
From: Jennifer Nichols [KDHE] <Jennifer.Nichols@ks.gov>
Sent: Wednesday, February 22, 2023 11:38 AM
To: Tony Guy [KDHE] <Tony.Guy@ks.gov>; Edwards, Jeffery <jeffery.edwards@nebraska.gov>
Cc: Mindy Bowman [KDHE] <Mindy.Bowman@ks.gov>
Subject: RE: Original request for Rolling Meadows landfill North of Topeka, KS.

From: Tony Guy [KDHE] <Tony.Guy@ks.gov>
Sent: Wednesday, February 22, 2023 11:04 AM
To: jeffery.edwards@nebraska.gov
Cc: Mindy Bowman [KDHE] <Mindy.Bowman@ks.gov>; Jennifer Nichols [KDHE] <Jennifer.Nichols@ks.gov>
Subject: Original request for Rolling Meadows landfill North of Topeka, KS.

Jeff,

Here is some information that we have. You may already be aware of the first file. We will send additional analytical later today or tomorrow. It is currently in a large hyperlinks that we are trying to figure out how to get to you.

Thank you,

Tony Guy
KDHE/BWM
785-296-0681

Jennifer Nichols [KDHE]

From: Erich Glave [KDHE]
Sent: Friday, January 13, 2023 10:38 AM
To: Julie Coleman [KDHE]; Mindy Bowman [KDHE]
Cc: Dan Wells [KDHE]; Jennifer Nichols [KDHE]; Jaime Wilson [KDHE]; Doug Cole [KDHE]
Subject: FW: Waste Profile Approvals Mile Post 14
Attachments: 126362KS_approval.pdf; 126363KS_approval.pdf

Documentation of approved disposal in Nebraska.

Erich Glave
 Director, BEFS
 785.296.5575

From: Pritchard, Jeffrey <pritchard.jeffrey@epa.gov>
Sent: Friday, January 13, 2023 10:30 AM
To: Erich Glave [KDHE] <Erich.Glave@ks.gov>
Subject: FW: Waste Profile Approvals Mile Post 14

EXTERNAL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

FYI – see attached.

Jeff Pritchard
 On-Scene Coordinator
 U.S. EPA Region 7
 11201 Renner Blvd | Lenexa, KS 66219
 Phone: 913.551.7772 Cell: 816-541-0031
Pritchard.Jeffrey@epa.gov

From: Brian Meyer <brian_meyer@tcenergy.com>
Sent: Friday, January 13, 2023 10:21 AM
To: Pritchard, Jeffrey <pritchard.jeffrey@epa.gov>; OPATCENERGYMILLCREEK <OPATCENERGYMILLCREEK@epa.gov>
Cc: Robert Baumgartner <robert_baumgartner@tcenergy.com>; Laura MacNeil <laura_macneil@tcenergy.com>; Allison Shepard <allison_shepard@tcenergy.com>
Subject: Waste Profile Approvals Mile Post 14

Jeff – I was asked to send you the profile approvals from Waste Management Inc Pheasant Point, NE landfill. Attached are two approvals, one for the crude impacted soils and one for the crude impacted solids (ppe, absorbents, etc). If you have any other questions let me know.

Thanks,

Brian Meyer
 Environmental Specialist
 Environment, Land, & Emergency Management



Non-Hazardous WAM Approval

Requested Management Facility: Pheasant Point Landfill

Profile Number: 126362KS Waste Acceptance Expiration Date: 12/30/2023
 Common Name: Crude Oil Impacted Soil WM Regulatory Volume Limit: 8000 Cubic Yards ☐ NA

APPROVAL DETAILS

Approval Decision: ☒ Approved ☐ Not Approved Profile Renewal: ☐ Yes ☒ No

Management Method: Direct Landfill

Generator Name: TransCanada Keystone Pipeline, LP

Profile Expiration Date: 12/30/2023

Periodic Testing Due Date: ☒ NA

Other Due Date: ☒ NA (Specify)

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

Generator Conditions

- Shall not contain free liquids.
- Waste manifest or applicable shipping document must accompany load.
- The waste profile number must appear on the shipping papers.

Waste analysis must be submitted for each 2000 cubic yards disposed. Analysis must include, at a minimum: TPH LRH/MRH/HRH, TCLP VOC's, TCLP SVOC's, TCLP RCRA Metals, Total Sulfate (Method 9056A) and Paint Filter.

Pace Analytical Report, Pace Project No. 60418714 is approved for 8000 cubic yards.

WM Authorization Name: Joshua Buehre Title: Waste Approval Manager

WM Authorization Signature: *Joshua Buehre* Date: 12/30/2022

Agency Authorization (if Required): Date:



Non-Hazardous WAM Approval

Requested Management Facility: Pheasant Point Landfill

Profile Number: 126363KS Waste Acceptance Expiration Date: 12/30/2023
Common Name: Crude Impacted Oily Solids WM Regulatory Volume Limit: 100 Cubic Yards ☐ NA

APPROVAL DETAILS

Approval Decision: ☒ Approved ☐ Not Approved

Profile Renewal: ☐ Yes ☒ No

Management Method: Direct Landfill

Generator Name: TransCanada Keystone Pipeline, LP

Profile Expiration Date: 12/30/2023

Periodic Testing Due Date: _____ ☒ NA

Other Due Date: _____ ☒ NA (Specify) _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

Generator Conditions

- Shall not contain free liquids.
- Waste manifest or applicable shipping document must accompany load.
- The waste profile number must appear on the shipping papers.

Waste analysis must be submitted for each 100 cubic yards disposed. Analysis must include, at a minimum: TPH LRH/MRH/HRH, TCLP VOC's, TCLP SVOC's, TCLP RCRA Metals, Total Sulfate (Method 9056A) and Paint Filter.

Pace Analytical Report, Pace Project No. 60418714 is approved for 100 cubic yards.

WM Authorization Name: Joshua Buehre Title: Waste Approval Manager

WM Authorization Signature: *Joshua Brinkman* Date: 12/30/2022

Agency Authorization (if Required): _____ Date: _____

Special Waste Disposal Request
Kansas Department of Health and Environment
 Bureau of Waste Management
 Waste Reduction, Compliance and Enforcement Section
 1000 SW Jackson, Suite 320, Topeka, Kansas 66612-1366

You may email to: kdhe.swda@ks.gov or FAX form to: 785-559-4253

Please type or clearly print - See page 2 for instructions

I. REQUESTER INFORMATION *(This is where the Disposal Authorization letter will be sent.)*

Business/Company Name: TransCanada Keystone Pipeline, LP

Address: 13710 FNB Parkway, Suite 300

City: Omaha State: NE Zip Code 68154 County: Douglas

Contact Person: Mr. Brian Meyer Telephone Number: 402-492-7408

E-Mail Address, if applicable: brian_meyer@tcenergy.com Fax Number: N/A

II. POINT/LOCATION OF GENERATION INFORMATION *(only if different from the information in Section I above)*

Name of Property/Owner/Generator: TransCanada Keystone Pipeline, LP

Physical Address/Location: Sunflower Road & 20th Road

City: Washington State: KS Zip Code 66968 County: Washington

Contact Person: Mr. Brian Meyer Telephone Number: 402-492-7408

III. WASTE INFORMATION - Use back of form if additional space is required

Waste Description: Crude oil impacted soil, vegetation, wood, plastic, absorbents, PPE, hoses, boom, and animal carcass

Process Producing Waste: Clean up of crude oil pipeline release

Physical Characteristics of Waste: Varies, clear to brown/black

Quantity for Disposal: 75,000 (Please Select One) ☐ Lbs ☐ Tons | ☒ Cubic Yards ☐ Drums

Est. Weight: 100,000 lb

☒ One time Event, up to 6 months ☐ Per Year/Annually

Laboratory Analyses Attached: ☒ Yes ☐ No

Safety Data Sheets (SDS) Attached: ☒ Yes ☐ No

Renewal of Previous Authorization: Previous/Current Authorization No: N/A Exp. Date: N/A

IV. DISPOSAL INFORMATION

Landfill Proposed for Disposal: Waste Management Rolling Meadows Landfill, Topeka, KS

Solid Waste Transfer Station Proposed: N/A Permit #: N/A

V. CERTIFICATION

I hereby certify that I am a duly authorized representative of the generator identified above. I further certify that, to the best of my knowledge, the following items are true:

1. The waste identified for disposal is not a hazardous waste as defined by K.A.R. 28-31-261.
2. All analytical analyses provided are from a Kansas Department of Health and Environment (KDHE) certified laboratory and are representative of the waste identified for disposal.
3. All information provided in any attached profile, re-certification, or other document completed by the authorized representative accurately characterizes the waste.
4. If this is a renewal, the materials and processes that generate the waste have not changed since the last disposal authorization indicated above, and the information previously provided to KDHE is still valid.

Signature

Brian Meyer
 Printed Name

12/14/22
 Date

SDS

SECTION 1 – MATERIAL IDENTIFICATION

Material Name: HEAVY CRUDE OIL/DILUENT MIX
Synonyms: Bow River (BR); Cold Lake Blend (CLB); Christina Lake Dil-bit Blend (CDB), Christina Lake Blend (CSB); Western Canadian Blend (WCB); Western Canadian Select (WCS); Wabasca Heavy (WH)
Use: Process stream, fuels and lubricants production
WHMIS Classification: Class B, Div. 2, Class D, Div. 2, Sub-Div. A and B
NFPA: **Fire:** 2 **Reactivity:** 0 **Health:** 3
TDG Shipping Name: Petroleum Crude Oil
TDG Class: 3 **UN:** 1267
TDG Packing Group: II (boiling point 35 deg. C or above, and flash point less than 23 deg. C)
Manufacturer/Supplier: CENOVUS ENERGY INC.
 500 Centre Street SE, PO Box 766
 Calgary, AB T2P 0M5
Emergency Telephone: 1-877-458-8080, CANUTEC 1-613-996-6666 (Canada)
Chemical Description: A naturally occurring mixture of paraffins, naphthalenes, aromatic hydrocarbons and small amounts of sulphur and nitrogen compounds mixed with condensate

SECTION 2 – HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Concentrations (%)	C.A.S. Nos.	LD50/LC50 Specify Species & Route	Exposure Limits
Bitumen	50 – 90	8052-42-4		5 mg/m ³ (OEL, PEL oil mist)
Hydrocarbon Diluent	10 – 50	N.Av.	N.Av.	900 mg/m ³ (OEL)*
Benzene	0.03 – 0.3	71-43-2	LD50, rat, oral, 930 mg/kg LC50, rat, 4 hr, 13200 ppm	0.5 ppm (OEL, TLV) 10 ppm (PEL)
Hydrogen Sulphide [§]	<0.1	7783-06-04	LC50, rat, 4 hrs, 444 ppm	10 ppm (OEL), 1 ppm (TLV), 20 ppm (PEL-C)

OEL = AB Occupational Exposure Limit; TLV = ACGIH Threshold Limit Value; PEL = OSHA Permissible Exposure Limit;
 C = Ceiling; *OEL for gasoline; [§]Hydrogen Sulfide in liquid, vapour phase may contain higher concentrations

SECTION 3 – PHYSICAL DATA FOR MATERIAL

Physical State: Liquid **Vapour Pressure, Reid (kPa):** 76 @ 38°C
Specific Gravity: 0.91 – 0.94 **Odour Threshold (ppm):** N.Av.
Vapour Density (air=1): 2.5 -5.0 (estimated) **Evaporation Rate:** N.Av.
Percent Volatiles, (v/v): 15 - 30 (estimated) **Boiling Pt. (deg.C):** 35 – 180°C
pH: N.Av. **Freezing Pt. (deg.C):** <20
Coefficient of Water/Oil Distribution: <0.1
Odour & Appearance: Brown/black liquid, hydrocarbon odour
 (N.Av. = not available N.App. = not applicable)

SECTION 4 – FIRE AND EXPLOSION

Flammability: Yes **Conditions:** Material will ignite at normal temperatures.
Means of Extinction: Foam, CO₂, dry chemical. Explosive accumulations can build up in areas of poor ventilation.
Special Procedures: Use water spray to cool fire-exposed containers, and to disperse vapors if spill has not ignited. Cut off fuel and allow flame to burn out.
Flash Point (deg.C) & Method: <-35 (PMCC)
Upper Explosive Limit (% by vol.): 8 (estimated) **Sensitivity to Impact:** No
Lower Explosive Limit (% by vol.): 0.8 (estimated) **Sensitivity to Static Discharge:** Yes, at normal temperatures
Auto-Ignition Temp. (deg.C): 250 (estimated) **TDG Flammability Classification:** 3
Hazardous Combustion Products: Carbon monoxide, carbon dioxide, sulphur oxides

SECTION 5 – REACTIVITY DATA

Chemical Stability: Stable **Conditions:** Heat
Incompatibility: Yes **Substances:** Oxidizing agents (e.g. chlorine)
Reactivity: Yes **Conditions:** Heat, strong sunlight
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, sulphur oxides

SECTION 6 – TOXICOLOGICAL PROPERTIES OF PRODUCT**Routes of Entry:****Skin Absorption :** Yes**Skin Contact:** Yes**Eye Contact:** Yes**Inhalation: Acute:** Yes**Chronic:** Yes**Ingestion:** Yes**Effects of Acute Exposure:** Vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. Contact with skin may cause irritation and possibly dermatitis. Contact of liquid with eyes may cause severe irritation/burns.**Effects of Chronic Exposure:** Due to presence of benzene, long term exposure may increase the risk of anemia and leukemia. Repeated skin contact may increase the risk of skin cancer.**Sensitization to Product:** No.**Exposure Limits of Product:** 0.5 ppm (OEL for benzene)**Irritancy:** Yes**Synergistic Materials:** None reported**Carcinogenicity:** Yes **Reproductive Effects:** Possibly **Teratogenicity:** Possibly **Mutagenicity:** Possibly**SECTION 7 – PREVENTIVE MEASURES****Personal Protective Equipment:** Use positive pressure self-contained breathing apparatus, supplied air breathing apparatus or cartridge air purifying respirator approved for organic vapours where concentrations may exceed exposure limits (note: cartridge respirator not suitable for hydrogen sulfide, oxygen deficiency or IDLH situations) – see also Storage below).**Gloves:** Viton (nitrile adequate for short exposure to liquid)**Eye:** Chemical splash goggles. **Footwear:** As per safety policy **Clothing:** As per fire protection policy**Engineering Controls:** Use only in well ventilated areas. Mechanical ventilation required in confined areas. Equipment must be explosion proof.**Leaks & Spills:** Stop leak if safe to do so. Use personal protective equipment. Use water spray to cool containers. Remove all ignition sources. Provide explosion-proof clearing ventilation, if possible. Prevent from entering confined spaces. Dyke and pump into containers for recycling or disposal. Notify appropriate regulatory authorities.**Waste Disposal:** Contact appropriate regulatory authorities for disposal requirements.**Handling Procedures & Equipment:** Avoid contact with liquid. Avoid inhalation. Bond and ground all transfers. Avoid sparking conditions.**Storage Requirements:** Store in a cool, dry, well ventilated area away from heat, strong sunlight, and ignition sources.**Special Shipping Provisions:** N.App.**Caution:** Hydrogen sulfide may accumulate in headspaces of tanks and other equipment, even when concentrations in the liquid product are low. Overexposure to hydrogen sulphide may cause dizziness, headache, nausea and possibly unconsciousness and death. Factors increasing this risk include heating, agitation and contact of the liquid with acids or acid salts. Assess the exposure risk by gas monitoring. Wear air supplying breathing apparatus if necessary.**SECTION 8 – FIRST AID MEASURES****Skin:** Flush skin with water, removing contaminated clothing. Get medical attention if irritation persists or large area of contact. Decontaminate clothing before re-use.**Eye:** Immediately flush with large amounts of lukewarm water for 15 minutes, lifting upper and lower lids at intervals. Seek medical attention if irritation persists.**Inhalation:** Ensure own safety. Remove victim to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention immediately.**Ingestion:** Give 2-3 glasses of milk or water to drink. DO NOT INDUCE VOMITING. Keep warm and at rest. Get immediate medical attention.**SECTION 9 – PREPARATION DATE OF MSDS****Prepared By:** Cenovus Energy Inc. Health and Safety**Phone Number:** 1-403-766-2000**Preparation Date:** April 10, 2013

Lab Reports for Similar Crude Oil Impacted Soil Characterization



ANALYTICAL REPORT

February 19, 2019

Burns & McDonnell - KS

Sample Delivery Group: L1069815
Samples Received: 02/13/2019
Project Number: ST. PAUL 20-9
Description:

Report To: Trevor Gustafson
9400 Ward Parkway
Kansas City, MO 64114

Entire Report Reviewed By:

Tom Mellette
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SOIL CELL 1 5W6FU L1069815-01 Solid

			Collected by Trevor Gustafson	Collected date/time 02/11/19 16:40	Received date/time 02/13/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1236996	1	02/14/19 10:41	02/14/19 10:50	JD
Wet Chemistry by Method 9023	WG1236951	1	02/14/19 09:38	02/14/19 11:07	EEM
Wet Chemistry by Method 9066	WG1237131	1	02/14/19 12:00	02/14/19 15:48	JER
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1236833	20	02/13/19 22:57	02/14/19 17:22	ACG
Polychlorinated Biphenyls (GC) by Method 8082	WG1237230	1	02/14/19 21:46	02/15/19 09:30	LEL
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1237000	3	02/14/19 09:58	02/14/19 15:54	LEA

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SOIL CELL 1 5W6FU L1069815-02 Waste

			Collected by Trevor Gustafson	Collected date/time 02/11/19 16:40	Received date/time 02/13/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG1237007	1	02/14/19 10:04	02/14/19 10:04	RT
Preparation by Method 1311	WG1237030	1	02/14/19 10:19	02/14/19 10:19	TM
Wet Chemistry by Method 9012 B	WG1237130	1	02/15/19 08:33	02/15/19 12:27	JER
Wet Chemistry by Method 9034-9030B	WG1238120	1	02/16/19 15:55	02/16/19 15:55	TCC
Wet Chemistry by Method 9045D	WG1236929	1	02/14/19 14:11	02/14/19 15:45	MLW
Wet Chemistry by Method 9095B	WG1236907	1	02/14/19 13:00	02/14/19 15:00	BAM
Wet Chemistry by Method D93/1010A	WG1236139	1	02/15/19 16:41	02/15/19 16:41	RDW
Mercury by Method 7470A	WG1237508	1	02/15/19 06:59	02/15/19 13:00	ABL
Metals (ICP) by Method 6010B	WG1237577	1	02/15/19 09:15	02/15/19 17:05	TRB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237593	1	02/15/19 15:51	02/15/19 15:51	ACG
Chlorinated Acid Herbicides (GC) by Method 8151A	WG1237549	1	02/15/19 08:11	02/16/19 05:22	KLM
Pesticides (GC) by Method 8081B	WG1237517	1	02/18/19 06:02	02/18/19 20:06	VKS
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG1237509	1	02/15/19 15:27	02/16/19 16:45	AO

CASE NARRATIVE

ONE LAB. NATIONWIDE.

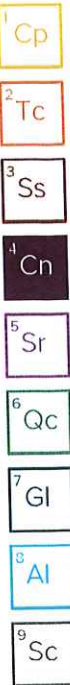


All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Tom Mellette
Project Manager

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.



SOIL CELL 1 5W6FU

Collected date/time: 02/11/19 16:40

SAMPLE RESULTS - 01

L1069815

ONE LAB. NATIONWIDE.



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	75.0		1	02/14/2019 10:50	WG1236996

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9023

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Extracted TOX	ND		33.4	1	02/14/2019 11:07	WG1236951

Wet Chemistry by Method 9066

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	1.35	P1	0.894	1	02/14/2019 15:48	WG1237131

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.535		0.0267	20	02/14/2019 17:22	WG1236833
Toluene	2.18		0.133	20	02/14/2019 17:22	WG1236833
Ethylbenzene	0.326		0.0667	20	02/14/2019 17:22	WG1236833
Total Xylenes	2.80		0.173	20	02/14/2019 17:22	WG1236833
(S) Toluene-d8	94.6		75.0-131		02/14/2019 17:22	WG1236833
(S) 4-Bromofluorobenzene	110		67.0-138		02/14/2019 17:22	WG1236833
(S) 1,2-Dichloroethane-d4	89.5		70.0-130		02/14/2019 17:22	WG1236833

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0227	1	02/15/2019 09:30	WG1237230
PCB 1221	ND		0.0227	1	02/15/2019 09:30	WG1237230
PCB 1232	ND		0.0227	1	02/15/2019 09:30	WG1237230
PCB 1242	ND		0.0227	1	02/15/2019 09:30	WG1237230
PCB 1248	ND		0.0227	1	02/15/2019 09:30	WG1237230
PCB 1254	ND		0.0227	1	02/15/2019 09:30	WG1237230
PCB 1260	ND		0.0227	1	02/15/2019 09:30	WG1237230
(S) Decachlorobiphenyl	55.3		10.0-135		02/15/2019 09:30	WG1237230
(S) Tetrachloro-m-xylene	75.8		10.0-139		02/15/2019 09:30	WG1237230

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis date / time	Batch
DRO	596		40.0	3	02/14/2019 15:54	WG1237000
ORO	498		40.0	3	02/14/2019 15:54	WG1237000
(S) Nitrobenzene-d5	93.6		22.0-150		02/14/2019 15:54	WG1237000
(S) 2-Fluorobiphenyl	86.8		27.0-135		02/14/2019 15:54	WG1237000
(S) p-Terphenyl-d14	84.8		22.0-129		02/14/2019 15:54	WG1237000

SOIL CELL 1 5W6FU

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.



Collected date/time: 02/11/19 16:40

L1069815

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		2/14/2019 10:19:18 AM	WG1237030
TCLP ZHE Extraction	-		2/14/2019 10:04:19 AM	WG1237007
Fluid	1		2/14/2019 10:19:18 AM	WG1237030
Initial pH	7.72		2/14/2019 10:19:18 AM	WG1237030
Final pH	5.74		2/14/2019 10:19:18 AM	WG1237030

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	02/15/2019 12:27	WG1237130

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	02/16/2019 15:55	WG1238120

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.82	<u>T8</u>	1	02/14/2019 15:45	WG1236929

Sample Narrative:

L1069815-02 WG1236929: 7.82 at 18.6C

Wet Chemistry by Method 9095B

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	02/14/2019 15:00	WG1236907

Sample Narrative:

L1069815-02 WG1236907: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170		1	02/15/2019 16:41	WG1236139

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	02/15/2019 13:00	WG1237508

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	02/15/2019 17:05	WG1237577
Barium	1.83		0.100	100	1	02/15/2019 17:05	WG1237577
Cadmium	ND		0.100	1	1	02/15/2019 17:05	WG1237577
Chromium	ND		0.100	5	1	02/15/2019 17:05	WG1237577
Lead	ND		0.100	5	1	02/15/2019 17:05	WG1237577
Selenium	ND		0.100	1	1	02/15/2019 17:05	WG1237577
Silver	ND		0.100	5	1	02/15/2019 17:05	WG1237577

SOIL CELL 15W6FU

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

Collected date/time: 02/11/19 16:40

L1069815

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0683		0.0500	0.50	1	02/15/2019 15:51	WG1237593
Carbon tetrachloride	ND		0.0500	0.50	1	02/15/2019 15:51	WG1237593
Chlorobenzene	ND		0.0500	100	1	02/15/2019 15:51	WG1237593
Chloroform	ND		0.250	6	1	02/15/2019 15:51	WG1237593
1,2-Dichloroethane	ND		0.0500	0.50	1	02/15/2019 15:51	WG1237593
1,1-Dichloroethene	ND		0.0500	0.70	1	02/15/2019 15:51	WG1237593
2-Butanone (MEK)	ND		0.500	200	1	02/15/2019 15:51	WG1237593
Tetrachloroethene	ND		0.0500	0.70	1	02/15/2019 15:51	WG1237593
Trichloroethene	ND		0.0500	0.50	1	02/15/2019 15:51	WG1237593
Vinyl chloride	ND		0.0500	0.20	1	02/15/2019 15:51	WG1237593
(S) Toluene-d8	95.9		80.0-120			02/15/2019 15:51	WG1237593
(S) o,a,a-Trifluorotoluene	99.9		80.0-120			02/15/2019 15:51	WG1237593
(S) 4-Bromofluorobenzene	99.3		77.0-126			02/15/2019 15:51	WG1237593
(S) 1,2-Dichloroethane-d4	101		70.0-130			02/15/2019 15:51	WG1237593

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	ND		0.00200	1	1	02/16/2019 05:22	WG1237549
2,4-D	ND		0.00200	10	1	02/16/2019 05:22	WG1237549
(S) 2,4-Dichlorophenyl Acetic Acid	70.0		14.0-158			02/16/2019 05:22	WG1237549

Pesticides (GC) by Method 8081B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Chlordane	ND		0.00500	0.03	1	02/18/2019 20:06	WG1237517
Endrin	ND		0.00500	0.02	1	02/18/2019 20:06	WG1237517
Heptachlor	ND		0.00500	0.0080	1	02/18/2019 20:06	WG1237517
Lindane	ND		0.00500	0.40	1	02/18/2019 20:06	WG1237517
Methoxychlor	ND		0.00500	10	1	02/18/2019 20:06	WG1237517
Toxaphene	ND		0.0100	0.50	1	02/18/2019 20:06	WG1237517
(S) Decachlorobiphenyl	91.1		10.0-128			02/18/2019 20:06	WG1237517
(S) Tetrachloro-m-xylene	84.5		10.0-127			02/18/2019 20:06	WG1237517

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	02/16/2019 16:45	WG1237509
2,4-Dinitrotoluene	ND		0.100	0.13	1	02/16/2019 16:45	WG1237509
Hexachlorobenzene	ND		0.100	0.13	1	02/16/2019 16:45	WG1237509
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	02/16/2019 16:45	WG1237509
Hexachloroethane	ND		0.100	3	1	02/16/2019 16:45	WG1237509
Nitrobenzene	ND		0.100	2	1	02/16/2019 16:45	WG1237509
Pyridine	ND		0.100	5	1	02/16/2019 16:45	WG1237509
3&4-Methyl Phenol	ND		0.100	400	1	02/16/2019 16:45	WG1237509
2-Methylphenol	ND		0.100	200	1	02/16/2019 16:45	WG1237509
Pentachlorophenol	ND		0.100	100	1	02/16/2019 16:45	WG1237509
2,4,5-Trichlorophenol	ND		0.100	400	1	02/16/2019 16:45	WG1237509
2,4,6-Trichlorophenol	ND		0.100	2	1	02/16/2019 16:45	WG1237509
(S) 2-Fluorophenol	42.3		10.0-120			02/16/2019 16:45	WG1237509
(S) Phenol-d5	26.5		10.0-120			02/16/2019 16:45	WG1237509
(S) Nitrobenzene-d5	60.1		10.0-127			02/16/2019 16:45	WG1237509
(S) 2-Fluorobiphenyl	62.0		10.0-130			02/16/2019 16:45	WG1237509
(S) 2,4,6-Tribromophenol	61.5		10.0-155			02/16/2019 16:45	WG1237509
(S) p-Terphenyl-d14	75.3		10.0-128			02/16/2019 16:45	WG1237509

WG1236996

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

L1069815-01

Method Blank (MB)

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

(MB) R3384019-1 02/14/19 10:50																	
MB Result		MB Qualifier		MB MDL		MB RDL											
%				%		%											
Analyte																	
Total Solids		0.000															
L1069846-01 Original Sample (OS) • Duplicate (DUP)																	
(OS) L1069846-01 02/14/19 10:50 • (DUP) R3384019-3 02/14/19 10:50																	
Original Result		DUP Result		Dilution		DUP RPD		DUP RPD Limits									
%		%				%		%									
Analyte																	
Total Solids		84.6		1		4.65		10									
Laboratory Control Sample (LCS)																	
(LCS) R3384019-2 02/14/19 10:50																	
Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier									
%		%		%		%											
Analyte																	
Total Solids		50.0		100		85.0-115											

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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QUALITY CONTROL SUMMARY

L1069815-02

WG1237130

Wet Chemistry by Method 9012 B

Method Blank (MB)

(MB) R3384101-1 02/15/19 12:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Reactive Cyanide	U	0.0390	0.250	

L1069655-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1069655-02 02/15/19 12:25 • (DUP) R3384101-5 02/15/19 12:26

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier Limits	DUP RPD Limits
Reactive Cyanide	ND	0.174	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3384101-2 02/15/19 12:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Reactive Cyanide	2.50	2.46	98.3	50.0-150	

L1069653-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069653-01 02/15/19 12:19 • (MS) R3384101-3 02/15/19 12:20 • (MSD) R3384101-4 02/15/19 12:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Reactive Cyanide	1.67	ND	1.42	1.41	85.4	84.8	1	75.0-125		0.761		20

WG1236951

Wet Chemistry by Method 9023

Method Blank (MB)

QUALITY CONTROL SUMMARY

L1069815-01

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

(MB) R3383793-1 02/14/19 10:37				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	
Extracted TOX	U	9.45	25.0	

L1069798-09 Original Sample (OS) • Duplicate (DUP)				
(OS) L1069798-09 02/14/19 12:37 • (DUP) R3383793-5 02/14/19 12:43				
	Original Result	DUP Result	DUP RPD	DUP RPD Limits
Analyte	mg/kg	mg/kg	%	%
Extracted TOX	U	0.000	1	0.000 20

Laboratory Control Sample (LCS)				
(LCS) R3383793-2 02/14/19 10:44				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits
Analyte	mg/kg	mg/kg	%	%
Extracted TOX	250	247	98.8	85.0-115

L1069568-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)				
(OS) L1069568-01 02/14/19 11:15 • (MS) R3383793-3 02/14/19 11:21 • (MSD) R3383793-4 02/14/19 11:29				
	Spike Amount	Original Result	MS Result	MSD Result
Analyte	mg/kg	mg/kg	mg/kg	mg/kg
Extracted TOX	1030	ND	1150	1110

	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	%	%		%			%	%
	112	108	1	80.0-120			3.51	20

WG1238120

Wet Chemistry by Method 9034-90308

QUALITY CONTROL SUMMARY

L1069815-02

Method Blank (MB)

(MB) R3384349-1 02/16/19 15:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Reactive Sulfide	U		7.63	25.0

L1069262-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1069262-02 02/16/19 15:55 • (DUP) R3384349-3 02/16/19 15:55

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3384349-2 02/16/19 15:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Reactive Sulfide	100	87.7	87.7	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



WG1236929

Wet Chemistry by Method 9045D

QUALITY CONTROL SUMMARY

L1069815-02

L1069806-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1069806-01 02/14/19 15:45 • (DUP) R3383902-3 02/14/19 15:45

Analyte	Original Result		DUP Result		DUP RPD		DUP Qualifier		DUP RPD Limits	
	su	7.44	su	7.42	%	0.269			%	1
pH										

Sample Narrative:

OS: 7.44 at 18.7C
DUP: 7.42 at 18.7C

Laboratory Control Sample (LCS)

(LCS) R3383902-1 02/14/19 15:45

Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier	
	su	10.0	su	9.96	%	99.5	%	99.0-101		
pH										

Sample Narrative:

LCS: 9.96 at 17.5C

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



WG1237131

Wet Chemistry by Method 9066

QUALITY CONTROL SUMMARY

L1069815-01

Method Blank (MB)

(MB) R3383904-1 02/14/19 15:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Total Phenol by 4AAP	U	0.220	0.220	0.670

L1069815-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1069815-01 02/14/19 15:48 • (DUP) R3383904-3 02/14/19 15:49

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Phenol by 4AAP	1.35	1.71	1	23.4	P1	20

Laboratory Control Sample (LCS)

(LCS) R3383904-2 02/14/19 15:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Phenol by 4AAP	8.33	8.13	97.6	90.0-110	

L1069955-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069955-01 02/14/19 15:50 • (MS) R3383904-4 02/14/19 15:51 • (MSD) R3383904-5 02/14/19 15:51

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Total Phenol by 4AAP	16.7	0.483	15.1	15.3	87.4	88.7	1	90.0-110	J6	J6	1.43	20

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WG1236907

Wet Chemistry by Method 9095B

QUALITY CONTROL SUMMARY

L1069815-02

L1069444-02 Original Sample (OS) • Duplicate (DUP)

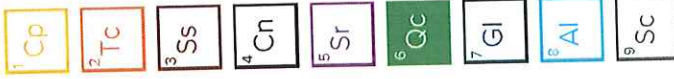
(OS) L1069444-02 02/14/19 15:00 • (DUP) R3383860-1 02/14/19 15:00

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

Sample Narrative:

OS: Contains No Free Liquid

DUP: Contains No Free Liquid



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QUALITY CONTROL SUMMARY

L1069815-02

WG1236139

Wet Chemistry by Method D93/1010A

L1068430-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1068430-03 02/15/19 16:41 • (DUP) R3384215-2 02/15/19 16:41

Original Result		DUP Result		DUP RPD		DUP Qualifier		DUP RPD Limits	
Deg. F		Deg. F		%		%		%	
DNI at 170		DNI at 170		1		0.000		10	

Analyte
Ignitability

Laboratory Control Sample (LCS)

(LCS) R3384215-1 02/15/19 16:41

Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier	
Deg. F		Deg. F		%		%			
82.0		81.9		99.9		96.0-104			

Analyte
Ignitability

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

QUALITY CONTROL SUMMARY

L1069815-02

WG1237508

Mercury by Method 7470A

Method Blank (MB)

(MB) R3384119-1 02/15/19 11:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U	0.00330	0.0100	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3384119-2 02/15/19 11:56 • (LCSD) R3384119-3 02/15/19 11:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.0317	0.0309	106	103	80.0-120			2.47	20

L1069238-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069238-01 02/15/19 12:01 • (MS) R3384119-4 02/15/19 12:04 • (MSD) R3384119-5 02/15/19 12:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0309	0.0303	103	101	1	75.0-125			1.83	20

L1069281-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069281-02 02/15/19 12:14 • (MS) R3384119-6 02/15/19 12:16 • (MSD) R3384119-7 02/15/19 12:18

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0344	0.0346	115	115	1	75.0-125			0.595	20

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WG1237577

Metals (ICP) by Method 6010B

Method Blank (MB)

QUALITY CONTROL SUMMARY

L1069815-02

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

(MB) R3384128-1 02/15/19 11:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0330	0.100
Barium	U		0.0330	0.100
Cadmium	U		0.0330	0.100
Chromium	U		0.0330	0.100
Lead	U		0.0330	0.100
Selenium	U		0.0330	0.100
Silver	U		0.0330	0.100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3384128-2 02/15/19 11:26 • (LCSD) R3384128-3 02/15/19 11:29

Analyte	Spike Amount mg/l	LCS Result		LCSD Result		LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
		mg/l	mg/l	mg/l	mg/l							
Arsenic	10.0	10.2	10.2	10.2	10.2	102	102	80.0-120			0.00979	20
Barium	10.0	10.3	10.3	10.3	10.3	103	103	80.0-120			0.208	20
Cadmium	10.0	10.2	10.2	10.2	10.2	102	102	80.0-120			0.118	20
Chromium	10.0	9.93	9.97	9.97	99.3	99.3	99.7	80.0-120			0.382	20
Lead	10.0	10.3	10.3	10.3	103	103	103	80.0-120			0.177	20
Selenium	10.0	10.5	10.4	10.4	105	105	104	80.0-120			0.523	20
Silver	10.0	9.94	9.95	99.4	99.5	99.4	99.5	80.0-120			0.102	20

L1069262-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069262-02 02/15/19 11:32 • (MS) R3384128-5 02/15/19 11:37 • (MSD) R3384128-6 02/15/19 11:40

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	NT D	%
Arsenic	10.0	ND	10.4	10.5	104	105	1	75.0-125		0.811		20
Barium	10.0	1.88	12.2	12.2	104	103	1	75.0-125		0.408		20
Cadmium	10.0	ND	10.5	10.4	105	104	1	75.0-125		0.689		20
Chromium	10.0	ND	10.1	10.0	101	100	1	75.0-125		0.893		20
Lead	10.0	ND	10.5	10.5	105	105	1	75.0-125		0.579		20
Selenium	10.0	ND	10.8	10.7	108	107	1	75.0-125		0.649		20
Silver	10.0	ND	10.3	10.2	103	102	1	75.0-125		1.15		20

WG1237577

Metals (ICP) by Method 6010B

QUALITY CONTROL SUMMARY

L1069815-02

L1069281-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069281-02 02/15/19 16:23 • (MS) R3384255-1 02/15/19 16:26 • (MSD) R3384255-2 02/15/19 16:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	10.6	10.5	106	105	1	75.0-125			0.967	20
Barium	10.0	ND	10.6	10.6	105	105	1	75.0-125			0.111	20
Cadmium	10.0	ND	10.3	10.3	103	103	1	75.0-125			0.240	20
Chromium	10.0	ND	10.4	10.3	104	103	1	75.0-125			0.0547	20
Lead	10.0	ND	10.5	10.5	105	105	1	75.0-125			0.213	20
Selenium	10.0	ND	10.6	10.6	106	106	1	75.0-125			0.121	20
Silver	10.0	ND	10.3	10.2	103	102	1	75.0-125			0.0948	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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QUALITY CONTROL SUMMARY

L1069815-01

WG1236833

Volatile Organic Compounds (GC/MS) by Method 8260B

Method Blank (MB)

(MB) R3384556-2 02/14/19 10:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	97.5			75.0-131
(S) 4-Bromofluorobenzene	104			67.0-138
(S) 1,2-Dichloroethane-d4	85.9			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3384556-1 02/14/19 09:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.0995	79.6	70.0-123	
Ethylbenzene	0.125	0.117	93.9	74.0-126	
Toluene	0.125	0.116	92.9	75.0-121	
Xylenes, Total	0.375	0.346	92.3	72.0-127	
(S) Toluene-d8			95.7	75.0-131	
(S) 4-Bromofluorobenzene			106	67.0-138	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

L1069572-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069572-01 02/14/19 17:41 • (MS) R3384556-3 02/14/19 18:00 • (MSD) R3384556-4 02/14/19 18:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	13.4	36.0	60.6	45.1	94.3	400	10.0-149		J3	51.0	37
Ethylbenzene	0.125	36.4	58.9	84.4	45.1	95.9	400	10.0-160			35.5	38
Toluene	0.125	149	143	184	0.000	68.8	400	10.0-156	J6		25.0	38
Xylenes, Total	0.375	187	234	321	31.6	89.4	400	10.0-160			31.2	38
(S) Toluene-d8					96.3	93.1		75.0-131				
(S) 4-Bromofluorobenzene					109	106		67.0-138				
(S) 1,2-Dichloroethane-d4					112	99.6		70.0-130				

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Volatile Organic Compounds (GC/MS) by Method 8260B

QUALITY CONTROL SUMMARY

L1069815-02

Method Blank (MB)

(MB) R3384105-4 02/15/19 11:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0165	0.0500
Carbon tetrachloride	U		0.0165	0.0500
Chlorobenzene	U		0.0165	0.0500
Chloroform	U		0.0825	0.250
1,2-Dichloroethane	U		0.0165	0.0500
1,1-Dichloroethene	U		0.0165	0.0500
2-Butanone (MEK)	U		0.165	0.500
Tetrachloroethene	U		0.0165	0.0500
Trichloroethene	U		0.0165	0.0500
Vinyl chloride	U		0.0165	0.0500
(S) Toluene-d8	96.7			80.0-120
(S) a,a,-Trifluorotoluene	99.2			80.0-120
(S) 4-Bromofluorobenzene	101			77.0-126
(S) 1,2-Dichloroethane-d4	101			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3384105-1 02/15/19 09:10 • (LCSD) R3384105-2 02/15/19 09:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0226	0.0222	90.4	88.9	70.0-123			1.78	20
Carbon tetrachloride	0.0250	0.0229	0.0231	91.7	92.4	68.0-126			0.715	20
Chlorobenzene	0.0250	0.0235	0.0240	93.8	95.8	80.0-121			2.11	20
Chloroform	0.0250	0.0242	0.0238	96.9	95.3	73.0-120			1.62	20
1,2-Dichloroethane	0.0250	0.0224	0.0219	89.4	87.6	70.0-128			2.10	20
1,1-Dichloroethene	0.0250	0.0258	0.0258	103	103	71.0-124			0.0935	20
2-Butanone (MEK)	0.125	0.121	0.121	96.5	96.8	44.0-160			0.271	20
Tetrachloroethene	0.0250	0.0229	0.0234	91.6	93.4	72.0-132			1.98	20
Trichloroethene	0.0250	0.0259	0.0254	104	102	78.0-124			2.06	20
Vinyl chloride	0.0250	0.0236	0.0235	94.5	94.0	67.0-131			0.622	20
(S) Toluene-d8				95.1	96.1	80.0-120				
(S) a,a,-Trifluorotoluene				104	104	80.0-120				
(S) 4-Bromofluorobenzene				100	102	77.0-126				
(S) 1,2-Dichloroethane-d4				96.7	93.1	70.0-130				

WG1237593

Volatile Organic Compounds (GC/MS) by Method 8260B

QUALITY CONTROL SUMMARY

L1069815-02

L1069770-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069770-01 02/15/19 16:31 • (MS) R3384105-5 02/15/19 16:52 • (MSD) R3384105-6 02/15/19 17:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	0.819	0.585	65.5	1	17.0-158		J3	33.3	27
Carbon tetrachloride	1.25	ND	0.697	0.470	55.8	1	23.0-159		J3	38.9	28
Chlorobenzene	1.25	ND	0.906	0.679	72.5	1	33.0-152		J3	28.7	27
Chloroform	1.25	ND	0.912	0.687	73.0	1	29.0-154		J3	28.2	28
1,2-Dichloroethane	1.25	ND	0.967	0.724	71.3	1	29.0-151		J3	28.7	27
1,1-Dichloroethene	1.25	ND	0.661	0.475	52.8	1	11.0-160		J3	32.7	29
2-Butanone (MEK)	6.25	ND	5.94	4.54	95.0	1	10.0-160		J3	26.7	32
Tetrachloroethene	1.25	ND	0.733	0.533	58.6	1	10.0-160		J3	31.6	27
Trichloroethene	1.25	ND	0.803	0.581	64.2	1	10.0-160		J3	32.1	25
Vinyl chloride	1.25	ND	0.674	0.457	53.9	1	10.0-160		J3	38.4	27
(S) Toluene-d8					93.6		80.0-120				
(S) o,a-Trifluorotoluene					97.4		80.0-120				
(S) 4-Bromofluorobenzene					102		77.0-126				
(S) 1,2-Dichloroethane-d4					99.2		70.0-130				

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QUALITY CONTROL SUMMARY

L1069815-02

WG1237549

Chlorinated Acid Herbicides (GC) by Method 8151A

Method Blank (MB)

(MB) R3384709-1 02/16/19 03:20				
Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
2,4-D	U	0.000667	0.000667	0.00200
2,4,5-TP (Silvex)	U	0.000667	0.000667	0.00200
(S) 2,4-Dichlorophenyl Acetic Acid	73.6			14.0-158

Laboratory Control Sample (LCS)

(LCS) R3384709-2 02/16/19 03:34				
Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %
2,4-D	0.0500	0.0427	85.4	50.0-120
2,4,5-TP (Silvex)	0.0500	0.0462	92.4	50.0-125
(S) 2,4-Dichlorophenyl Acetic Acid		76.0		14.0-158

L1069653-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069653-02 02/16/19 04:28 • (MS) R3384709-3 02/16/19 04:41 • (MSD) R3384709-4 02/16/19 04:55									
Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	RPD Limits %
2,4-D	0.0500	ND	0.0493	0.0446	98.6	89.2	1	50.0-120	10.0
2,4,5-TP (Silvex)	0.0500	ND	0.0455	0.0440	91.0	88.0	1	50.0-125	3.35
(S) 2,4-Dichlorophenyl Acetic Acid					160	154	J1	14.0-158	20

WG1237517

Pesticides (GC) by Method 8081B

QUALITY CONTROL SUMMARY

L1069815-02

Method Blank (MB)

(MB) R3384750-1 02/18/19 16:21

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Gamma BHC	U	0.00167	0.00167	0.00500
Endrin	U	0.00167	0.00167	0.00500
Heptachlor	U	0.00167	0.00167	0.00500
Methoxychlor	U	0.00167	0.00167	0.00500
Chlordane	U	0.00167	0.00167	0.00500
Toxaphene	U	0.00333	0.00333	0.0100
(S) Decachlorobiphenyl	80.7			10.0-128
(S) Tetrachloro-m-xylene	104			10.0-127

Laboratory Control Sample (LCS)

(LCS) R3384750-2 02/18/19 16:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gamma BHC	0.0100	0.0105	105	55.0-129	
Endrin	0.0100	0.00879	87.9	57.0-134	
Heptachlor	0.0100	0.00619	61.9	27.0-132	
Methoxychlor	0.0100	0.00954	95.4	54.0-155	
(S) Decachlorobiphenyl			99.5	10.0-128	
(S) Tetrachloro-m-xylene			99.6	10.0-127	

WG1237230

Polychlorinated Biphenyls (GC) by Method 8082

QUALITY CONTROL SUMMARY

L1069815-01

Method Blank (MB)

(MB) R3384138-1 02/15/19 08:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
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PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	83.2			10.0-135
(S) Tetrachloro-m-xylene	108			10.0-139

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3384138-2 02/15/19 09:05 • (LCSD) R3384138-3 02/15/19 09:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.159	0.143	95.2	85.6	37.0-145			10.6	37
PCB 1016	0.167	0.181	0.182	108	109	36.0-141			0.551	35
(S) Decachlorobiphenyl				102	88.9	10.0-135				
(S) Tetrachloro-m-xylene				127	112	10.0-139				

L1069955-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1069955-01 02/15/19 11:35 • (MS) R3384138-4 02/15/19 11:47 • (MSD) R3384138-5 02/15/19 12:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	U	0.164	0.153	98.2	91.6	1	10.0-160	P		6.94	38
PCB 1016	0.167	U	0.128	0.203	76.6	122	1	10.0-160		J3	45.3	37
(S) Decachlorobiphenyl				64.3	64.3	96.4		10.0-135				
(S) Tetrachloro-m-xylene				81.7	81.7	118		10.0-139				

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QUALITY CONTROL SUMMARY

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Semi Volatile Organic Compounds (GC/MS) by Method 8270C

L1069815-01

Method Blank (MB)

(MB) R3383884-1 02/14/19 13:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
DRO	U	2.50	2.50	10.0
ORO	U	2.50	2.50	10.0
(S) Nitrobenzene-d5	133			22.0-150
(S) 2-Fluorobiphenyl	124			27.0-135
(S) p-Terphenyl-d14	121			22.0-129

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3383884-4 02/14/19 14:40 • (LCSD) R3383884-5 02/14/19 15:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
DRO	167	120	130	71.9	77.8	33.0-123			8.00	20
(S) Nitrobenzene-d5				109	124	22.0-150				
(S) 2-Fluorobiphenyl				105	106	27.0-135				
(S) p-Terphenyl-d14				118	121	22.0-129				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



WG1237509

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

QUALITY CONTROL SUMMARY

L1069815-02

Method Blank (MB)

(MB) R3384382-2 02/16/19 13:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U	0.0333	0.0333	0.100
2,4-Dinitrotoluene	U	0.0333	0.0333	0.100
Hexachlorobenzene	U	0.0333	0.0333	0.100
Hexachloro-1,3-butadiene	U	0.0333	0.0333	0.100
Hexachloroethane	U	0.0333	0.0333	0.100
Nitrobenzene	U	0.0333	0.0333	0.100
Pyridine	U	0.0333	0.0333	0.100
2-Methylphenol	U	0.0333	0.0333	0.100
3&4-Methyl Phenol	U	0.0333	0.0333	0.100
Pentachlorophenol	U	0.0333	0.0333	0.100
2,4,5-Trichlorophenol	U	0.0333	0.0333	0.100
2,4,6-Trichlorophenol	U	0.0333	0.0333	0.100
(S) Nitrobenzene-d5	57.1			10.0-127
(S) 2-Fluorobiphenyl	53.8			10.0-130
(S) p-Terphenyl-d14	73.1			10.0-128
(S) Phenol-d5	23.6			10.0-120
(S) 2-Fluorophenol	39.8			10.0-120
(S) 2,4,6-Tribromophenol	49.6			10.0-155

Laboratory Control Sample (LCS)

(LCS) R3384382-1 02/16/19 12:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,4-Dichlorobenzene	0.500	0.279	55.8	18.0-120	
2,4-Dinitrotoluene	0.500	0.396	79.2	49.0-124	
Hexachlorobenzene	0.500	0.348	69.6	44.0-120	
Hexachloro-1,3-butadiene	0.500	0.254	50.8	19.0-120	
Hexachloroethane	0.500	0.268	53.6	15.0-120	
Nitrobenzene	0.500	0.297	59.4	27.0-120	
Pyridine	0.500	0.0838	16.8	10.0-120	
2-Methylphenol	0.500	0.299	59.8	28.0-120	
3&4-Methyl Phenol	0.500	0.311	62.2	31.0-120	
Pentachlorophenol	0.500	0.337	67.4	23.0-120	
2,4,5-Trichlorophenol	0.500	0.376	75.2	44.0-120	
2,4,6-Trichlorophenol	0.500	0.371	74.2	42.0-120	
(S) Nitrobenzene-d5			54.1	10.0-127	
(S) 2-Fluorobiphenyl			63.1	10.0-130	
(S) p-Terphenyl-d14			75.5	10.0-128	

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Semi Volatile Organic Compounds (GC/MS) by Method 8270C

QUALITY CONTROL SUMMARY

L1069815-02

Laboratory Control Sample (LCS)

(LCS) R3384382-1 02/16/19 12:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) Phenol-d5		25.1	25.1	10.0-120	
(S) 2-Fluorophenol		40.2	40.2	10.0-120	
(S) 2,4,6-Tribromophenol		68.0	68.0	10.0-155	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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GLOSSARY OF TERMS

ONE LAB. NATIONWIDE.



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P	RPD between the primary and confirmatory analysis exceeded 40%.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



CHAIN-OF-CUSTODY / Analytical Request Document

This Chain-of-Custody is a document to document the handling of samples from collection to analysis.



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Page 1 of 1

2050483

REGULATORY AGENCY

WATER ☒ CERAMIC WATER ☐ DRINKING WATER ☐ OTHER ☐

USE ☐ JUST ☐ REUSE ☐

Section A
Requester Information

Requester Name City of Chicago

Requester Address 100 N Dearborn St

Requester City Chicago State IL Zip 60601

Requester Phone 312 321-1000 Fax 312 321-1000

Requester Email info@cityofchicago.org

Section B
Requester Project Information

Project Name Water Quality Improvement Project

Project Address 100 N Dearborn St

Project City Chicago State IL Zip 60601

Project Phone 312 321-1000 Fax 312 321-1000

Project Email info@cityofchicago.org

Section C
Sample Information

Sample Name Water

Sample Address 100 N Dearborn St

Sample City Chicago State IL Zip 60601

Sample Phone 312 321-1000 Fax 312 321-1000

Sample Email info@cityofchicago.org

Sample Date 10/10/2022

Sample Time 10:00 AM

Sample Location 100 N Dearborn St

Sample State IL

Sample Zip 60601

Sample Project No / Lab ID 2050483

Requested Analysis Filtered (Y/N)

ANALYSIS TEST	DATE	TIME	ANALYST	AFFILIATION	DATE	TIME	SAMPLE LOCATION	DATE	TIME	ANALYST	AFFILIATION	DATE	TIME	SAMPLE LOCATION
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

Section D
Requester Signature

Requester Name City of Chicago

Requester Title Mayor

Requester Signature [Signature]

Requester Date 10/10/2022

Requester Time 10:00 AM

Requester Location 100 N Dearborn St

Requester State IL

Requester Zip 60601

Requester Project No / Lab ID 2050483

1990

**Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form**

Client:	SDC#:	L1669819	
Confer Received / Opened On: 2/13/19	Temperature:	7.8	
Received By: Thomas Vinden			
Signature: <i>Thomas Vinden</i>			
	NP	Yes	No
Receipt Check List			
COC Seal Present / Intact?		☒	
COC Signed / Accurate?		☒	
Bottles arrive intact?		☒	
Correct bottles used?		☒	
Sufficient volume sent?		☒	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			



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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Burns & McDonnell
9400 Ward Parkway
Kansas City MO 64114

Report Date: November 22, 2019 10:22

Project: TC - Edinburg

Account #: 38837
Group Number: 2075511
PO Number: 119910
State of Sample Origin: ND

Electronic Copy To Burns & McDonnell
Electronic Copy To Burns & McDonnell
Electronic Copy To Burns & McDonnell
Electronic Copy To Burns & McDonnell
Electronic Copy To Burns & McDonnell

Attn: Catherine J Stott
Attn: Douglas Cheek
Attn: Trevor Gustafson
Attn: Nathan Kilgore
Attn: Kari Benjamin

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/>. Historical copies may be requested through your project manager.



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SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
WC-1 Solid	11/19/2019 15:30	1205994
WC-1 Solid	11/19/2019 15:30	1205995
WC-1 Solid	11/19/2019 15:30	1205996
WC-1 Solid	11/19/2019 15:35	1205997
WC-2 Solid	11/19/2019 15:35	1205998
WC-2 Solid	11/19/2019 15:35	1205999

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.



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Case Narrative

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Project Name: TC - Edinburg
ELLE Group #: 2075511

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C, GC/MS Volatiles

Batch #: E193252AA (Sample number(s): 1205996, 1205999 UNSPK: 1205996)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: Carbon Tetrachloride

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Carbon Tetrachloride

SW-846 9045D Nov 2004, Wet Chemistry

Sample #s: 1205997

The pH was measured in water at 20.1 C.
The pH was measured in water at 20.3 C
Continuous stirring was employed while taking the pH reading due to oily nature of the sample.

Sample #s: 1205994

The pH was measured in water at 20.3 C
Continuous stirring was employed while taking the pH reading due to oily nature of the sample.



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Analysis Report

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Sample Description: WC-1 Solid
TC-Edinburg

Burns & McDonnell
ELLE Sample #: G4 1205994
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44
Collection Date/Time: 11/19/2019 15:30

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry						
00394	pH	SW-846 9045D Nov 2004 n.a.	Std. Units 7.57	Std. Units 0.0100	Std. Units 0.0100	1
The pH was measured in water at 20.3 C Continuous stirring was employed while taking the pH reading due to oily nature of the sample.						
01820	Paint Filter Liquids Test	SW-846 9095B n.a.	Absent	0	0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00394	pH	SW-846 9045D Nov 2004	1	19326039401A	11/22/2019 09:59	Kenneth A Bell	1
01820	Paint Filter Liquids Test	SW-846 9095B	1	19324182001A	11/20/2019 20:15	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result



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Analysis Report

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Sample Description: WC-1 Solid
TCLP NVE
TC-Edinburg

Burns & McDonnell
ELLE Sample #: TL 1205995
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44
Collection Date/Time: 11/19/2019 15:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	mg/l	mg/l	mg/l	
14252	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.010	1
14252	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	0.025	1
14252	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
14252	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.010	1
14252	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
14252	2-Methylphenol	95-48-7	N.D.	0.003	0.010	1
14252	4-Methylphenol	106-44-5	N.D.	0.003	0.010	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14252	Nitrobenzene	98-95-3	N.D.	0.003	0.010	1
14252	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
14252	Pyridine	110-86-1	N.D.	0.010	0.025	1
14252	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.010	1
14252	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.010	1
Metals		SW-846 6010D Rev.4, July 2014	mg/l	mg/l	mg/l	
07035	Arsenic	7440-38-2	N.D.	0.0160	0.0300	1
07046	Barium	7440-39-3	0.250	0.0010	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.0010	0.0050	1
07051	Chromium	7440-47-3	0.0031 J	0.0016	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0160	0.0500	1
07066	Silver	7440-22-4	N.D.	0.0050	0.0100	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000087 J	0.000050	0.00020	1

Sample Comments

The pH of the extraction fluid used for the leachate preparation was 4.90.
The final pH of the leachate was 5.66.

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14252	TCLP 8270D MINI	SW-846 8270D	1	19324WAF026	11/21/2019 16:19	Edward C Monborne	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	19324WAF026	11/21/2019 09:00	Joshua S Ruth	1

*=This limit was used in the evaluation of the final result



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Sample Description: WC-1 Solid
TCLP NVE
TC-Edinburg

Burns & McDonnell
ELLE Sample #: TL 1205995
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44
Collection Date/Time: 11/19/2019 15:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
07046	Barium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
07049	Cadmium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
07051	Chromium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
07055	Lead	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
07036	Selenium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
07066	Silver	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 10:58	Patrick J Engle	1
00259	Mercury	SW-846 7470A	1	193250571301	11/21/2019 11:09	Damary Valentin	1
14045	ICP-WW/TL, 3010A (tot) - U345	SW-846 3010A	1	193251404502	11/21/2019 05:45	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	193250571301	11/21/2019 07:30	James L Mertz	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	19324-9169-947	11/20/2019 12:46	Craig S Pfautz	n.a.

*=This limit was used in the evaluation of the final result



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Analysis Report

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Sample Description: WC-1 Solid
TCLP ZHE
TC-Edinburg

Burns & McDonnell
ELLE Sample #: TL 1205996
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44
Collection Date/Time: 11/19/2019 15:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/l	mg/l	mg/l	
11997	Benzene	71-43-2	0.14	0.004	0.020	20
11997	2-Butanone	78-93-3	N.D.	0.006	0.20	20
11997	Carbon Tetrachloride	56-23-5	N.D.	0.004	0.020	20
11997	Chlorobenzene	108-90-7	N.D.	0.004	0.020	20
11997	Chloroform	67-66-3	N.D.	0.004	0.020	20
11997	1,2-Dichloroethane	107-06-2	N.D.	0.006	0.020	20
11997	1,1-Dichloroethene	75-35-4	N.D.	0.004	0.020	20
11997	Tetrachloroethene	127-18-4	N.D.	0.004	0.020	20
11997	Trichloroethene	79-01-6	N.D.	0.004	0.020	20
11997	Vinyl Chloride	75-01-4	N.D.	0.004	0.020	20

Sample Comments

The pH of the extraction fluid used for the leachate preparation was 4.88.
The final pH of the leachate was 5.21.

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C/D	SW-846 8260C	1	E193252AA	11/21/2019 17:12	Kevin A Sposito	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	E193252AA	11/21/2019 17:11	Kevin A Sposito	20
00946	TCLP Zero Headspace Extraction	SW-846 1311	1	19324-16818-946	11/20/2019 12:08	Brian Reed	n.a.

*=This limit was used in the evaluation of the final result



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Analysis Report

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Sample Description: WC-2 Solid
TC-Edinburg

Burns & McDonnell
ELLE Sample #: G4 1205997
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44
Collection Date/Time: 11/19/2019 15:35

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry						
00394	pH	SW-846 9045D Nov 2004 n.a.	Std. Units 7.83	Std. Units 0.0100	Std. Units 0.0100	1
The pH was measured in water at 20.1 C. The pH was measured in water at 20.3 C Continuous stirring was employed while taking the pH reading due to oily nature of the sample.						
01820	Paint Filter Liquids Test	SW-846 9095B n.a.	Absent	0	0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00394	pH	SW-846 9045D Nov 2004	1	19326039401A	11/22/2019 09:59	Kenneth A Bell	1
01820	Paint Filter Liquids Test	SW-846 9095B	1	19324182001A	11/20/2019 20:15	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result



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Analysis Report

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Sample Description: WC-2 Solid
TCLP NVE
TC-Edinburg

Burns & McDonnell
ELLE Sample #: TL 1205998
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44

Collection Date/Time: 11/19/2019 15:35

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	mg/l	mg/l	mg/l	
14252	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	0.010	1
14252	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	0.025	1
14252	Hexachlorobenzene	118-74-1	N.D.	0.0005	0.003	1
14252	Hexachlorobutadiene	87-68-3	N.D.	0.003	0.010	1
14252	Hexachloroethane	67-72-1	N.D.	0.005	0.025	1
14252	2-Methylphenol	95-48-7	N.D.	0.003	0.010	1
14252	4-Methylphenol	106-44-5	N.D.	0.003	0.010	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
14252	Nitrobenzene	98-95-3	N.D.	0.003	0.010	1
14252	Pentachlorophenol	87-86-5	N.D.	0.005	0.025	1
14252	Pyridine	110-86-1	N.D.	0.010	0.025	1
14252	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	0.010	1
14252	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	0.010	1
Metals		SW-846 6010D Rev.4, July 2014	mg/l	mg/l	mg/l	
07035	Arsenic	7440-38-2	N.D.	0.0160	0.0300	1
07046	Barium	7440-39-3	0.345	0.0010	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.0010	0.0050	1
07051	Chromium	7440-47-3	0.0026 J	0.0016	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0160	0.0500	1
07066	Silver	7440-22-4	N.D.	0.0050	0.0100	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000080 J	0.000050	0.00020	1

Sample Comments

The pH of the extraction fluid used for the leachate preparation was 4.90.
The final pH of the leachate was 6.28.

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14252	TCLP 8270D MINI	SW-846 8270D	1	19324WAF026	11/21/2019 16:47	Edward C Monborne	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	19324WAF026	11/21/2019 09:00	Joshua S Ruth	1

*=This limit was used in the evaluation of the final result



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Analysis Report

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Sample Description: WC-2 Solid
TCLP NVE
TC-Edinburg

Burns & McDonnell
ELLE Sample #: TL 1205998
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44

Collection Date/Time: 11/19/2019 15:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
07046	Barium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
07049	Cadmium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
07051	Chromium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
07055	Lead	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
07036	Selenium	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
07066	Silver	SW-846 6010D Rev.4, July 2014	1	193251404502	11/21/2019 11:25	Patrick J Engle	1
00259	Mercury	SW-846 7470A	1	193250571301	11/21/2019 11:21	Damary Valentin	1
14045	ICP-WW/TL, 3010A (tot) - U345	SW-846 3010A	1	193251404502	11/21/2019 05:45	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	193250571301	11/21/2019 07:30	James L Mertz	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	19324-9169-947	11/20/2019 12:46	Craig S Pfautz	n.a.

*=This limit was used in the evaluation of the final result



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Analysis Report

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Sample Description: WC-2 Solid
TCLP ZHE
TC-Edinburg

Burns & McDonnell
ELLE Sample #: TL 1205999
ELLE Group #: 2075511
Matrix: Solid

Project Name: TC - Edinburg

Submittal Date/Time: 11/20/2019 10:44
Collection Date/Time: 11/19/2019 15:35

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	GC/MS Volatiles	SW-846 8260C	mg/l	mg/l	mg/l	
11997	Benzene	71-43-2	0.30	0.004	0.020	20
11997	2-Butanone	78-93-3	N.D.	0.006	0.20	20
11997	Carbon Tetrachloride	56-23-5	N.D.	0.004	0.020	20
11997	Chlorobenzene	108-90-7	N.D.	0.004	0.020	20
11997	Chloroform	67-66-3	N.D.	0.004	0.020	20
11997	1,2-Dichloroethane	107-06-2	N.D.	0.006	0.020	20
11997	1,1-Dichloroethene	75-35-4	N.D.	0.004	0.020	20
11997	Tetrachloroethene	127-18-4	N.D.	0.004	0.020	20
11997	Trichloroethene	79-01-6	N.D.	0.004	0.020	20
11997	Vinyl Chloride	75-01-4	N.D.	0.004	0.020	20

Sample Comments

The pH of the extraction fluid used for the leachate preparation was 4.88.
The final pH of the leachate was 5.51.

If the analysis is for determination of Hazardous Waste Characteristics,
see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	VOCs- 5ml Water by 8260C/D	SW-846 8260C	1	E193252AA	11/21/2019 18:13	Kevin A Sposito	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	E193252AA	11/21/2019 18:12	Kevin A Sposito	20
00946	TCLP Zero Headspace Extraction	SW-846 1311	1	19324-16818-946	11/20/2019 12:08	Brian Reed	n.a.

*=This limit was used in the evaluation of the final result



Lancaster Laboratories
Environmental

Analysis Report

2426 New Holland Pike, Lancaster, PA 17601 • 717-658-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: Burns & McDonnell
Reported: 11/22/2019 10:22

Group Number: 2075511

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result mg/l	MDL** mg/l	LOQ mg/l
Batch number: E193252AA	Sample number(s): 1205996, 1205999		
Benzene	N.D.	0.0002	0.001
2-Butanone	N.D.	0.0003	0.010
Carbon Tetrachloride	N.D.	0.0002	0.001
Chlorobenzene	N.D.	0.0002	0.001
Chloroform	N.D.	0.0002	0.001
1,2-Dichloroethane	N.D.	0.0003	0.001
1,1-Dichloroethene	N.D.	0.0002	0.001
Tetrachloroethene	N.D.	0.0002	0.001
Trichloroethene	N.D.	0.0002	0.001
Vinyl Chloride	N.D.	0.0002	0.001
Batch number: 19324WAF026	Sample number(s): 1205995, 1205998		
1,4-Dichlorobenzene	N.D.	0.003	0.010
2,4-Dinitrotoluene	N.D.	0.005	0.025
Hexachlorobenzene	N.D.	0.0005	0.003
Hexachlorobutadiene	N.D.	0.003	0.010
Hexachloroethane	N.D.	0.005	0.025
2-Methylphenol	N.D.	0.003	0.010
4-Methylphenol	N.D.	0.003	0.010
Nitrobenzene	N.D.	0.003	0.010
Pentachlorophenol	N.D.	0.005	0.025
Pyridine	N.D.	0.010	0.025
2,4,5-Trichlorophenol	N.D.	0.003	0.010
2,4,6-Trichlorophenol	N.D.	0.003	0.010
Batch number: 193250571301	Sample number(s): 1205995, 1205998		
Mercury	0.000056 J	0.000050	0.00020
Batch number: 193251404502	Sample number(s): 1205995, 1205998		
Arsenic	N.D.	0.0160	0.0300
Barium	N.D.	0.0010	0.0050
Cadmium	N.D.	0.0010	0.0050
Chromium	N.D.	0.0016	0.0150
Lead	N.D.	0.0071	0.0150
Selenium	N.D.	0.0160	0.0500
Silver	N.D.	0.0050	0.0100

*- Outside of specification

**This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.



Lancaster Laboratories
Environmental

Analysis Report

2426 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: Burns & McDonnell
Reported: 11/22/2019 10:22

Group Number: 2075511

LCS/LCSD

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: E193252AA	Sample number(s): 1205996,1205999								
Benzene	0.0200	0.0217	0.0200	0.0213	109	106	80-120	2	30
2-Butanone	0.150	0.174	0.150	0.167	116	111	59-135	4	30
Carbon Tetrachloride	0.0200	0.0297	0.0200	0.0287	148*	143*	64-134	3	30
Chlorobenzene	0.0200	0.0222	0.0200	0.0218	111	109	80-120	2	30
Chloroform	0.0200	0.0226	0.0200	0.0220	113	110	80-120	3	30
1,2-Dichloroethane	0.0200	0.0220	0.0200	0.0221	110	111	73-124	1	30
1,1-Dichloroethene	0.0200	0.0222	0.0200	0.0214	111	107	80-131	4	30
Tetrachloroethene	0.0200	0.0201	0.0200	0.0191	101	96	80-120	5	30
Trichloroethene	0.0200	0.0225	0.0200	0.0216	112	108	80-120	4	30
Vinyl Chloride	0.0200	0.0202	0.0200	0.0189	101	95	56-120	6	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 19324WAF026	Sample number(s): 1205995,1205998								
1,4-Dichlorobenzene	0.250	0.180	0.250	0.178	72	71	34-97	1	30
2,4-Dinitrotoluene	0.250	0.228	0.250	0.226	91	90	64-112	1	30
Hexachlorobenzene	0.250	0.251	0.250	0.249	100	100	60-117	1	30
Hexachlorobutadiene	0.250	0.205	0.250	0.196	82	78	20-108	5	30
Hexachloroethane	0.250	0.165	0.250	0.160	66	64	23-95	3	30
2-Methylphenol	0.250	0.190	0.250	0.192	76	77	53-107	1	30
4-Methylphenol	0.250	0.186	0.250	0.188	75	75	49-108	1	30
Nitrobenzene	0.250	0.208	0.250	0.210	83	84	49-113	1	30
Pentachlorophenol	0.250	0.242	0.250	0.237	97	95	54-131	2	30
Pyridine	0.250	0.0970	0.250	0.108	39	43	21-61	11	30
2,4,5-Trichlorophenol	0.250	0.227	0.250	0.229	91	92	66-118	1	30
2,4,6-Trichlorophenol	0.250	0.225	0.250	0.226	90	90	69-122	0	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 193250571301	Sample number(s): 1205995,1205998								
Mercury	0.00100	0.00103			103		80-110		
Batch number: 193251404502	Sample number(s): 1205995,1205998								
Arsenic	0.0600	0.0660			110		80-120		
Barium	0.0100	0.0109			109		80-120		
Cadmium	0.0100	0.0105			105		80-120		
Chromium	0.0300	0.0313			104		80-120		
Lead	0.0300	0.0301			100		80-120		
Selenium	0.100	0.114			114		80-120		
Silver	0.0200	0.0204			102		80-120		
	Std. Units	Std. Units	Std. Units	Std. Units					
Batch number: 19326039401A	Sample number(s): 1205994,1205997								
pH	7.00	7.01			100		95-105		

*- Outside of specification

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Lancaster Laboratories
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Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-658-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: Burns & McDonnell
Reported: 11/22/2019 10:22

Group Number: 2075511

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: E193252AA	Sample number(s): 1205996,1205999 UNSPK: 1205996									
Benzene	0.137	0.400	0.573	0.400	0.586	109	112	80-120	2	30
2-Butanone	N.D.	3.00	3.04	3.00	3.03	101	101	59-135	0	30
Carbon Tetrachloride	N.D.	0.400	0.600	0.400	0.624	150*	156*	64-134	4	30
Chlorobenzene	N.D.	0.400	0.442	0.400	0.458	110	114	80-120	4	30
Chloroform	N.D.	0.400	0.452	0.400	0.469	113	117	80-120	4	30
1,2-Dichloroethane	N.D.	0.400	0.440	0.400	0.455	110	114	73-124	3	30
1,1-Dichloroethene	N.D.	0.400	0.444	0.400	0.461	111	115	80-131	4	30
Tetrachloroethene	N.D.	0.400	0.403	0.400	0.407	101	102	80-120	1	30
Trichloroethene	N.D.	0.400	0.449	0.400	0.470	112	117	80-120	5	30
Vinyl Chloride	N.D.	0.400	0.424	0.400	0.429	106	107	56-120	1	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 193250571301	Sample number(s): 1205995,1205998 UNSPK: 1205995									
Mercury	0.0000873	0.0200	0.0174	0.0200	0.0169	86	84	80-120	2	20
Batch number: 193251404502	Sample number(s): 1205995,1205998 UNSPK: 1205995									
Arsenic	N.D.	5.00	4.65	5.00	4.45	93	89	75-125	4	20
Barium	0.250	100	84.61	100	84.91	84	85	75-125	0	20
Cadmium	N.D.	1.00	0.877	1.00	0.844	88	84	75-125	4	20
Chromium	0.00311	5.00	4.28	5.00	4.10	86	82	75-125	4	20
Lead	N.D.	5.00	4.26	5.00	4.12	85	82	75-125	3	20
Selenium	N.D.	1.00	0.929	1.00	0.929	93	93	75-125	0	20
Silver	N.D.	5.00	4.33	5.00	4.15	87	83	75-125	4	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 193250571301	Sample number(s): 1205995,1205998 BKG: 1205995			
Mercury	0.0000873	0.0000916	5 (1)	20
Batch number: 193251404502	Sample number(s): 1205995,1205998 BKG: 1205995			
Arsenic	N.D.	N.D.	0 (1)	20
Barium	0.250	0.254	1	20
Cadmium	N.D.	N.D.	0 (1)	20

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.



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Analysis Report

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Quality Control Summary

Client Name: Burns & McDonnell
Reported: 11/22/2019 10:22

Group Number: 2075511

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Chromium	0.00311	0.00286	8 (1)	20
Lead	N.D.	N.D.	0 (1)	20
Selenium	N.D.	N.D.	0 (1)	20
Silver	N.D.	N.D.	0 (1)	20
	Std. Units	Std. Units		
Batch number: 19326039401A	Sample number(s): 1205994, 1205997 BKG: 1205994			
pH	7.57	7.63	1	3

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C/D
Batch number: E193252AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1205996	100	99	103	104
1205999	101	100	103	105
Blank	101	98	103	104
LCS	100	100	101	103
LCSD	101	103	102	105
MS	100	99	102	104
MSD	102	98	102	103
Limits:	80-120	80-120	80-120	80-120

Analysis Name: TCLP 8270D MINI
Batch number: 19324WAF026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
1205995	81	85	98	27	37	72
1205998	77	80	93	29	43	85
Blank	78	78	92	29	43	94
LCS	82	86	93	37	54	99
LCSD	83	87	93	38	55	96
Limits:	33-113	44-102	39-125	10-67	10-84	23-135

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

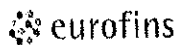
(2) The unspiked result was more than four times the spike added.

38837	2075511	1205994-999
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BURNS MCDONNELL

Request for Chemical Analysis and Chain of Custody Record

[illegible]



Lancaster Laboratories
Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 267058



Group Number(s): 2075511

Client: Burns & McDonnell

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Date:	<u>11/20/2019</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>2</u>

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	Total Trip Blank Qty:	0
Samples Chilled:	Yes	Air Quality Samples Present:	No
Paperwork Enclosed:	Yes		
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Kristin Zeigler

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	192050133	4.6	IR	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
WC-2	11/19/2019 15:30	



Lancaster Laboratories
Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value $\geq$ the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $>40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Jennifer Nichols [KDHE]

From: kdhe.SWDA
Sent: Wednesday, December 14, 2022 3:22 PM
To: Brian Meyer
Cc: Dan Wells [KDHE]; Jennifer Nichols [KDHE]; Robert Baumgartner; Allison Shepard; Karla Scarce (kscarce@wm.com)
Subject: RE: Miles Post 14 Incident SWDA
Attachments: Signed KDHE SWDA TC MP 14.pdf

Good afternoon Brian,

All paperwork for special waste will need to be submitted through Waste Management (WM), since the waste is going to a WM facility. I have included Karla Scarce (262-532-8005) with WM to expedite the paperwork. WM will review and give the paperwork associated with this waste an internal ID number for tracking. They in turn will send all paperwork to me for review and authorization.

Please let me know if you have any other questions,

Tony Guy
 KDHE/BWM
 785-296-0681

From: Brian Meyer <brian_meyer@tcenergy.com>
Sent: Wednesday, December 14, 2022 1:15 PM
To: kdhe.SWDA <kdhe.SWDA@ks.gov>
Cc: Dan Wells [KDHE] <Danial.Wells@ks.gov>; Jennifer Nichols [KDHE] <Jennifer.Nichols@ks.gov>; Robert Baumgartner <robert_baumgartner@tcenergy.com>; Allison Shepard <allison_shepard@tcenergy.com>
Subject: Miles Post 14 Incident SWDA

EXTERNAL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hello – Please find attached the Special Waste Disposal Authorization for the TC Energy Milepost 14 incident. I've included the SDS and analytical from previous releases of similar material.

Thanks,

Brian Meyer
 Environmental Specialist
 Environment, Land, & Emergency Management

brian_meyer@tcenergy.com
 mobile: 531-444-6990 desk: 402-492-7408



13710 FNB Pkwy, Ste 300

Omaha, NE 68154

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Jennifer Nichols [KDHE]

From: Dan Wells [KDHE]
Sent: Wednesday, December 14, 2022 2:36 PM
To: Julie Coleman [KDHE]; Jennifer Nichols [KDHE]; Erich Glave [KDHE]; Randy Carlson [KDHE]; Joe Dom [KDHE]; Joel Billinger [KDHE]; Tony Guy [KDHE]
Subject: FW: Miles Post 14 Incident SWDA
Attachments: Signed KDHE SWDA TC MP 14.pdf

Dan Wells, District Environmental Administrator
 Kansas Dept. of Health and Environment
 Northwest District Office
 Hays, KS
 (785) 261-6101
 Dan.wells@ks.gov

From: Brian Meyer <brian_meyer@tcenergy.com>
Sent: Wednesday, December 14, 2022 1:15 PM
To: kdhe.SWDA <kdhe.SWDA@ks.gov>
Cc: Dan Wells [KDHE] <Danial.Wells@ks.gov>; Jennifer Nichols [KDHE] <Jennifer.Nichols@ks.gov>; Robert Baumgartner <robert_baumgartner@tcenergy.com>; Allison Shepard <allison_shepard@tcenergy.com>
Subject: Miles Post 14 Incident SWDA

EXTERNAL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hello – Please find attached the Special Waste Disposal Authorization for the TC Energy Milepost 14 incident. I've included the SDS and analytical from previous releases of similar material.

Thanks,

Brian Meyer
 Environmental Specialist
 Environment, Land, & Emergency Management

brian_meyer@tcenergy.com
 mobile: 531-444-6990 desk: 402-492-7408



13710 FNB Pkwy, Ste 300

Omaha, NE 68154

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