Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
SANITARY SEWER REHABILITATION PROJECT
SUB-BASIN 60-06
OAKLAND, CALIFORNIA

PREPARED FOR:
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March 20, 2015
Project No. 402231012

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Mr. Mark Arniola, Environmental Program Specialist
City of Oakland, Public Works
Department Environmental Sciences Division
250 Frank Ogawa Plaza, Suite 5301
Oakland, California 94612

Subject: Limited Phase II Environmental Site Assessment,
Sanitary Sewer Rehabilitation Project
Sub-Basin 60-06
Oakland, California

Dear Mr. Arniola:

In general accordance with our proposal dated January 20, 2015, Ninyo & Moore has performed a Limited Phase II Environmental Site Assessment for the above-referenced site in Oakland (site). This report documents the recent site assessment activities, the results of site work, and our conclusions and recommendations regarding the environmental conditions at the site.

We appreciate the opportunity to be of service to you on this project.

Sincerely,
NINYO & MOORE

PROFESSIONAL GEOLOGIST • FORREST McFARLAND No. 7984 • STATE OF CALIFORNIA

Professional Geologist • Kristopher M. Larson No. 8059 • State of California

Forrest S McFarland PG 7984
Project Environmental Geologist

Kris M. Larson, PG 8059
Principal Environmental Geologist

FSM/KML/vmp

Distribution: Addressee (2 hard copies and 1 electronic copy)

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1. INTRODUCTION

Ninyo & Moore was retained by the City of Oakland Public Works Agency, Environmental Services Division (City) to conduct a Limited Phase II Environmental Site Assessment (ESA) within the boundaries of Sub-Basin 60-06 in Oakland, California (site; Figure 1). The work was conducted in general accordance with our proposal dated January 20, 2015.

According to a Hazardous Materials Assessment (HMA) conducted for Sub-Basin 60-06 by Ninyo & Moore (Ninyo & Moore, 2014), the sewer line segment adjacent to a former gasoline service station located at 2700 23rd Avenue, as shown on Figure 2, was identified as an area of potential environmental concern due to a former underground storage tank at the property. No other areas within the Sub-Basin were listed as areas of environmental concern; however, representative soil samples were also collected in two other areas where sewer replacement is proposed in order to get a better idea of overall soil classification within the site. Subsequently, Ninyo & Moore advanced four soil borings for collection of soil and groundwater samples within three different areas within the site boundary. These areas include:

- Near the sewer line segment adjacent to 2700 23rd Avenue (Borings SB-1 and SB-2). These borings were advanced on 27th Street adjacent to and downgradient of the former gasoline service station, in order to classify the soil and groundwater for disposal as well as evaluate the potential health risks to workers associated with contaminated soils.

- Near the intersection of 24th Avenue and E. 22nd Street (Boring SB-3). This boring was advanced to classify the soil for disposal.

- Near the sewer line segment in the intersection of 23rd Avenue and E. 19th Street (Boring SB-4). This boring was advanced to classify the soil for disposal.

2. OBJECTIVE

The objective of the Limited Phase II ESA was to evaluate potential environmental concerns relating to site soils, as well as to classify the soil for disposal purposes from different areas that are not considered to be an environmental concern.

3. SITE SETTING

The site boundary used in the HMA included Sub-Basin 60-06, is the vicinity of 21st Avenue, E. 17th Street, 24th Avenue and E. 27th Street in Oakland, California. The site includes properties ad-

jacent to and within the area roughly bound by E. 27th Street to the north, E. 17th Street and 23rd Avenue to the south, Inyo Avenue and 25th Avenue to the east, 24th Avenue to the southeast, 21st and 22nd Avenues to the west (Figure 2).

Investigative activities consisted of pre-field preparations and boring installation for soil sampling. Ninyo & Moore conducted the field activities on February 26, 2015. Our pre-field and field activities are discussed in the sections below.

3.1. Pre-field Preparation

Pre-field preparations were performed prior to implementation of drilling activities. Ninyo & Moore performed the following pre-field preparations.

3.1.1. Permits

One drilling permit for four boring locations was obtained on February 5, 2015, from the Alameda County Public Works Agency. Three obstruction permits and three excavation permits were obtained on February 23, 2015, from the City of Oakland. Copies of these permits are included in Appendix A of this report.

3.1.2. Underground Services Alert (USA)

Ninyo & Moore marked proposed boring locations with white paint and notified USA more than 48 hours in advance of any drilling per USA guidelines.

3.2. Drilling Company and Drilling Dates

PeneCore Drilling of Woodland, California, performed drilling of the borings on February 26, 2015 using a hand auger and a truck-mounted Geoprobe rig. PeneCore Drilling is a C-57 licensed California well drilling contractor.

3.3. Ninyo & Moore Personnel

Ninyo & Moore's Project Environmental Geologist, Forrest McFarland, supervised the installation of the borings and completed sampling efforts on February 26, 2015. Mr. McFarland is a California Registered Geologist.

3.4. Sampling Methodology

Four soil borings (SB-1 through SB-4) were advanced for the collection of soil samples (Figure 2) and two of these borings (SB-1 and SB-2) were proposed for grab-groundwater sampling. Soil borings were advanced to 20 feet below ground surface (bgs) using a Geoprobe sampling rig subsequent to hand-augering the first five feet for utility clearance. Samples were collected from acetate sleeves within the sampling rods or from the hand auger bucket. A photoionization detector (PID) was used to measure potential volatile organic vapors from the soil sample sleeves and aid in determining the best depth to collect soil samples for laboratory analysis. One soil sample was submitted from each boring at a depth where obvious signs of contamination were observed, where elevated PID readings were observed, or if no contamination or elevated PID readings were observed, at approximately one-foot above first-observed groundwater.

The direct push Geoprobe rods and hand auger were decontaminated between borings using a steam cleaner to help minimize cross contamination. The water generated from the steam cleaning was mixed with cement grout, which was used during tremmie grouting operations for each of the boreholes. The grout was placed to match the surface condition.

3.5. Site Sedimentology and Soil Conditions

The surface cover at borings SB-1 through SB-4 consisted of an approximate four-inch thick asphalt and eight-inch base rock layer. The underlying soil in these borings consisted of alluvial material consisting of poorly graded sand, silty sands and gravels, sandy silt, and/or sandy clay.

Elevated PID readings and soils exhibiting petroleum odors were detected in soil cuttings from the SB-1 and SB-2 boring locations at depths between 7-10 feet bgs. Perched groundwater was also observed in boring SB-1 and SB-2 between 7-10 feet bgs; however, groundwater was not observed in borings SB-3 and SB-4, and there was insufficient groundwater in boring SB-1 for sampling purposes. A description of the observed subsurface lithology is described in boring logs that are included in Appendix B.

3.6. Sample Collection and Laboratory Analysis

The soil samples used for laboratory analysis were obtained by removing the sample from the Geoprobe acetate sleeves or taken directly from the hand auger bucket and transferring the soil to a jar or vials. The analyses selected for soil samples were based on the likely environmental concerns attributed to the historical site use in the vicinity of the proposed project areas and for waste classification.

Groundwater samples from SB-2 were collected using a disposable bailer and transferred to laboratory supplied containers.

The soil and groundwater samples were placed in a cooler on ice and delivered to Curtis and Tompkins Laboratories (C&T) in Berkeley, California for analysis with completed chain-of-custody documentation.

Soil and groundwater samples were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) using EPA Method 8015B.
- Volatile organic compounds (VOCs) using EPA Method 8260B.
- Title 22 Metals using EPA Method 6010B. Groundwater samples were Lab-filtered.

3.7. Soil Sample Laboratory Analytical Results

The soil laboratory analytical results are summarized in Tables 1 and 2. The laboratory analytical reports are included in Appendix C. Soil sample analytical results were compared to Regional Water Quality Control Board Environmental Screening Levels (ESLs), Tables K-2 and K-3 (RWQCB, 2013), as well as City of Oakland Survey of Background Metals (Oakland, 2005). A copy of the City of Oakland Background Metals document is provided in Appendix D. A summary of the constituents is below and a discussion of the findings is presented in Section 5.

- Antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, nickel, mercury, vanadium, and zinc were reported above laboratory practical quantitation limits (PQLs) within all of the collected soil samples. Molybdenum was reported above PQLs in one of four soil samples. The detected metals concentrations were below Commer-

cial/Industrial ESLs and below Construction/Trench Worker ESLs in soil samples with the single exception of arsenic. The Commercial/Industrial worker ESL (Table K-2) of 1.6 milligrams per kilograms (mg/kg) for arsenic was exceeded in all four soil samples collected. However, the arsenic concentrations were within the Oakland background study range of 1.8-5.9 mg/kg and below Construction/Trench Worker ESLs (Table K-3).

- TPHg was reported at concentrations above laboratory PQLs in the samples from SB-1-10 and SB-2-10 at concentrations of 2.2 mg/kg and 220 mg/kg, respectively. Concentrations were below the Construction/Trench Worker and Commercial/Industrial Worker ESLs for TPH constituents.

- TPHd was reported at concentrations above laboratory PQLs in the samples from SB-1-10 and SB-2-10 at concentrations of 2.7 mg/kg and 82 mg/kg, respectively. Concentrations were below the Construction/Trench Worker and Commercial/Industrial Worker ESLs for TPH constituents.

- TPHmo was reported at a concentration above laboratory PQLs in the sample from SB-2-10 at a concentration of 8.0 mg/kg. This concentration is below the Construction/Trench Worker and Commercial/Industrial Worker ESLs for TPH constituents.

- VOCs were reported above laboratory PQLs in the SB-2-10 sample as ethylbenzene, m,p-Xylenes, isopropylbenzene, propylbenzene and n-butylbenzene at concentrations of 0.610, 0.250, 0.280, 0.590, and 0.510 mg/kg, respectively. Concentrations were below the Construction/Trench Worker and Commercial/Industrial Worker ESLs for the respective VOCs, where listed.

3.8. Groundwater Sample Laboratory Analytical Results

The groundwater laboratory analytical results are summarized in Tables 3 and 4 and compared to Groundwater Screening Level ESLs (RWQCB, 2013; Table F1-A). Select compounds are also compared to the NPDES General Waste Discharge Requirements discussed in the Fuels and VOC Permit (RWQCB, 2012). The laboratory analytical reports are included in Appendix C. A summary of the constituents and their comparisons to the screening criteria is below.

- Arsenic, barium, and nickel were reported above laboratory PQLs within the groundwater sample SB-2-GW at concentrations of 14, 208, and 6.2 micrograms per Liter (µg/L) respectively, barium and nickel concentrations are below the groundwater screening ESLs while the arsenic is slightly above its ESL of 10 µg/L.

- TPHg was reported in the groundwater sample SB-2-GW at a concentration of 12,000 µg/L. This concentration is above the groundwater screening ESL of 100 µg/L and General Waste Discharge Requirement of 50 µg/L.

- TPHd was reported in the groundwater sample SB-2-GW at a concentration of 4,000 µg/L. This concentration is above the groundwater screening ESL of 100 µg/L and General Waste Discharge Requirement of 50 µg/L.

- TPHmo was reported in the groundwater sample SB-2-GW at a concentration of 330 µg/L. This concentration is above the groundwater screening ESL of 100 µg/L.

- Four VOCs were reported above groundwater screening ESLs and General Waste Discharge Requirements in the SB-2-GW groundwater sample. Benzene, toluene, ethylbenzene and m,p-Xylenes were detected at concentrations of 71, 42, 110, and 62 µg/L, respectively.

4. QUALITY ASSURANCE/QUALITY CONTROL RESULTS

The laboratory analyses were reviewed by Ninyo & Moore as a check of overall quality. The data quality check process included a review of chain-of-custody forms, holding times, laboratory analytical reports, method blanks, surrogate recoveries, matrix spike, matrix spike duplicates, and detection limits.

A review of laboratory Quality Assurance/Quality Control analysis indicated that holding times were met for all samples indicating proper sample extraction and analysis procedures. Certain compounds in the matrix spike and matrix spike duplicate analysis were outside of their respective recovery criteria; however, the associated relative percent difference (RPD) and lab control samples (LCS) were within limits. The analytical batch was validated by the laboratory control sample and is deemed reliable for use.

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this investigation, we provide the following conclusions and recommendations:

- None of the compounds detected in soil exceed the San Francisco Bay RWQCB ESLs for the construction/trench worker or commercial/industrial worker direct exposure scenarios with the exception of arsenic which is within the background concentration range for native Oakland soils. Therefore, direct contact with soil is not a concern for workers.

- Title 22 Metal concentrations detected in soil are relatively consistent across the various portions of the site sampled and are within the range of typical background conditions encountered in the region.

- Although none of the soil sample analytical results exceed screening criteria for construction/trench worker direct exposure (except arsenic as noted), elevated concentrations of TPH compounds were found to be present in soil and groundwater, including soil that may be excavated for utility work. It is anticipated that excavated soil within the project area will be classified as Class II non-hazardous waste. However, if contaminated soil is encountered, which would be characterized by odors or obvious signs of staining, it should be stockpiled and sampled for waste profiling and identification of an appropriate facility for disposal. If contaminated soil is encountered during construction activities, the contractor should contact the City for further guidance regarding worker safety, soil handling, and disposal options.

- Groundwater was observed and sampled in one of four soil borings (SB-2-GW), which is directly adjacent to the former service station at 2700 23rd Avenue. Analysis of the SB-2-GW groundwater sample indicated that groundwater encountered during the implementation of the Sanitary Sewer Rehabilitation Project would likely require treatment prior to discharge to a storm sewer in order to comply with the VOC and Fuel General Permit Effluent Limitations. Additional sampling and monitoring requirements are established in the VOC and Fuel General Permit should this project require dewatering and subsequent discharge to a storm sewer.

6. LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Variations in site conditions may exist and conditions not observed or described in this report may be encountered during subsequent activities.

Ninyo & Moore's findings, conclusions and recommendations regarding environmental conditions, as presented in this report, are based on limited subsurface assessment and chemical analysis. The samples collected and used for testing, and the observations made, are believed to be representative of the area(s) evaluated; however, conditions can vary significantly between sampling locations. Variations in soil conditions will exist beyond the points explored in this evaluation.

The environmental interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and concentration of specific chemical or physical constituents in samples collected from the subject site. The testing and analyses have been conducted by an independent laboratory which is certified by the State of California to conduct such tests. Ninyo & Moore has no involvement in, or control over, such testing and analysis. Ninyo & Moore, therefore, disclaims responsibility for any inaccuracy in such laboratory results.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

7. REFERENCES

Oakland, 2005, *City of Oakland, Survey of Background Metal Concentration Studies*, Oakland Urban Land Redevelopment Program, Oakland, CA 94612, dated December.

Ninyo & Moore, 2014, *Hazardous Materials Assessment, Sanitary Sewer Rehabilitation Project, Sub Basin 60-06, Oakland, California*, dated July 25.

RWQCB, 2012, General Waste Discharge Requirements for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (VOC and Fuel General Permit) California Regional Water Quality Control Board, dated February 9.

RWQCB, 2013, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board, dated December.

TABLE 1
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TITLE 22 METALS

Sample ID	Sample Collection Date	Sample Depth (ft bgs)	Analytes															
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
			Soil Sample Analytical Results (mg/kg)																
SB-1-10	2/26/2015	10	6.7	**4.0**	150	0.40	ND<0.27	21	11	12	7.6	ND<0.27	32	ND<0.53	ND<0.27	ND<0.53	27	25	0.023
SB-2-10	2/26/2015	10	6.9	**3.5**	180	0.53	ND<0.27	30	11	18	7.4	ND<0.27	47	ND<0.55	ND<0.27	ND<0.55	35	30	0.033
SB-3-10	2/26/2015	10	9.8	**4.8**	240	0.45	ND<0.26	27	14	21	15	0.29	65	ND<0.52	ND<0.26	ND<0.52	32	43	0.017
SB-4-7	2/26/2015	7	5.9	**2.9**	63	0.32	ND<0.25	19	6.6	6.8	3.6	ND<0.25	16	ND<0.51	ND<0.25	ND<0.51	22	14	0.032
Construction/Trench Worker ESL[1]			120	10	61,000	180	110	NE	49	12,000	320	1,500	6,100	1,500	1,500	3.1	1,500	93,000	27
Commercial/Industrial Worker ESL[2]			410	1.6	190,000	2,000	1,000	NE	300	41,000	320	5,100	19,000	5,100	5,100	10	5,100	310,000	88
Oakland Background Study Range[3]			--	1.8 - 5.9	--	--	--	24.8 - 43	--	--	--	--	--	--	--	--	--	--	--

Notes:

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

< X = concentration not detected above laboratory reporting limits of X

NE = Not Established

[1] - Construction/Trench worker ESLs = San Francisco Bay RWQCB Environmental Screening Levels - Table K-3 Construction/Trench Worker Exposure Scenario, Revised December 2013

[2] - Commercial/Industrial worker ESLs = San Francisco Bay RWQCB Environmental Screening Levels - Table K-2 Direct Exposure Soil Screening Levels, Commercial/Industrail Worker Exposure Senario, Revised December 2013

[3] - Oakland Background Study Range - City of Oakland Survey of Background Metal Concentration Studies included in Appendix C of this report

Samples analyzed for Title 22 Metals using EPA Method 6010B, except for Mercury which was analyzed using 7471A

Bold indicates exceedence of Commercial/Industrial Worker ESL

TABLE 2
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE, DIESEL, MOTOR OIL
AND VOLATILE ORGANIC COMPOUNDS

Sample I.D.	Sample Collection Date	Sample Depth (ft bgs)	TPH (mg/kg)			VOCs (mg/kg)				
			Gasoline C7-C-12	Diesel C10-C24	Motor Oil C24-C36	Ethyl-benzene	m, p-Xylenes	Isopropyl-benzene (Cumene)	Propyl-benzene	n-butyl-benzene
SB-1-10	2/26/2015	10	2.2Y	2.7Y	ND<5.0	ND<0.0042	ND<0.0042	ND<0.0042	ND<0.0042	ND<0.0042
SB-2-10	2/26/2015	10	220Y	82Y	8.0	0.610	0.250	0.280	0.590	0.510
SB-3-10	2/26/2015	10	ND<1.0	ND<1.0	ND<5.0	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047
SB-4-7	2/26/2015	7	ND<1.1	ND<1.0	ND<5.0	ND<0.0042	ND<0.0042	ND<0.0042	ND<0.0042	ND<0.0042
Construction/Trench Worker ESL[1]			2,700	900	28,000	490	2,500	NL	NL	NL
Commercial/Industrial Worker ESL[2]			4,000	1,100	100,000	24	2,600	NL	NL	NL

Notes and Abbreviations:
TPH (total petroleum hydrocarbons) as gasoline, diesel and motor oil analyzed by EPA Method 8015B
VOCs = Volatile Organic Compounds analyzed by EPA Method 8260B
mg/kg = milligrams per kilogram
ug/kg = micrograms per kilograms
ft bgs = feet below ground surface
< X = concentration not detected above laboratory reporting limits of X
NA = Not Applicable
ND = Not Detected
NL = Not listed
Y - Sample exhibits chromatographic pattern which does not resemble standard

[1] -Construction/Trench worker ESLs = San Francisco Bay RWQCB Environmental Screening Levels - Table K-3 Construction/Trench Worker Exposure, Revised December 2013

[2] - Commercial/Industrial worker ESLs = San Francisco Bay RWQCB Environmental Screening Levels - Table K-2 Direct Exposure Soil Screening Levels, Commercial/Industrail Worker Exposure Senario, Revised December 2013

Bold indicates exceedence of Commercial/Industrial Worker ESL

TABLE 3
GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
TITLE 22 METALS

Sample ID	Sample Collection Date	Sample Depth (ft bgs)	Analytes																
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
			Groundwater Sample Analytical Results (µg/L)																
SB-2-GW	2/26/2015	10	ND<10	**14**	280	ND<2.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	6.2	ND<10	ND<5.0	ND<10	ND<5.0	ND<20	ND<0.02
Trip Blank	2/26/2015	10	ND<10	ND<5.0	ND<5.0	ND<2.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<10	ND<5.0	ND<20	ND<0.20
General Waste Discharge Requirement[1] Trigger Pollutants			6.0	10	NE	4	1	NE[3]	NE	5.9/3.4/4.7[4]	3.2	NE	30/13/19[5]	5.0	2.2	1.7	NE	86	0.025
Groundwater Screening Level ESLs[2]			6.0	10	1000	0.53	0.25	50	3.0	3.1	2.5	78	8.2	5.0	0.19	2.0	19	81	0.025

Notes:

Title 22 metals analyzed by 6010B

< X = concentration not detected above laboratory reporting limits of X

NE = Not Established

Samples analyzed for Title 22 Metals using EPA Method 6010B, except for Mercury which was analyzed using 7471A

Bold indicates exceedence of Commercial/Industrial Worker ESL

[1] - General Waste Discharge Requirements for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fuel Leaks and Other Related Wastes (VOC and Fuel General Permit) RWQCB 02-08-12 as Trigger Pollutants (exceeding Triggers indicates further testing is needed. Triggers are not effluent limitations and should not be construed as such)

[2] - Groundwater Screening Levels (groundwater IS a current or potential drinking water resource) from Table F1-A; SFRWQCB ESLs

[3] - Chromium (IV) has a Trigger Poutant level of 11 µg/L

[4] - Copper has a Trigger Poutant level of 5.9/3.4/4.7 µg/L which is applicable to North Bay/Central Bay/ and South Bay areas, respectively.

[5] - Nickel has a Trigger Poutant level of 30/13/19 µg/L which is applicable to North Bay/Central Bay/ and South Bay areas, respectively.

TABLE 4
GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AND DETECTED VOLATILE ORGANIC COMPOUNDS

Sample ID	Sample Collection Date	Sample Depth (ft bgs)	Analytes												
			Gasoline C7-C12	Diesel C10-C24	Motor Oil C24-C36	Benzene	Toluene	Ethylbenzene	Total Xylenes (m,p + o)	Isopropylbenzene	Propylbenzene	1,3,5-Trimethylbenzene	sec-butylbenzene	para-Isopropyl Toluene	Naphthalene
			Groundwater Sample Analytical Results (µg/L)												
SB-2-GW	2/26/2015	10	**12,000**	**4,000**	**330**	**71**	**42**	**110**	**62**	71	130	22	9.3	11	4.9
Trip Blank	2/26/2015	10	ND<50	ND<50	ND<300	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0
General Waste Discharge Requirement[1]			50	50	NE	1	5	5	5	NE	NE	NE	NE	NE	NE
Groundwater Screening Level ESLs[2]			100	100	100	1.0	40	30	20	NE	NE	NE	NE	NE	6.1

Notes:

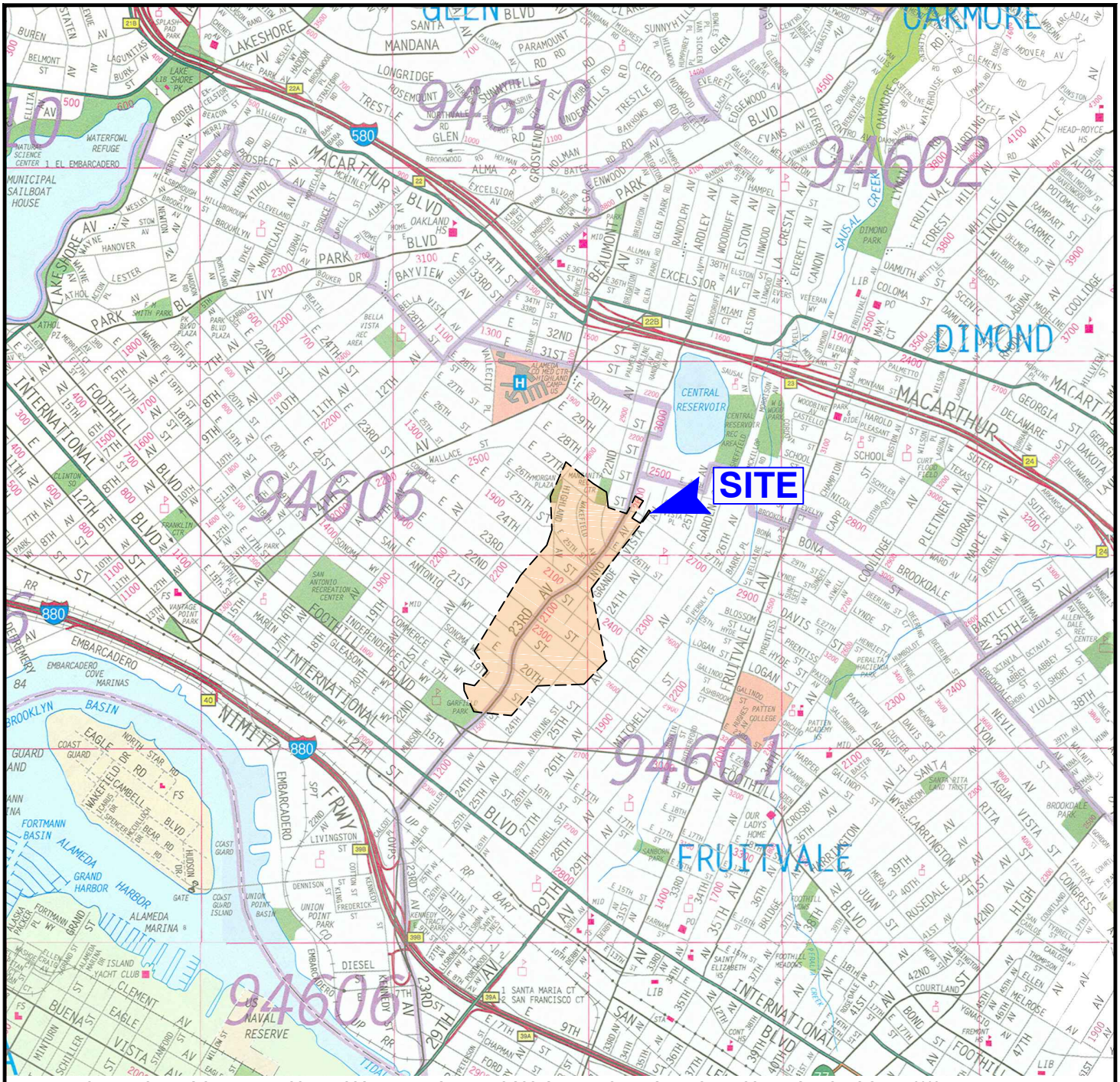
Total Petroleum Hydrocarbons analyzed using EPA Method 8015B
Title 22 metals analyzed by 6010B
Volatile Organic Compounds Analyzed using EPA Method 6010B

-- not applicable
µg/L - micrograms per Liter
ESL- Environmental Screening Level
NA - Not analyzed
ND<X - not detected at a concentration greater than the laboratory reporting limit of X
NE- Not Established

Boldtype indicates concentration exceeds Groundwater Screening Level ESLs

[1] - General Waste Discharge Requirements for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds (VOC), Fu
Leaks and Other Related Wastes (VOC and Fuel General Permit) RWQCB 02-08-12

[2] - Groundwater Screening Levels (groundwater IS a current or potential drinking water resource) from Table F1-A; SFRWQCB ESLs



REFERENCE: METRO AREAS OF ALAMEDA, CONTRA COSTA, MARIN, SAN FRANCISCO, SAN MATEO, AND SANTA CLARA COUNTIES, THOMAS GUIDE, 2008.

N

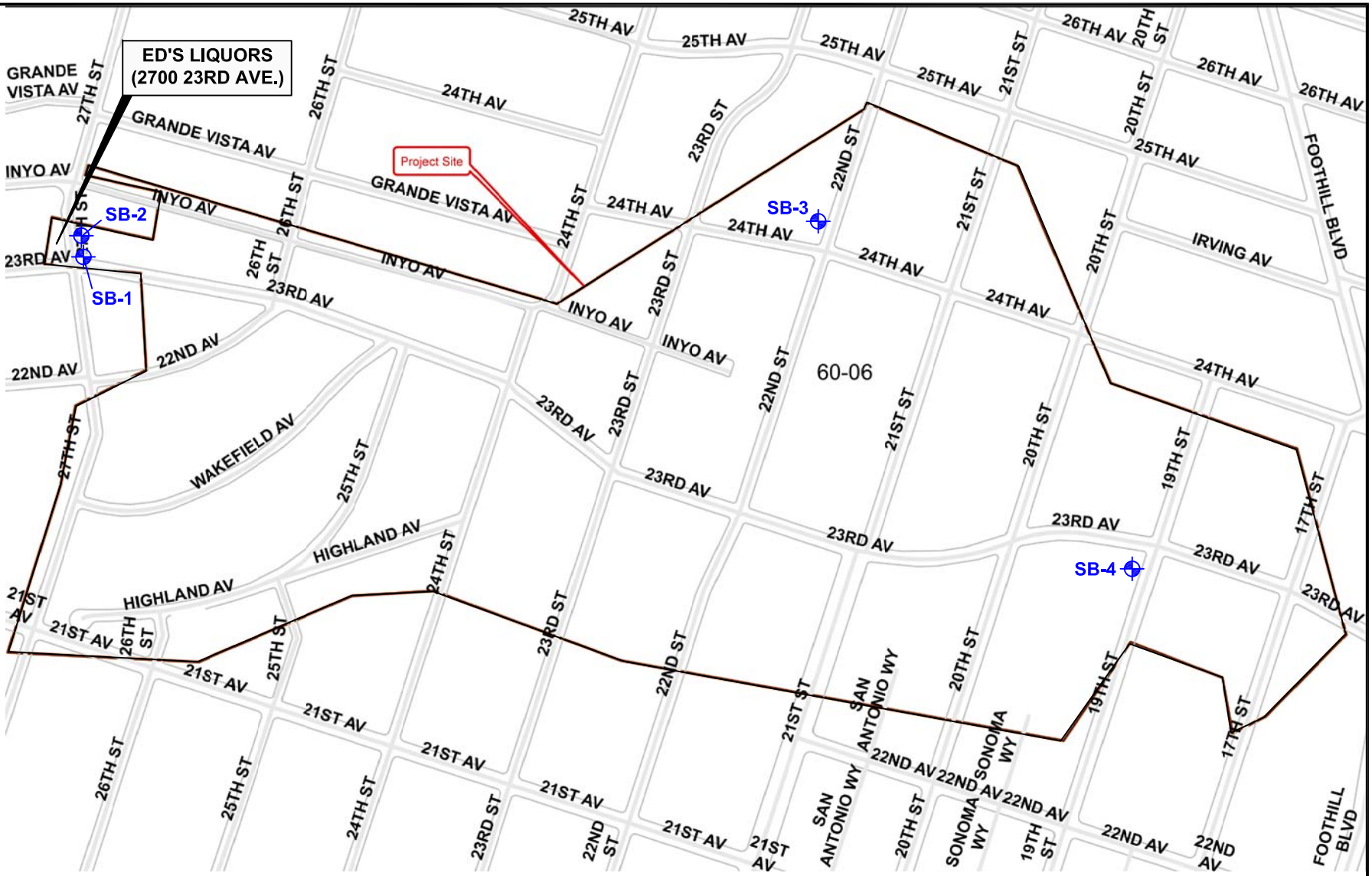
SCALE IN FEET

0 2,000 4,000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	SITE LOCATION	FIGURE
PROJECT NO. 402231012 / DATE 3/15	SUB-BASIN 60-06 OAKLAND, CALIFORNIA	1

402231012-SL.dwg, Mar 16, 2015, 10:34am, SN



LEGEND

BORING LOCATION

N

SCALE IN FEET

0 400 800

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: MAP BY CITY OF OAKLAND, SHEET NO. 101, DECEMBER 2013.

Ninyo & Moore	SITE VICINITY	FIGURE
PROJECT NO. 402231012 / DATE 3/15	SUB-BASIN 60-06 OAKLAND, CALIFORNIA	2

402231012-SV.dwg, Mar 16, 2015, 10:33am, SN

REFERENCE: GOOGLE EARTH IMAGERY, 2015.

N

SCALE IN FEET

0 60 120

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND
BORING LOCATION

Ninyo & Moore	2700 23RD AVENUE BORING LOCATIONS	FIGURE
PROJECT NO. 402231012 / DATE 3/15	SUB-BASIN 60-06 OAKLAND, CALIFORNIA	3

402231012-SB1.dwg, Mar 16, 2015, 10:35am, SN

REFERENCE: GOOGLE EARTH IMAGERY, 2015.

N

SCALE IN FEET

0 60 120

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND
BORING LOCATION

Ninyo & Moore	2400 EAST 22ND STREET BORING LOCATION	FIGURE
PROJECT NO. 402231012 / DATE 3/15	SUB-BASIN 60-06 OAKLAND, CALIFORNIA	4

402231012-SB3.dwg, Mar 16, 2015, 10:36am, SN

REFERENCE: GOOGLE EARTH IMAGERY, 2015.

N

SCALE IN FEET

0 60 120

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND
BORING LOCATION

Ninyo & Moore	2288 EAST 19TH STREET BORING LOCATION	FIGURE
PROJECT NO. 402231012 / DATE 3/15	SUB-BASIN 60-06 OAKLAND, CALIFORNIA	5

402231012-SB4.dwg, Mar 16, 2015, 10:36am, SN

APPENDIX A

PERMITS

Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 02/05/2015 By jamesy

Permit Numbers: W2015-0107
Permits Valid from 02/19/2015 to 02/19/2015

Application Id:	1422901610462	**City of Project Site:**Oakland
Site Location:	2700 23rd Avenue	
Project Start Date:	02/19/2015	**Completion Date:**02/19/2015
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org	
Applicant:	Ninyo & Moore - Melissa Terry 1956 Webster Street, Suite 400, Oakland, CA 94612	**Phone:** 510-455-1087
Property Owner:	Public Works City of Oakland 250 Frank H. Ogawa Plaza #5301, Oakland, CA 94612	**Phone:** 510-238-6361
Client:	** same as Property Owner **	
Contact:	Melissa Terry	**Phone:** 510-455-1087 **Cell:** 510-455-1087

	Total Due:	$265.00
Receipt Number: WR2015-0055	**Total Amount Paid:**	$265.00
Payer Name : Avram Ninyo	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 4 Boreholes
Driller: PeneCore Drilling Company - Lic #: 906899 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2015-0107	02/05/2015	05/20/2015	4	4.00 in.	10.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or

waterways or be allowed to move off the property where work is being completed.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

8. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

Permits for which no major inspection has been ap[illegible]ed within 180 days shall expire by limitation. No refund [illegible]e than 180 days after expiration or fi[illegible]

JOB SITE

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: OB1500178 Obstruction

Filed Date: 2/23/2015

Job Site: 2700 23RD AVE

Schedule Inspection by calling: 510-238-3444

Parcel No: 026 079303100

District:

Project Description: Reserve two non-metered parking spaces on E 27th St at 23rd Ave.
One space NO FEE re: X1500372.
Re: Soil borings for soil sampling on E 27th St at 23rd Ave; see site plan.
Contact Melissa Terry, Ninyo & Moore, 510 455-1087

Related Permits: X1500372

	Name	Applicant	Address	Phone	License #
Owner:	PULIDO MARIA & PEDRO		22762 MOURA CT HAYWARD, CA		
Contractor-Employee:	T S A DRILLING INC	X	220 NORTH EAST ST WOODLAND, CA	(530) 661-3600	906899

PERMIT DETAILS: Building/Public Use/Activity/Obstructions

Work Information

Start Date: 02/26/2015
End Date: 02/26/2015

Obstruction Permit Type: Short Term (Max 14 Days)
Number of Meters (Metered Area):
Length Of Obstruction (Unmetered Area): 25

TOTAL FEES TO BE PAID AT FILING: $101.26

Application Fee	$71.00	Records Management Fee	$8.38	Short Term Permits	$17.25
Technology Enhancement Fee	$4.63				

Plans Checked By _____ Date _____ Permit Issued By _____ Date 2.23

Finalized By _____ Date _____

1611.93

Permits for which no major inspection has been ap... ved within 180 days shall expire by limitation. No refund... re than 180 days after expiration or final.

JOB SITE

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: OB1500177 Obstruction

Filed Date: 2/23/2015

Job Site: 1748 23RD AVE

Schedule Inspection by calling: 510-238-3444

Parcel No: 020 020501700

District:

Project Description: Reserve two non-metered parking spaces on E 19th St at 23rd Ave.
One space NO FEE re: X1500371.
Soil borings for soil sampling on E 19th St at 23rd Ave; see site plan.
Contact Melissa Terry, Ninyo & Moore, 510 455-1087

Related Permits: OB1500176

	Name	Applicant	Address	Phone	License #
Owner:	KADOTA MASAO & HOSHIKO TRS		1748 23RD AVE OAKLAND, CA		
Contractor-Employee:	T S A DRILLING INC	X	220 NORTH EAST ST WOODLAND, CA	(530) 661-3600	906899

PERMIT DETAILS: Building/Public Use/Activity/Obstructions

Work Information

Start Date: 02/26/2015
End Date: 02/26/2015

Obstruction Permit Type: Short Term (Max 14 Days)
Number of Meters (Metered Area):
Length Of Obstruction (Unmetered Area): 25

TOTAL FEES TO BE PAID AT FILING: $101.26

Application Fee	$71.00	Records Management Fee	$8.38	Short Term Permits	$17.25
Technology Enhancement Fee	$4.63				

Plans Checked By _____ Date _____ Permit Issued By _____ Date 2.23

Finalized By _____ Date _____

Permits for which no major inspection has been ap, ved within 180 days shall expire by limitation. No refund . re than 180 days after expiration final.

JOB SITE

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: OB1500176 Obstruction **Filed Date:** 2/23/2015

Job Site: 2141 24TH AVE **Schedule Inspection by calling:** 510-238-3444

Parcel No: 021 029200101

District:

Project Description: Reserve two non-metered parking spaces on E 22nd St at 24th Ave. One space NO FEE re: X1500370.
Re: Soil borings for soil sampling on E 22nd St at 24th Ave; see site plan.
Contact Melissa Terry, Ninyo & Moore, 510 455-1087

Related Permits: X1500370 X1500371

	Name	Applicant	Address	Phone	License #
Owner:	BANKS ROSALIND R & ABDURRASHEED HANEEF & TAUH ETAL		P O BOX 6324 OAKLAND, CA		
Contractor-Employee:	T S A DRILLING INC	X	220 NORTH EAST ST WOODLAND, CA	(530) 661-3600	906899

PERMIT DETAILS: Building/Public Use/Activity/Obstructions

Work Information

Start Date: 02/26/2015
End Date: 02/26/2015

Obstruction Permit Type: Short Term (Max 14 Days)
Number of Meters (Metered Area):
Length Of Obstruction (Unmetered Area): 25

TOTAL FEES TO BE PAID AT FILING: $101.26

Application Fee	$71.00	Records Management Fee	$8.38	Short Term Permits	$17.25
Technology Enhancement Fee	$4.63				

Plans Checked By _____ Date _____ Permit Issued By _____ Date 2.23

Finalized By _____ Date _____

Permits for which no major inspection has been ap[redacted]ration or final.

JOB SITE

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: X1500372 Excavation

Filed Date: 2/23/2015

Job Site: 2700 23RD AVE

Schedule Inspection by calling: [redacted]

Parcel No: 026 079303100

District:

For SL; X; and CGS permits see **SPECIAL NOTE** below

Project Description: Soil borings for soil sampling on E 27th St at 23rd Ave; see site plan.
Permit valid 90 days.
Contact Melissa Terry, Ninyo & Moore, 510 455-1087
Separate Obstruction permit required to reserve/block parking lane.
Call PWA INSPECTION prior to start: 510-238-3651. 4th FLOOR.

Related Permits: X1500371

	Name	Applicant	Address	Phone	License #
Owner:	PULIDO MARIA & PEDRO		22762 MOURA CT HAYWARD, CA		
Contractor-Employee:	T S A DRILLING INC	X	220 NORTH EAST ST WOODLAND, CA	(530) 661-3600	906899

PERMIT DETAILS: Building/Public Infrastructure/Excavation/NA

General Information

Excavation Type: Private Party
Special Paving Detail Required:
Tree Removal Involved:
Date Street Last Resurfaced:
Holiday Restriction (Nov 1 - Jan 1):
Worker's Compensation Company Name:
Limited Operation Area (7AM-9AM) And (4PM-6PM):
Worker's Compensation Policy #:

Key Dates

Approximate Start Date:
Approximate End Date:

TOTAL FEES TO BE PAID AT FILING: $436.05

Application Fee	$71.00	Excavation - Private Party Type	$309.00	Records Management Fee	$36.10
Technology Enhancement Fee	$19.95				

Plans Checked By _____ Date _____ Permit Issued By _____ Date 2.23

Finalized By _____ Date _____

SPECIAL NOTE

- For SL; X; and CGS permits Call PWA INSPECTION prior to start: 510-238-3651 or visit 4th FLOOR.
- SL and X permits valid 90 days; CGS permits valid 30 days

Permits for which no major inspection has been a[illegible] piration or final.

JOB SITE

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: X1500371 Excavation

Filed Date: 2/23/2015

Job Site: 1748 23RD AVE

Schedule Inspection by calling: [illegible]

Parcel No: 020 020501700

District:

For SL; X; and CGS permits see **SPECIAL NOTE** below

Project Description: Soil borings for soil sampling on E 19th St at 23rd Ave; see site plan.
Permit valid 90 days.
Contact Melissa Terry, Ninyo & Moore, 510 455-1087
Separate Obstruction permit required to reserve/block parking lane.
Call PWA INSPECTION prior to start: 510-238-3651. 4th FLOOR.

Related Permits: X1500370

	Name	Applicant	Address	Phone	License #
Owner:	KADOTA MASAO & HOSHIKO TRS		1748 23RD AVE OAKLAND, CA		
Contractor-Employee:	T S A DRILLING INC	X	220 NORTH EAST ST WOODLAND, CA	(530) 661-3600	906899

PERMIT DETAILS: Building/Public Infrastructure/Excavation/NA

General Information

Excavation Type: Private Party
Special Paving Detail Required:
Tree Removal Involved:
Date Street Last Resurfaced:
Holiday Restriction (Nov 1 - Jan 1):
Worker's Compensation Company Name:
Limited Operation Area (7AM-9AM) And (4PM-6PM):
Worker's Compensation Policy #:

Key Dates

Approximate Start Date:
Approximate End Date:

TOTAL FEES TO BE PAID AT FILING: $436.05

Application Fee	$71.00	Excavation - Private Party Type	$309.00	Records Management Fee	$36.10
Technology Enhancement Fee	$19.95				

Plans Checked By _____ Date _____ Permit Issued By _____ Date 2/23

Finalized By _____ Date _____

SPECIAL NOTE

- For SL; X; and CGS permits Call PWA INSPECTION prior to start: 510-238-3651 or visit 4th FLOOR.
- SL and X permits valid 90 days; CGS permits valid 30 days

Permits for which no major inspection has been a[illegible] [illegible]piration or final.

JOB SITE

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: X1500370 Excavation

Filed Date: 2/23/2015

Job Site: 2141 24TH AVE

Schedule Inspection by calling: [illegible]

Parcel No: 021 029200101

District:

For SL; X; and CGS permits see **SPECIAL NOTE** below

Project Description: Soil borings for soil sampling on E 22nd St at 24th Ave; see site plan.
Permit valid 90 days.
Contact Melissa Terry, Ninyo & Moore, 510 455-1087
Separate Obstruction permit required to reserve/block parking lane.
Call PWA INSPECTION prior to start: 510-238-3651. 4th FLOOR.

Related Permits:

	Name	Applicant	Address	Phone	License #
Owner:	BANKS ROSALIND R & ABDURRASHEED HANEEF & TAUH ETAL		P O BOX 6324 OAKLAND, CA		
Contractor-Employee:	T S A DRILLING INC	X	220 NORTH EAST ST WOODLAND, CA	(530) 661-3600	906899

PERMIT DETAILS: Building/Public Infrastructure/Excavation/NA

General Information

Excavation Type: Private Party
Special Paving Detail Required:
Tree Removal Involved:
Date Street Last Resurfaced:
Holiday Restriction (Nov 1 - Jan 1):
Worker's Compensation Company Name:
Limited Operation Area (7AM-9AM) And (4PM-6PM):
Worker's Compensation Policy #:

Key Dates

Approximate Start Date:
Approximate End Date:

TOTAL FEES TO BE PAID AT FILING: $436.05

Application Fee	$71.00	Excavation - Private Party Type	$309.00	Records Management Fee	$36.10
Technology Enhancement Fee	$19.95				

Plans Checked By _____ Date _____ Permit Issued By _____ Date 2.23

Finalized By _____ Date _____

SPECIAL NOTE

- For SL; X; and CGS permits Call PWA INSPECTION prior to start: 510-238-3651 or visit 4th FLOOR.
- SL and X permits valid 90 days; CGS permits valid 30 days

APPENDIX B

BORING LOGS

BORING LOG EXPLANATION SHEET

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	
0	■							Bulk sample.
		■						Modified split-barrel drive sampler.
		⊠						2-inch inner diameter split-barrel drive sampler.
		⊠						No recovery with modified split-barrel drive sampler, or 2-inch inner diameter split-barrel drive sampler.
		▮						Sample retained by others.
5		◪						Standard Penetration Test (SPT).
		⁄						No recovery with a SPT.
		▯	XX/XX					Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.
		⁄						No recovery with Shelby tube sampler.
		▯						Continuous Push Sample.
10				⚲				Seepage.
				▽				Groundwater encountered during drilling.
				▼				Groundwater measured after drilling.
						▨	SM	MAJOR MATERIAL TYPE (SOIL): Solid line denotes unit change.
						▨	CL	Dashed line denotes material change.
15						▨		Attitudes: Strike/Dip b: Bedding c: Contact j: Joint f: Fracture F: Fault cs: Clay Seam s: Shear bss: Basal Slide Surface sf: Shear Fracture sz: Shear Zone sbs: Shear Bedding Surface
								The total depth line is a solid line that is drawn at the bottom of the boring.
20								

Ninyo & Moore

BORING LOG

Explanation of Boring Log Symbols

PROJECT NO.	DATE	FIGURE

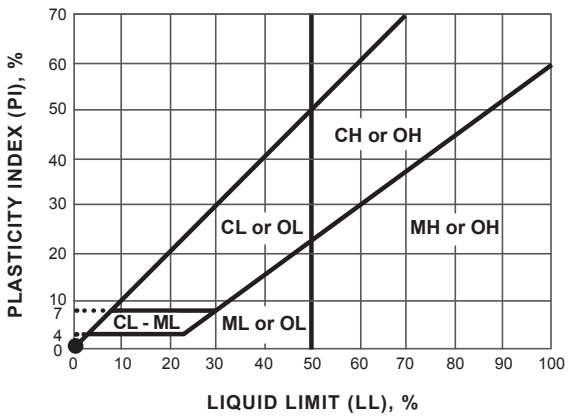
SOIL CLASSIFICATION CHART PER ASTM D 2488

PRIMARY DIVISIONS			SECONDARY DIVISIONS	
			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with clay
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

PLASTICITY CHART



APPARENT DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPOOLING CABLE OR CATHEAD		AUTOMATIC TRIP HAMMER	
	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

CONSISTENCY - FINE-GRAINED SOIL

CONSIS-TENCY	SPOOLING CABLE OR CATHEAD		AUTOMATIC TRIP HAMMER	
	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

Ninyo & Moore

USCS METHOD OF SOIL CLASSIFICATION

Explanation of USCS Method of Soil Classification

PROJECT NO.	DATE	FIGURE

DATE DRILLED 2/26/15 BORING NO. SB-1

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING GEOPROBE

DRIVE WEIGHT _____ DROP _____

SAMPLED BY FSM LOGGED BY FSM REVIEWED BY _____

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								SC	ASPHALT: Approximately 4-inches thick.
						1.5			Dark gray, moist, dense, clayey SAND, fine to coarse-grained sand, trace fine gravel.
						1.5		SM	Dark gray, moist, medium dense, silty SAND; fine to coarse-grained sand, trace fine sub-angular gravel.
				▽				ML	Gray, moist, firm, SILT; grades wet in 2-inch sand stringer.
10									Gray, moist, firm, SILT; Medium plasticity, strong gasoline odor.
									No Recovery 10-15 feet, tube stuck in drill rod.
						80.1		SM	Dark yellowish brown, moist, dense, silty SAND; fine-grained sand.
20						13.6			Dark yellow brown, moist, dense, silty SAND; Total depth = 20 feet.
									Groundwater was encountered at approximately 7 feet, in 2-inch stringer.
									Backfilled with neat cement on 2/26/15.
30									
40									

Ninyo & Moore

BORING LOG

SUB-BASIN 60-60
2699 23RD AVENUE, OAKLAND, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402231012	3/15	A1

DATE DRILLED 2/26/15 BORING NO. SB-2

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING GEOPROBE

DRIVE WEIGHT _____ DROP _____

SAMPLED BY FSM LOGGED BY FSM REVIEWED BY _____

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								GW	4-inches asphalt.
						1.8			Dark yellowish brown, moist, medium dense, silty SAND; fine to coarse-grained sand.
						15.1			Grades dark brown.
				▽				ML	No recovery 5-7 feet.
									Gray, moist, soft,sandy SILT, fine-grained sand, strong gasoline odor.
10						1,382			Grades wet at 10-14 feet bgs, strong gasoline odor.
						19.0			Very dark grayish brown, dry to moist, hard, sandy SILT; fine-grained sand, trace fine sub-angular gravel.
									Grades with trace fine sub-angular gravel at 18 feet.
20						3.8			Very dark grayish brown, moist, hard, sandy SILT; fine-grained sand.
									Total depth = 20 feet
									Groundwater encountered at approximately 10 feet, stabilized groundwater 5.8.
									Backfilled with neat cement on 2/26/15.
30									
40									

Ninyo & Moore

BORING LOG

SUB-BASIN 60-60
2699 23RD AVENUE, OAKLAND, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402231012	3/15	A2

DATE DRILLED 2/26/15 BORING NO. SB-3

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING GEOPROBE

DRIVE WEIGHT _____ DROP _____

SAMPLED BY FSM LOGGED BY FSM REVIEWED BY _____

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								GW	4-inches asphalt.
								ML	Road base gravel.
									Dark brown, moist, firm, sandy SILT; fine-grained sand, low plasticity, trace fine gravel.
						.01			Yellowish brown, moist, firm, SILT; medium plasticity, trace fine gravel.
						0.2		GM	Brown, mosit, dense, silty GRAVEL; fine to coarse subangular gravel, no odor.
10								ML	Yellowish brown, moist, firm, sandy SILT, low to medium plasticity, 15 % fine-grained sand.
						0.2			Yellowish brown, moist, firm, sandy SILT; low to medium plasticity, 15% fine grained sand.
						0.2			
20									Total depth = 20 feet.
									Groundwater was not encountered.
									Backfilled with neat cement on 2/26/15.
30									
40									

Ninyo & Moore

BORING LOG

SUB-BASIN 60-60
2699 23RD AVENUE, OAKLAND, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402231012	3/15	A3

DATE DRILLED 2/26/15 BORING NO. SB-4

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING GEOPROBE

DRIVE WEIGHT _____ DROP _____

SAMPLED BY FSM LOGGED BY FSM REVIEWED BY _____

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								GW	4-inches asphalt.
								SM	Road base gravel.
									Dark brown, moist, medium dense, silty SAND; 80% fine-grained sand.
						0.1			
				▽					Grades with decreasing silt, 3-inches lens of wet sand.
						0.1		GM	Yellowish brown, moist, dense, silty GRAVEL; fine to coarse-grained sand, fine to coarse angular gravel.
10						0.1		ML	Yellowish brown, moist, firm, SILT; low plasticity, trace fine gravel.
								SM	Yellowish brown, moist, medium dense, silty SAND; fine-grained sand, 30% silt.
20						0.1			Moist, dense, grades with increasing fine-grained SAND.
									Total depth = 20 feet.
									Groundwater was encountered at approximately 7 feet, in 3- inch lens.
									Backfilled with neat cement on 2/26/15.
30									
40									

Ninyo & Moore

BORING LOG

SUB-BASIN 60-60
2699 23RD AVENUE, OAKLAND, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402231012	3/15	A5

APPENDIX C

LABORATORY ANALYTICAL REPORT


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 264927
ANALYTICAL REPORT

Ninyo & Moore	Project : 402231012
1956 Webster St.	Location : SUB-Basin
Oakland, CA 94612	Level : II

Sample ID	Lab ID
SB-3-10	264927-001
SB-4-7	264927-002
SB-1-10	264927-003
SB-2-10	264927-004
SB-2-GW	264927-005
TRIP BLANK	264927-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Mikelle Chong Date: 03/05/2015

Mikelle M. Chong
Project Manager
mikelle.chong@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**264927**
Client:	**Ninyo & Moore**
Project:	**402231012**
Location:	**SUB-Basin**
Request Date:	**02/26/15**
Samples Received:	**02/26/15**

This data package contains sample and QC results for four soil samples and one water sample, requested for the above referenced project on 02/26/15. The samples were received on ice and intact, directly from the field.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Soil:
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Soil:
Low recovery was observed for diesel C10-C24 in the MS of SB-2-10 (lab # 264927-004); the LCS was within limits, and the associated RPD was within limits. High surrogate recovery was observed for o-terphenyl in SB-4-7 (lab # 264927-002); no target analytes were detected in the sample. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Water:
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Soil:
High recoveries were observed for trichloroethene in the MS/MSD for batch 220868; the parent sample was not a project sample, the LCS was within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. Low surrogate recoveries were observed for dibromofluoromethane in the MS/MSD for batch 220868; the parent sample was not a project sample. SB-2-10 (lab # 264927-004) was diluted due to high non-target analytes. No other analytical problems were encountered.

Metals (EPA 6010B and EPA 7471A) Soil:
No analytical problems were encountered.

Metals (EPA 6010B and EPA 7470A) Filtrate:
No analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Page 1 of 1

Chain of Custody # _____

C&T LOGIN # 264927

Project No: 402231012
Project Name: SUMP Basin 60-06
Project P. O. No:
EDD Format: Report Level ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☒ Standard

Sampler: F McFarland
Report To: Kris Larson
Company: Ninyo & Moore
Telephone: 510 343-3020
Email: klarson@ninyoandmoore.com

Lab No.	Sample ID.	SAMPLING		MATRIX				# of Containers	CHEMICAL PRESERVATIVE					ANALYTICAL REQUEST					
		Date Collected	Time Collected	Water	Solid				HCl	H2SO4	HNO3	NaOH	None	TPHg	TPHd/mo	VOCs 8260B	Title 22 metals (no Hg)		
1	SB-3-10	02/26/15	0930		X			5						X	X	X	X		
2	SB-4-7	02/26/15	1113		X			5						X	X	X	X		
3	SB-1-10	02/26/15	1325		X			5						X	X	X	X		
4	SB-2-10	02/26/15	1417		X			5						X	X	X	X		
5	SB-2-GW	02/26/15	1471	X				9	X				X	X	X	X	X		

Notes:
Lab to Filter Groundwater for Title 22 Metals

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:
[signature] DATE: 2/26/15 TIME: 1610
DATE: TIME:
DATE: TIME:

RECEIVED BY:
[signature] DATE: 2/26/15 TIME: 16:10
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 264927 Date Received 2/26/15 Number of coolers 1
Client Ninyo + Moore Project SUB-Basin

Date Opened 2/26 By (print) BJ (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☒ Bubble Wrap ☒ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☒ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ (YES) NO
If YES, what time were they transferred to freezer? 1700
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ (YES) (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ (YES) NO N/A
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
If YES, Who was called? _____ By _____ Date: _____

COMMENTS
10 Received 3 extra Trip Blanks

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 264927

Results for any subcontracted analyses are not included in this summary.

Client : Ninyo & Moore
Project : 402231012
Location : SUB-Basin

Client Sample ID : SB-3-10 Laboratory Sample ID : 264927-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Antimony	9.8		0.52	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Arsenic	4.8		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	240		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.45		0.10	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	27		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	14		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	21		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	15		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.017		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Molybdenum	0.29		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Nickel	65		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	32		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	43		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-4-7 Laboratory Sample ID : 264927-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Antimony	5.9		0.51	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Arsenic	2.9		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	63		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.32		0.10	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	19		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	6.6		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	6.8		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	3.6		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.032		0.015	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	16		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	22		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	14		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Client Sample ID : SB-1-10 Laboratory Sample ID : 264927-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	2.2	Y	0.99	mg/Kg	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	2.7	Y	1.0	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Antimony	6.7		0.53	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Arsenic	4.0		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	150		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.40		0.11	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	21		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	12		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	7.6		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.023		0.017	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	32		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	27		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	25		1.1	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-2-10 Laboratory Sample ID : 264927-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	220	Y	33	mg/Kg	As Recd	166.7	EPA 8015B	EPA 5030B
Diesel C10-C24	82	Y	0.99	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	8.0		5.0	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Ethylbenzene	610		250	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5035
m,p-Xylenes	250		250	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5035
Isopropylbenzene	280		250	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5035
Propylbenzene	590		250	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5035
n-Butylbenzene	510		250	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5035
Antimony	6.9		0.55	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Arsenic	3.5		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	180		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.53		0.11	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	30		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	18		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	7.4		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.033		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	47		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	35		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	30		1.1	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Client Sample ID : SB-2-GW Laboratory Sample ID : 264927-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	12,000		2,500	ug/L	As Recd	50.00	EPA 8015B	EPA 5030B
Diesel C10-C24	4,000		50	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Motor Oil C24-C36	330	Y	300	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Benzene	71		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Toluene	42		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Ethylbenzene	110		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
m,p-Xylenes	46		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
o-Xylene	16		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Isopropylbenzene	71		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Propylbenzene	130		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
1,3,5-Trimethylbenzene	22		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
sec-Butylbenzene	9.3		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
para-Isopropyl Toluene	11		1.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Naphthalene	4.9		4.0	ug/L	As Recd	2.000	EPA 8260B	EPA 5030B
Arsenic	14		5.0	ug/L	DISS.	1.000	EPA 6010B	METHOD
Barium	280		5.0	ug/L	DISS.	1.000	EPA 6010B	METHOD
Nickel	6.2		5.0	ug/L	DISS.	1.000	EPA 6010B	METHOD

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Field ID:	SB-2-GW	Sampled:	02/26/15
Matrix:	Water	Received:	02/26/15
Units:	ug/L	Analyzed:	03/02/15
Batch#:	220922		

Type: SAMPLE Diln Fac: 50.00
Lab ID: 264927-005

Analyte	Result	RL
Gasoline C7-C12	12,000	2,500

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	80-132

Type: BLANK Diln Fac: 1.000
Lab ID: QC779136

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	81	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC779135	Batch#:	220922
Matrix:	Water	Analyzed:	03/02/15
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	927.9	93	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	84	80-132

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	220922
MSS Lab ID:	264920-001	Sampled:	02/26/15
Matrix:	Water	Received:	02/26/15
Units:	ug/L	Analyzed:	03/02/15
Diln Fac:	1.000		

Type: MS Lab ID: QC779137

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<12.60	2,000	1,911	96	76-120

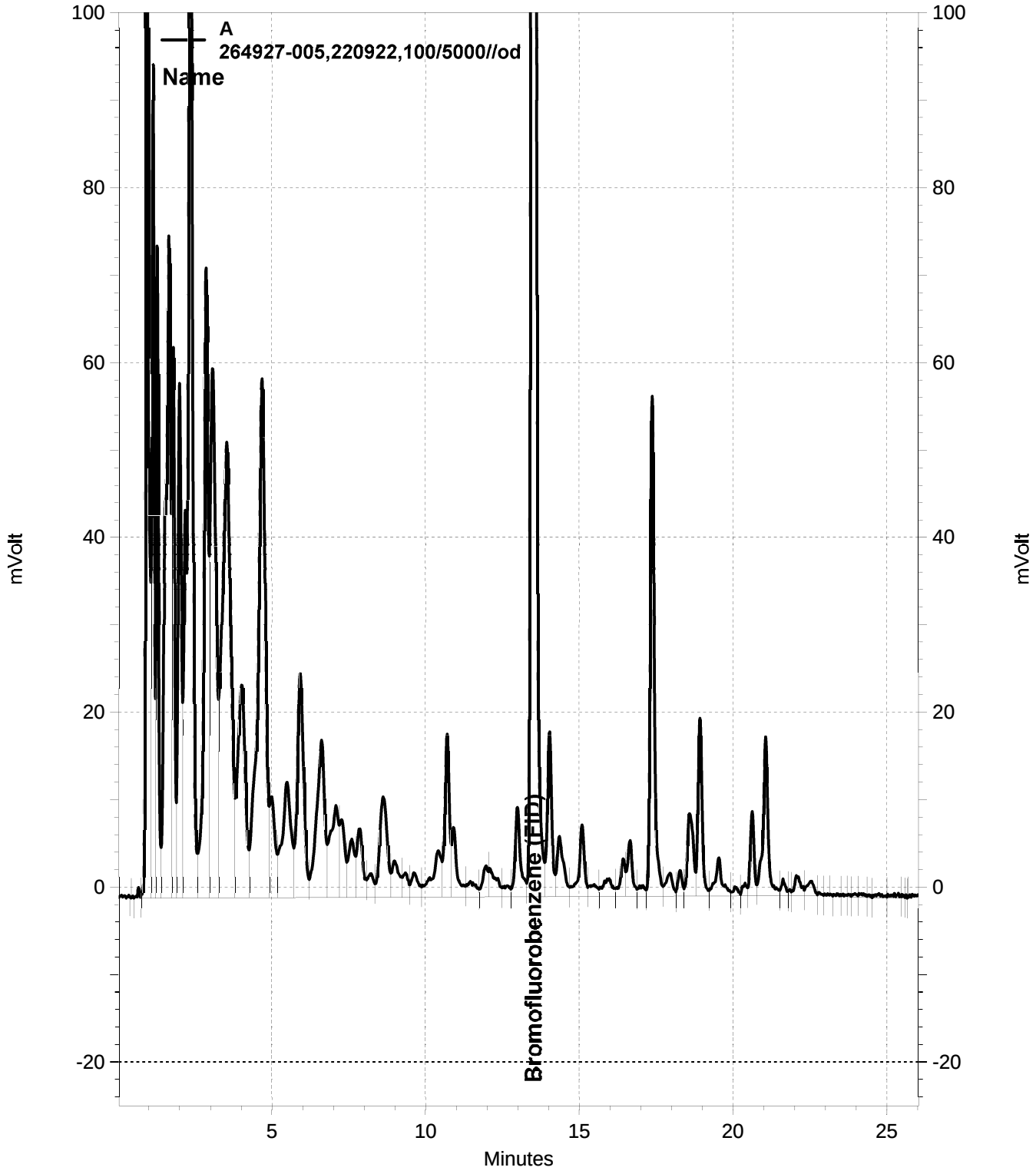
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	80-132

Type: MSD Lab ID: QC779138

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,920	96	76-120	0	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	80-132

RPD= Relative Percent Difference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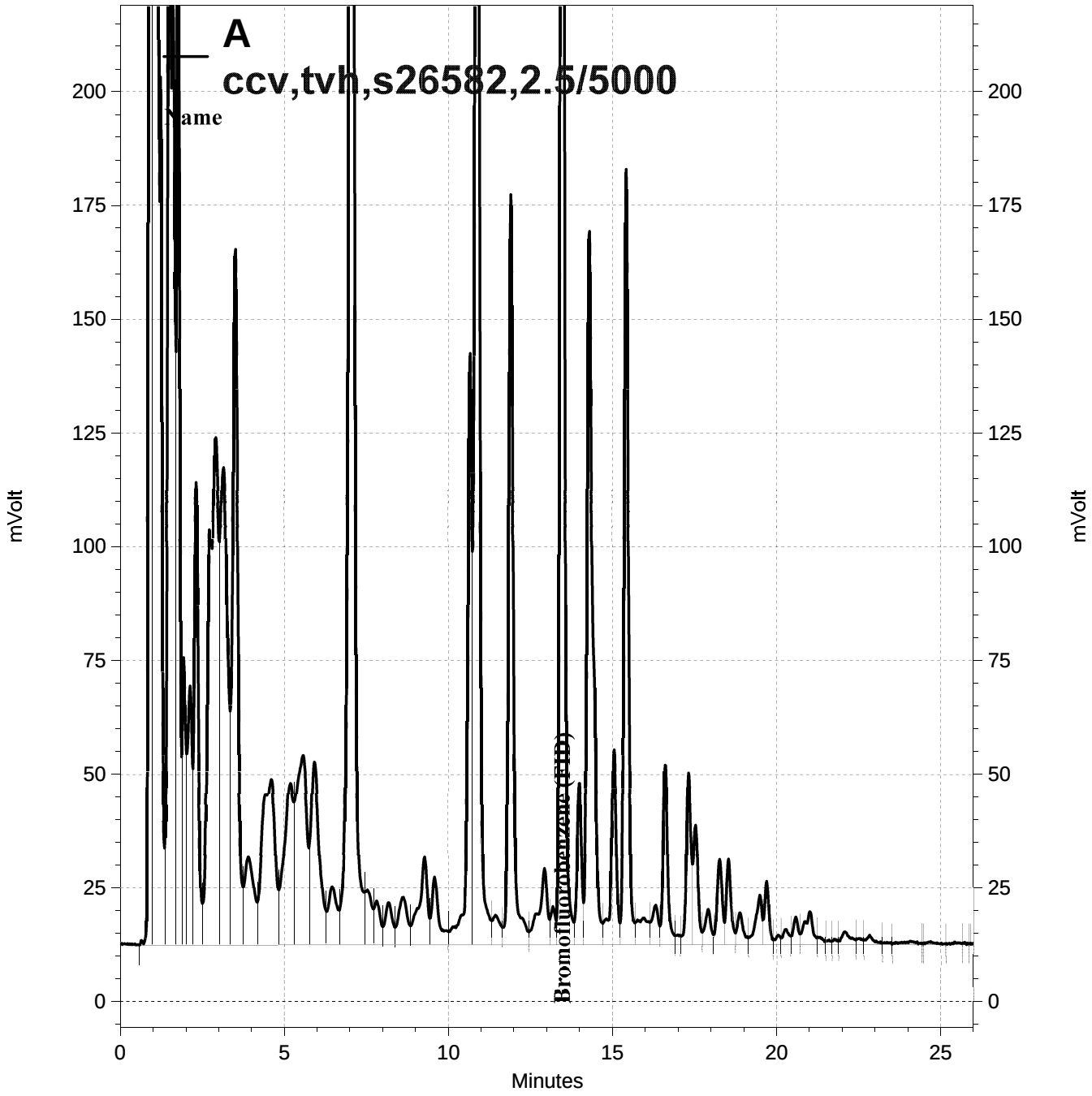
264927-005,220922,100/5000//od
Name
100
80
60
40
20
0
-20
mVolt
Bromofluorobenzene (FID)
5
10
15
20
25
Minutes
\\Lims\gdrive\ezchrom\Projects\GC04\Data\061-012, A



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Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	02/26/15
Units:	mg/Kg	Received:	02/26/15
Basis:	as received		

Field ID:	SB-3-10	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	220880
Lab ID:	264927-001	Analyzed:	02/27/15

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	113	78-138

Field ID:	SB-4-7	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	220880
Lab ID:	264927-002	Analyzed:	02/27/15

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	105	78-138

Field ID:	SB-1-10	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	220880
Lab ID:	264927-003	Analyzed:	02/27/15

Analyte	Result	RL
Gasoline C7-C12	2.2 Y	0.99

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	126	78-138

Field ID:	SB-2-10	Diln Fac:	166.7
Type:	SAMPLE	Batch#:	220927
Lab ID:	264927-004	Analyzed:	03/02/15

Analyte	Result	RL
Gasoline C7-C12	220 Y	33

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	78-138

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	02/26/15
Units:	mg/Kg	Received:	02/26/15
Basis:	as received		

Type:	BLANK	Batch#:	220880
Lab ID:	QC778981	Analyzed:	02/27/15
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	91	78-138

Type:	BLANK	Batch#:	220880
Lab ID:	QC779140	Analyzed:	03/02/15
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	110	78-138

Type:	BLANK	Batch#:	220927
Lab ID:	QC779163	Analyzed:	03/02/15
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	78-138

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC778980	Batch#:	220880
Matrix:	Soil	Analyzed:	02/27/15
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.010	101	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	78-138

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	264928-001	Batch#:	220880
Matrix:	Soil	Sampled:	02/26/15
Units:	mg/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	03/02/15

Type: MS Lab ID: QC778982

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1641	9.804	8.452	85	50-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	117	78-138

Type: MSD Lab ID: QC778983

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.709	7.616	77	50-120	9	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	110	78-138

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC779162	Batch#:	220927
Matrix:	Soil	Analyzed:	03/02/15
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9694	97	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	93	78-138

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	264951-001	Batch#:	220927
Matrix:	Soil	Sampled:	02/27/15
Units:	mg/Kg	Received:	02/27/15
Basis:	as received	Analyzed:	03/02/15

Type: MS Lab ID: QC779164

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.06308	10.53	9.269	87	50-120

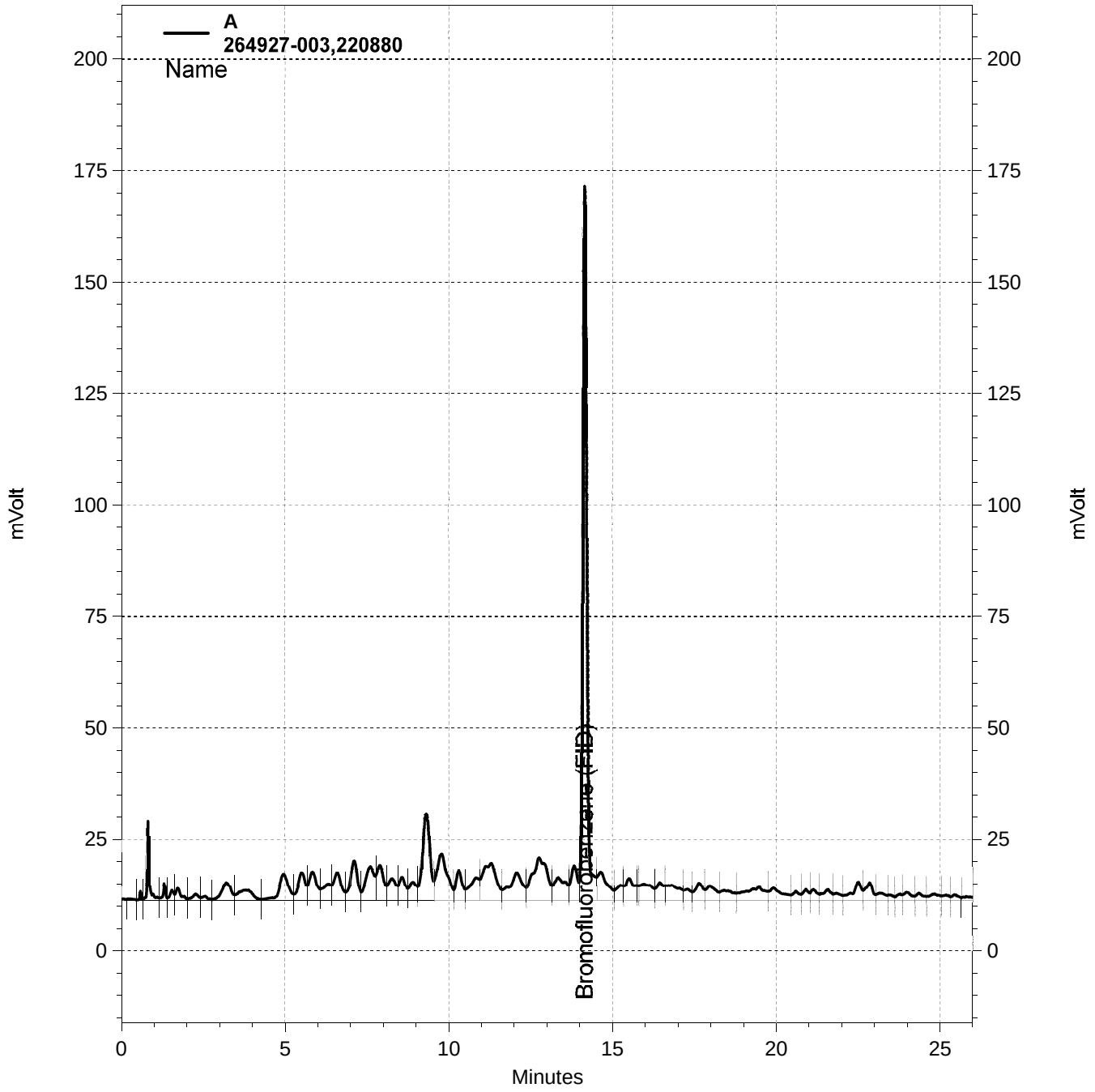
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	78-138

Type: MSD Lab ID: QC779165

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.87	8.007	73	50-120	18	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

RPD= Relative Percent Difference



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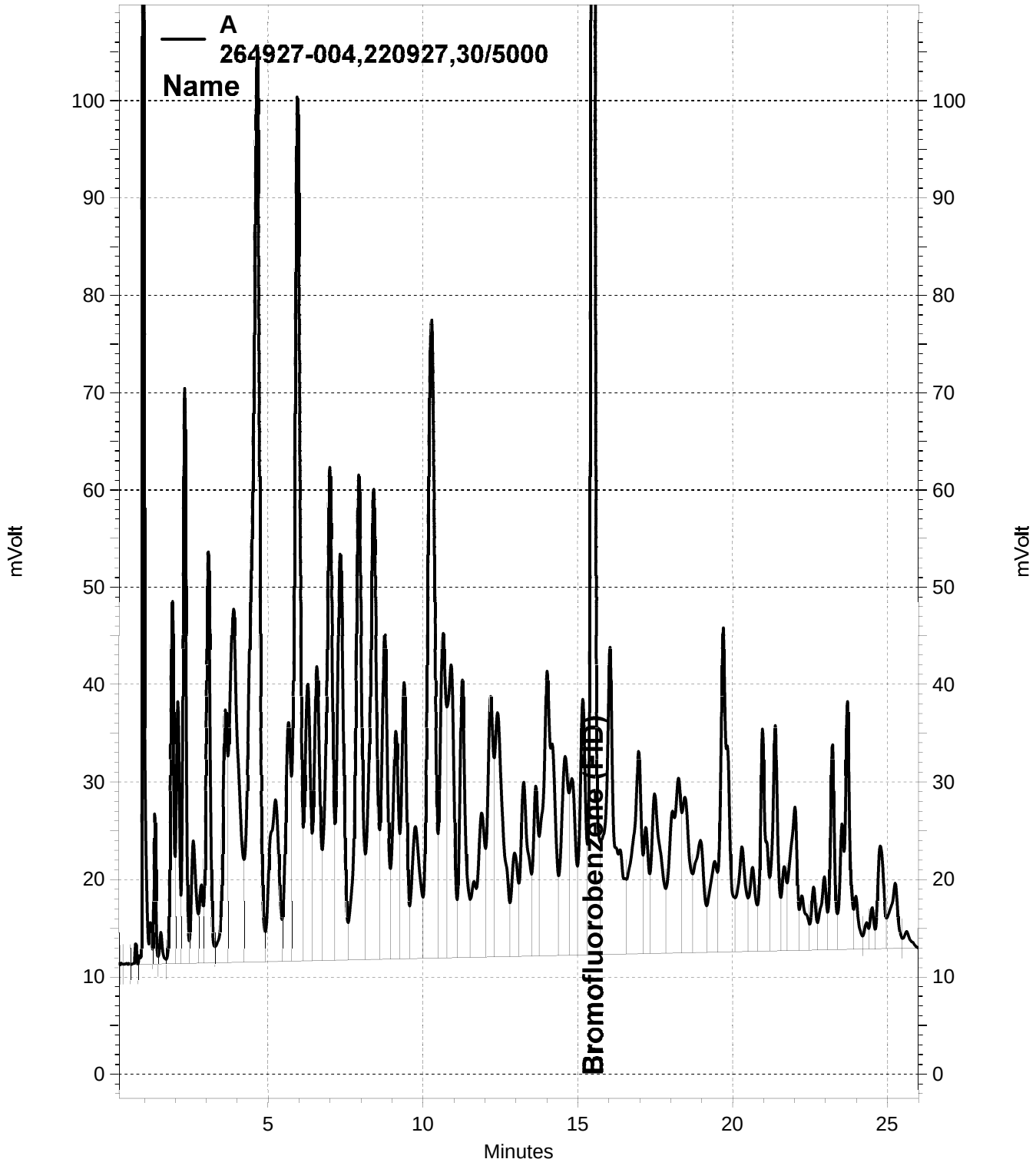

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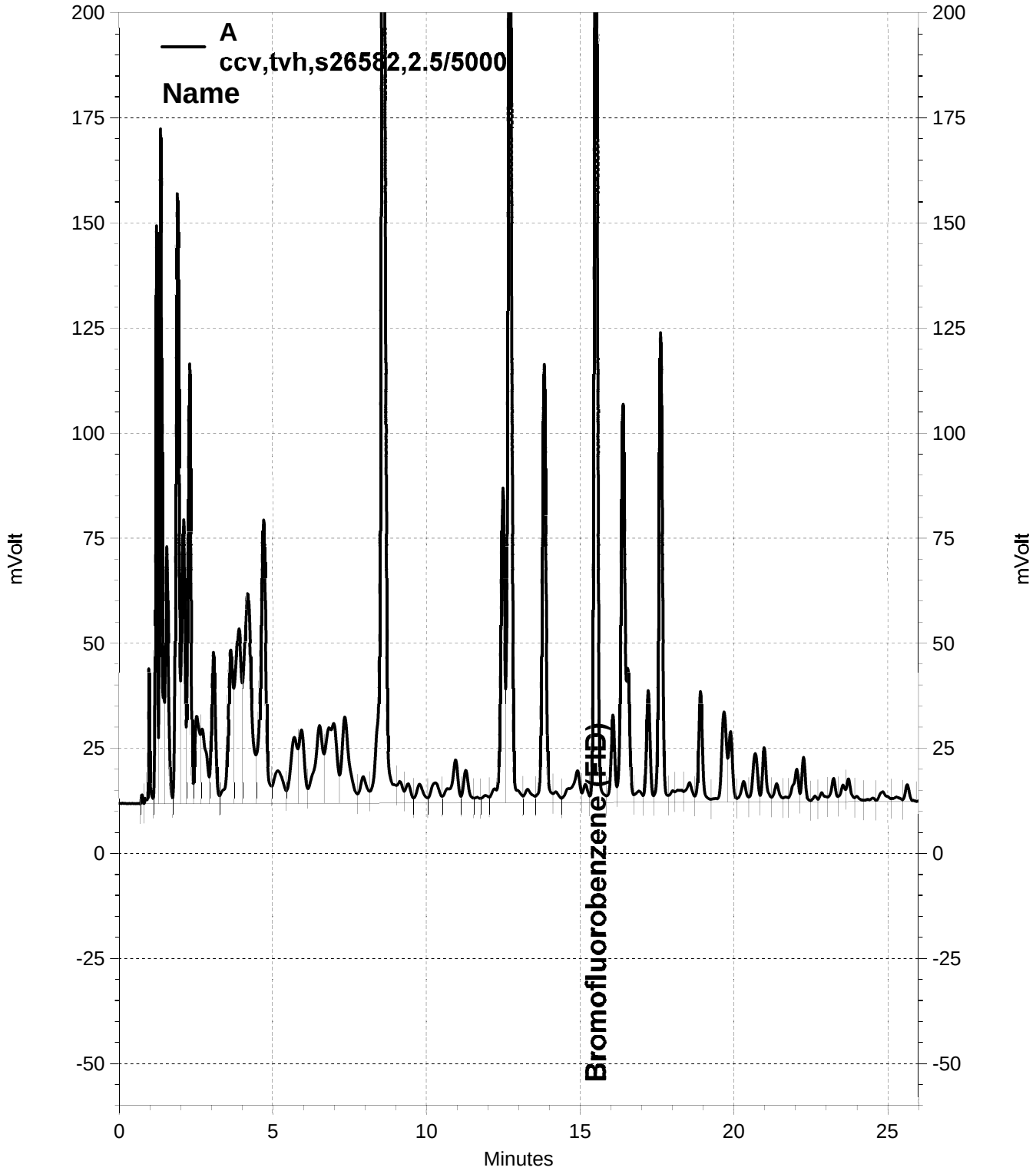

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Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3520C
Project#:	402231012	Analysis:	EPA 8015B
Field ID:	SB-2-GW	Batch#:	220893
Matrix:	Water	Sampled:	02/26/15
Units:	ug/L	Received:	02/26/15
Diln Fac:	1.000	Prepared:	02/27/15

Type: SAMPLE Analyzed: 03/03/15
Lab ID: 264927-005

Analyte	Result	RL
Diesel C10-C24	4,000	50
Motor Oil C24-C36	330 Y	300

Surrogate	%REC	Limits
o-Terphenyl	99	67-136

Type: BLANK Analyzed: 03/02/15
Lab ID: QC779029

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	85	67-136

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3520C
Project#:	402231012	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	220893
Units:	ug/L	Prepared:	02/27/15
Diln Fac:	1.000	Analyzed:	03/02/15

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC779030

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,743	70	60-121

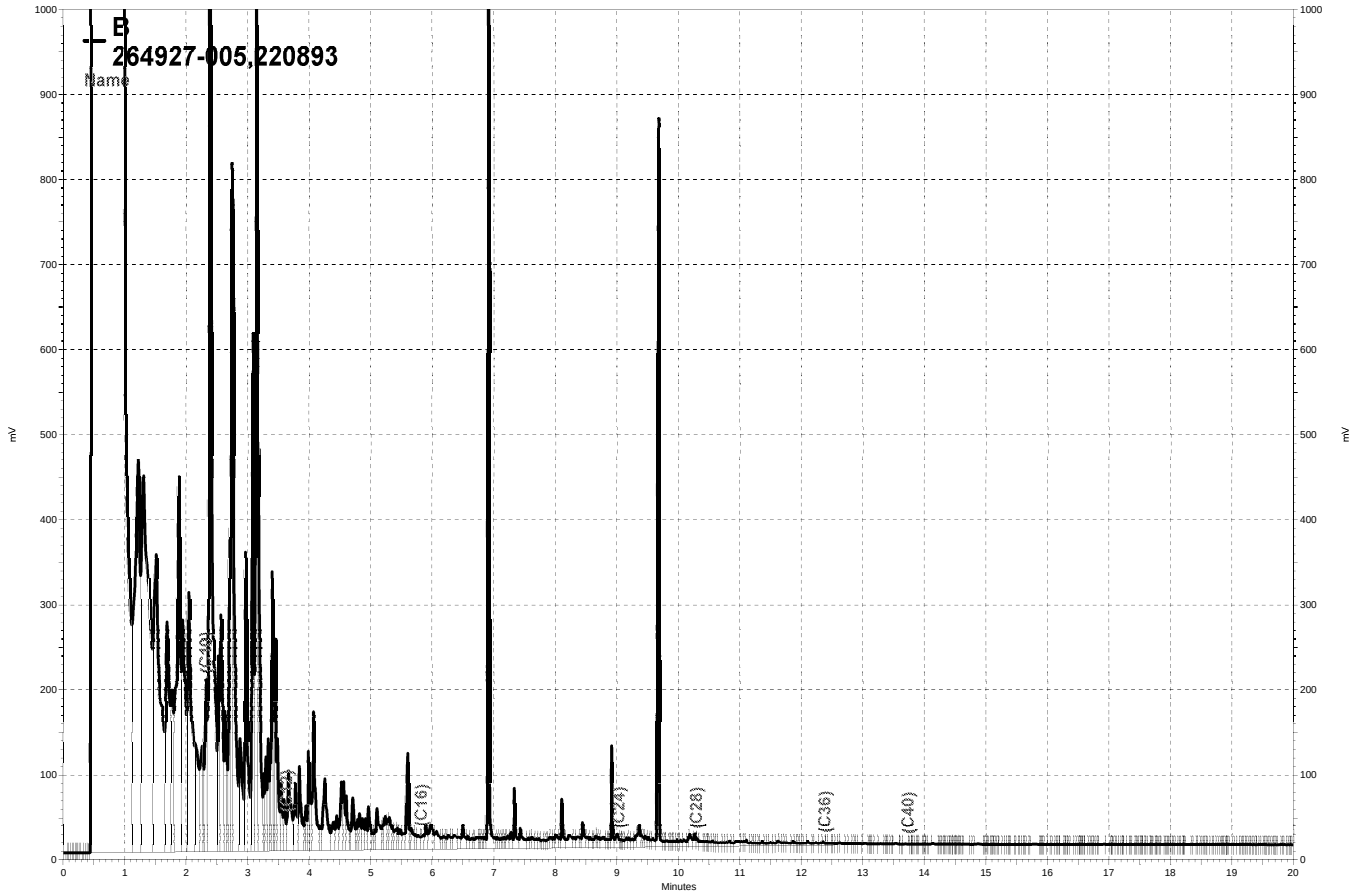
Surrogate	%REC	Limits
o-Terphenyl	79	67-136

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC779031

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,599	64	60-121	9	32

Surrogate	%REC	Limits
o-Terphenyl	80	67-136

RPD= Relative Percent Difference



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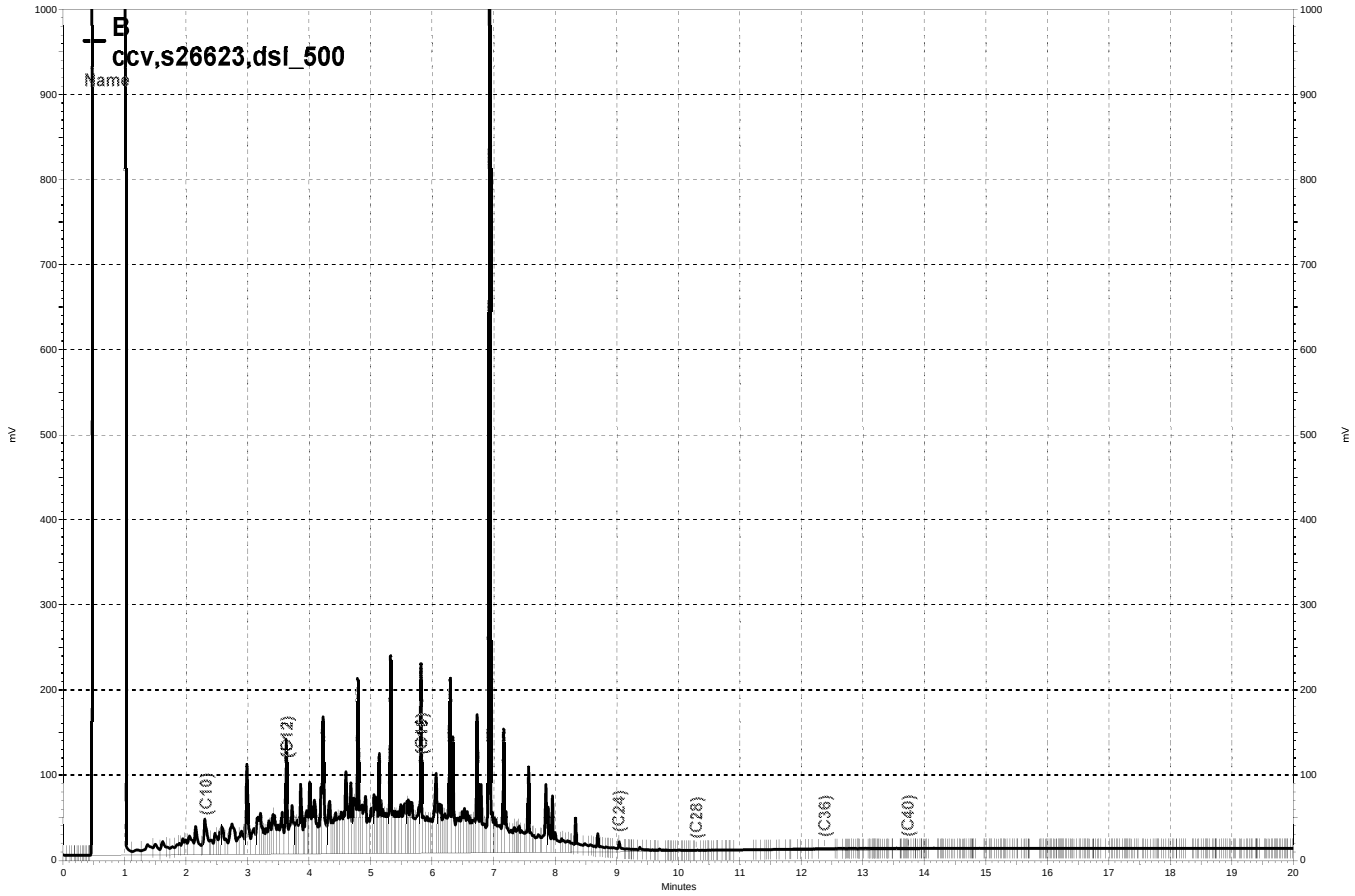

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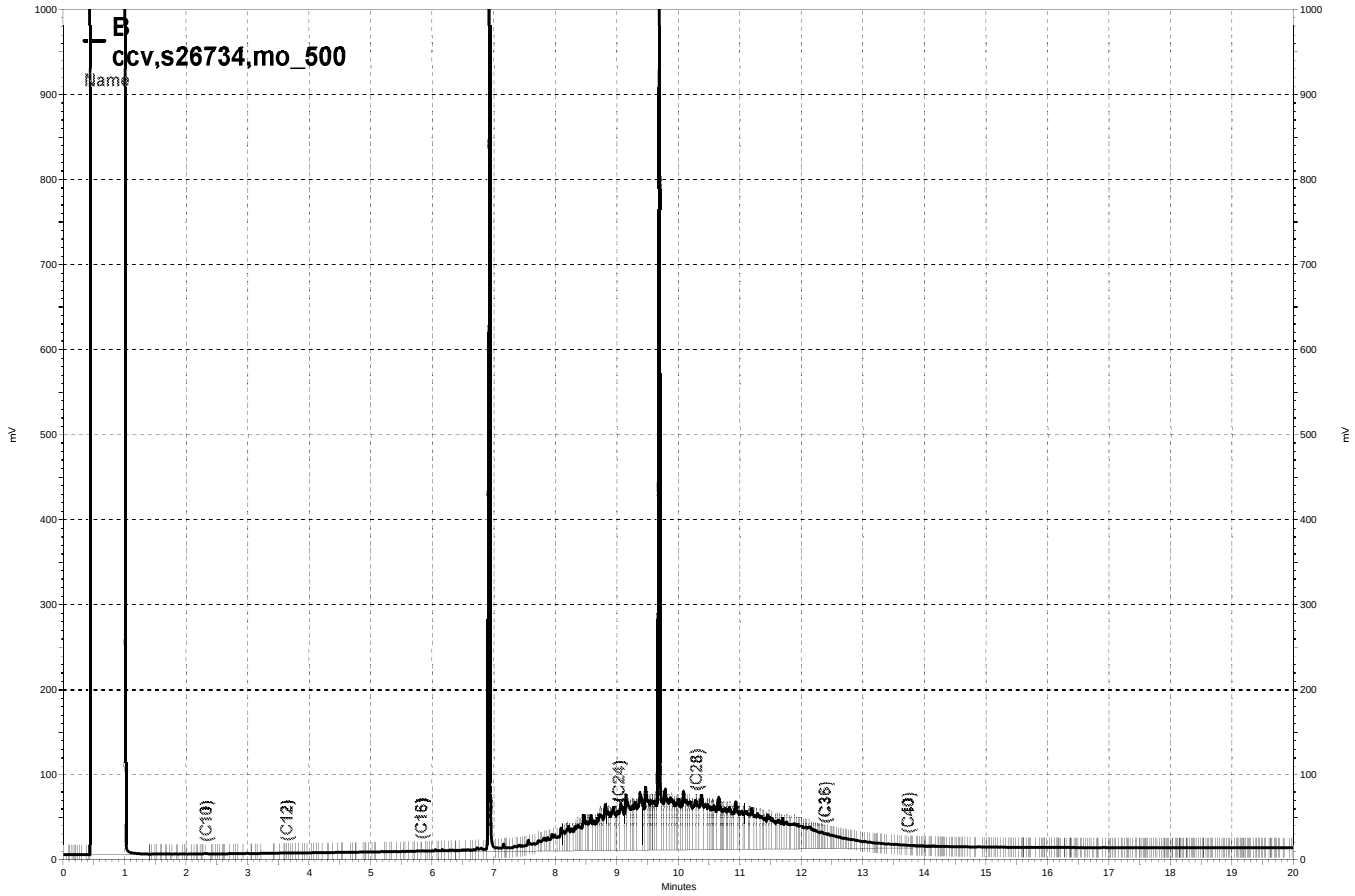

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Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3550B
Project#:	402231012	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	220888
Units:	mg/Kg	Sampled:	02/26/15
Basis:	as received	Received:	02/26/15
Diln Fac:	1.000	Prepared:	02/27/15

Field ID: SB-3-10 Lab ID: 264927-001
Type: SAMPLE Analyzed: 03/04/15

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	104	59-140

Field ID: SB-4-7 Lab ID: 264927-002
Type: SAMPLE Analyzed: 03/04/15

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	141 *	59-140

Field ID: SB-1-10 Lab ID: 264927-003
Type: SAMPLE Analyzed: 03/04/15

Analyte	Result	RL
Diesel C10-C24	2.7 Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	111	59-140

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3550B
Project#:	402231012	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	220888
Units:	mg/Kg	Sampled:	02/26/15
Basis:	as received	Received:	02/26/15
Diln Fac:	1.000	Prepared:	02/27/15

Field ID:	SB-2-10	Lab ID:	264927-004
Type:	SAMPLE	Analyzed:	02/27/15

Analyte	Result	RL
Diesel C10-C24	82 Y	0.99
Motor Oil C24-C36	8.0	5.0

Surrogate	%REC	Limits
o-Terphenyl	111	59-140

Type:	BLANK	Analyzed:	03/02/15
Lab ID:	QC779013		

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	123	59-140

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3550B
Project#:	402231012	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC779014	Batch#:	220888
Matrix:	Soil	Prepared:	02/27/15
Units:	mg/Kg	Analyzed:	02/27/15

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.78	48.02	96	58-137

Surrogate	%REC	Limits
o-Terphenyl	95	59-140

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3550B
Project#:	402231012	Analysis:	EPA 8015B
Field ID:	SB-2-10	Batch#:	220888
MSS Lab ID:	264927-004	Sampled:	02/26/15
Matrix:	Soil	Received:	02/26/15
Units:	mg/Kg	Prepared:	02/27/15
Basis:	as received	Analyzed:	02/27/15
Diln Fac:	1.000		

Type: MS Lab ID: QC779015

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	82.35	50.38	96.29	28 *	46-154

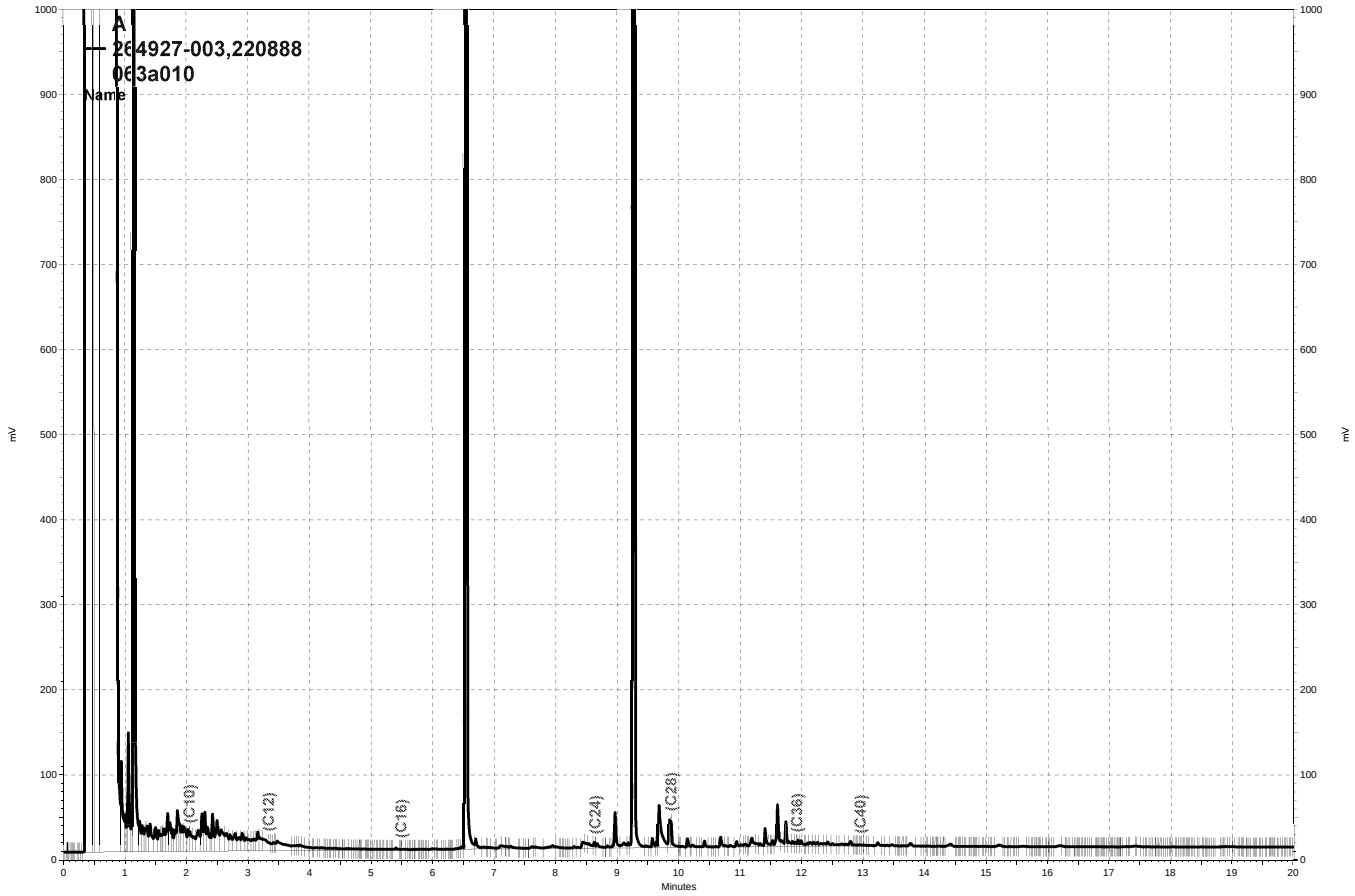
Surrogate	%REC	Limits
o-Terphenyl	120	59-140

Type: MSD Lab ID: QC779016

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.41	131.2	97	46-154	31	50

Surrogate	%REC	Limits
o-Terphenyl	123	59-140

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference



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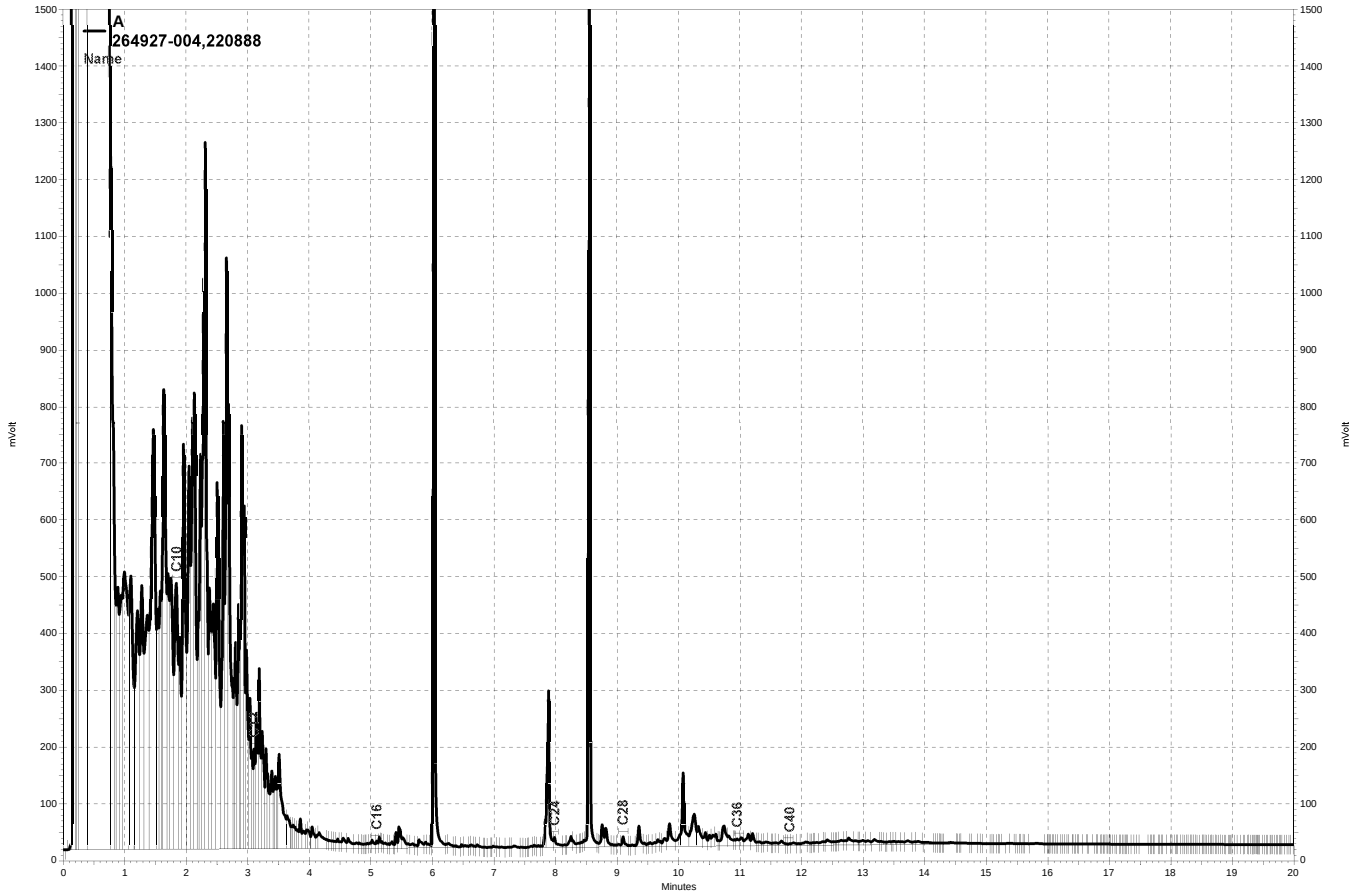

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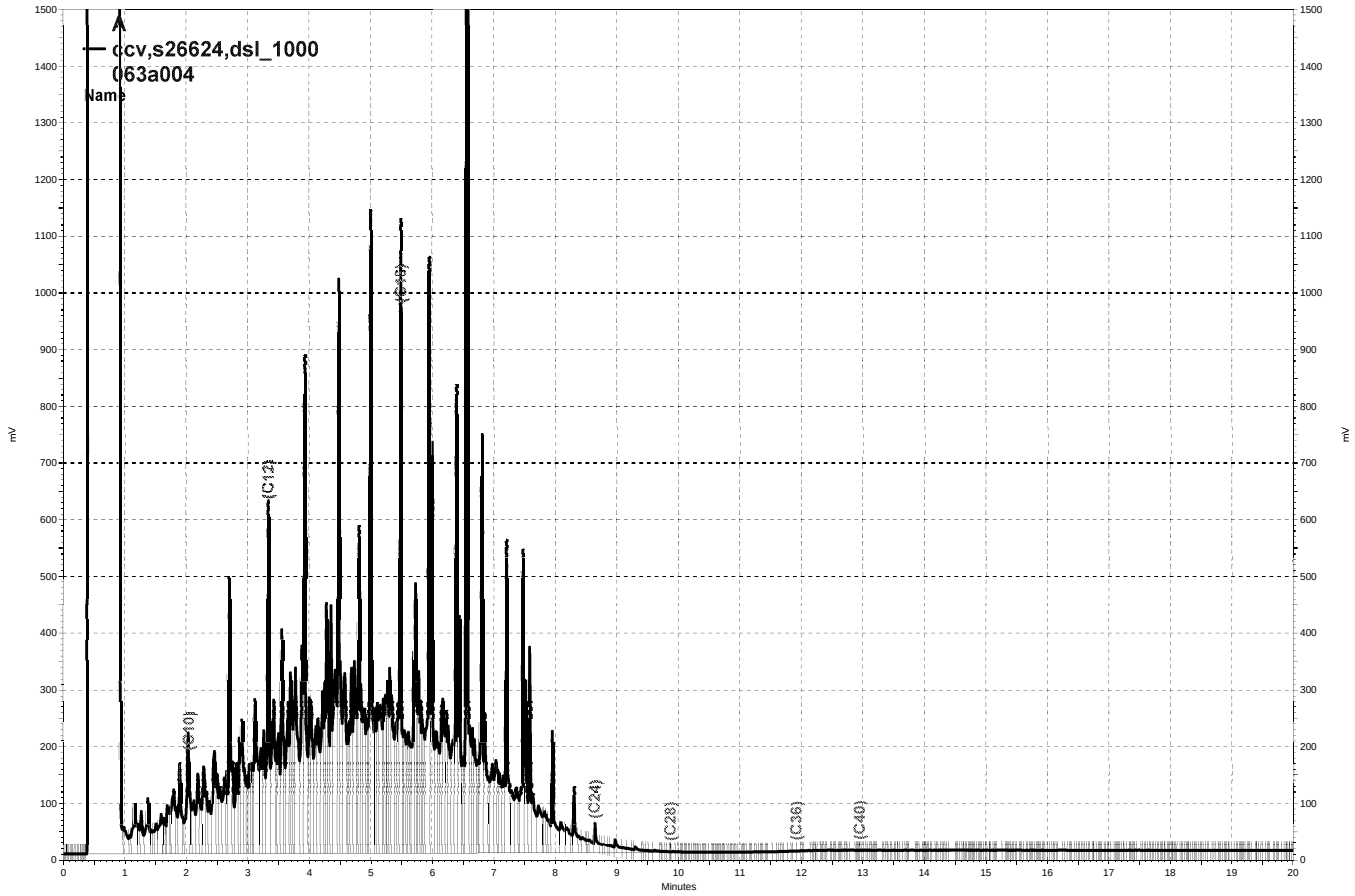

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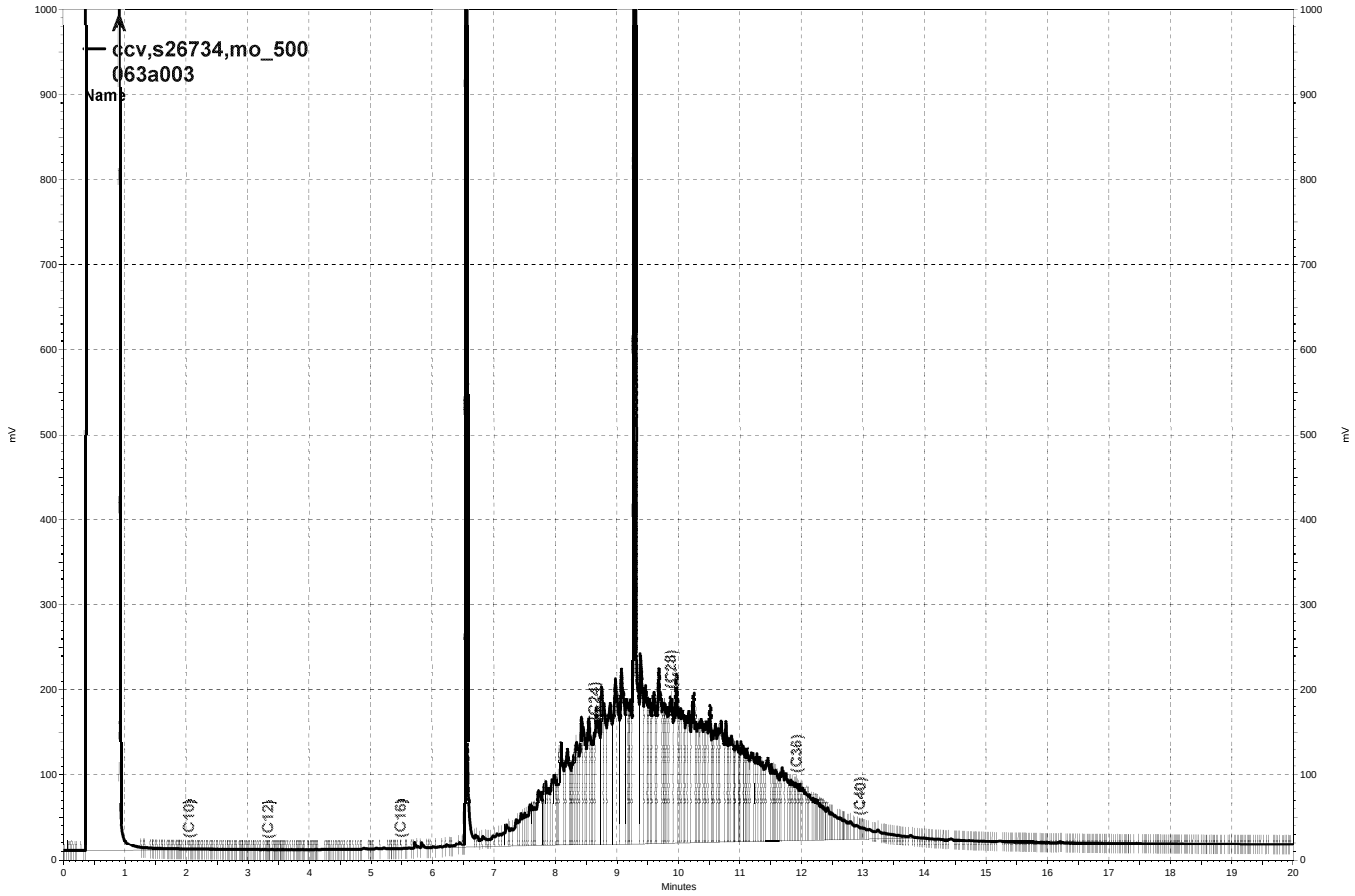

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-2-GW	Batch#:	220930
Lab ID:	264927-005	Sampled:	02/26/15
Matrix:	Water	Received:	02/26/15
Units:	ug/L	Analyzed:	03/03/15
Diln Fac:	2.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	2.0
Vinyl Chloride	ND	1.0
Bromomethane	ND	2.0
Chloroethane	ND	2.0
Trichlorofluoromethane	ND	2.0
Acetone	ND	20
Freon 113	ND	4.0
1,1-Dichloroethene	ND	1.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	1.0
MTBE	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Vinyl Acetate	ND	20
1,1-Dichloroethane	ND	1.0
2-Butanone	ND	20
cis-1,2-Dichloroethene	ND	1.0
2,2-Dichloropropane	ND	1.0
Chloroform	ND	1.0
Bromochloromethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1-Dichloropropene	ND	1.0
Carbon Tetrachloride	ND	1.0
1,2-Dichloroethane	ND	1.0
Benzene	71	1.0
Trichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
Bromodichloromethane	ND	1.0
Dibromomethane	ND	1.0
4-Methyl-2-Pentanone	ND	20
cis-1,3-Dichloropropene	ND	1.0
Toluene	42	1.0
trans-1,3-Dichloropropene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
2-Hexanone	ND	20
1,3-Dichloropropane	ND	1.0
Tetrachloroethene	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-2-GW	Batch#:	220930
Lab ID:	264927-005	Sampled:	02/26/15
Matrix:	Water	Received:	02/26/15
Units:	ug/L	Analyzed:	03/03/15
Diln Fac:	2.000		

Analyte	Result	RL
Dibromochloromethane	ND	1.0
1,2-Dibromoethane	ND	1.0
Chlorobenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
Ethylbenzene	110	1.0
m,p-Xylenes	46	1.0
o-Xylene	16	1.0
Styrene	ND	1.0
Bromoform	ND	2.0
Isopropylbenzene	71	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
1,2,3-Trichloropropane	ND	1.0
Propylbenzene	130	1.0
Bromobenzene	ND	1.0
1,3,5-Trimethylbenzene	22	1.0
2-Chlorotoluene	ND	1.0
4-Chlorotoluene	ND	1.0
tert-Butylbenzene	ND	1.0
1,2,4-Trimethylbenzene	ND	1.0
sec-Butylbenzene	9.3	1.0
para-Isopropyl Toluene	11	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
n-Butylbenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,2-Dibromo-3-Chloropropane	ND	4.0
1,2,4-Trichlorobenzene	ND	1.0
Hexachlorobutadiene	ND	4.0
Naphthalene	4.9	4.0
1,2,3-Trichlorobenzene	ND	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	89	80-128
1,2-Dichloroethane-d4	77	75-139
Toluene-d8	95	80-120
Bromofluorobenzene	88	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	220930
Units:	ug/L	Analyzed:	03/02/15
Diln Fac:	1.000		

Type: BS Lab ID: QC779177

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	15.00	14.00	93	66-135
Benzene	15.00	15.60	104	80-123
Trichloroethene	15.00	15.63	104	80-123
Toluene	15.00	16.16	108	80-121
Chlorobenzene	15.00	16.17	108	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	91	75-139
Toluene-d8	97	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC779178

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	15.00	12.56	84	66-135	11	24
Benzene	15.00	14.26	95	80-123	9	20
Trichloroethene	15.00	14.06	94	80-123	11	20
Toluene	15.00	14.85	99	80-121	8	20
Chlorobenzene	15.00	15.14	101	80-123	7	20

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-128
1,2-Dichloroethane-d4	89	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC779179	Batch#:	220930
Matrix:	Water	Analyzed:	03/02/15
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC779179	Batch#:	220930
Matrix:	Water	Analyzed:	03/02/15
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-128
1,2-Dichloroethane-d4	96	75-139
Toluene-d8	99	80-120
Bromofluorobenzene	110	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-3-10	Diln Fac:	0.9416
Lab ID:	264927-001	Batch#:	220868
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Freon 12	ND	9.4
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.4
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.4
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.4
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-3-10	Diln Fac:	0.9416
Lab ID:	264927-001	Batch#:	220868
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	89	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	93	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-4-7	Diln Fac:	0.8319
Lab ID:	264927-002	Batch#:	220868
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Freon 12	ND	8.3
Chloromethane	ND	8.3
Vinyl Chloride	ND	8.3
Bromomethane	ND	8.3
Chloroethane	ND	8.3
Trichlorofluoromethane	ND	4.2
Acetone	ND	17
Freon 113	ND	4.2
1,1-Dichloroethene	ND	4.2
Methylene Chloride	ND	17
Carbon Disulfide	ND	4.2
MTBE	ND	4.2
trans-1,2-Dichloroethene	ND	4.2
Vinyl Acetate	ND	42
1,1-Dichloroethane	ND	4.2
2-Butanone	ND	8.3
cis-1,2-Dichloroethene	ND	4.2
2,2-Dichloropropane	ND	4.2
Chloroform	ND	4.2
Bromochloromethane	ND	4.2
1,1,1-Trichloroethane	ND	4.2
1,1-Dichloropropene	ND	4.2
Carbon Tetrachloride	ND	4.2
1,2-Dichloroethane	ND	4.2
Benzene	ND	4.2
Trichloroethene	ND	4.2
1,2-Dichloropropane	ND	4.2
Bromodichloromethane	ND	4.2
Dibromomethane	ND	4.2
4-Methyl-2-Pentanone	ND	8.3
cis-1,3-Dichloropropene	ND	4.2
Toluene	ND	4.2
trans-1,3-Dichloropropene	ND	4.2
1,1,2-Trichloroethane	ND	4.2
2-Hexanone	ND	8.3
1,3-Dichloropropane	ND	4.2
Tetrachloroethene	ND	4.2

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-4-7	Diln Fac:	0.8319
Lab ID:	264927-002	Batch#:	220868
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Dibromochloromethane	ND	4.2
1,2-Dibromoethane	ND	4.2
Chlorobenzene	ND	4.2
1,1,1,2-Tetrachloroethane	ND	4.2
Ethylbenzene	ND	4.2
m,p-Xylenes	ND	4.2
o-Xylene	ND	4.2
Styrene	ND	4.2
Bromoform	ND	4.2
Isopropylbenzene	ND	4.2
1,1,2,2-Tetrachloroethane	ND	4.2
1,2,3-Trichloropropane	ND	4.2
Propylbenzene	ND	4.2
Bromobenzene	ND	4.2
1,3,5-Trimethylbenzene	ND	4.2
2-Chlorotoluene	ND	4.2
4-Chlorotoluene	ND	4.2
tert-Butylbenzene	ND	4.2
1,2,4-Trimethylbenzene	ND	4.2
sec-Butylbenzene	ND	4.2
para-Isopropyl Toluene	ND	4.2
1,3-Dichlorobenzene	ND	4.2
1,4-Dichlorobenzene	ND	4.2
n-Butylbenzene	ND	4.2
1,2-Dichlorobenzene	ND	4.2
1,2-Dibromo-3-Chloropropane	ND	4.2
1,2,4-Trichlorobenzene	ND	4.2
Hexachlorobutadiene	ND	4.2
Naphthalene	ND	4.2
1,2,3-Trichlorobenzene	ND	4.2

Surrogate	%REC	Limits
Dibromofluoromethane	105	78-134
1,2-Dichloroethane-d4	88	80-138
Toluene-d8	95	80-120
Bromofluorobenzene	91	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-1-10	Diln Fac:	0.8361
Lab ID:	264927-003	Batch#:	220868
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Freon 12	ND	8.4
Chloromethane	ND	8.4
Vinyl Chloride	ND	8.4
Bromomethane	ND	8.4
Chloroethane	ND	8.4
Trichlorofluoromethane	ND	4.2
Acetone	ND	17
Freon 113	ND	4.2
1,1-Dichloroethene	ND	4.2
Methylene Chloride	ND	17
Carbon Disulfide	ND	4.2
MTBE	ND	4.2
trans-1,2-Dichloroethene	ND	4.2
Vinyl Acetate	ND	42
1,1-Dichloroethane	ND	4.2
2-Butanone	ND	8.4
cis-1,2-Dichloroethene	ND	4.2
2,2-Dichloropropane	ND	4.2
Chloroform	ND	4.2
Bromochloromethane	ND	4.2
1,1,1-Trichloroethane	ND	4.2
1,1-Dichloropropene	ND	4.2
Carbon Tetrachloride	ND	4.2
1,2-Dichloroethane	ND	4.2
Benzene	ND	4.2
Trichloroethene	ND	4.2
1,2-Dichloropropane	ND	4.2
Bromodichloromethane	ND	4.2
Dibromomethane	ND	4.2
4-Methyl-2-Pentanone	ND	8.4
cis-1,3-Dichloropropene	ND	4.2
Toluene	ND	4.2
trans-1,3-Dichloropropene	ND	4.2
1,1,2-Trichloroethane	ND	4.2
2-Hexanone	ND	8.4
1,3-Dichloropropane	ND	4.2
Tetrachloroethene	ND	4.2

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-1-10	Diln Fac:	0.8361
Lab ID:	264927-003	Batch#:	220868
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Dibromochloromethane	ND	4.2
1,2-Dibromoethane	ND	4.2
Chlorobenzene	ND	4.2
1,1,1,2-Tetrachloroethane	ND	4.2
Ethylbenzene	ND	4.2
m,p-Xylenes	ND	4.2
o-Xylene	ND	4.2
Styrene	ND	4.2
Bromoform	ND	4.2
Isopropylbenzene	ND	4.2
1,1,2,2-Tetrachloroethane	ND	4.2
1,2,3-Trichloropropane	ND	4.2
Propylbenzene	ND	4.2
Bromobenzene	ND	4.2
1,3,5-Trimethylbenzene	ND	4.2
2-Chlorotoluene	ND	4.2
4-Chlorotoluene	ND	4.2
tert-Butylbenzene	ND	4.2
1,2,4-Trimethylbenzene	ND	4.2
sec-Butylbenzene	ND	4.2
para-Isopropyl Toluene	ND	4.2
1,3-Dichlorobenzene	ND	4.2
1,4-Dichlorobenzene	ND	4.2
n-Butylbenzene	ND	4.2
1,2-Dichlorobenzene	ND	4.2
1,2-Dibromo-3-Chloropropane	ND	4.2
1,2,4-Trichlorobenzene	ND	4.2
Hexachlorobutadiene	ND	4.2
Naphthalene	ND	4.2
1,2,3-Trichlorobenzene	ND	4.2

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	84	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	96	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-2-10	Diln Fac:	50.00
Lab ID:	264927-004	Batch#:	220885
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Freon 12	ND	500
Chloromethane	ND	500
Vinyl Chloride	ND	500
Bromomethane	ND	500
Chloroethane	ND	500
Trichlorofluoromethane	ND	250
Acetone	ND	1,000
Freon 113	ND	250
1,1-Dichloroethene	ND	250
Methylene Chloride	ND	1,000
Carbon Disulfide	ND	250
MTBE	ND	250
trans-1,2-Dichloroethene	ND	250
Vinyl Acetate	ND	2,500
1,1-Dichloroethane	ND	250
2-Butanone	ND	500
cis-1,2-Dichloroethene	ND	250
2,2-Dichloropropane	ND	250
Chloroform	ND	250
Bromochloromethane	ND	250
1,1,1-Trichloroethane	ND	250
1,1-Dichloropropene	ND	250
Carbon Tetrachloride	ND	250
1,2-Dichloroethane	ND	250
Benzene	ND	250
Trichloroethene	ND	250
1,2-Dichloropropane	ND	250
Bromodichloromethane	ND	250
Dibromomethane	ND	250
4-Methyl-2-Pentanone	ND	500
cis-1,3-Dichloropropene	ND	250
Toluene	ND	250
trans-1,3-Dichloropropene	ND	250
1,1,2-Trichloroethane	ND	250
2-Hexanone	ND	500
1,3-Dichloropropane	ND	250
Tetrachloroethene	ND	250

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	SB-2-10	Diln Fac:	50.00
Lab ID:	264927-004	Batch#:	220885
Matrix:	Soil	Sampled:	02/26/15
Units:	ug/Kg	Received:	02/26/15
Basis:	as received	Analyzed:	02/27/15

Analyte	Result	RL
Dibromochloromethane	ND	250
1,2-Dibromoethane	ND	250
Chlorobenzene	ND	250
1,1,1,2-Tetrachloroethane	ND	250
Ethylbenzene	610	250
m,p-Xylenes	250	250
o-Xylene	ND	250
Styrene	ND	250
Bromoform	ND	250
Isopropylbenzene	280	250
1,1,2,2-Tetrachloroethane	ND	250
1,2,3-Trichloropropane	ND	250
Propylbenzene	590	250
Bromobenzene	ND	250
1,3,5-Trimethylbenzene	ND	250
2-Chlorotoluene	ND	250
4-Chlorotoluene	ND	250
tert-Butylbenzene	ND	250
1,2,4-Trimethylbenzene	ND	250
sec-Butylbenzene	ND	250
para-Isopropyl Toluene	ND	250
1,3-Dichlorobenzene	ND	250
1,4-Dichlorobenzene	ND	250
n-Butylbenzene	510	250
1,2-Dichlorobenzene	ND	250
1,2-Dibromo-3-Chloropropane	ND	250
1,2,4-Trichlorobenzene	ND	250
Hexachlorobutadiene	ND	250
Naphthalene	ND	250
1,2,3-Trichlorobenzene	ND	250

Surrogate	%REC	Limits
Dibromofluoromethane	94	78-134
1,2-Dichloroethane-d4	101	80-138
Toluene-d8	92	80-120
Bromofluorobenzene	112	78-123
Trifluorotoluene (MeOH)	102	52-147

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC778925	Batch#:	220868
Matrix:	Soil	Analyzed:	02/27/15
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	22.12	88	70-134
Benzene	25.00	28.12	112	80-123
Trichloroethene	25.00	25.81	103	80-128
Toluene	25.00	26.31	105	80-120
Chlorobenzene	25.00	26.73	107	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	98	78-134
1,2-Dichloroethane-d4	85	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	91	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC778926	Batch#:	220868
Matrix:	Soil	Analyzed:	02/27/15
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC778926	Batch#:	220868
Matrix:	Soil	Analyzed:	02/27/15
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	83	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	92	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	220868
MSS Lab ID:	264928-001	Sampled:	02/26/15
Matrix:	Soil	Received:	02/26/15
Units:	ug/Kg	Analyzed:	02/27/15
Basis:	as received		

Type: MS Diln Fac: 1.000
Lab ID: QC778991

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.5881	50.00	48.15	96	56-133
Benzene	<0.6852	50.00	47.47	95	57-120
Trichloroethene	<0.7136	50.00	76.65	153 *	49-145
Toluene	<0.7505	50.00	43.19	86	51-120
Chlorobenzene	<0.6152	50.00	40.77	82	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	66 *	78-134
1,2-Dichloroethane-d4	87	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	93	78-123

Type: MSD Diln Fac: 0.9901
Lab ID: QC778992

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	49.50	49.79	101	56-133	4	46
Benzene	49.50	47.40	96	57-120	1	44
Trichloroethene	49.50	75.98	153 *	49-145	0	46
Toluene	49.50	41.72	84	51-120	2	47
Chlorobenzene	49.50	39.86	81	47-120	1	50

Surrogate	%REC	Limits
Dibromofluoromethane	68 *	78-134
1,2-Dichloroethane-d4	87	80-138
Toluene-d8	95	80-120
Bromofluorobenzene	92	78-123

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC779002	Batch#:	220885
Matrix:	Soil	Analyzed:	02/27/15
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC779002	Batch#:	220885
Matrix:	Soil	Analyzed:	02/27/15
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	108	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	112	78-123

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	402231012	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC779003	Batch#:	220885
Matrix:	Soil	Analyzed:	02/27/15
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	20.00	19.62	98	70-134
Benzene	20.00	20.53	103	80-123
Trichloroethene	20.00	22.64	113	80-128
Toluene	20.00	21.73	109	80-120
Chlorobenzene	20.00	21.30	106	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	103	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	97	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	402231012	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	220885
MSS Lab ID:	264823-003	Sampled:	02/20/15
Matrix:	Soil	Received:	02/20/15
Units:	ug/Kg	Analyzed:	03/02/15
Basis:	as received		

Type: MS Diln Fac: 0.9747
Lab ID: QC779004

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.9267	48.73	38.09	78	56-133
Benzene	<0.8898	48.73	44.18	91	57-120
Trichloroethene	<0.8236	48.73	45.36	93	49-145
Toluene	<0.7015	48.73	44.14	91	51-120
Chlorobenzene	<0.6766	48.73	39.24	81	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	98	80-138
Toluene-d8	101	80-120
Bromofluorobenzene	107	78-123

Type: MSD Diln Fac: 0.9804
Lab ID: QC779005

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	49.02	38.64	79	56-133	1	46
Benzene	49.02	41.81	85	57-120	6	44
Trichloroethene	49.02	41.51	85	49-145	9	46
Toluene	49.02	41.67	85	51-120	6	47
Chlorobenzene	49.02	35.86	73	47-120	10	50

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	99	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	108	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	264927	Project#:	402231012
Client:	Ninyo & Moore	Location:	SUB-Basin
Field ID:	SB-3-10	Diln Fac:	1.000
Lab ID:	264927-001	Sampled:	02/26/15
Matrix:	Soil	Received:	02/26/15
Units:	mg/Kg	Analyzed:	03/03/15
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	9.8	0.52	220948	03/03/15	EPA 3050B	EPA 6010B
Arsenic	4.8	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Barium	240	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Beryllium	0.45	0.10	220948	03/03/15	EPA 3050B	EPA 6010B
Cadmium	ND	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Chromium	27	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Cobalt	14	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Copper	21	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Lead	15	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Mercury	0.017	0.016	220940	03/02/15	METHOD	EPA 7471A
Molybdenum	0.29	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Nickel	65	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Selenium	ND	0.52	220948	03/03/15	EPA 3050B	EPA 6010B
Silver	ND	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Thallium	ND	0.52	220948	03/03/15	EPA 3050B	EPA 6010B
Vanadium	32	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Zinc	43	1.0	220948	03/03/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	264927	Project#:	402231012
Client:	Ninyo & Moore	Location:	SUB-Basin
Field ID:	SB-4-7	Diln Fac:	1.000
Lab ID:	264927-002	Sampled:	02/26/15
Matrix:	Soil	Received:	02/26/15
Units:	mg/Kg	Analyzed:	03/03/15
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	5.9	0.51	220948	03/03/15	EPA 3050B	EPA 6010B
Arsenic	2.9	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Barium	63	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Beryllium	0.32	0.10	220948	03/03/15	EPA 3050B	EPA 6010B
Cadmium	ND	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Chromium	19	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Cobalt	6.6	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Copper	6.8	0.26	220948	03/03/15	EPA 3050B	EPA 6010B
Lead	3.6	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Mercury	0.032	0.015	220940	03/02/15	METHOD	EPA 7471A
Molybdenum	ND	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Nickel	16	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Selenium	ND	0.51	220948	03/03/15	EPA 3050B	EPA 6010B
Silver	ND	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Thallium	ND	0.51	220948	03/03/15	EPA 3050B	EPA 6010B
Vanadium	22	0.25	220948	03/03/15	EPA 3050B	EPA 6010B
Zinc	14	1.0	220948	03/03/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	264927	Project#:	402231012
Client:	Ninyo & Moore	Location:	SUB-Basin
Field ID:	SB-1-10	Diln Fac:	1.000
Lab ID:	264927-003	Sampled:	02/26/15
Matrix:	Soil	Received:	02/26/15
Units:	mg/Kg	Analyzed:	03/03/15
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	6.7	0.53	220948	03/03/15	EPA 3050B	EPA 6010B
Arsenic	4.0	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Barium	150	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Beryllium	0.40	0.11	220948	03/03/15	EPA 3050B	EPA 6010B
Cadmium	ND	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Chromium	21	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Cobalt	11	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Copper	12	0.28	220948	03/03/15	EPA 3050B	EPA 6010B
Lead	7.6	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Mercury	0.023	0.017	220940	03/02/15	METHOD	EPA 7471A
Molybdenum	ND	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Nickel	32	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Selenium	ND	0.53	220948	03/03/15	EPA 3050B	EPA 6010B
Silver	ND	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Thallium	ND	0.53	220948	03/03/15	EPA 3050B	EPA 6010B
Vanadium	27	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Zinc	25	1.1	220948	03/03/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	264927	Project#:	402231012
Client:	Ninyo & Moore	Location:	SUB-Basin
Field ID:	SB-2-10	Diln Fac:	1.000
Lab ID:	264927-004	Sampled:	02/26/15
Matrix:	Soil	Received:	02/26/15
Units:	mg/Kg	Analyzed:	03/03/15
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	6.9	0.55	220948	03/03/15	EPA 3050B	EPA 6010B
Arsenic	3.5	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Barium	180	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Beryllium	0.53	0.11	220948	03/03/15	EPA 3050B	EPA 6010B
Cadmium	ND	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Chromium	30	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Cobalt	11	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Copper	18	0.28	220948	03/03/15	EPA 3050B	EPA 6010B
Lead	7.4	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Mercury	0.033	0.016	220940	03/02/15	METHOD	EPA 7471A
Molybdenum	ND	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Nickel	47	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Selenium	ND	0.55	220948	03/03/15	EPA 3050B	EPA 6010B
Silver	ND	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Thallium	ND	0.55	220948	03/03/15	EPA 3050B	EPA 6010B
Vanadium	35	0.27	220948	03/03/15	EPA 3050B	EPA 6010B
Zinc	30	1.1	220948	03/03/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	220940
Lab ID:	QC779213	Prepared:	03/02/15
Matrix:	Soil	Analyzed:	03/03/15
Units:	mg/Kg		

Result	RL
ND	0.017

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	220940
Matrix:	Soil	Prepared:	03/02/15
Units:	mg/Kg	Analyzed:	03/03/15
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC779214	0.2083	0.2102	101	80-120		
BSD	QC779215	0.2083	0.2109	101	80-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	220940
MSS Lab ID:	264846-001	Sampled:	02/17/15
Matrix:	Soil	Received:	02/20/15
Units:	mg/Kg	Prepared:	03/02/15
Basis:	as received	Analyzed:	03/03/15

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC779216	0.03968	0.2232	0.2837	109	69-142		
MSD	QC779217		0.1953	0.2451	105	69-142	3	36

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3050B
Project#:	402231012	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC779240	Batch#:	220948
Matrix:	Soil	Prepared:	03/03/15
Units:	mg/Kg	Analyzed:	03/03/15

Analyte	Result	RL
Antimony	ND	0.50
Arsenic	ND	0.25
Barium	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.26
Lead	ND	0.25
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	0.50
Silver	ND	0.25
Thallium	ND	0.50
Vanadium	ND	0.25
Zinc	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3050B
Project#:	402231012	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	220948
Units:	mg/Kg	Prepared:	03/03/15
Diln Fac:	5.000	Analyzed:	03/03/15

Type: BS Lab ID: QC779241

Analyte	Spiked	Result	%REC	Limits
Antimony	50.00	52.99	106	80-120
Arsenic	50.00	52.11	104	80-120
Barium	50.00	51.12	102	80-120
Beryllium	50.00	52.11	104	80-120
Cadmium	50.00	53.55	107	80-120
Chromium	50.00	50.06	100	80-120
Cobalt	50.00	48.96	98	80-120
Copper	50.00	41.37	83	80-120
Lead	50.00	48.70	97	80-120
Molybdenum	50.00	51.25	102	80-120
Nickel	50.00	48.89	98	80-120
Selenium	50.00	53.02	106	80-120
Silver	50.00	48.61	97	80-120
Thallium	50.00	51.55	103	80-120
Vanadium	50.00	52.96	106	80-120
Zinc	50.00	52.08	104	80-120

Type: BSD Lab ID: QC779242

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	50.00	54.69	109	80-120	3	20
Arsenic	50.00	54.03	108	80-120	4	20
Barium	50.00	51.80	104	80-120	1	20
Beryllium	50.00	52.82	106	80-120	1	20
Cadmium	50.00	53.88	108	80-120	1	20
Chromium	50.00	52.01	104	80-120	4	20
Cobalt	50.00	51.01	102	80-120	4	20
Copper	50.00	42.30	85	80-120	2	20
Lead	50.00	50.36	101	80-120	3	20
Molybdenum	50.00	53.11	106	80-120	4	20
Nickel	50.00	50.87	102	80-120	4	20
Selenium	50.00	55.20	110	80-120	4	20
Silver	50.00	49.43	99	80-120	2	20
Thallium	50.00	54.16	108	80-120	5	20
Vanadium	50.00	53.71	107	80-120	1	20
Zinc	50.00	54.29	109	80-120	4	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	EPA 3050B
Project#:	402231012	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	220948
MSS Lab ID:	264846-007	Sampled:	02/19/15
Matrix:	Soil	Received:	02/20/15
Units:	mg/Kg	Prepared:	03/03/15
Basis:	as received	Analyzed:	03/03/15
Diln Fac:	5.000		

Type: MS Lab ID: QC779243

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	16.50	53.76	52.95	68	15-120
Arsenic	6.755	53.76	66.42	111	69-120
Barium	149.2	53.76	228.3	147	35-154
Beryllium	0.3640	53.76	60.42	112	75-120
Cadmium	0.4750	53.76	60.95	112	71-120
Chromium	48.23	53.76	116.4	127	57-133
Cobalt	14.67	53.76	71.63	106	56-125
Copper	37.57	53.76	95.45	108	54-144
Lead	6.051	53.76	61.51	103	53-125
Molybdenum	0.3500	53.76	55.12	102	66-120
Nickel	66.69	53.76	136.9	131	44-141
Selenium	<0.1342	53.76	56.79	106	61-120
Silver	<0.06858	53.76	55.41	103	69-120
Thallium	<0.1496	53.76	55.06	102	59-120
Vanadium	60.61	53.76	131.2	131	52-144
Zinc	60.76	53.76	129.9	129	45-145

Type: MSD Lab ID: QC779244

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	53.19	51.27	65	15-120	2	41
Arsenic	53.19	63.31	106	69-120	4	35
Barium	53.19	215.8	125	35-154	5	36
Beryllium	53.19	57.32	107	75-120	4	20
Cadmium	53.19	58.01	108	71-120	4	25
Chromium	53.19	111.1	118	57-133	4	33
Cobalt	53.19	68.73	102	56-125	3	36
Copper	53.19	89.54	98	54-144	6	38
Lead	53.19	58.81	99	53-125	4	42
Molybdenum	53.19	52.17	97	66-120	4	20
Nickel	53.19	131.7	122	44-141	3	39
Selenium	53.19	53.86	101	61-120	4	33
Silver	53.19	52.21	98	69-120	5	22
Thallium	53.19	52.12	98	59-120	4	27
Vanadium	53.19	124.7	121	52-144	5	29
Zinc	53.19	124.7	120	45-145	4	39

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012		
Field ID:	SB-2-GW	Diln Fac:	1.000
Lab ID:	264927-005	Sampled:	02/26/15
Matrix:	Filtrate	Received:	02/26/15
Units:	ug/L		

Analyte	Result	RL	Batch#	Prepared	Analyzed	Analysis
Antimony	ND	10	220972	03/03/15	03/04/15	EPA 6010B
Arsenic	14	5.0	220972	03/03/15	03/04/15	EPA 6010B
Barium	280	5.0	220972	03/03/15	03/04/15	EPA 6010B
Beryllium	ND	2.0	220972	03/03/15	03/04/15	EPA 6010B
Cadmium	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Chromium	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Cobalt	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Copper	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Lead	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Mercury	ND	0.20	220941	03/02/15	03/03/15	EPA 7470A
Molybdenum	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Nickel	6.2	5.0	220972	03/03/15	03/04/15	EPA 6010B
Selenium	ND	10	220972	03/03/15	03/04/15	EPA 6010B
Silver	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Thallium	ND	10	220972	03/03/15	03/04/15	EPA 6010B
Vanadium	ND	5.0	220972	03/03/15	03/04/15	EPA 6010B
Zinc	ND	20	220972	03/03/15	03/04/15	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	220941
Matrix:	Water	Prepared:	03/02/15
Units:	ug/L	Analyzed:	03/03/15
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC779221	2.500	2.472	99	80-120		
BSD	QC779222	2.500	2.601	104	80-120	5	24

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	220941
Field ID:	ZZZZZZZZZZ	Sampled:	02/26/15
MSS Lab ID:	264924-001	Received:	02/26/15
Matrix:	Water	Prepared:	03/02/15
Units:	ug/L	Analyzed:	03/03/15
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC779223	0.04740	2.500	2.609	102	60-130		
MSD	QC779224		2.500	2.448	96	60-130	6	34

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	220941
Lab ID:	QC779274	Prepared:	03/02/15
Matrix:	Filtrate	Analyzed:	03/03/15
Units:	ug/L		

Result	RL
ND	0.20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC779333	Batch#:	220972
Matrix:	Filtrate	Prepared:	03/03/15
Units:	ug/L	Analyzed:	03/04/15

Analyte	Result	RL
Antimony	ND	10
Arsenic	ND	5.0
Barium	ND	5.0
Beryllium	ND	2.0
Cadmium	ND	5.0
Chromium	ND	5.0
Cobalt	ND	5.0
Copper	ND	5.0
Lead	ND	5.0
Molybdenum	ND	5.0
Nickel	ND	5.0
Selenium	ND	10
Silver	ND	5.0
Thallium	ND	10
Vanadium	ND	5.0
Zinc	ND	20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 6010B
Matrix:	Filtrate	Batch#:	220972
Units:	ug/L	Prepared:	03/03/15
Diln Fac:	1.000	Analyzed:	03/04/15

Type: BS Lab ID: QC779334

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	84.60	85	79-120
Arsenic	100.0	96.21	96	80-120
Barium	100.0	96.49	96	80-120
Beryllium	100.0	99.79	100	80-120
Cadmium	100.0	104.9	105	80-120
Chromium	100.0	96.14	96	80-120
Cobalt	100.0	95.43	95	80-120
Copper	100.0	94.35	94	80-120
Lead	100.0	92.98	93	80-120
Molybdenum	100.0	94.11	94	80-120
Nickel	100.0	94.79	95	80-120
Selenium	100.0	98.19	98	80-120
Silver	100.0	98.38	98	77-120
Thallium	50.00	51.85	104	80-121
Vanadium	100.0	96.00	96	80-120
Zinc	100.0	100.1	100	80-120

Type: BSD Lab ID: QC779335

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	82.44	82	79-120	3	20
Arsenic	100.0	96.16	96	80-120	0	20
Barium	100.0	94.43	94	80-120	2	20
Beryllium	100.0	97.76	98	80-120	2	20
Cadmium	100.0	101.6	102	80-120	3	20
Chromium	100.0	93.22	93	80-120	3	20
Cobalt	100.0	93.43	93	80-120	2	20
Copper	100.0	90.55	91	80-120	4	20
Lead	100.0	91.08	91	80-120	2	20
Molybdenum	100.0	92.88	93	80-120	1	20
Nickel	100.0	92.61	93	80-120	2	20
Selenium	100.0	98.02	98	80-120	0	20
Silver	100.0	95.45	95	77-120	3	20
Thallium	50.00	50.51	101	80-121	3	20
Vanadium	100.0	93.21	93	80-120	3	20
Zinc	100.0	98.19	98	80-120	2	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved California Title 22 Metals

Lab #:	264927	Location:	SUB-Basin
Client:	Ninyo & Moore	Prep:	METHOD
Project#:	402231012	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	220972
MSS Lab ID:	264923-001	Sampled:	02/26/15
Matrix:	Filtrate	Received:	02/26/15
Units:	ug/L	Prepared:	03/03/15
Diln Fac:	1.000	Analyzed:	03/04/15

Type: MS Lab ID: QC779336

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<2.348	100.0	82.48	82	74-120
Arsenic	<1.028	100.0	101.5	102	80-127
Barium	27.59	100.0	122.8	95	80-120
Beryllium	<0.1463	100.0	97.34	97	80-120
Cadmium	<0.2822	100.0	99.16	99	80-120
Chromium	<0.6000	100.0	94.42	94	80-120
Cobalt	<0.8861	100.0	89.82	90	80-120
Copper	<0.6734	100.0	92.22	92	80-120
Lead	<1.306	100.0	83.87	84	67-120
Molybdenum	3.351	100.0	95.20	92	80-120
Nickel	0.9312	100.0	90.03	89	80-120
Selenium	8.942	100.0	106.8	98	73-132
Silver	<1.126	100.0	97.65	98	67-120
Thallium	4.929	50.00	51.17	92	76-121
Vanadium	4.016	100.0	100.4	96	80-120
Zinc	<2.830	100.0	97.04	97	80-122

Type: MSD Lab ID: QC779337

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	86.52	87	74-120	5	24
Arsenic	100.0	100.5	101	80-127	1	25
Barium	100.0	121.7	94	80-120	1	20
Beryllium	100.0	99.20	99	80-120	2	20
Cadmium	100.0	98.46	98	80-120	1	20
Chromium	100.0	93.81	94	80-120	1	20
Cobalt	100.0	90.46	90	80-120	1	20
Copper	100.0	91.12	91	80-120	1	20
Lead	100.0	85.08	85	67-120	1	23
Molybdenum	100.0	96.51	93	80-120	1	20
Nickel	100.0	91.00	90	80-120	1	20
Selenium	100.0	107.6	99	73-132	1	30
Silver	100.0	97.05	97	67-120	1	22
Thallium	50.00	51.79	94	76-121	1	20
Vanadium	100.0	99.18	95	80-120	1	20
Zinc	100.0	98.01	98	80-122	1	20

RPD= Relative Percent Difference

APPENDIX D

OAKLAND METALS BACKGROUND SURVEY

City of Oakland
Survey of Studies on Naturally-occurring Metals Concentrations

Some naturally-occurring concentrations of metals in Oakland soils are higher than the thresholds calculated by risk-based models. In such cases, there is unlikely to be any real reduction in risk realized from remediation to the risk-based threshold since the observed concentrations are likely to represent ambient conditions. In Oakland, this is especially true of arsenic. The following table contains the results from studies on naturally-occurring metals conducted in locations that are relevant to Oakland's geology.

Background Metal Concentrations
(ppm in soil)

Source	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Lawrence Berkeley National Laboratories[1]	5.5	19.1	1.0	2.7	99.6	69.4	16.1	0.4	119.8	5.6	1.8	27.1	106.1
-Colluvian &Fill	5.9	14.0	0.9	1.5	91.4	59.6	14.7	0.3	120.2	5.6	1.7	42.5	91.5
-Great Valley Group	6.3	31.0	1.0	3.2	59.0	99.7	21.5	0.6	69.7	4.8	2.2	8.7	135.9
-Moraga Formation	6.1	9.3	0.8	2.6	142.2	54.1	8.9	0.3	100.4	4.7	2.0	38.9	84.7
-Orinda Formation	5.2	17.8	1.1	3.3	95.2	66.9	14.8	0.3	144.3	7.0	1.9	19.8	98.3
-San Pablo Group	7.1	15.7	0.8	2.9	78.6	40.9	10.3	0.4	125.9	4.9	1.5	10.9	97.7
San Leandro, Ca[2]	<3-<15	1.8-5.9	<0.25-<1.30	<0.25-<1.30	24.8-43.0	11.8-68.0	3.3-10.4	<0.10	2.93-43.60	<0.25-<2.50	<0.50-<2.50	<0.50-<5.00	9.3-61.3
Union City, Ca[3]	5.0	6.92-9.34	0.5-0.81	0.5-1.30	46.5-112	28.2-60.1	19.8-148	0.1-0.36	32.4-60.6	0.5	0.5	5.0	97.1-474
Western U.S.[4]	--	1-50	--	0.1-0.7	1-1,000	2-100	20-100	0.01-0.3	5-500	--	--	--	10-300

Sources:
[1] Lawrence Berkeley National Laboratory Environmental Restoration Program, 1995. 500 samples were taken from 71 locations representing 5 geologic units at LBNL: Colluvian & Fill, Great Valley group, Moraga formation, Orinda formation and San Pablo group. Concentrations listed are Upper 95% Confidence Limits of data from 71 monitoring well borings.
[2] Chemical Testing on Background Soil Samples: Roberts Landing Development Site, San Leandro, CA, 1994.
[3] Site Wide Remedial Investigation: Pacific States Steel Corp. Union City, CA, 1992.
[4] USEPA (found in Remedial Investigation Report, Hercules Properties, Inc., 1991).