AA**	**12/16/15 09:00**	**Sediment**	**N/A**	**01/04/16**	**01/04/16 17:00**	**G0104TSB1**

Parameter	Result	RL	DF	Qualifiers
Solids, Total	69.1	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341175	**15-12-1639-2-AA**	**12/16/15 10:10**	**Sediment**	**N/A**	**01/04/16**	**01/04/16 17:00**	**G0104TSB1**

Parameter	Result	RL	DF	Qualifiers
Solids, Total	75.8	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341176	**15-12-1639-3-AA**	**12/16/15 11:00**	**Sediment**	**N/A**	**01/04/16**	**01/04/16 17:00**	**G0104TSB1**

Parameter	Result	RL	DF	Qualifiers
Solids, Total	72.2	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341177	**15-12-1639-4-AA**	**12/16/15 13:00**	**Sediment**	**N/A**	**01/04/16**	**01/04/16 17:00**	**G0104TSB1**

Parameter	Result	RL	DF	Qualifiers
Solids, Total	60.4	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341178	**15-12-1639-5-AA**	**12/16/15 14:00**	**Sediment**	**N/A**	**01/04/16**	**01/04/16 17:00**	**G0104TSB1**

Parameter	Result	RL	DF	Qualifiers
Solids, Total	63.8	0.100	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-05-019-3176**	**N/A**	**Solid**	**N/A**	**01/04/16**	**01/04/16 17:00**	**G0104TSB1**

Parameter	Result	RL	DF	Qualifiers
Solids, Total	ND	0.100	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341174	**15-12-1639-1-A**	**12/16/15 09:00**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/30/15 03:04**	**151229L04**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Allethrin	ND	1.4	2.00	
Bifenthrin	2.1	1.4	2.00	
Cyfluthrin	ND	1.4	2.00	
Cypermethrin	ND	1.4	2.00	
Deltamethrin/Tralomethrin	ND	1.4	2.00	
Fenpropathrin	ND	1.4	2.00	
Fenvalerate/Esfenvalerate	ND	1.4	2.00	
Fluvalinate	ND	1.4	2.00	
Permethrin (cis/trans)	4.8	2.9	2.00	
Phenothrin	ND	1.4	2.00	
Resmethrin/Bioresmethrin	ND	1.4	2.00	
Tetramethrin	ND	1.4	2.00	
lambda-Cyhalothrin	ND	1.4	2.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorendate	77	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341175	**15-12-1639-2-A**	**12/16/15 10:10**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/30/15 03:55**	**151229L04**

Comment(s): - The reporting limit is elevated resulting from matrix interference.
- Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Allethrin	ND	1.3	2.00	
Bifenthrin	ND	1.3	2.00	
Cyfluthrin	ND	1.3	2.00	
Cypermethrin	ND	1.3	2.00	
Deltamethrin/Tralomethrin	ND	1.3	2.00	
Fenpropathrin	ND	1.3	2.00	
Fenvalerate/Esfenvalerate	ND	1.3	2.00	
Fluvalinate	ND	1.3	2.00	
Permethrin (cis/trans)	ND	2.6	2.00	
Phenothrin	ND	1.3	2.00	
Resmethrin/Bioresmethrin	ND	1.3	2.00	
Tetramethrin	ND	1.3	2.00	
lambda-Cyhalothrin	ND	1.3	2.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorendate	83	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341176	**15-12-1639-3-A**	**12/16/15 11:00**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/30/15 04:47**	**151229L04**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Allethrin	ND	0.69	1.00	
Bifenthrin	1.0	0.69	1.00	
Cyfluthrin	ND	0.69	1.00	
Cypermethrin	ND	0.69	1.00	
Deltamethrin/Tralomethrin	ND	0.69	1.00	
Fenpropathrin	ND	0.69	1.00	
Fenvalerate/Esfenvalerate	ND	0.69	1.00	
Fluvalinate	ND	0.69	1.00	
Permethrin (cis/trans)	1.9	1.4	1.00	
Phenothrin	ND	0.69	1.00	
Resmethrin/Bioresmethrin	ND	0.69	1.00	
Tetramethrin	ND	0.69	1.00	
lambda-Cyhalothrin	ND	0.69	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorendate	95	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341177	**15-12-1639-4-A**	**12/16/15 13:00**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/30/15 05:39**	**151229L04**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Allethrin	ND	0.82	1.00	
Bifenthrin	5.0	0.82	1.00	
Cyfluthrin	ND	0.82	1.00	
Cypermethrin	ND	0.82	1.00	
Deltamethrin/Tralomethrin	ND	0.82	1.00	
Fenpropathrin	4.9	0.82	1.00	
Fenvalerate/Esfenvalerate	1.9	0.82	1.00	
Fluvalinate	ND	0.82	1.00	
Permethrin (cis/trans)	21	1.6	1.00	
Phenothrin	ND	0.82	1.00	
Resmethrin/Bioresmethrin	ND	0.82	1.00	
Tetramethrin	ND	0.82	1.00	
lambda-Cyhalothrin	ND	0.82	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorendate	98	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341178	**15-12-1639-5-A**	**12/16/15 14:00**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/30/15 06:31**	**151229L04**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Allethrin	ND	0.78	1.00	
Bifenthrin	3.6	0.78	1.00	
Cyfluthrin	ND	0.78	1.00	
Cypermethrin	ND	0.78	1.00	
Deltamethrin/Tralomethrin	ND	0.78	1.00	
Fenpropathrin	ND	0.78	1.00	
Fenvalerate/Esfenvalerate	ND	0.78	1.00	
Fluvalinate	ND	0.78	1.00	
Permethrin (cis/trans)	2.6	1.6	1.00	
Phenothrin	ND	0.78	1.00	
Resmethrin/Bioresmethrin	ND	0.78	1.00	
Tetramethrin	ND	0.78	1.00	
lambda-Cyhalothrin	ND	0.78	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorendate	98	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-403-92**	**N/A**	**Solid**	**GCTQ 2**	**12/29/15**	**12/30/15 00:28**	**151229L04**

Parameter	Result	RL	DF	Qualifiers
Allethrin	ND	0.50	1.00	
Bifenthrin	ND	0.50	1.00	
Cyfluthrin	ND	0.50	1.00	
Cypermethrin	ND	0.50	1.00	
Deltamethrin/Tralomethrin	ND	0.50	1.00	
Fenpropathrin	ND	0.50	1.00	
Fenvalerate/Esfenvalerate	ND	0.50	1.00	
Fluvalinate	ND	0.50	1.00	
Permethrin (cis/trans)	ND	1.0	1.00	
Phenothrin	ND	0.50	1.00	
Resmethrin/Bioresmethrin	ND	0.50	1.00	
Tetramethrin	ND	0.50	1.00	
lambda-Cyhalothrin	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibutylchlorendate	66	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3050B
Method: EPA 6020
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341174	**15-12-1639-1-AA**	**12/16/15 09:00**	**Sediment**	**ICP/MS 03**	**12/28/15**	**01/06/16 16:30**	**151228L01E**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Arsenic	6.24	0.145	1.00	
Cadmium	0.563	0.145	1.00	
Chromium	28.7	0.145	1.00	
Copper	30.0	0.145	1.00	
Lead	12.1	0.145	1.00	
Nickel	31.2	0.145	1.00	
Selenium	0.449	0.145	1.00	
Silver	ND	0.145	1.00	
Zinc	94.0	1.45	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341175	**15-12-1639-2-AA**	**12/16/15 10:10**	**Sediment**	**ICP/MS 03**	**12/28/15**	**01/06/16 16:33**	**151228L01E**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Arsenic	3.54	0.132	1.00	
Cadmium	0.372	0.132	1.00	
Chromium	15.8	0.132	1.00	
Copper	17.1	0.132	1.00	
Lead	6.51	0.132	1.00	
Nickel	16.7	0.132	1.00	
Selenium	0.302	0.132	1.00	
Silver	ND	0.132	1.00	
Zinc	51.5	1.32	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3050B
Method: EPA 6020
Units: mg/kg

Project: 66551

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341176	**15-12-1639-3-AA**	**12/16/15 11:00**	**Sediment**	**ICP/MS 03**	**12/28/15**	**01/06/16 16:36**	**151228L01E**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Arsenic	4.98	0.139	1.00	
Cadmium	0.469	0.139	1.00	
Chromium	18.1	0.139	1.00	
Copper	53.6	0.139	1.00	
Lead	9.75	0.139	1.00	
Nickel	18.4	0.139	1.00	
Selenium	0.470	0.139	1.00	
Silver	ND	0.139	1.00	
Zinc	82.3	1.39	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341177	**15-12-1639-4-AA**	**12/16/15 13:00**	**Sediment**	**ICP/MS 03**	**12/28/15**	**01/06/16 16:39**	**151228L01E**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Arsenic	7.17	0.166	1.00	
Cadmium	0.673	0.166	1.00	
Chromium	31.8	0.166	1.00	
Copper	58.8	0.166	1.00	
Lead	17.5	0.166	1.00	
Nickel	33.2	0.166	1.00	
Selenium	0.715	0.166	1.00	
Silver	ND	0.166	1.00	
Zinc	131	1.66	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3050B
Method: EPA 6020
Units: mg/kg

Project: 66551

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341178	**15-12-1639-5-AA**	**12/16/15 14:00**	**Sediment**	**ICP/MS 03**	**12/28/15**	**01/06/16 16:41**	**151228L01E**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Arsenic	7.68	0.157	1.00	
Cadmium	0.739	0.157	1.00	
Chromium	31.5	0.157	1.00	
Copper	68.2	0.157	1.00	
Lead	15.8	0.157	1.00	
Nickel	29.7	0.157	1.00	
Selenium	0.694	0.157	1.00	
Silver	ND	0.157	1.00	
Zinc	137	1.57	1.00	

Method Blank	099-15-254-384	N/A	Solid	ICP/MS 03	12/28/15	12/29/15 17:24	151228L01E

Parameter	Result	RL	DF	Qualifiers
Arsenic	ND	0.100	1.00	
Cadmium	ND	0.100	1.00	
Chromium	ND	0.100	1.00	
Copper	ND	0.100	1.00	
Lead	ND	0.100	1.00	
Nickel	ND	0.100	1.00	
Selenium	ND	0.100	1.00	
Silver	ND	0.100	1.00	
Zinc	ND	1.00	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341174	**15-12-1639-1-AA**	**12/16/15 09:00**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/04/16 16:43**	**151230L11**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	14	1.00	
2,4,5-Trichlorophenol	ND	14	1.00	
2,4,6-Trichlorophenol	ND	14	1.00	
2,4-Dichlorophenol	ND	14	1.00	
2,4-Dimethylphenol	ND	720	1.00	
2,4-Dinitrophenol	ND	720	1.00	
2-Chlorophenol	ND	14	1.00	
2-Methylnaphthalene	ND	14	1.00	
2-Methylphenol	ND	14	1.00	
2-Nitrophenol	ND	720	1.00	
3/4-Methylphenol	ND	14	1.00	
4,6-Dinitro-2-Methylphenol	ND	720	1.00	
4-Chloro-3-Methylphenol	ND	14	1.00	
4-Nitrophenol	ND	720	1.00	
Acenaphthene	ND	14	1.00	
Acenaphthylene	ND	14	1.00	
Anthracene	ND	14	1.00	
Benzo (a) Anthracene	16	14	1.00	
Benzo (a) Pyrene	ND	14	1.00	
Benzo (b) Fluoranthene	21	14	1.00	
Benzo (g,h,i) Perylene	ND	14	1.00	
Benzo (k) Fluoranthene	ND	14	1.00	
Bis(2-Ethylhexyl) Phthalate	210	14	1.00	
Butyl Benzyl Phthalate	28	14	1.00	
Chrysene	26	14	1.00	
Di-n-Butyl Phthalate	59	14	1.00	
Di-n-Octyl Phthalate	ND	14	1.00	
Dibenz (a,h) Anthracene	ND	14	1.00	
Diethyl Phthalate	ND	14	1.00	
Dimethyl Phthalate	ND	14	1.00	
Fluoranthene	39	14	1.00	
Fluorene	ND	14	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	14	1.00	
Naphthalene	ND	14	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

eurofins | Calscience

Analytical Report

American Scientific Laboratories, LLC	Date Received:	12/21/15
2520 North San Fernando Road	Work Order:	15-12-1639
Los Angeles, CA 90065-1324	Preparation:	EPA 3541
	Method:	EPA 8270C SIM
	Units:	ug/kg
Project: 66551		Page 2 of 12

Parameter	Result	RL	DF	Qualifiers
Pentachlorophenol	ND	720	1.00	
Phenanthrene	16	14	1.00	
Phenol	ND	14	1.00	
Pyrene	46	14	1.00	
1,6,7-Trimethylnaphthalene	ND	14	1.00	
2,3,4,6-Tetrachlorophenol	ND	14	1.00	
2,6-Dichlorophenol	ND	14	1.00	
DCPA	ND	14	1.00	
Dibenzothiophene	ND	14	1.00	
Perthane	ND	14	1.00	
1-Methylphenanthrene	ND	14	1.00	
Benzo (e) Pyrene	ND	14	1.00	
Perylene	38	14	1.00	
Biphenyl	ND	14	1.00	
2,6-Dimethylnaphthalene	ND	14	1.00	
Isophorone	ND	720	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	
2-Fluorobiphenyl	111	14-146	
2-Fluorophenol	85	15-138	
Nitrobenzene-d5	94	18-162	
p-Terphenyl-d14	112	34-148	
Phenol-d6	94	17-141	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341175	**15-12-1639-2-AA**	**12/16/15 10:10**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/05/16 14:02**	**151230L11**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	13	1.00	
2,4,5-Trichlorophenol	ND	13	1.00	
2,4,6-Trichlorophenol	ND	13	1.00	
2,4-Dichlorophenol	ND	13	1.00	
2,4-Dimethylphenol	ND	660	1.00	
2,4-Dinitrophenol	ND	660	1.00	
2-Chlorophenol	ND	13	1.00	
2-Methylnaphthalene	ND	13	1.00	
2-Methylphenol	ND	13	1.00	
2-Nitrophenol	ND	660	1.00	
3/4-Methylphenol	ND	13	1.00	
4,6-Dinitro-2-Methylphenol	ND	660	1.00	
4-Chloro-3-Methylphenol	ND	13	1.00	
4-Nitrophenol	ND	660	1.00	
Acenaphthene	ND	13	1.00	
Acenaphthylene	ND	13	1.00	
Anthracene	ND	13	1.00	
Benzo (a) Anthracene	ND	13	1.00	
Benzo (a) Pyrene	ND	13	1.00	
Benzo (b) Fluoranthene	ND	13	1.00	
Benzo (g,h,i) Perylene	ND	13	1.00	
Benzo (k) Fluoranthene	ND	13	1.00	
Bis(2-Ethylhexyl) Phthalate	55	13	1.00	
Butyl Benzyl Phthalate	ND	13	1.00	
Chrysene	ND	13	1.00	
Di-n-Butyl Phthalate	13	13	1.00	
Di-n-Octyl Phthalate	ND	13	1.00	
Dibenz (a,h) Anthracene	ND	13	1.00	
Diethyl Phthalate	ND	13	1.00	
Dimethyl Phthalate	ND	13	1.00	
Fluoranthene	ND	13	1.00	
Fluorene	ND	13	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	13	1.00	
Naphthalene	ND	13	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC	Date Received:	12/21/15
2520 North San Fernando Road	Work Order:	15-12-1639
Los Angeles, CA 90065-1324	Preparation:	EPA 3541
	Method:	EPA 8270C SIM
	Units:	ug/kg
Project: 66551		Page 4 of 12

Parameter	Result	RL	DF	Qualifiers
Pentachlorophenol	ND	660	1.00	
Phenanthrene	ND	13	1.00	
Phenol	ND	13	1.00	
Pyrene	ND	13	1.00	
1,6,7-Trimethylnaphthalene	ND	13	1.00	
2,3,4,6-Tetrachlorophenol	ND	13	1.00	
2,6-Dichlorophenol	ND	13	1.00	
DCPA	ND	13	1.00	
Dibenzothiophene	ND	13	1.00	
Perthane	ND	13	1.00	
1-Methylphenanthrene	ND	13	1.00	
Benzo (e) Pyrene	ND	13	1.00	
Perylene	17	13	1.00	
Biphenyl	ND	13	1.00	
2,6-Dimethylnaphthalene	ND	13	1.00	
Isophorone	ND	660	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	33	32-143	
2-Fluorobiphenyl	119	14-146	
2-Fluorophenol	92	15-138	
Nitrobenzene-d5	101	18-162	
p-Terphenyl-d14	112	34-148	
Phenol-d6	98	17-141	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341176	**15-12-1639-3-AA**	**12/16/15 11:00**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/05/16 14:27**	**151230L11**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	14	1.00	
2,4,5-Trichlorophenol	ND	14	1.00	
2,4,6-Trichlorophenol	ND	14	1.00	
2,4-Dichlorophenol	ND	14	1.00	
2,4-Dimethylphenol	ND	690	1.00	
2,4-Dinitrophenol	ND	690	1.00	
2-Chlorophenol	ND	14	1.00	
2-Methylnaphthalene	ND	14	1.00	
2-Methylphenol	ND	14	1.00	
2-Nitrophenol	ND	690	1.00	
3/4-Methylphenol	ND	14	1.00	
4,6-Dinitro-2-Methylphenol	ND	690	1.00	
4-Chloro-3-Methylphenol	ND	14	1.00	
4-Nitrophenol	ND	690	1.00	
Acenaphthene	ND	14	1.00	
Acenaphthylene	ND	14	1.00	
Anthracene	ND	14	1.00	
Benzo (a) Anthracene	17	14	1.00	
Benzo (a) Pyrene	15	14	1.00	
Benzo (b) Fluoranthene	23	14	1.00	
Benzo (g,h,i) Perylene	ND	14	1.00	
Benzo (k) Fluoranthene	20	14	1.00	
Bis(2-Ethylhexyl) Phthalate	280	14	1.00	
Butyl Benzyl Phthalate	14	14	1.00	
Chrysene	27	14	1.00	
Di-n-Butyl Phthalate	18	14	1.00	
Di-n-Octyl Phthalate	ND	14	1.00	
Dibenz (a,h) Anthracene	ND	14	1.00	
Diethyl Phthalate	ND	14	1.00	
Dimethyl Phthalate	ND	14	1.00	
Fluoranthene	28	14	1.00	
Fluorene	ND	14	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	14	1.00	
Naphthalene	ND	14	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
Pentachlorophenol	ND	690	1.00	
Phenanthrene	14	14	1.00	
Phenol	ND	14	1.00	
Pyrene	56	14	1.00	
1,6,7-Trimethylnaphthalene	ND	14	1.00	
2,3,4,6-Tetrachlorophenol	ND	14	1.00	
2,6-Dichlorophenol	ND	14	1.00	
DCPA	ND	14	1.00	
Dibenzothiophene	ND	14	1.00	
Perthane	ND	14	1.00	
1-Methylphenanthrene	ND	14	1.00	
Benzo (e) Pyrene	16	14	1.00	
Perylene	19	14	1.00	
Biphenyl	ND	14	1.00	
2,6-Dimethylnaphthalene	ND	14	1.00	
Isophorone	ND	690	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	63	32-143	
2-Fluorobiphenyl	145	14-146	
2-Fluorophenol	133	15-138	
Nitrobenzene-d5	144	18-162	
p-Terphenyl-d14	143	34-148	
Phenol-d6	140	17-141	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341177	**15-12-1639-4-AA**	**12/16/15 13:00**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/04/16 17:59**	**151230L11**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	16	1.00	
2,4,5-Trichlorophenol	ND	16	1.00	
2,4,6-Trichlorophenol	ND	16	1.00	
2,4-Dichlorophenol	ND	16	1.00	
2,4-Dimethylphenol	ND	820	1.00	
2,4-Dinitrophenol	ND	820	1.00	
2-Chlorophenol	ND	16	1.00	
2-Methylnaphthalene	ND	16	1.00	
2-Methylphenol	ND	16	1.00	
2-Nitrophenol	ND	820	1.00	
3/4-Methylphenol	ND	16	1.00	
4,6-Dinitro-2-Methylphenol	ND	820	1.00	
4-Chloro-3-Methylphenol	ND	16	1.00	
4-Nitrophenol	ND	820	1.00	
Acenaphthene	ND	16	1.00	
Acenaphthylene	ND	16	1.00	
Anthracene	ND	16	1.00	
Benzo (a) Anthracene	ND	16	1.00	
Benzo (a) Pyrene	ND	16	1.00	
Benzo (b) Fluoranthene	ND	16	1.00	
Benzo (g,h,i) Perylene	ND	16	1.00	
Benzo (k) Fluoranthene	ND	16	1.00	
Bis(2-Ethylhexyl) Phthalate	160	16	1.00	
Butyl Benzyl Phthalate	30	16	1.00	
Chrysene	20	16	1.00	
Di-n-Butyl Phthalate	27	16	1.00	
Di-n-Octyl Phthalate	ND	16	1.00	
Dibenz (a,h) Anthracene	ND	16	1.00	
Diethyl Phthalate	ND	16	1.00	
Dimethyl Phthalate	ND	16	1.00	
Fluoranthene	23	16	1.00	
Fluorene	ND	16	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	16	1.00	
Naphthalene	ND	16	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

eurofins | Calscience

Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
Pentachlorophenol	ND	820	1.00	
Phenanthrene	21	16	1.00	
Phenol	ND	16	1.00	
Pyrene	35	16	1.00	
1,6,7-Trimethylnaphthalene	ND	16	1.00	
2,3,4,6-Tetrachlorophenol	ND	16	1.00	
2,6-Dichlorophenol	ND	16	1.00	
DCPA	ND	16	1.00	
Dibenzothiophene	ND	16	1.00	
Perthane	ND	16	1.00	
1-Methylphenanthrene	ND	16	1.00	
Benzo (e) Pyrene	ND	16	1.00	
Perylene	24	16	1.00	
Biphenyl	ND	16	1.00	
2,6-Dimethylnaphthalene	ND	16	1.00	
Isophorone	ND	820	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	32-143	
2-Fluorobiphenyl	103	14-146	
2-Fluorophenol	87	15-138	
Nitrobenzene-d5	93	18-162	
p-Terphenyl-d14	106	34-148	
Phenol-d6	89	17-141	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341178	**15-12-1639-5-AA**	**12/16/15 14:00**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/04/16 18:26**	**151230L11**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	16	1.00	
2,4,5-Trichlorophenol	ND	16	1.00	
2,4,6-Trichlorophenol	ND	16	1.00	
2,4-Dichlorophenol	ND	16	1.00	
2,4-Dimethylphenol	ND	780	1.00	
2,4-Dinitrophenol	ND	780	1.00	
2-Chlorophenol	ND	16	1.00	
2-Methylnaphthalene	ND	16	1.00	
2-Methylphenol	ND	16	1.00	
2-Nitrophenol	ND	780	1.00	
3/4-Methylphenol	ND	16	1.00	
4,6-Dinitro-2-Methylphenol	ND	780	1.00	
4-Chloro-3-Methylphenol	ND	16	1.00	
4-Nitrophenol	ND	780	1.00	
Acenaphthene	ND	16	1.00	
Acenaphthylene	ND	16	1.00	
Anthracene	ND	16	1.00	
Benzo (a) Anthracene	110	16	1.00	
Benzo (a) Pyrene	92	16	1.00	
Benzo (b) Fluoranthene	110	16	1.00	
Benzo (g,h,i) Perylene	35	16	1.00	
Benzo (k) Fluoranthene	120	16	1.00	
Bis(2-Ethylhexyl) Phthalate	290	16	1.00	
Butyl Benzyl Phthalate	80	16	1.00	
Chrysene	160	16	1.00	
Di-n-Butyl Phthalate	24	16	1.00	
Di-n-Octyl Phthalate	ND	16	1.00	
Dibenz (a,h) Anthracene	ND	16	1.00	
Diethyl Phthalate	ND	16	1.00	
Dimethyl Phthalate	25	16	1.00	
Fluoranthene	320	16	1.00	
Fluorene	ND	16	1.00	
Indeno (1,2,3-c,d) Pyrene	54	16	1.00	
Naphthalene	ND	16	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
Pentachlorophenol	ND	780	1.00	
Phenanthrene	140	16	1.00	
Phenol	ND	16	1.00	
Pyrene	310	16	1.00	
1,6,7-Trimethylnaphthalene	ND	16	1.00	
2,3,4,6-Tetrachlorophenol	ND	16	1.00	
2,6-Dichlorophenol	ND	16	1.00	
DCPA	ND	16	1.00	
Dibenzothiophene	ND	16	1.00	
Perthane	ND	16	1.00	
1-Methylphenanthrene	ND	16	1.00	
Benzo (e) Pyrene	92	16	1.00	
Perylene	56	16	1.00	
Biphenyl	ND	16	1.00	
2,6-Dimethylnaphthalene	20	16	1.00	
Isophorone	ND	780	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	46	32-143	
2-Fluorobiphenyl	98	14-146	
2-Fluorophenol	78	15-138	
Nitrobenzene-d5	79	18-162	
p-Terphenyl-d14	102	34-148	
Phenol-d6	86	17-141	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-256-140**	**N/A**	**Solid**	**GC/MS MM**	**12/30/15**	**01/04/16 15:26**	**151230L11**

Parameter	Result	RL	DF	Qualifiers
1-Methylnaphthalene	ND	10	1.00	
2,4,5-Trichlorophenol	ND	10	1.00	
2,4,6-Trichlorophenol	ND	10	1.00	
2,4-Dichlorophenol	ND	10	1.00	
2,4-Dimethylphenol	ND	500	1.00	
2,4-Dinitrophenol	ND	500	1.00	
2-Chlorophenol	ND	10	1.00	
2-Methylnaphthalene	ND	10	1.00	
2-Methylphenol	ND	10	1.00	
2-Nitrophenol	ND	500	1.00	
3/4-Methylphenol	ND	10	1.00	
4,6-Dinitro-2-Methylphenol	ND	500	1.00	
4-Chloro-3-Methylphenol	ND	10	1.00	
4-Nitrophenol	ND	500	1.00	
Acenaphthene	ND	10	1.00	
Acenaphthylene	ND	10	1.00	
Anthracene	ND	10	1.00	
Benzo (a) Anthracene	ND	10	1.00	
Benzo (a) Pyrene	ND	10	1.00	
Benzo (b) Fluoranthene	ND	10	1.00	
Benzo (g,h,i) Perylene	ND	10	1.00	
Benzo (k) Fluoranthene	ND	10	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	10	1.00	
Butyl Benzyl Phthalate	ND	10	1.00	
Chrysene	ND	10	1.00	
Di-n-Butyl Phthalate	ND	10	1.00	
Di-n-Octyl Phthalate	ND	10	1.00	
Dibenz (a,h) Anthracene	ND	10	1.00	
Diethyl Phthalate	ND	10	1.00	
Dimethyl Phthalate	ND	10	1.00	
Fluoranthene	ND	10	1.00	
Fluorene	ND	10	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	10	1.00	
Naphthalene	ND	10	1.00	
Pentachlorophenol	ND	500	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
Phenanthrene	ND	10	1.00	
Phenol	ND	10	1.00	
Pyrene	ND	10	1.00	
1,6,7-Trimethylnaphthalene	ND	10	1.00	
2,3,4,6-Tetrachlorophenol	ND	10	1.00	
2,6-Dichlorophenol	ND	10	1.00	
DCPA	ND	10	1.00	
Dibenzothiophene	ND	10	1.00	
Perthane	ND	10	1.00	
1-Methylphenanthrene	ND	10	1.00	
Benzo (e) Pyrene	ND	10	1.00	
Perylene	ND	10	1.00	
Biphenyl	ND	10	1.00	
2,6-Dimethylnaphthalene	ND	10	1.00	
Isophorone	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	62	32-143	
2-Fluorobiphenyl	54	14-146	
2-Fluorophenol	40	15-138	
Nitrobenzene-d5	66	18-162	
p-Terphenyl-d14	79	34-148	
Phenol-d6	25	17-141	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341174	**15-12-1639-1-AA**	**12/16/15 09:00**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 16:55**	**151230L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
PCB003	ND	0.29	1.00	
PCB005/008	ND	0.58	1.00	
PCB015	ND	0.29	1.00	
PCB018	ND	0.29	1.00	
PCB027	ND	0.29	1.00	
PCB028	ND	0.29	1.00	
PCB029	ND	0.29	1.00	
PCB031	ND	0.29	1.00	
PCB033	ND	0.29	1.00	
PCB037	ND	0.29	1.00	
PCB044	ND	0.29	1.00	
PCB049	ND	0.29	1.00	
PCB052	ND	0.29	1.00	
PCB056	ND	0.29	1.00	
PCB060	ND	0.29	1.00	
PCB066	ND	0.29	1.00	
PCB070	ND	0.29	1.00	
PCB074	ND	0.29	1.00	
PCB077	ND	0.29	1.00	
PCB081	ND	0.29	1.00	
PCB087	ND	0.29	1.00	
PCB095	ND	0.29	1.00	
PCB097	ND	0.29	1.00	
PCB099	ND	0.29	1.00	
PCB101	ND	0.29	1.00	
PCB105	ND	0.29	1.00	
PCB110	ND	0.29	1.00	
PCB114	ND	0.29	1.00	
PCB118	ND	0.29	1.00	
PCB119	ND	0.29	1.00	
PCB123	ND	0.29	1.00	
PCB126	ND	0.29	1.00	
PCB128	ND	0.29	1.00	
PCB132/153	ND	0.58	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
PCB137	ND	0.29	1.00	
PCB138/158	ND	0.58	1.00	
PCB141	ND	0.29	1.00	
PCB149	ND	0.29	1.00	
PCB151	ND	0.29	1.00	
PCB156	ND	0.29	1.00	
PCB157	ND	0.29	1.00	
PCB167	ND	0.29	1.00	
PCB168	ND	0.29	1.00	
PCB169	ND	0.29	1.00	
PCB170	ND	0.29	1.00	
PCB174	ND	0.29	1.00	
PCB177	ND	0.29	1.00	
PCB180	ND	0.29	1.00	
PCB183	ND	0.29	1.00	
PCB184	ND	0.29	1.00	
PCB187	ND	0.29	1.00	
PCB189	ND	0.29	1.00	
PCB194	ND	0.29	1.00	
PCB195	ND	0.29	1.00	
PCB200	ND	0.29	1.00	
PCB201	ND	0.29	1.00	
PCB203	ND	0.29	1.00	
PCB206	ND	0.29	1.00	
PCB209	ND	0.29	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	85	50-150	
p-Terphenyl-d14	100	50-150	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Project: 66551

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341175	**15-12-1639-2-AA**	**12/16/15 10:10**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 17:18**	**151230L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
PCB003	ND	0.26	1.00	
PCB005/008	ND	0.52	1.00	
PCB015	ND	0.26	1.00	
PCB018	ND	0.26	1.00	
PCB027	ND	0.26	1.00	
PCB028	ND	0.26	1.00	
PCB029	ND	0.26	1.00	
PCB031	ND	0.26	1.00	
PCB033	ND	0.26	1.00	
PCB037	ND	0.26	1.00	
PCB044	ND	0.26	1.00	
PCB049	ND	0.26	1.00	
PCB052	ND	0.26	1.00	
PCB056	ND	0.26	1.00	
PCB060	ND	0.26	1.00	
PCB066	ND	0.26	1.00	
PCB070	0.73	0.26	1.00	
PCB074	ND	0.26	1.00	
PCB077	ND	0.26	1.00	
PCB081	ND	0.26	1.00	
PCB087	ND	0.26	1.00	
PCB095	0.43	0.26	1.00	
PCB097	ND	0.26	1.00	
PCB099	0.34	0.26	1.00	
PCB101	0.42	0.26	1.00	
PCB105	0.89	0.26	1.00	
PCB110	0.55	0.26	1.00	
PCB114	ND	0.26	1.00	
PCB118	0.59	0.26	1.00	
PCB119	ND	0.26	1.00	
PCB123	ND	0.26	1.00	
PCB126	ND	0.26	1.00	
PCB128	ND	0.26	1.00	
PCB132/153	0.73	0.52	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
PCB137	ND	0.26	1.00	
PCB138/158	0.61	0.52	1.00	
PCB141	ND	0.26	1.00	
PCB149	0.42	0.26	1.00	
PCB151	ND	0.26	1.00	
PCB156	ND	0.26	1.00	
PCB157	ND	0.26	1.00	
PCB167	ND	0.26	1.00	
PCB168	ND	0.26	1.00	
PCB169	ND	0.26	1.00	
PCB170	ND	0.26	1.00	
PCB174	ND	0.26	1.00	
PCB177	ND	0.26	1.00	
PCB180	ND	0.26	1.00	
PCB183	ND	0.26	1.00	
PCB184	ND	0.26	1.00	
PCB187	ND	0.26	1.00	
PCB189	ND	0.26	1.00	
PCB194	ND	0.26	1.00	
PCB195	ND	0.26	1.00	
PCB200	ND	0.26	1.00	
PCB201	ND	0.26	1.00	
PCB203	ND	0.26	1.00	
PCB206	ND	0.26	1.00	
PCB209	ND	0.26	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	95	50-150	
p-Terphenyl-d14	106	50-150	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341176	**15-12-1639-3-AA**	**12/16/15 11:00**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 17:42**	**151230L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
PCB003	ND	0.28	1.00	
PCB005/008	ND	0.55	1.00	
PCB015	ND	0.28	1.00	
PCB018	ND	0.28	1.00	
PCB027	ND	0.28	1.00	
PCB028	ND	0.28	1.00	
PCB029	ND	0.28	1.00	
PCB031	ND	0.28	1.00	
PCB033	ND	0.28	1.00	
PCB037	ND	0.28	1.00	
PCB044	ND	0.28	1.00	
PCB049	ND	0.28	1.00	
PCB052	ND	0.28	1.00	
PCB056	ND	0.28	1.00	
PCB060	ND	0.28	1.00	
PCB066	0.28	0.28	1.00	
PCB070	ND	0.28	1.00	
PCB074	ND	0.28	1.00	
PCB077	ND	0.28	1.00	
PCB081	ND	0.28	1.00	
PCB087	ND	0.28	1.00	
PCB095	0.51	0.28	1.00	
PCB097	ND	0.28	1.00	
PCB099	0.32	0.28	1.00	
PCB101	0.82	0.28	1.00	
PCB105	ND	0.28	1.00	
PCB110	0.48	0.28	1.00	
PCB114	ND	0.28	1.00	
PCB118	0.62	0.28	1.00	
PCB119	ND	0.28	1.00	
PCB123	ND	0.28	1.00	
PCB126	ND	0.28	1.00	
PCB128	ND	0.28	1.00	
PCB132/153	0.89	0.55	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
PCB137	ND	0.28	1.00	
PCB138/158	0.86	0.55	1.00	
PCB141	ND	0.28	1.00	
PCB149	0.54	0.28	1.00	
PCB151	ND	0.28	1.00	
PCB156	ND	0.28	1.00	
PCB157	ND	0.28	1.00	
PCB167	ND	0.28	1.00	
PCB168	ND	0.28	1.00	
PCB169	ND	0.28	1.00	
PCB170	ND	0.28	1.00	
PCB174	ND	0.28	1.00	
PCB177	ND	0.28	1.00	
PCB180	ND	0.28	1.00	
PCB183	ND	0.28	1.00	
PCB184	ND	0.28	1.00	
PCB187	ND	0.28	1.00	
PCB189	ND	0.28	1.00	
PCB194	ND	0.28	1.00	
PCB195	ND	0.28	1.00	
PCB200	ND	0.28	1.00	
PCB201	ND	0.28	1.00	
PCB203	ND	0.28	1.00	
PCB206	ND	0.28	1.00	
PCB209	ND	0.28	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	89	50-150	
p-Terphenyl-d14	100	50-150	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341177	**15-12-1639-4-AA**	**12/16/15 13:00**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 18:07**	**151230L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
PCB003	ND	0.33	1.00	
PCB005/008	ND	0.66	1.00	
PCB015	ND	0.33	1.00	
PCB018	ND	0.33	1.00	
PCB027	ND	0.33	1.00	
PCB028	ND	0.33	1.00	
PCB029	ND	0.33	1.00	
PCB031	ND	0.33	1.00	
PCB033	ND	0.33	1.00	
PCB037	ND	0.33	1.00	
PCB044	ND	0.33	1.00	
PCB049	ND	0.33	1.00	
PCB052	ND	0.33	1.00	
PCB056	ND	0.33	1.00	
PCB060	ND	0.33	1.00	
PCB066	ND	0.33	1.00	
PCB070	ND	0.33	1.00	
PCB074	ND	0.33	1.00	
PCB077	ND	0.33	1.00	
PCB081	ND	0.33	1.00	
PCB087	2.9	0.33	1.00	
PCB095	0.58	0.33	1.00	
PCB097	ND	0.33	1.00	
PCB099	0.53	0.33	1.00	
PCB101	0.84	0.33	1.00	
PCB105	ND	0.33	1.00	
PCB110	0.83	0.33	1.00	
PCB114	ND	0.33	1.00	
PCB118	0.99	0.33	1.00	
PCB119	ND	0.33	1.00	
PCB123	ND	0.33	1.00	
PCB126	ND	0.33	1.00	
PCB128	ND	0.33	1.00	
PCB132/153	1.4	0.66	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
PCB137	ND	0.33	1.00	
PCB138/158	1.6	0.66	1.00	
PCB141	ND	0.33	1.00	
PCB149	1.2	0.33	1.00	
PCB151	ND	0.33	1.00	
PCB156	ND	0.33	1.00	
PCB157	ND	0.33	1.00	
PCB167	ND	0.33	1.00	
PCB168	ND	0.33	1.00	
PCB169	ND	0.33	1.00	
PCB170	ND	0.33	1.00	
PCB174	0.61	0.33	1.00	
PCB177	ND	0.33	1.00	
PCB180	ND	0.33	1.00	
PCB183	ND	0.33	1.00	
PCB184	ND	0.33	1.00	
PCB187	ND	0.33	1.00	
PCB189	ND	0.33	1.00	
PCB194	ND	0.33	1.00	
PCB195	ND	0.33	1.00	
PCB200	ND	0.33	1.00	
PCB201	ND	0.33	1.00	
PCB203	ND	0.33	1.00	
PCB206	ND	0.33	1.00	
PCB209	ND	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	95	50-150	
p-Terphenyl-d14	106	50-150	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341178	**15-12-1639-5-AA**	**12/16/15 14:00**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 18:36**	**151230L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
PCB003	ND	0.31	1.00	
PCB005/008	ND	0.62	1.00	
PCB015	ND	0.31	1.00	
PCB018	ND	0.31	1.00	
PCB027	ND	0.31	1.00	
PCB028	ND	0.31	1.00	
PCB029	ND	0.31	1.00	
PCB031	ND	0.31	1.00	
PCB033	ND	0.31	1.00	
PCB037	ND	0.31	1.00	
PCB044	ND	0.31	1.00	
PCB049	ND	0.31	1.00	
PCB052	ND	0.31	1.00	
PCB056	ND	0.31	1.00	
PCB060	ND	0.31	1.00	
PCB066	0.48	0.31	1.00	
PCB070	0.50	0.31	1.00	
PCB074	ND	0.31	1.00	
PCB077	ND	0.31	1.00	
PCB081	ND	0.31	1.00	
PCB087	1.1	0.31	1.00	
PCB095	0.65	0.31	1.00	
PCB097	ND	0.31	1.00	
PCB099	0.57	0.31	1.00	
PCB101	0.83	0.31	1.00	
PCB105	ND	0.31	1.00	
PCB110	1.4	0.31	1.00	
PCB114	ND	0.31	1.00	
PCB118	1.1	0.31	1.00	
PCB119	ND	0.31	1.00	
PCB123	ND	0.31	1.00	
PCB126	ND	0.31	1.00	
PCB128	ND	0.31	1.00	
PCB132/153	1.2	0.62	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
PCB137	ND	0.31	1.00	
PCB138/158	1.4	0.62	1.00	
PCB141	ND	0.31	1.00	
PCB149	0.81	0.31	1.00	
PCB151	ND	0.31	1.00	
PCB156	ND	0.31	1.00	
PCB157	ND	0.31	1.00	
PCB167	ND	0.31	1.00	
PCB168	ND	0.31	1.00	
PCB169	ND	0.31	1.00	
PCB170	ND	0.31	1.00	
PCB174	ND	0.31	1.00	
PCB177	ND	0.31	1.00	
PCB180	ND	0.31	1.00	
PCB183	ND	0.31	1.00	
PCB184	ND	0.31	1.00	
PCB187	ND	0.31	1.00	
PCB189	ND	0.31	1.00	
PCB194	ND	0.31	1.00	
PCB195	ND	0.31	1.00	
PCB200	ND	0.31	1.00	
PCB201	ND	0.31	1.00	
PCB203	ND	0.31	1.00	
PCB206	ND	0.31	1.00	
PCB209	ND	0.31	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	93	50-150	
p-Terphenyl-d14	111	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg
Page 11 of 12

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-418-191**	**N/A**	**Solid**	**GC/MS HHH**	**12/30/15**	**01/04/16 15:45**	**151230L12**

Parameter	Result	RL	DF	Qualifiers
PCB003	ND	0.20	1.00	
PCB005/008	ND	0.40	1.00	
PCB015	ND	0.20	1.00	
PCB018	ND	0.20	1.00	
PCB027	ND	0.20	1.00	
PCB028	ND	0.20	1.00	
PCB029	ND	0.20	1.00	
PCB031	ND	0.20	1.00	
PCB033	ND	0.20	1.00	
PCB037	ND	0.20	1.00	
PCB044	ND	0.20	1.00	
PCB049	ND	0.20	1.00	
PCB052	ND	0.20	1.00	
PCB056	ND	0.20	1.00	
PCB060	ND	0.20	1.00	
PCB066	ND	0.20	1.00	
PCB070	ND	0.20	1.00	
PCB074	ND	0.20	1.00	
PCB077	ND	0.20	1.00	
PCB081	ND	0.20	1.00	
PCB087	ND	0.20	1.00	
PCB095	ND	0.20	1.00	
PCB097	ND	0.20	1.00	
PCB099	ND	0.20	1.00	
PCB101	ND	0.20	1.00	
PCB105	ND	0.20	1.00	
PCB110	ND	0.20	1.00	
PCB114	ND	0.20	1.00	
PCB118	ND	0.20	1.00	
PCB119	ND	0.20	1.00	
PCB123	ND	0.20	1.00	
PCB126	ND	0.20	1.00	
PCB128	ND	0.20	1.00	
PCB132/153	ND	0.40	1.00	
PCB137	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
PCB138/158	ND	0.40	1.00	
PCB141	ND	0.20	1.00	
PCB149	ND	0.20	1.00	
PCB151	ND	0.20	1.00	
PCB156	ND	0.20	1.00	
PCB157	ND	0.20	1.00	
PCB167	ND	0.20	1.00	
PCB168	ND	0.20	1.00	
PCB169	ND	0.20	1.00	
PCB170	ND	0.20	1.00	
PCB174	ND	0.20	1.00	
PCB177	ND	0.20	1.00	
PCB180	ND	0.20	1.00	
PCB183	ND	0.20	1.00	
PCB184	ND	0.20	1.00	
PCB187	ND	0.20	1.00	
PCB189	ND	0.20	1.00	
PCB194	ND	0.20	1.00	
PCB195	ND	0.20	1.00	
PCB200	ND	0.20	1.00	
PCB201	ND	0.20	1.00	
PCB203	ND	0.20	1.00	
PCB206	ND	0.20	1.00	
PCB209	ND	0.20	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	94	50-150	
p-Terphenyl-d14	97	50-150	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3550B (M)
Method: Organotins by Krone et al.
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341174	**15-12-1639-1-AA**	**12/16/15 09:00**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 11:27**	**151229L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Dibutyltin	ND	4.3	1.00	
Monobutyltin	ND	4.3	1.00	
Tetrabutyltin	ND	4.3	1.00	
Tributyltin	ND	4.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	124	27-135	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341175	**15-12-1639-2-AA**	**12/16/15 10:10**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 11:43**	**151229L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Dibutyltin	ND	3.9	1.00	
Monobutyltin	ND	3.9	1.00	
Tetrabutyltin	ND	3.9	1.00	
Tributyltin	ND	3.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	99	27-135	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341176	**15-12-1639-3-AA**	**12/16/15 11:00**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 11:59**	**151229L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Dibutyltin	30	4.1	1.00	
Monobutyltin	ND	4.1	1.00	
Tetrabutyltin	ND	4.1	1.00	
Tributyltin	10	4.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	114	27-135	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3550B (M)
Method: Organotins by Krone et al.
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341177	**15-12-1639-4-AA**	**12/16/15 13:00**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 12:15**	**151229L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Dibutyltin	14	4.9	1.00	
Monobutyltin	ND	4.9	1.00	
Tetrabutyltin	ND	4.9	1.00	
Tributyltin	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	91	27-135	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
341178	**15-12-1639-5-AA**	**12/16/15 14:00**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 12:31**	**151229L12**

Comment(s): - Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qualifiers
Dibutyltin	10	4.6	1.00	
Monobutyltin	ND	4.6	1.00	
Tetrabutyltin	ND	4.6	1.00	
Tributyltin	ND	4.6	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	96	27-135	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-07-016-1354**	**N/A**	**Solid**	**GC/MS Y**	**12/29/15**	**01/04/16 10:39**	**151229L12**

Parameter	Result	RL	DF	Qualifiers
Dibutyltin	ND	3.0	1.00	
Monobutyltin	ND	3.0	1.00	
Tetrabutyltin	ND	3.0	1.00	
Tributyltin	ND	3.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	124	27-135	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
15-12-1320-1	**Sample**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/30/15 01:20**	**151229S04**
15-12-1320-1	**Matrix Spike**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/31/15 07:48**	**151229S04**
15-12-1320-1	**Matrix Spike Duplicate**	**Sediment**	**GCTQ 2**	**12/29/15**	**12/31/15 08:39**	**151229S04**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Allethrin	ND	5.000	2.119	42	1.942	39	10-148	9	0-30	
Bifenthrin	1.190	5.000	3.033	37	3.023	37	26-128	0	0-30	
Cyfluthrin	ND	5.000	8.598	172	8.182	164	10-131	5	0-30	3
Cypermethrin	ND	5.000	8.470	169	8.292	166	10-136	2	0-30	3
Deltamethrin/Tralomethrin	ND	5.000	12.84	257	13.38	268	13-190	4	0-30	3
Fenpropathrin	ND	5.000	5.179	104	4.854	97	10-148	6	0-30	
Fenvalerate/Esfenvalerate	ND	10.00	20.45	204	19.45	195	10-149	5	0-30	3
Fluvalinate	ND	5.000	7.154	143	6.639	133	10-121	7	0-30	3
Permethrin (cis/trans)	ND	5.000	6.482	130	6.129	123	45-123	6	0-30	3
Phenothrin	ND	5.000	6.943	139	6.862	137	45-165	1	0-30	
Resmethrin/Bioresmethrin	ND	5.000	6.893	138	7.064	141	38-164	2	0-30	
Tetramethrin	ND	5.000	7.667	153	8.035	161	15-153	5	0-30	3
lambda-Cyhalothrin	ND	5.000	9.516	190	9.154	183	10-123	4	0-30	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3050B
Method: EPA 6020

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
15-12-1818-1	**Sample**	**Filter**	**ICP/MS 03**	**12/28/15**	**12/29/15 17:49**	**151228S01**
15-12-1818-1	**Matrix Spike**	**Filter**	**ICP/MS 03**	**12/28/15**	**12/29/15 17:29**	**151228S01**
15-12-1818-1	**Matrix Spike Duplicate**	**Filter**	**ICP/MS 03**	**12/28/15**	**12/29/15 17:32**	**151228S01**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Arsenic	ND	600.0	699.2	117	685.8	114	80-120	2	0-20	
Cadmium	ND	600.0	682.2	114	675.4	113	80-120	1	0-20	
Chromium	ND	600.0	659.6	110	645.3	108	80-120	2	0-20	
Copper	63.51	600.0	738.7	113	727.4	111	80-120	2	0-20	
Lead	ND	600.0	601.1	100	605.3	101	80-120	1	0-20	
Nickel	ND	600.0	651.0	109	637.5	106	80-120	2	0-20	
Selenium	ND	600.0	739.2	123	728.9	121	80-120	1	0-20	3
Silver	ND	300.0	325.2	108	327.6	109	80-120	1	0-20	
Zinc	ND	600.0	785.8	131	954.2	159	80-120	19	0-20	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
341174	**Sample**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/04/16 16:43**	**151230S11**
341174	**Matrix Spike**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/04/16 19:43**	**151230S11**
341174	**Matrix Spike Duplicate**	**Sediment**	**GC/MS MM**	**12/30/15**	**01/04/16 20:09**	**151230S11**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	ND	1000	778.8	78	1102	110	40-160	34	0-20	4
2,4-Dichlorophenol	ND	1000	888.4	89	950.3	95	40-160	7	0-20	
2-Methylphenol	ND	1000	1304	130	1178	118	40-160	10	0-20	
2-Nitrophenol	ND	1000	941.9	94	943.8	94	40-160	0	0-20	
4-Chloro-3-Methylphenol	ND	1000	1054	105	988.4	99	40-160	6	0-20	
Acenaphthene	ND	1000	1155	116	1138	114	40-160	2	0-20	
Benzo (a) Pyrene	ND	1000	902.4	90	921.9	92	17-163	2	0-20	
Chrysene	18.19	1000	1132	111	1077	106	17-168	5	0-20	
Di-n-Butyl Phthalate	40.75	1000	1272	123	1203	116	40-160	6	0-20	
Dimethyl Phthalate	ND	1000	1108	111	923.1	92	40-160	18	0-20	
Fluoranthene	26.83	1000	1513	149	1262	124	26-137	18	0-20	3
Fluorene	ND	1000	1203	120	978.4	98	59-121	21	0-20	4
Naphthalene	ND	1000	975.0	98	907.5	91	21-133	7	0-20	
Phenanthrene	11.30	1000	1404	139	1219	121	54-120	14	0-20	3
Phenol	ND	1000	1066	107	1024	102	40-160	4	0-20	
Pyrene	31.50	1000	1307	128	1236	120	6-156	6	0-46	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
341177	**Sample**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 18:07**	**151230S12**
341177	**Matrix Spike**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/05/16 14:46**	**151230S12**
341177	**Matrix Spike Duplicate**	**Sediment**	**GC/MS HHH**	**12/30/15**	**01/04/16 20:12**	**151230S12**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
PCB018	ND	50.00	52.00	104	54.70	109	50-150	5	0-25	
PCB028	ND	50.00	56.43	113	60.18	120	50-150	6	0-25	
PCB044	ND	50.00	52.77	106	56.56	113	50-150	7	0-25	
PCB052	ND	50.00	51.39	103	54.60	109	50-150	6	0-25	
PCB066	ND	50.00	59.58	119	65.12	130	50-150	9	0-25	
PCB077	ND	50.00	53.82	108	62.98	126	50-150	16	0-25	
PCB101	0.5047	50.00	49.19	97	54.85	109	50-150	11	0-25	
PCB105	ND	50.00	55.45	111	66.17	132	50-150	18	0-25	
PCB118	0.5954	50.00	57.46	114	68.38	136	50-150	17	0-25	
PCB126	ND	50.00	54.93	110	67.29	135	50-150	20	0-25	
PCB128	ND	50.00	50.93	102	61.95	124	50-150	20	0-25	
PCB170	ND	50.00	56.22	112	56.65	113	50-150	1	0-25	
PCB180	ND	50.00	57.14	114	70.24	140	50-150	21	0-25	
PCB187	ND	50.00	52.79	106	61.93	124	50-150	16	0-25	
PCB195	ND	50.00	57.66	115	57.51	115	50-150	0	0-25	
PCB206	ND	50.00	58.60	117	55.73	111	50-150	5	0-25	
PCB209	ND	50.00	52.40	105	51.30	103	50-150	2	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3550B (M)
Method: Organotins by Krone et al.
Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
341175	**Sample**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 11:43**	**151229S12**
341175	**Matrix Spike**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 13:19**	**151229S12**
341175	**Matrix Spike Duplicate**	**Sediment**	**GC/MS Y**	**12/29/15**	**01/04/16 13:34**	**151229S12**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Tetrabutyltin	ND	100.0	113.1	113	105.8	106	33-129	7	0-36	
Tributyltin	ND	100.0	86.05	86	83.56	84	34-142	3	0-50	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - PDS

American Scientific Laboratories, LLC		Date Received:	12/21/15
2520 North San Fernando Road		Work Order:	15-12-1639
Los Angeles, CA 90065-1324		Preparation:	EPA 3050B
		Method:	EPA 6020
Project: 66551			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	PDS/PDSD Batch Number
15-12-1818-1	**Sample**	**Filter**	**ICP/MS 03**	**12/28/15 00:00**	**12/29/15 17:49**	**151228S01**
15-12-1818-1	**PDS**	**Filter**	**ICP/MS 03**	**12/28/15 00:00**	**12/31/15 13:35**	**151228S01**

Parameter	Sample Conc.	Spike Added	PDS Conc.	PDS %Rec.	%Rec. CL	Qualifiers
Arsenic	ND	600.0	667.5	111	75-125	
Cadmium	ND	600.0	672.9	112	75-125	
Chromium	ND	600.0	635.0	106	75-125	
Copper	63.51	600.0	736.4	112	75-125	
Lead	ND	600.0	606.0	101	75-125	
Nickel	ND	600.0	641.9	107	75-125	
Selenium	ND	600.0	718.0	120	75-125	
Silver	ND	300.0	273.4	91	75-125	
Zinc	ND	600.0	749.6	125	75-125	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Sample Duplicate

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: N/A
Method: SM 2540 B (M)

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
341174	**Sample**	**Sediment**	**N/A**	**01/04/16 00:00**	**01/04/16 17:00**	**G0104TSD1**
341174	**Sample Duplicate**	**Sediment**	**N/A**	**01/04/16 00:00**	**01/04/16 17:00**	**G0104TSD1**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total	69.10	68.60	1	0-10	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270D (M)/TQ/EI
Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-403-92	**LCS**	**Solid**	**GCTQ 2**	**12/29/15**	**12/30/15 21:41**	**151229L04**
099-14-403-92	**LCSD**	**Solid**	**GCTQ 2**	**12/29/15**	**12/30/15 22:32**	**151229L04**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Allethrin	5.000	5.304	106	5.202	104	10-148	0-171	2	0-25	
Bifenthrin	5.000	5.426	109	5.550	111	26-128	9-145	2	0-25	
Cyfluthrin	5.000	4.476	90	4.459	89	10-131	0-151	0	0-25	
Cypermethrin	5.000	4.599	92	4.431	89	10-136	0-157	4	0-25	
Deltamethrin/Tralomethrin	5.000	5.782	116	5.644	113	13-190	0-220	2	0-25	
Fenpropathrin	5.000	5.327	107	5.166	103	10-148	0-171	3	0-25	
Fenvalerate/Esfenvalerate	10.00	10.44	104	9.642	96	10-149	0-172	8	0-25	
Fluvalinate	5.000	3.750	75	3.477	70	10-121	0-140	8	0-25	
Permethrin (cis/trans)	5.000	6.015	120	5.824	116	45-123	32-136	3	0-25	
Phenothrin	5.000	6.839	137	6.895	138	45-165	25-185	1	0-25	
Resmethrin/Bioresmethrin	5.000	6.507	130	6.501	130	38-164	17-185	0	0-25	
Tetramethrin	5.000	5.233	105	5.206	104	15-153	0-176	1	0-25	
lambda-Cyhalothrin	5.000	5.068	101	5.082	102	10-123	0-142	0	0-25	

Total number of LCS compounds: 13
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

American Scientific Laboratories, LLC		Date Received:	12/21/15
2520 North San Fernando Road		Work Order:	15-12-1639
Los Angeles, CA 90065-1324		Preparation:	EPA 3050B
		Method:	EPA 6020
Project: 66551			Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-254-384	**LCS**	**Solid**	**ICP/MS 03**	**12/28/15**	**12/29/15 17:27**	**151228L01E**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Arsenic	25.00	27.61	110	80-120	
Cadmium	25.00	26.84	107	80-120	
Chromium	25.00	25.45	102	80-120	
Copper	25.00	27.13	109	80-120	
Lead	25.00	24.39	98	80-120	
Nickel	25.00	25.83	103	80-120	
Selenium	25.00	26.25	105	80-120	
Silver	12.50	12.88	103	80-120	
Zinc	25.00	28.86	115	80-120	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM
Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-256-140	**LCS**	**Solid**	**GC/MS MM**	**12/30/15**	**01/05/16 12:46**	**151230L11**
099-14-256-140	**LCSD**	**Solid**	**GC/MS MM**	**12/30/15**	**01/05/16 13:11**	**151230L11**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	1000	826.1	83	890.3	89	40-160	20-180	7	0-20	
2,4-Dichlorophenol	1000	829.0	83	882.9	88	40-160	20-180	6	0-20	
2-Methylphenol	1000	975.5	98	1034	103	40-160	20-180	6	0-20	
2-Nitrophenol	1000	814.8	81	892.6	89	40-160	20-180	9	0-20	
4-Chloro-3-Methylphenol	1000	907.9	91	959.0	96	40-160	20-180	5	0-20	
Acenaphthene	1000	927.9	93	1021	102	48-108	38-118	10	0-11	
Benzo (a) Pyrene	1000	870.0	87	1007	101	17-163	0-187	15	0-20	
Chrysene	1000	984.7	98	1083	108	17-168	0-193	10	0-20	
Di-n-Butyl Phthalate	1000	947.7	95	1012	101	40-160	20-180	7	0-20	
Dimethyl Phthalate	1000	992.6	99	1070	107	40-160	20-180	8	0-20	
Fluoranthene	1000	964.2	96	1054	105	26-137	8-156	9	0-20	
Fluorene	1000	996.0	100	1071	107	59-121	49-131	7	0-20	
Naphthalene	1000	882.9	88	942.1	94	21-133	2-152	6	0-20	
Phenanthrene	1000	965.8	97	1061	106	54-120	43-131	9	0-20	
Phenol	1000	910.5	91	1035	103	40-160	20-180	13	0-20	
Pyrene	1000	1014	101	1040	104	28-106	15-119	3	0-16	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3541
Method: EPA 8270C SIM PCB Congeners

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-418-191	**LCS**	**Solid**	**GC/MS HHH**	**12/30/15**	**01/05/16 13:14**	**151230L12**
099-16-418-191	**LCSD**	**Solid**	**GC/MS HHH**	**12/30/15**	**01/05/16 13:37**	**151230L12**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
PCB018	50.00	35.20	70	33.56	67	50-150	33-167	5	0-25	
PCB028	50.00	38.13	76	35.45	71	50-150	33-167	7	0-25	
PCB044	50.00	36.81	74	35.14	70	50-150	33-167	5	0-25	
PCB052	50.00	35.49	71	33.29	67	50-150	33-167	6	0-25	
PCB066	50.00	43.61	87	41.12	82	50-150	33-167	6	0-25	
PCB077	50.00	40.64	81	38.21	76	50-150	33-167	6	0-25	
PCB101	50.00	36.08	72	34.34	69	50-150	33-167	5	0-25	
PCB105	50.00	41.32	83	39.62	79	50-150	33-167	4	0-25	
PCB118	50.00	42.53	85	40.31	81	50-150	33-167	5	0-25	
PCB126	50.00	40.33	81	38.48	77	50-150	33-167	5	0-25	
PCB128	50.00	37.56	75	36.01	72	50-150	33-167	4	0-25	
PCB170	50.00	40.45	81	37.45	75	50-150	33-167	8	0-25	
PCB180	50.00	40.31	81	38.55	77	50-150	33-167	4	0-25	
PCB187	50.00	38.36	77	36.35	73	50-150	33-167	5	0-25	
PCB195	50.00	40.36	81	38.04	76	50-150	33-167	6	0-25	
PCB206	50.00	39.35	79	36.38	73	50-150	33-167	8	0-25	
PCB209	50.00	34.81	70	32.05	64	50-150	33-167	8	0-25	

Total number of LCS compounds: 17
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, CA 90065-1324

Project: 66551

Date Received: 12/21/15
Work Order: 15-12-1639
Preparation: EPA 3550B (M)
Method: Organotins by Krone et al.

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-016-1354	**LCS**	**Solid**	**GC/MS Y**	**12/29/15**	**01/04/16 10:55**	**151229L12**
099-07-016-1354	**LCSD**	**Solid**	**GC/MS Y**	**12/29/15**	**01/04/16 11:11**	**151229L12**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Tetrabutyltin	100.0	110.7	111	122.4	122	40-142	10	0-20	
Tributyltin	100.0	86.58	87	96.01	96	33-147	10	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Glossary of Terms and Qualifiers

Work Order: 15-12-1639 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

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15-12-1639

DATE: 12/21/15
PAGE: 1 OF 1

AMERICAN SCIENTIFIC LABS	CLIENT PROJECT NAME / NUMBER: 66551
2520 N. San Fernando Road	P.O. NO.:
Los Angeles, STATE: CA, ZIP: 90065	PROJECT CONTACT: Alen Hosepians
323-223-9700	E-MAIL: alen@asllab.com
QUOTE NO:	LOG CODE:

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"): ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS (STANDARD)

☐ COELT EDF   GLOBAL ID:

SPECIAL INSTRUCTIONS: Standard TAT

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	Arsenic, Cadmium, Chromium	Copper, Lead, Nickel, Selenium	Silver, Zinc (6020)	Organotin - Krone et al	8270C PCB Congeners	8270C SIM Phenols,	Phthalates, PAH's	8270C Pyrethroids
1	341174	12/16/15	9:00	Solid	1				X	X	X	X	X	X		X
2	341175	↓	10:10	↓	↓				X	X	X	X	X	X		X
3	341176	↓	11:00	↓	↓				X	X	X	X	X	X		X
4	341177	↓	1:00	↓	↓				X	X	X	X	X	X		X
5	341178	↓	2:00	↓	↓				X	X	X	X	X	X		X

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
[signature]	[signature] EU	12/21/15	1420
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

01/01/14 Revision

Return to Contents

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WORK ORDER NUMBER: 15-12- 1639

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ASL

DATE: 12 / 21 / 2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC2 (CF:-0.4°C); Temperature (w/o CF): 5.1 °C (w/ CF): 4.7 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: JW

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: JW

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1058

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☐

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 1058

s = H_2SO_4, **u** = ultra-pure, **znna** = $Zn(CH_3CO_2)_2$ + NaOH Reviewed by: 681

Return to Contents

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone (805)650-1400
Attn Harry Finney

Number of Pages 3
Date Received 02/01/2016
Date Reported 02/08/2016

Job Number	Ordered	Client
66896	02/01/2016	AET

Project ID: 0062-22Q
Project Name: Vertura Port

Enclosed are the results of analyses on 1 sample analyzed as specified on attached chain of custody.

Wendy Lu
Organics Supervisor

ASL JOB # 66896

JOB NO.	TASK	PROJECT NAME	PROJECT MANAGER	SAMPLER	LABORATORY	GLOBAL I.D.
0062-220		Ventura Port	HCF	HCF	ASL	NR

Sample Identification	Date	Time	Sample Container (Size/Material)	Sample Type (Liquid, Soil, etc.)	Preservative	Analyses Requested A	B	C	D	E	F	Laboratory ID#	Comments
B-1	2/1/16		4oz glass	sediment	Refrig	X						342998	

Relinquished By (Signature)	Date	Time	Received By (Signature)
	2/1/16	11:55	

Analyses:
A Total Chlordane
B
C
D
E
F

CHAIN OF CUSTODY RECORD
Applied Environmental Technologies, Inc.
(805) 650-1400 • FAX (805) 650-1576 • 4561 MARKET ST., SUITE B, VENTURA, CA 93003

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Applied Enviro. Technologies, Inc.
18429 Bryant Street
Northridge, CA 91325-

Telephone: (805)650-1400
Attn: Harry Finney

Project ID: 0062-22Q
Project Name: Vertura Port

ASL Job Number	Submitted	Client
66896	02/01/2016	AET

Method: 8081A, Organochlorine Pesticides

QC Batch No: 020116-1

Our Lab I.D.		**342998**				
Client Sample I.D.		B-1				
Date Sampled		**02/01/2016**				
Date Prepared		**02/01/2016**				
Preparation Method						
Date Analyzed		**02/01/2016**				
Matrix		Soil				
Units		ug/kg				
Dilution Factor		1				
Analytes	**PQL**	**Results**				
Aldrin	**2.00**	**ND**				
alpha-Hexachlorocyclohexane (Alpha-BHC)	**2.00**	**ND**				
Beta-Hexachlorocyclohexane (Beta-BHC)	**2.00**	**ND**				
Gamma-Chlordane	**2.00**	**ND**				
alpha-Chlordane	**2.00**	**ND**				
4,4'-DDD (DDD)	**4.00**	**ND**				
4,4'-DDE (DDE)	**4.00**	**ND**				
4,4'-DDT (DDT)	**4.00**	**ND**				
delta-Hexachlorocyclohexane (Delta-BHC)	**2.00**	**ND**				
Dieldrin	**4.00**	**ND**				
Endosulfan 1	**2.00**	**ND**				
Endosulfan 11	**4.00**	**ND**				
Endosulfan sulfate	**4.00**	**ND**				
Endrin	**4.00**	**ND**				
Endrin aldehyde	**4.00**	**ND**				
Endrin ketone	**4.00**	**ND**				
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	**2.00**	**ND**				
Heptachlor	**2.00**	**ND**				
Heptachlor epoxide	**2.00**	**ND**				
Methoxychlor	**4.00**	**ND**				
Toxaphene	**170**	**ND**				
Chlordane, Total	**170**	**ND**				

Our Lab I.D.		**342998**				
Surrogates	**% Rec.Limit**	**% Rec.**				
Surrogate Percent Recovery						
Decachlorobiphenyl	**43-169**	**92**				

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Project ID: 0062-22Q
Project Name: Vertura Port

ASL Job Number	Submitted	Client
66896	02/01/2016	AET

Method: 8081A, Organochlorine Pesticides

QUALITY CONTROL REPORT

QC Batch No: 020116-1

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
Aldrin	**98**	**106**	**7.8**	**42-122**	**<30**					
4,4'-DDT (DDT)	**56**	**60**	**6.9**	**25-160**	**<30**					
Dieldrin	**102**	**108**	**5.7**	**36-146**	**<30**					
Endrin	**82**	**88**	**7.1**	**30-147**	**<30**					
gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane)	**111**	**114**	**2.7**	**32-127**	**<30**					
Heptachlor	**96**	**95**	**1.0**	**34-111**	**<30**					