Detterman, Mark, Env. Health

From: Detterman, Mark, Env. Health
Sent: Thursday, May 16, 2013 1:08 PM
To: 'Bob Clark-Riddell'
Cc: Michael Collings; grewalngns@yahoo.com
Subject: RE: ACEH Correspondence for RO464

Please see Geotracker.

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

From: Bob Clark-Riddell [mailto:briddell@pangeaenv.com]
Sent: Thursday, May 16, 2013 12:06 PM
To: Detterman, Mark, Env. Health
Cc: Michael Collings; grewalngns@yahoo.com
Subject: FW: ACEH Correspondence for RO464

Mark,

The landowner is providing his information in response to your letter. Meanwhile, the landowner is disposing of shallow soil at the site, which he removed to provide better support for his new building. The landfill rep (Mike Collings of Pacific States) is requesting information about closure status for the property.

Please confirm via email (reply all) that the ACEH is in the process of closing this case. An expeditious reply would be appreciated, since soil disposal has put the project on hold. Thank you.

Bob Clark-Riddell, P.E.
Pangea Environmental Services, Inc.
510.435.8664

From: dehloptoxic, Env. Health [mailto:deh.loptoxic@acgov.org]
Sent: Tuesday, May 14, 2013 12:57 PM
To: ESPINO@CHEVRON.COM; MGOMEZ@OAKLANDNET.COM; GREWALNGNS@YAHOO.COM
Cc: Lee, Nathan; Bob Clark-Riddell; Griffin, Leroy; Drogos, Donna, Env. Health; Roe, Dilan, Env. Health; Detterman, Mark, Env. Health
Subject: ACEH Correspondence for RO464

Dear Interested Parties,

Attached is Alameda County Environmental Health's (ACEH) correspondence for your case, RO0000464.

Please add our e-mail address to your address book to prevent future e-mails from being filtered as spam.

Sincerely,

ACEH

Detterman, Mark, Env. Health

From: Detterman, Mark, Env. Health
Sent: Thursday, May 16, 2013 3:41 PM
To: 'Bob Clark-Riddell'; dharlan@oaklandnet.com; tlow@oaklandnet.com; cburns@oaklandnet.com
Cc: grewalngns@yahoo.com
Subject: RE: 451 Hegenberger

Please note that quite significant concentrations of very shallow gasoline contamination will remain at the site. These concentrations do not met the Low Threat Closure Policy, but appear to be limited to beneath, or in the vicinity of, the dispensers, and thus can be managed through a site management plan (SMP). The SMP will likely require that with any construction at the site, ACEH is to be notified, and that city approved redevelopment plans be reviewed and approved at ACEH.

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
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Alameda, CA 94502
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Fax: 510.337.9335
Email: mark.detterman@acgov.org

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From: Bob Clark-Riddell [mailto:briddell@pangeaenv.com]
Sent: Thursday, May 16, 2013 1:57 PM
To: dharlan@oaklandnet.com; tlow@oaklandnet.com; cburns@oaklandnet.com
Cc: grewalngns@yahoo.com; Detterman, Mark, Env. Health
Subject: 451 Hegenberger

Hello City,

The property owner (Navdeep) requested I forward you this information about the soil being used for backfill and disposed offsite.

Last fall Chevron overexcavated TPH impact adjacent the former UST behind the current building. The excavation extent was based on borings performed by Chevron. Having removed all significant impact, ACEH plans to close the case. I have copied this email to the ACEH caseworker.

For the new building location, Navdeep had shallow soil re-graded to mix in coarse soil with the bay mud to provide a better base for the future building, and to offhaul excess (about 300 yards) soil to a local landfill. The landfill required two discrete samples from the stockpiled soil. Analytic results for these discrete samples are attached and indicate no VOCs, no SVOCs, no pesticides, metals within background, and low TPH levels in one of the two samples. The maximum TPH detected as ND mg/kg TPHg, 7.6 mg/kg TPHd, and 41 mg/kg TPHmo. Note that TPHd and TPHmo are not volatile and do not pose a vapor intrusion concern. Also note that the ACEH closed the case with residual hydrocarbons so they are not concerned about these TPH levels.

Please contact me if you have any additional questions.

Bob Clark-Riddell, P.E.
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612
510.435.8664 phone
510.836.3709 fax

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received: 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Reported: 05/15/13
Oakland, CA 94612	Client P.O.:	Date Completed: 05/15/13

WorkOrder: 1305396

May 15, 2013

Dear Bob:

Enclosed within are:

1) The results of the **2** analyzed samples from your project: **451 Helen,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

The analytical results relate only to the items tested.

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

1305396

CHAIN OF CUSTODY RECORD

RUSH

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☒ 48 HR ☐ 72 HR ☐ 5 DAY

GeoTracker EDF ☐ PDF ☐ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: BOB CLARK-RIDDEN Bill To: BOB

Company: LANGAN

E-Mail:

Tele: (510) 435-8664 Fax: ( )

Project #: Project Name: 457 HELEN

Project Location: 457 HELEN BERKELEY, CA

Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
SP-1			12:25	1	TUBE		X				X			
SP-2			12:30	1	(		X				X			

Analysis Request

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

Other: TPH gld/mo scan

Comments: Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
	5/13/13	1:00	
Relinquished By:	Date:	Time:	Received By:
	5/13/13	1500	
Relinquished By:	Date:	Time:	Received By:

ICE/t° 3.4

COMMENTS:

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS

PRESERVED IN LAB

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305396 **ClientCode: PEO**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Bob Clark-Riddell
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
(510) 836-3700 FAX: (510) 836-3709

Email: BRiddell@pangeaenv.com
cc:
PO:
ProjectNo: 451 Helen

Bill to:
Bob Clark-Riddell
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

Requested TAT: **2 days**

Date Received: **05/13/2013**
Date Printed: **05/13/2013**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1305396-001	SP-1	Soil	5/13/2013 12:25	☐	A	A	A	A	A							
1305396-002	SP-2	Soil	5/13/2013 12:30	☐		A		A	A							

Test Legend:

1	8081_S	2	8260B_S	3	8270D_S	4	CAM17MS_S	5	G-MBTEX_S
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A contain testgroup.

Prepared by: Zoraida Cortez

Comments:

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

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**
Date and Time Received: **5/13/2013 3:17:07 PM**

Project Name: **451 Helen**
LogIn Reviewed by: Zoraida Cortez

WorkOrder N°: **1305396** Matrix: Soil
Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☐	No ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 3.4°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	No VOA vials submitted ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

** NOTE: If the "No" box is checked, see comments below.*

Comments:

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Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received: 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted: 05/13/13
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/14/13

Organochlorine Pesticides by GC-ECD (8080 Basic Target List)*

Extraction Method: SW3550B | Analytical Method: SW8081A | Work Order: 1305396

					Reporting Limit for DF =1	
Lab ID	1305396-001A					
Client ID	SP-1					
Matrix	S				S	W
DF	2					
Compound	**Concentration**				mg/kg	µg/L
Aldrin	ND<0.0020				0.001	NA
a-BHC	ND<0.0020				0.001	NA
b-BHC	ND<0.0020				0.001	NA
d-BHC	ND<0.0020				0.001	NA
g-BHC	ND<0.0020				0.001	NA
Chlordane (Technical)	ND<0.050				0.025	NA
a-Chlordane	ND<0.0020				0.001	NA
g-Chlordane	ND<0.0020				0.001	NA
p,p-DDD	ND<0.0020				0.001	NA
p,p-DDE	ND<0.0020				0.001	NA
p,p-DDT	ND<0.0020				0.001	NA
Dieldrin	ND<0.0020				0.001	NA
Endosulfan I	ND<0.0020				0.001	NA
Endosulfan II	ND<0.0020				0.001	NA
Endosulfan sulfate	ND<0.0020				0.001	NA
Endrin	ND<0.0020				0.001	NA
Endrin aldehyde	ND<0.0020				0.001	NA
Endrin ketone	ND<0.0020				0.001	NA
Heptachlor	ND<0.0020				0.001	NA
Heptachlor epoxide	ND<0.0020				0.001	NA
Hexachlorobenzene	ND<0.020				0.01	NA
Hexachlorocyclopentadiene	ND<0.040				0.02	NA
Methoxychlor	ND<0.0020				0.001	NA
Toxaphene	ND<0.10				0.05	NA
Surrogate Recoveries (%)						
%SS:	86					
Comments	a3					

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor.

surrogate diluted out of range or surrogate coelutes with another peak/sample contains surrogate.

a3) sample diluted due to high organic content.

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received: 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted: 05/13/13
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/13/13

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1305396

Lab ID	1305396-001A
Client ID	SP-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	110	%SS2:	114
%SS3:	97		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received: 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted: 05/13/13
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/13/13

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1305396

Lab ID	1305396-002A
Client ID	SP-2
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	0.05	tert-Amyl methyl ether (TAME)	ND	1.0	0.005
Benzene	ND	1.0	0.005	Bromobenzene	ND	1.0	0.005
Bromochloromethane	ND	1.0	0.005	Bromodichloromethane	ND	1.0	0.005
Bromoform	ND	1.0	0.005	Bromomethane	ND	1.0	0.005
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)	ND	1.0	0.05
n-Butyl benzene	ND	1.0	0.005	sec-Butyl benzene	ND	1.0	0.005
tert-Butyl benzene	ND	1.0	0.005	Carbon Disulfide	ND	1.0	0.005
Carbon Tetrachloride	ND	1.0	0.005	Chlorobenzene	ND	1.0	0.005
Chloroethane	ND	1.0	0.005	Chloroform	ND	1.0	0.005
Chloromethane	ND	1.0	0.005	2-Chlorotoluene	ND	1.0	0.005
4-Chlorotoluene	ND	1.0	0.005	Dibromochloromethane	ND	1.0	0.005
1,2-Dibromo-3-chloropropane	ND	1.0	0.004	1,2-Dibromoethane (EDB)	ND	1.0	0.004
Dibromomethane	ND	1.0	0.005	1,2-Dichlorobenzene	ND	1.0	0.005
1,3-Dichlorobenzene	ND	1.0	0.005	1,4-Dichlorobenzene	ND	1.0	0.005
Dichlorodifluoromethane	ND	1.0	0.005	1,1-Dichloroethane	ND	1.0	0.005
1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.004	1,1-Dichloroethene	ND	1.0	0.005
cis-1,2-Dichloroethene	ND	1.0	0.005	trans-1,2-Dichloroethene	ND	1.0	0.005
1,2-Dichloropropane	ND	1.0	0.005	1,3-Dichloropropane	ND	1.0	0.005
2,2-Dichloropropane	ND	1.0	0.005	1,1-Dichloropropene	ND	1.0	0.005
cis-1,3-Dichloropropene	ND	1.0	0.005	trans-1,3-Dichloropropene	ND	1.0	0.005
Diisopropyl ether (DIPE)	ND	1.0	0.005	Ethylbenzene	ND	1.0	0.005
Ethyl tert-butyl ether (ETBE)	ND	1.0	0.005	Freon 113	ND	1.0	0.1
Hexachlorobutadiene	ND	1.0	0.005	Hexachloroethane	ND	1.0	0.005
2-Hexanone	ND	1.0	0.005	Isopropylbenzene	ND	1.0	0.005
4-Isopropyl toluene	ND	1.0	0.005	Methyl-t-butyl ether (MTBE)	ND	1.0	0.005
Methylene chloride	ND	1.0	0.005	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.005
Naphthalene	ND	1.0	0.005	n-Propyl benzene	ND	1.0	0.005
Styrene	ND	1.0	0.005	1,1,1,2-Tetrachloroethane	ND	1.0	0.005
1,1,2,2-Tetrachloroethane	ND	1.0	0.005	Tetrachloroethene	ND	1.0	0.005
Toluene	ND	1.0	0.005	1,2,3-Trichlorobenzene	ND	1.0	0.005
1,2,4-Trichlorobenzene	ND	1.0	0.005	1,1,1-Trichloroethane	ND	1.0	0.005
1,1,2-Trichloroethane	ND	1.0	0.005	Trichloroethene	ND	1.0	0.005
Trichlorofluoromethane	ND	1.0	0.005	1,2,3-Trichloropropane	ND	1.0	0.005
1,2,4-Trimethylbenzene	ND	1.0	0.005	1,3,5-Trimethylbenzene	ND	1.0	0.005
Vinyl Chloride	ND	1.0	0.005	Xylenes, Total	ND	1.0	0.005

Surrogate Recoveries (%)

%SS1:	115	%SS2:	110
%SS3:	97		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received: 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted: 05/14/13
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/14/13

Semi-Volatile Organics by GC/MS (Basic Target List)*

Extraction Method: SW3550B | Analytical Method: SW8270C | Work Order: 1305396

Lab ID	1305396-001A
Client ID	SP-1
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acenaphthene	ND<0.50	2.0	0.25	Acenaphthylene	ND<0.50	2.0	0.25
Acetochlor	ND<0.50	2.0	0.25	Anthracene	ND<0.50	2.0	0.25
Benzidine	ND<2.6	2.0	1.3	Benzoic Acid	ND<5.0	2.0	2.5
Benzo (a) anthracene	ND<0.50	2.0	0.25	Benzo (b) fluoranthene	ND<0.50	2.0	0.25
Benzo (k) fluoranthene	ND<0.50	2.0	0.25	Benzo (g,h,i) perylene	ND<0.50	2.0	0.25
Benzo (a) pyrene	ND<0.50	2.0	0.25	Benzyl Alcohol	ND<2.6	2.0	1.3
1,1-Biphenyl	ND<0.50	2.0	0.25	Bis (2-chloroethoxy) Methane	ND<0.50	2.0	0.25
Bis (2-chloroethyl) Ether	ND<0.50	2.0	0.25	Bis (2-chloroisopropyl) Ether	ND<0.50	2.0	0.25
Bis (2-ethylhexyl) Phthalate	ND<0.50	2.0	0.25	4-Bromophenyl Phenyl Ether	ND<0.50	2.0	0.25
Butylbenzyl Phthalate	ND<0.50	2.0	0.25	4-Chloroaniline	ND<0.50	2.0	0.25
4-Chloro-3-methylphenol	ND<0.50	2.0	0.25	2-Chloronaphthalene	ND<0.50	2.0	0.25
2-Chlorophenol	ND<0.50	2.0	0.25	4-Chlorophenyl Phenyl Ether	ND<0.50	2.0	0.25
Chrysene	ND<0.50	2.0	0.25	Dibenzo (a,h) anthracene	ND<0.50	2.0	0.25
Dibenzofuran	ND<0.50	2.0	0.25	Di-n-butyl Phthalate	ND<0.50	2.0	0.25
1,2-Dichlorobenzene	ND<0.50	2.0	0.25	1,3-Dichlorobenzene	ND<0.50	2.0	0.25
1,4-Dichlorobenzene	ND<0.50	2.0	0.25	3,3-Dichlorobenzidine	ND<1.0	2.0	0.5
2,4-Dichlorophenol	ND<0.50	2.0	0.25	Diethyl Phthalate	ND<0.50	2.0	0.25
2,4-Dimethylphenol	ND<0.50	2.0	0.25	Dimethyl Phthalate	ND<0.50	2.0	0.25
4,6-Dinitro-2-methylphenol	ND<2.6	2.0	1.3	2,4-Dinitrophenol	ND<13	2.0	6.3
2,4-Dinitrotoluene	ND<0.50	2.0	0.25	2,6-Dinitrotoluene	ND<0.50	2.0	0.25
Di-n-octyl Phthalate	ND<1.0	2.0	0.5	1,2-Diphenylhydrazine	ND<0.50	2.0	0.25
Fluoranthene	ND<0.50	2.0	0.25	Fluorene	ND<0.50	2.0	0.25
Hexachlorobenzene	ND<0.50	2.0	0.25	Hexachlorobutadiene	ND<0.50	2.0	0.25
Hexachlorocyclopentadiene	ND<2.6	2.0	1.3	Hexachloroethane	ND<0.50	2.0	0.25
Indeno (1,2,3-cd) pyrene	ND<0.50	2.0	0.25	Isophorone	ND<0.50	2.0	0.25
2-Methylnaphthalene	ND<0.50	2.0	0.25	2-Methylphenol (o-Cresol)	ND<0.50	2.0	0.25
3 &/or 4-Methylphenol (m,p-Cresol)	ND<0.50	2.0	0.25	Naphthalene	ND<0.50	2.0	0.25
2-Nitroaniline	ND<2.6	2.0	1.3	3-Nitroaniline	ND<2.6	2.0	1.3
4-Nitroaniline	ND<2.6	2.0	1.3	Nitrobenzene	ND<0.50	2.0	0.25
2-Nitrophenol	ND<2.6	2.0	1.3	4-Nitrophenol	ND<2.6	2.0	1.3
N-Nitrosodiphenylamine	ND<0.50	2.0	0.25	N-Nitrosodi-n-propylamine	ND<0.50	2.0	0.25
Pentachlorophenol	ND<2.6	2.0	1.3	Phenanthrene	ND<0.50	2.0	0.25
Phenol	ND<0.50	2.0	0.25	Pyrene	ND<0.50	2.0	0.25
1,2,4-Trichlorobenzene	ND<0.50	2.0	0.25	2,4,5-Trichlorophenol	ND<0.50	2.0	0.25
2,4,6-Trichlorophenol	ND<0.50	2.0	0.25				

Surrogate Recoveries (%)

%SS1:	84	%SS2:	76
%SS3:	72	%SS4:	74
%SS5:	44	%SS6:	91

Comments: a3

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected at or above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content.

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Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted 05/13/13
Oakland, CA 94612	Client P.O.:	Date Analyzed 05/13/13-05/14/13

CAM / CCR 17 Metals*

Lab ID	1305396-001A	1305396-002A			Reporting Limit for DF =1; ND means not detected above the reporting limit	
Client ID	SP-1	SP-2				
Matrix	S	S			S	W
Extraction Type	TOTAL	TOTAL			mg/Kg	mg/L

ICP Metals, Concentration*

Analytical Method: SW6020 Extraction Method: SW3050B Work Order: 1305396

Dilution Factor	1	1			1	1
Antimony	0.60	0.54			0.5	NA
Arsenic	8.8	12			0.5	NA
Barium	240	250			5.0	NA
Beryllium	0.58	ND			0.5	NA
Cadmium	ND	0.38			0.25	NA
Chromium	58	52			0.5	NA
Cobalt	12	11			0.5	NA
Copper	28	22			0.5	NA
Lead	16	11			0.5	NA
Mercury	0.090	0.060			0.05	NA
Molybdenum	0.80	0.57			0.5	NA
Nickel	55	61			0.5	NA
Selenium	ND	ND			0.5	NA
Silver	ND	ND			0.5	NA
Thallium	ND	ND			0.5	NA
Vanadium	55	45			0.5	NA
Zinc	82	59			5.0	NA
%SS:	113	105				

Comments

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.
TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.
DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.
%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted 05/13/13
Oakland, CA 94612	Client P.O.:	Date Analyzed 05/14/13

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline *

Extraction method: SW5030B Analytical methods: SW8015Bm Work Order: 1305396

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS	Comments
001A	SP-1	S	ND	1	95	
002A	SP-2	S	ND	1	97	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

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Pangea Environmental Svcs., Inc.	Client Project ID: 451 Helen	Date Sampled: 05/13/13
		Date Received: 05/13/13
1710 Franklin Street, Ste. 200	Client Contact: Bob Clark-Riddell	Date Extracted: 05/13/13
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/13/13

Total Extractable Petroleum Hydrocarbons*

Extraction method: SW3550B Analytical methods: SW8015B Work Order: 1305396

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Motor Oil (C18-C36)	DF	% SS	Comments
1305396-001A	SP-1	S	7.6	41	1	108	e7,e2
1305396-002A	SP-2	S	ND	ND	1	89	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L	
	S	1.0	5.0	mg/Kg	

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
e2) diesel range compounds are significant; no recognizable pattern
e7) oil range compounds are significant

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QC SUMMARY REPORT FOR SW8081A

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77300 | WorkOrder: 1305396

EPA Method: SW8081A **Extraction: SW3550B** **Spiked Sample ID: 1305396-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/kg	mg/kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Aldrin	ND<0.002	0.050	NR	NR	NR	97.5	N/A	N/A	70 - 130
g-BHC	ND<0.002	0.050	NR	NR	NR	106	N/A	N/A	70 - 130
p,p-DDT	ND<0.002	0.050	NR	NR	NR	96.6	N/A	N/A	70 - 130
Dieldrin	ND<0.002	0.050	NR	NR	NR	118	N/A	N/A	70 - 130
Endrin	ND<0.002	0.050	NR	NR	NR	114	N/A	N/A	70 - 130
Heptachlor	ND<0.002	0.050	NR	NR	NR	112	N/A	N/A	70 - 130
%SS:	86	0.050	NR	NR	NR	73	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77300 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305396-001A	05/13/13 12:25 PM	05/13/13	05/14/13 2:03 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

surrogate diluted out of range or surrogate coelutes with another peak

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix inteference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77282 | WorkOrder: 1305396

EPA Method: SW8260B **Extraction: SW5030B** **Spiked Sample ID: 1305385-004A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	ND	0.050	97.9, F1	93.6	4.5	97.8	56 - 94	30	70 - 130
Benzene	ND	0.050	96.6	94.1	2.60	97.9	60 - 106	30	70 - 130
t-Butyl alcohol (TBA)	ND	0.20	107	96	11.0	110	56 - 140	30	70 - 130
Chlorobenzene	ND	0.050	98.2	95.8	2.50	101	61 - 108	30	70 - 130
1,2-Dibromoethane (EDB)	ND	0.050	97.1	95.2	1.99	99.8	54 - 119	30	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	0.050	92.1	89.8	2.54	95	48 - 115	30	70 - 130
1,1-Dichloroethene	ND	0.050	99.7	94.3	5.57	101	46 - 111	30	70 - 130
Diisopropyl ether (DIPE)	ND	0.050	88.5	87.7	0.994	90.6	53 - 111	30	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	0.050	93.6	91.8	1.96	96.8	61 - 104	30	70 - 130
Methyl-t-butyl ether (MTBE)	ND	0.050	97.7	94	3.89	100	58 - 107	30	70 - 130
Toluene	ND	0.050	103	105	1.60	112	64 - 114	30	70 - 130
Trichloroethene	ND	0.050	102	98.5	3.36	106	60 - 116	30	70 - 130
%SS1:	108	0.12	117	116	0.986	117	70 - 130	30	70 - 130
%SS2:	113	0.12	110	112	1.41	113	70 - 130	30	70 - 130
%SS3:	92	0.012	122	128	4.55	130	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

F1 = MS/MSD recovery was out of acceptance criteria; LCS validated the prep batch.

BATCH 77282 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305396-001A	05/13/13 12:25 PM	05/13/13	05/13/13 8:06 PM	1305396-002A	05/13/13 12:30 PM	05/13/13	05/13/13 8:48 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW8270C

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77323 | WorkOrder: 1305396

EPA Method: SW8270C **Extraction: SW3550B** **Spiked Sample ID: 1305396-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Acenaphthene	ND<0.5	5	NR	NR	NR	81.6	N/A	N/A	30 - 130
4-Chloro-3-methylphenol	ND<0.5	5	NR	NR	NR	79.8	N/A	N/A	30 - 130
2-Chlorophenol	ND<0.5	5	NR	NR	NR	83	N/A	N/A	30 - 130
1,4-Dichlorobenzene	ND<0.5	5	NR	NR	NR	71.9	N/A	N/A	30 - 130
2,4-Dinitrotoluene	ND<0.5	5	NR	NR	NR	77.1	N/A	N/A	30 - 130
4-Nitrophenol	ND<2.6	5	NR	NR	NR	49.8	N/A	N/A	30 - 130
N-Nitrosodi-n-propylamine	ND<0.5	5	NR	NR	NR	56.4	N/A	N/A	30 - 130
Pentachlorophenol	ND<2.6	5	NR	NR	NR	78.2	N/A	N/A	30 - 130
Phenol	ND<0.5	5	NR	NR	NR	71.5	N/A	N/A	30 - 130
Pyrene	ND<0.5	5	NR	NR	NR	90.8	N/A	N/A	30 - 130
1,2,4-Trichlorobenzene	ND<0.5	5	NR	NR	NR	83.8	N/A	N/A	30 - 130
%SS1:	84	5	NR	NR	NR	85	N/A	N/A	30 - 130
%SS2:	76	5	NR	NR	NR	79	N/A	N/A	30 - 130
%SS3:	72	5	NR	NR	NR	81	N/A	N/A	30 - 130
%SS4:	74	5	NR	NR	NR	78	N/A	N/A	30 - 130
%SS5:	44	5	NR	NR	NR	57	N/A	N/A	30 - 130
%SS6:	91	5	NR	NR	NR	87	N/A	N/A	30 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77323 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305396-001A	05/13/13 12:25 PM	05/14/13	05/14/13 5:10 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and / or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix, sample diluted due to high matrix or analyte content, or MS/MSD samples diluted due to high organic content.

#) surrogate diluted out of range; & = low or no recovery of surrogate or target analytes due to matrix interference.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QA/QC Officer

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QC SUMMARY REPORT FOR SW6020

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77283 | WorkOrder: 1305396

EPA Method: SW6020 **Extraction: SW3050B** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Antimony	N/A	50	N/A	N/A	N/A	93.8	N/A	N/A	75 - 125
Arsenic	N/A	50	N/A	N/A	N/A	101	N/A	N/A	75 - 125
Barium	N/A	500	N/A	N/A	N/A	98.2	N/A	N/A	75 - 125
Beryllium	N/A	50	N/A	N/A	N/A	96.6	N/A	N/A	75 - 125
Cadmium	N/A	50	N/A	N/A	N/A	96.7	N/A	N/A	75 - 125
Chromium	N/A	50	N/A	N/A	N/A	98	N/A	N/A	75 - 125
Cobalt	N/A	50	N/A	N/A	N/A	102	N/A	N/A	75 - 125
Copper	N/A	50	N/A	N/A	N/A	101	N/A	N/A	75 - 125
Lead	N/A	50	N/A	N/A	N/A	99.8	N/A	N/A	75 - 125
Mercury	N/A	1.25	N/A	N/A	N/A	93	N/A	N/A	75 - 125
Molybdenum	N/A	50	N/A	N/A	N/A	96.7	N/A	N/A	75 - 125
Nickel	N/A	50	N/A	N/A	N/A	102	N/A	N/A	75 - 125
Selenium	N/A	50	N/A	N/A	N/A	104	N/A	N/A	75 - 125
Silver	N/A	50	N/A	N/A	N/A	120	N/A	N/A	75 - 125
Thallium	N/A	50	N/A	N/A	N/A	98.2	N/A	N/A	75 - 125
Vanadium	N/A	50	N/A	N/A	N/A	97.6	N/A	N/A	75 - 125
Zinc	N/A	500	N/A	N/A	N/A	103	N/A	N/A	75 - 125
%SS:	N/A	500	N/A	N/A	N/A	99	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77283 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305396-001A	05/13/13 12:25 PM	05/13/13	05/14/13 2:03 PM	1305396-002A	05/13/13 12:30 PM	05/13/13	05/13/13 11:57 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77292 | WorkOrder: 1305396

EPA Method: SW8021B/8015Bm **Extraction: SW5030B** **Spiked Sample ID: 1305383-008A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH(btex)£	ND	0.60	96.4	93.5	3.05	100	70 - 130	20	70 - 130
MTBE	ND	0.10	102	99.6	2.45	106	70 - 130	20	70 - 130
Benzene	ND	0.10	106	104	2.21	109	70 - 130	20	70 - 130
Toluene	ND	0.10	102	100	1.22	106	70 - 130	20	70 - 130
Ethylbenzene	ND	0.10	109	107	1.48	110	70 - 130	20	70 - 130
Xylenes	ND	0.30	109	109	0	110	70 - 130	20	70 - 130
%SS:	95	0.10	95	113	17.3	109	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77292 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305396-001A	05/13/13 12:25 PM	05/13/13	05/14/13 3:21 AM	1305396-002A	05/13/13 12:30 PM	05/13/13	05/14/13 3:51 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 77290 | WorkOrder: 1305396

EPA Method: SW8015B **Extraction: SW3550B** **Spiked Sample ID: 1305385-004A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH-Diesel (C10-C23)	11	40	108	106	1.03	104	70 - 130	30	70 - 130
%SS:	103	25	103	102	0.968	94	70 - 130	30	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 77290 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305396-001A	05/13/13 12:25 PM	05/13/13	05/13/13 7:04 PM	1305396-002A	05/13/13 12:30 PM	05/13/13	05/13/13 8:20 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

QA/QC Officer