

Suggested Notice of Intent (NOI) Format

1. General facility information. Please provide the following information about the facility.

a) Name of facility: Huron Avenue 40" Water Main	Mailing Address for the Facility: Cambridge Water Department 250 Fresh Pond Parkway Cambridge MA 02138	
b) Location Address of the Facility (if different from mailing address): Huron Avenue, East of Fresh Pond Parkway to Standish Street, & Huron Avenue at Reservoir St.	Facility Location longitude: <u>42.380</u> latitude: <u>-71.142</u>	Type of Business: Facility SIC codes:
c) Name of facility owner: <u>Cambridge Water Department</u> Owner's email: <u>mgallagher@cambridgema.gov</u> Owner's Tel #: <u>(617) 349-4754</u> Owner's Fax #: _____ Address of owner (if different from facility address) _____ _____ Owner is (check one): 1. Federal _____ 2. State _____ 3. Private _____ 4. Other ☒ (Describe) <u>Municipality</u>		
Legal name of Operator, if not owner: <u>Barletta Heavy Division</u> Operator Contact Name: <u>Dan Deacon</u> Operator Tel Number: <u>781-821-6222</u> Fax Number: _____ Operator's email: <u>ddeacon@barlettaco.com</u> Operator Address (if different from owner) <u>40 Shawmut Rd # 200, Canton, MA 02021</u>		
d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? ☒		
e) Check Yes or No for the following: 1. Has a prior NPDES permit been granted for the discharge? Yes _____ No ☒ If Yes, Permit Number: _____ 2. Is the discharge a "new discharger" as defined by 40 CFR Section 122.2? Yes ☒ No _____ 3. Is the facility covered by an individual NPDES permit? Yes _____ No ☒ If Yes, Permit Number _____ 4. Is there a pending application on file with EPA for this discharge? Yes _____ No ☒ If Yes, date of submittal: _____		

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

a) Name of receiving water into which discharge will occur: Little River, Alewife Brook
 State Water Quality Classification: B Freshwater: Yes Marine Water: _____

- b) Describe the discharge activities for which the owner/applicant is seeking coverage:
- ✓ 1. Construction dewatering of groundwater intrusion and/or storm water accumulation.
 - 2. Short-term or long-term dewatering of foundation sumps.
 - 3. Other.

c) Number of outfalls 2

For each outfall:

d) Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow 72,000 GPD
 Average Monthly Flow 1,500,000 GPD

e.) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.3 Min pH 6.5

f.) Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit. Groundwater encountered during water main trenching activities that cannot be reinfiltated back into the ground, and storm water accumulation will be the source of discharge, if any are encountered within the trench.

g.) What treatment does the wastewater receive prior to discharge?

Groundwater that cannot be reinfiltated back into the ground and stormwater accumulated within the trench, will be treated with a Sedimentation Tank for TSS removal prior to dewatering to a storm drain system.

h.) Is the discharge continuous? Yes _____ No ✓ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) I

If (P), number of days or months per year of the discharge _____ and the specific months of discharge _____;

If (I), number of days/year there is a discharge 20-60

Is the discharge temporary? Yes ✓ No _____

If yes, approximate start date of dewatering January 2016 approximate end date of dewatering July 2016

i.) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. 42.396 lat. -71.144; Outfall 2: long. 42.396 lat. -71.146; Outfall 3: long. _____ lat. _____.

j.) If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations N/A cfs
 (See Appendix VII for equations and additional information)

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC): k.) Does the discharge occur in an ACEC? Yes _____ No <u>✓</u> If yes, provide the name of the ACEC: _____

3. Contaminant Information

a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for aquatic organism(s)). N/A b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge.
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4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendix IV. In addition, respond to the following questions.

a) Which of the three eligibility criteria listed in Appendix IV, Criterion (A, B, or C) have you met? <u>A</u> _____ b) Please attach documentation with your NOI supporting your response. Please see Appendix IV for acceptable documentation
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5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

a) See Screening Process in Appendix III and respond to questions regarding your site and any historic properties listed or eligible for listing on the National Register of Historic Places. Question 1: Yes _____ No <u>✓</u> ; Question 2: No <u>✓</u> Yes _____ b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No <u>✓</u> If yes, attach the results of the consultation(s). c) Which of the three National Historic Preservation Act eligibility criterion listed in Appendix III, Criterion (A, B, or C) have you met? <u>A</u> _____ d) Is the project located on property of religious or cultural significance to an Indian Tribe? Yes _____ or No <u>✓</u> If yes, provide that name of the Indian Tribe associated with the property. _____
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6. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

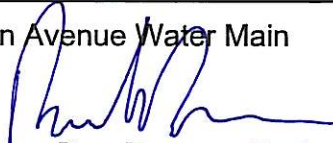
7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: Huron Avenue Water Main

Operator signature:



Print Full Name and Title: Dan Deacon, Project Manager

Date:

2/4/16

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

ATTACHMENT 1: SITE AND OUTFALL LOCATION FIGURES



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PROJECT NO.
201300056.015A

DRAWN BY: JA

CHECKED BY: GO

DATE: DECEMBER 2015

REVISED:

LOCUS PLAN

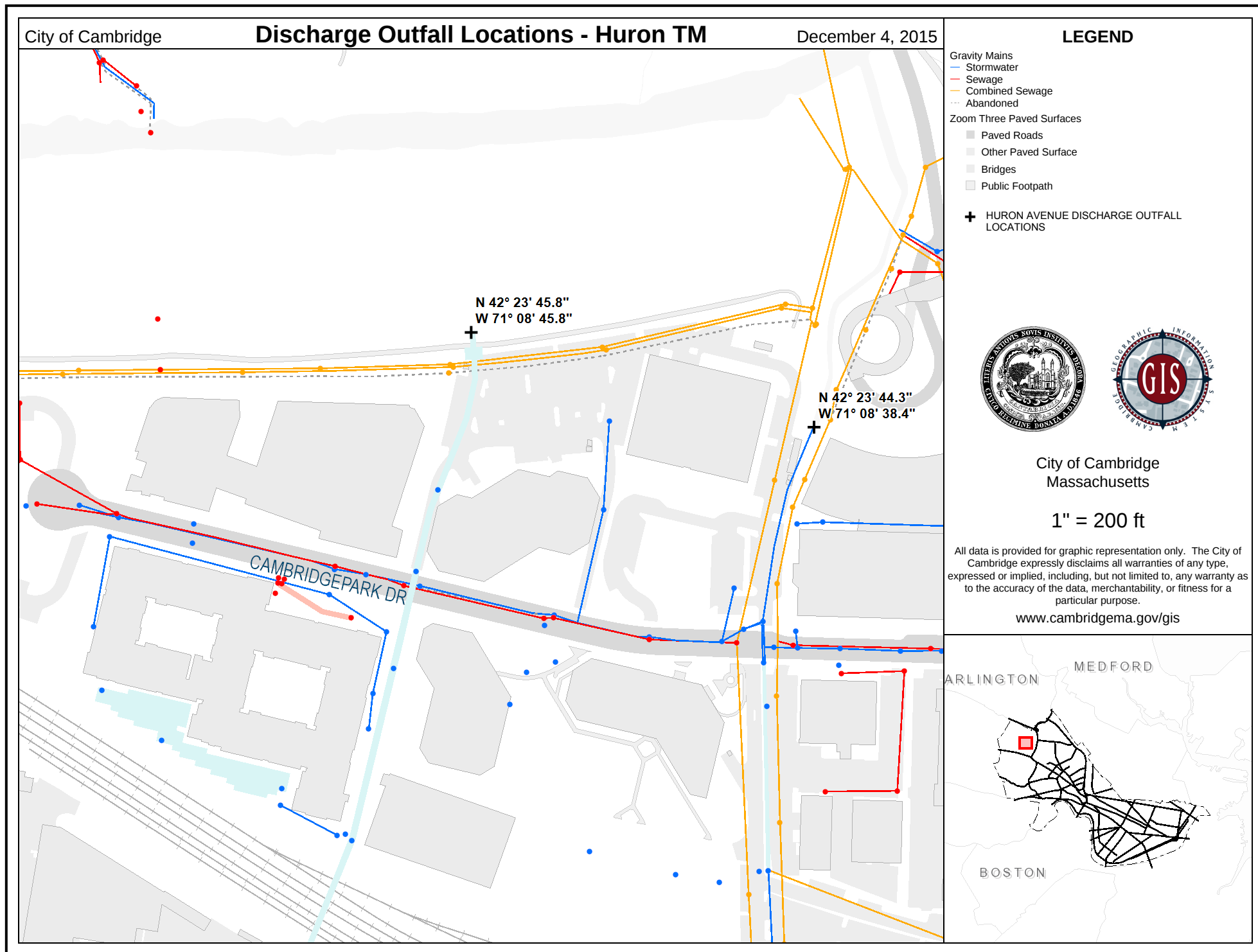
HURON TRANSMISSION MAIN PROJECT
CITY OF CAMBRIDGE, MASSACHUSETTS

FIGURE

1

PAGE: of

FIGURE 2



ATTACHMENT 2: HURON GROUNDWATER LAB ANALYSIS



CERTIFICATE OF ANALYSIS

Richard McGanty
GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062

RE: Huran A - Permit (02.0171434)
ESS Laboratory Work Order Number: 1303266

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 1:25 pm, Mar 22, 2013

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

SAMPLE RECEIPT

The following samples were received on March 15, 2013 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1303266-01	GW-1	Ground Water	150.1, 1664A, 200.7, 245.1, 608, 624, 625, EPH8270, MADEP-EPH
1303266-02	Trip Blank	Aqueous	624



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

PROJECT NARRATIVE

608/6630C Organochlorine Pesticides

CWC0163-CCV3 Continuing Calibration recovery is above upper control limit (C+).
Heptachlor (117% @ 85-115%)

624 Volatile Organic Compounds

CWC0158-CCV1 Continuing Calibration recovery is above upper control limit (C+).
Acrolein - Screen (140% @ 70-130%)

625 Semi-Volatile Organic Compounds

CWC0167-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (88% @ 70-130%)

CWC0167-CCV1 Continuing Calibration recovery is below lower control limit (C-).
Benzidine (63% @ 70-130%)

CWC0167-CCV1 Initial Calibration Verification recovery is outside of control limit (ICV).
Benzidine, Hexachlorocyclopentadiene

CWC0167-CCV1 This analyte is a poor performer for this method
Benzidine (63% @ 70-130%)

CWC0179-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (84% @ 70-130%)

CWC0179-CCV1 Initial Calibration Verification recovery is outside of control limit (ICV).
Benzidine

CWC0179-CCV1 This analyte is a poor performer for this method
Benzidine (78% @ 70-130%)

Classical Chemistry

1303266-01 The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: mg/L

Extraction Method: 3005A

All methods used are in accordance with 40 CFR 136.

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.025)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Arsenic	ND (0.025)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Cadmium	ND (0.0025)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Chromium	ND (0.010)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Copper	0.067 (0.010)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Lead	0.085 (0.010)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Mercury	0.00070 (0.00020)	245.1		1	NAR	03/20/13 11:46	20	40	CC31920
Nickel	ND (0.025)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Selenium	ND (0.025)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Silver	ND (0.005)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602
Zinc	0.092 (0.025)	200.7		1	NAR	03/16/13 19:35	50	25	CC31602



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 3/19/13 11:00

All methods used are in accordance with 40 CFR 136.

608 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1221	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1232	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1242	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1248	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1254	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1260	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1262	ND (0.10)	608		1	03/20/13 5:02		CC31906
Aroclor 1268	ND (0.10)	608		1	03/20/13 5:02		CC31906

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: Decachlorobiphenyl	62 %		30-150
Surrogate: Decachlorobiphenyl [2C]	67 %		30-150
Surrogate: Tetrachloro-m-xylene	47 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	58 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 5

Extraction Method: 3510C

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 3/18/13 14:30

All methods used are in accordance with 40 CFR 136.

608/6630C Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
4,4'-DDE	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
4,4'-DDT	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Aldrin	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
alpha-BHC	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
beta-BHC	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Chlordane (Total)	ND (0.50)	608		1	03/18/13 21:11	CWC0163	CC31820
delta-BHC	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Dieldrin	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Endosulfan I	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Endosulfan II	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Endosulfan Sulfate	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Endrin	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Endrin Aldehyde	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
gamma-BHC (Lindane)	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Heptachlor	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Heptachlor Epoxide	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Methoxychlor	ND (0.05)	608		1	03/18/13 21:11	CWC0163	CC31820
Toxaphene	ND (1.30)	608		1	03/18/13 21:11	CWC0163	CC31820

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	47 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	49 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	68 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	77 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: NS

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1-Trichloroethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,1,2,2-Tetrachloroethane	ND (0.5)	624		1	03/18/13 16:52	CWC0158	CC31813
1,1,2-Trichloroethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,1-Dichloroethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,1-Dichloroethene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,2-Dichlorobenzene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,2-Dichloroethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,2-Dichloropropane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,3-Dichlorobenzene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
1,4-Dichlorobenzene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
2-Chloroethyl vinyl ether	ND (10.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Acrolein - Screen	ND (5.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Acrylonitrile - Screen	ND (5.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Benzene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Bromodichloromethane	ND (0.6)	624		1	03/18/13 16:52	CWC0158	CC31813
Bromoform	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Bromomethane	ND (2.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Carbon Disulfide	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Carbon Tetrachloride	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Chlorobenzene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Chloroethane	ND (2.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Chloroform	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Chloromethane	ND (2.0)	624		1	03/18/13 16:52	CWC0158	CC31813
cis-1,3-Dichloropropene	ND (0.4)	624		1	03/18/13 16:52	CWC0158	CC31813
Dibromochloromethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Dibromomethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Dichloropropene (Total)	ND (0.9)	624		1	03/18/13 16:52		[CALC]
Ethylbenzene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Methylene Chloride	ND (4.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Styrene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Tetrachloroethene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: NS

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	1.8 (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
trans-1,2-Dichloroethene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
trans-1,3-Dichloropropene	ND (0.5)	624		1	03/18/13 16:52	CWC0158	CC31813
Trichloroethene	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Trichlorofluoromethane	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Vinyl Acetate	ND (5.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Vinyl Chloride	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Xylene O	ND (1.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Xylene P,M	ND (2.0)	624		1	03/18/13 16:52	CWC0158	CC31813
Xylenes (Total)	ND (2.0)	624		1	03/18/13 16:52		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>112 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3520C

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: IBM

Prepared: 3/18/13 19:00

All methods used are in accordance with 40 CFR 136.

625 Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
1,2-Dichlorobenzene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
1,3-Dichlorobenzene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
1,4-Dichlorobenzene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,4,5-Trichlorophenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,4,6-Trichlorophenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,4-Dichlorophenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,4-Dimethylphenol	ND (50.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,4-Dinitrophenol	ND (50.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,4-Dinitrotoluene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2,6-Dinitrotoluene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2-Chloronaphthalene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2-Chlorophenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2-Methylnaphthalene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2-Methylphenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
2-Nitrophenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
3,3'-Dichlorobenzidine	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
3+4-Methylphenol	ND (20.0)	625		1	03/19/13 23:01	CWC0179	CC31804
4,6-Dinitro-2-Methylphenol	ND (50.0)	625		1	03/19/13 23:01	CWC0179	CC31804
4-Bromophenyl-phenylether	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
4-Chloro-3-Methylphenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
4-Chloro-phenyl-phenyl ether	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
4-Nitrophenol	ND (50.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Acenaphthene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Acenaphthylene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Anthracene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Benzidine	ND (50.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Benzo(a)anthracene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Benzo(a)pyrene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Benzo(b)fluoranthene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Benzo(g,h,i)perylene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3520C

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: IBM

Prepared: 3/18/13 19:00

All methods used are in accordance with 40 CFR 136.

625 Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Benzo(k)fluoranthene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
bis(2-Chloroethoxy)methane	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
bis(2-Chloroethyl)ether	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
bis(2-chloroisopropyl)Ether	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
bis(2-Ethylhexyl)phthalate	ND (6.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Butylbenzylphthalate	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Chrysene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Dibenzo(a,h)Anthracene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Dibenzofuran	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Diethylphthalate	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Dimethylphthalate	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Di-n-butylphthalate	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Di-n-octylphthalate	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Fluoranthene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Fluorene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Hexachlorobenzene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Hexachlorobutadiene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Hexachlorocyclopentadiene	ND (25.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Hexachloroethane	ND (5.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Indeno(1,2,3-cd)Pyrene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Isophorone	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Naphthalene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Nitrobenzene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
N-Nitrosodimethylamine	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
N-Nitroso-Di-n-Propylamine	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
N-nitrosodiphenylamine	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Pentachlorophenol	ND (50.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Phenanthrene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Phenol	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804
Pyrene	ND (10.0)	625		1	03/19/13 23:01	CWC0179	CC31804



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3520C

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: IBM

Prepared: 3/18/13 19:00

All methods used are in accordance with 40 CFR 136.

625 Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: 1,2-Dichlorobenzene-d4	82 %		30-130				
Surrogate: 2,4,6-Tribromophenol	92 %		15-110				
Surrogate: 2-Chlorophenol-d4	85 %		15-110				
Surrogate: 2-Fluorobiphenyl	81 %		30-130				
Surrogate: 2-Fluorophenol	71 %		15-110				
Surrogate: Nitrobenzene-d5	82 %		30-130				
Surrogate: Phenol-d6	85 %		15-110				
Surrogate: p-Terphenyl-d14	60 %		30-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit
Client Sample ID: GW-1
Date Sampled: 03/15/13 09:00
Percent Solids: N/A

ESS Laboratory Work Order: 1303266
ESS Laboratory Sample ID: 1303266-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Oil & Grease	ND (5)	1664A		1	BLY	03/20/13 15:00	mg/L	CC32005
pH	7.52 (N/A)	150.1		1	EEM	03/15/13 17:05	S.U.	CC31538
pH Sample Temp	Aqueous pH measured in water at 12.6 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: GW-1

Date Sampled: 03/15/13 09:00

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-01

Sample Matrix: Ground Water

Units: ug/L

Prepared: 3/19/13 9:15

All methods used are in accordance with 40 CFR 136.

MADEP-EPH Extractable Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
C9-C18 Aliphatics1	ND (140)	MADEP-EPH		1	VSC	03/20/13 5:41	CWC0169	CC31805
C19-C36 Aliphatics1	ND (93)	MADEP-EPH		1	VSC	03/20/13 5:41	CWC0169	CC31805
C11-C22 Unadjusted Aromatics1	ND (93.5)	EPH8270		1	VSC	03/20/13 2:20	CWC0168	CC31805
C11-C22 Aromatics1,2	ND (93.5)	EPH8270			VSC	03/20/13 2:20		[CALC]
Preservative:	pH <= 2	MADEP-EPH			ML			CC31805

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1-Chlorooctadecane</i>	62 %		40-140
<i>Surrogate: 2-Bromonaphthalene</i>	101 %		40-140
<i>Surrogate: 2-Fluorobiphenyl</i>	95 %		40-140
<i>Surrogate: O-Terphenyl</i>	85 %		40-140



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: Trip Blank

Date Sampled: 03/15/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-02

Sample Matrix: Aqueous

Units: ug/L

Analyst: NS

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1-Trichloroethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,1,2,2-Tetrachloroethane	ND (0.5)	624		1	03/18/13 16:19	CWC0158	CC31813
1,1,2-Trichloroethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,1-Dichloroethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,1-Dichloroethene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,2-Dichlorobenzene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,2-Dichloroethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,2-Dichloropropane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,3-Dichlorobenzene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
1,4-Dichlorobenzene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
2-Chloroethyl vinyl ether	ND (10.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Acrolein - Screen	ND (5.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Acrylonitrile - Screen	ND (5.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Benzene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Bromodichloromethane	ND (0.6)	624		1	03/18/13 16:19	CWC0158	CC31813
Bromoform	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Bromomethane	ND (2.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Carbon Disulfide	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Carbon Tetrachloride	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Chlorobenzene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Chloroethane	ND (2.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Chloroform	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Chloromethane	ND (2.0)	624		1	03/18/13 16:19	CWC0158	CC31813
cis-1,3-Dichloropropene	ND (0.4)	624		1	03/18/13 16:19	CWC0158	CC31813
Dibromochloromethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Dibromomethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Dichloropropene (Total)	ND (0.9)	624		1	03/18/13 16:19		[CALC]
Ethylbenzene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Methylene Chloride	ND (4.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Styrene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Tetrachloroethene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Huran A - Permit

Client Sample ID: Trip Blank

Date Sampled: 03/15/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1303266

ESS Laboratory Sample ID: 1303266-02

Sample Matrix: Aqueous

Units: ug/L

Analyst: NS

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
trans-1,2-Dichloroethene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
trans-1,3-Dichloropropene	ND (0.5)	624		1	03/18/13 16:19	CWC0158	CC31813
Trichloroethene	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Trichlorofluoromethane	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Vinyl Acetate	ND (5.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Vinyl Chloride	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Xylene O	ND (1.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Xylene P,M	ND (2.0)	624		1	03/18/13 16:19	CWC0158	CC31813
Xylenes (Total)	ND (2.0)	624		1	03/18/13 16:19		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>92 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>109 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CC31602 - 3005A

Blank

Antimony	ND	0.025	mg/L
Arsenic	ND	0.025	mg/L
Cadmium	ND	0.0025	mg/L
Chromium	ND	0.010	mg/L
Copper	ND	0.010	mg/L
Lead	ND	0.010	mg/L
Nickel	ND	0.025	mg/L
Selenium	ND	0.025	mg/L
Silver	ND	0.005	mg/L
Zinc	ND	0.025	mg/L

Blank

Antimony	ND	0.050	mg/L
Arsenic	ND	0.050	mg/L
Cadmium	ND	0.0050	mg/L
Chromium	ND	0.020	mg/L
Copper	ND	0.020	mg/L
Lead	ND	0.020	mg/L
Nickel	ND	0.050	mg/L
Selenium	ND	0.050	mg/L
Silver	ND	0.010	mg/L
Zinc	ND	0.050	mg/L

LCS

Antimony	0.274	0.025	mg/L	0.2500	110	85-115
Arsenic	0.257	0.025	mg/L	0.2500	103	85-115
Cadmium	0.133	0.0025	mg/L	0.1250	106	85-115
Chromium	0.263	0.010	mg/L	0.2500	105	85-115
Copper	0.266	0.010	mg/L	0.2500	106	85-115
Lead	0.261	0.010	mg/L	0.2500	104	85-115
Nickel	0.266	0.025	mg/L	0.2500	106	85-115
Selenium	0.516	0.025	mg/L	0.5000	103	85-115
Silver	0.135	0.005	mg/L	0.1250	108	85-115
Zinc	0.265	0.025	mg/L	0.2500	106	85-115

LCS Dup

Antimony	0.274	0.025	mg/L	0.2500	110	85-115	0.1	20
Arsenic	0.256	0.025	mg/L	0.2500	102	85-115	0.5	20
Cadmium	0.132	0.0025	mg/L	0.1250	105	85-115	0.9	20
Chromium	0.258	0.010	mg/L	0.2500	103	85-115	2	20
Copper	0.258	0.010	mg/L	0.2500	103	85-115	3	20
Lead	0.261	0.010	mg/L	0.2500	104	85-115	0.1	20
Nickel	0.262	0.025	mg/L	0.2500	105	85-115	2	20
Selenium	0.521	0.025	mg/L	0.5000	104	85-115	0.9	20
Silver	0.132	0.005	mg/L	0.1250	106	85-115	2	20
Zinc	0.261	0.025	mg/L	0.2500	105	85-115	2	20



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CC31920 - 245.1/7470A

Blank

Mercury	ND	0.00020	mg/L
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LCS

Mercury	0.00564	0.00020	mg/L	0.006000	94	85-115
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LCS Dup

Mercury	0.00577	0.00020	mg/L	0.006000	96	85-115	2	20
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608 Polychlorinated Biphenyls (PCB)

Batch CC31906 - 3510C

Blank

Aroclor 1016	ND	0.10	ug/L
Aroclor 1221	ND	0.10	ug/L
Aroclor 1232	ND	0.10	ug/L
Aroclor 1242	ND	0.10	ug/L
Aroclor 1248	ND	0.10	ug/L
Aroclor 1254	ND	0.10	ug/L
Aroclor 1260	ND	0.10	ug/L
Aroclor 1262	ND	0.10	ug/L
Aroclor 1268	ND	0.10	ug/L

Surrogate: Decachlorobiphenyl	0.0555		ug/L	0.05000	111	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0532		ug/L	0.05000	106	30-150
Surrogate: Tetrachloro-m-xylene	0.0285		ug/L	0.05000	57	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0356		ug/L	0.05000	71	30-150

LCS

Aroclor 1016	0.95	0.10	ug/L	1.000	95	40-140
Aroclor 1260	0.91	0.10	ug/L	1.000	91	40-140

Surrogate: Decachlorobiphenyl	0.0564		ug/L	0.05000	113	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0529		ug/L	0.05000	106	30-150
Surrogate: Tetrachloro-m-xylene	0.0298		ug/L	0.05000	60	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0373		ug/L	0.05000	75	30-150

LCS Dup

Aroclor 1016	0.96	0.10	ug/L	1.000	96	40-140	1	50
Aroclor 1260	0.89	0.10	ug/L	1.000	89	40-140	2	50

Surrogate: Decachlorobiphenyl	0.0544		ug/L	0.05000	109	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0509		ug/L	0.05000	102	30-150
Surrogate: Tetrachloro-m-xylene	0.0320		ug/L	0.05000	64	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0380		ug/L	0.05000	76	30-150

608/6630C Organochlorine Pesticides

Batch CC31820 - 3510C

Blank



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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608/6630C Organochlorine Pesticides

Batch CC31820 - 3510C

4,4'-DDD	ND	0.05	ug/L							
4,4'-DDE	ND	0.05	ug/L							
4,4'-DDT	ND	0.05	ug/L							
Aldrin	ND	0.05	ug/L							
alpha-BHC	ND	0.05	ug/L							
beta-BHC	ND	0.05	ug/L							
Chlordane (Total)	ND	0.50	ug/L							
delta-BHC	ND	0.05	ug/L							
Dieldrin	ND	0.05	ug/L							
Endosulfan I	ND	0.05	ug/L							
Endosulfan II	ND	0.05	ug/L							
Endosulfan Sulfate	ND	0.05	ug/L							
Endrin	ND	0.05	ug/L							
Endrin Aldehyde	ND	0.05	ug/L							
gamma-BHC (Lindane)	ND	0.05	ug/L							
Heptachlor	ND	0.05	ug/L							
Heptachlor Epoxide	ND	0.05	ug/L							
Methoxychlor	ND	0.05	ug/L							
Toxaphene	ND	1.30	ug/L							

Surrogate: Decachlorobiphenyl	0.214		ug/L	0.2500		86	30-150
Surrogate: Decachlorobiphenyl [2C]	0.220		ug/L	0.2500		88	30-150
Surrogate: Tetrachloro-m-xylene	0.184		ug/L	0.2500		74	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.215		ug/L	0.2500		86	30-150

LCS

4,4'-DDD	0.26	0.05	ug/L	0.2500		105	40-140
4,4'-DDE	0.25	0.05	ug/L	0.2500		99	40-140
4,4'-DDT	0.27	0.05	ug/L	0.2500		109	40-140
Aldrin	0.23	0.05	ug/L	0.2500		92	40-140
alpha-BHC	0.26	0.05	ug/L	0.2500		105	40-140
beta-BHC	0.25	0.05	ug/L	0.2500		101	40-140
delta-BHC	0.27	0.05	ug/L	0.2500		106	40-140
Dieldrin	0.25	0.05	ug/L	0.2500		101	40-140
Endosulfan I	0.25	0.05	ug/L	0.2500		101	40-140
Endosulfan II	0.25	0.05	ug/L	0.2500		99	40-140
Endosulfan Sulfate	0.25	0.05	ug/L	0.2500		99	40-140
Endrin	0.29	0.05	ug/L	0.2500		117	40-140
Endrin Aldehyde	0.23	0.05	ug/L	0.2500		92	40-140
gamma-BHC (Lindane)	0.26	0.05	ug/L	0.2500		103	40-140
Heptachlor	0.23	0.05	ug/L	0.2500		92	40-140
Heptachlor Epoxide	0.26	0.05	ug/L	0.2500		103	40-140
Methoxychlor	0.26	0.05	ug/L	0.2500		102	40-140

Surrogate: Decachlorobiphenyl	0.227		ug/L	0.2500		91	30-150
Surrogate: Decachlorobiphenyl [2C]	0.233		ug/L	0.2500		93	30-150
Surrogate: Tetrachloro-m-xylene	0.210		ug/L	0.2500		84	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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608/6630C Organochlorine Pesticides

Batch CC31820 - 3510C

<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>0.243</i>		ug/L	<i>0.2500</i>		<i>97</i>	<i>30-150</i>			
LCS Dup										
4,4'-DDD	0.27	0.05	ug/L	0.2500		109	40-140	4	20	
4,4'-DDE	0.25	0.05	ug/L	0.2500		101	40-140	2	20	
4,4'-DDT	0.28	0.05	ug/L	0.2500		114	40-140	4	20	
Aldrin	0.23	0.05	ug/L	0.2500		92	40-140	0.4	20	
alpha-BHC	0.28	0.05	ug/L	0.2500		111	40-140	5	20	
beta-BHC	0.26	0.05	ug/L	0.2500		106	40-140	5	20	
delta-BHC	0.28	0.05	ug/L	0.2500		112	40-140	5	20	
Dieldrin	0.27	0.05	ug/L	0.2500		106	40-140	5	20	
Endosulfan I	0.26	0.05	ug/L	0.2500		106	40-140	5	20	
Endosulfan II	0.26	0.05	ug/L	0.2500		104	40-140	5	20	
Endosulfan Sulfate	0.26	0.05	ug/L	0.2500		104	40-140	5	20	
Endrin	0.31	0.05	ug/L	0.2500		123	40-140	5	20	
Endrin Aldehyde	0.24	0.05	ug/L	0.2500		97	40-140	5	20	
gamma-BHC (Lindane)	0.27	0.05	ug/L	0.2500		109	40-140	5	20	
Heptachlor	0.23	0.05	ug/L	0.2500		94	40-140	2	20	
Heptachlor Epoxide	0.27	0.05	ug/L	0.2500		108	40-140	5	20	
Methoxychlor	0.26	0.05	ug/L	0.2500		105	40-140	3	20	
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.220</i>		ug/L	<i>0.2500</i>		<i>88</i>	<i>30-150</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>0.226</i>		ug/L	<i>0.2500</i>		<i>91</i>	<i>30-150</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>0.201</i>		ug/L	<i>0.2500</i>		<i>80</i>	<i>30-150</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>0.234</i>		ug/L	<i>0.2500</i>		<i>93</i>	<i>30-150</i>			

624 Volatile Organic Compounds

Batch CC31813 - 5030B

Blank										
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
2-Chloroethyl vinyl ether	ND	10.0	ug/L							
Acrolein - Screen	ND	5.0	ug/L							
Acrylonitrile - Screen	ND	5.0	ug/L							
Benzene	ND	1.0	ug/L							
Bromodichloromethane	ND	0.6	ug/L							
Bromoform	ND	1.0	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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624 Volatile Organic Compounds

Batch CC31813 - 50308

Bromomethane	ND	2.0	ug/L							
Carbon Disulfide	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	1.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	1.0	ug/L							
Chloromethane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	0.4	ug/L							
Dibromochloromethane	ND	1.0	ug/L							
Dibromomethane	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methylene Chloride	ND	4.0	ug/L							
Styrene	ND	1.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.5	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Acetate	ND	5.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	23.0		ug/L	25.00		92	70-130			
Surrogate: 4-Bromofluorobenzene	27.3		ug/L	25.00		109	70-130			
Surrogate: Dibromofluoromethane	23.1		ug/L	25.00		92	70-130			
Surrogate: Toluene-d8	28.0		ug/L	25.00		112	70-130			

LCS

1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2,2-Tetrachloroethane	10.8		ug/L	10.00		108	70-130			
1,1,2-Trichloroethane	10.8		ug/L	10.00		108	70-130			
1,1-Dichloroethane	10.9		ug/L	10.00		109	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			
1,2-Dichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dichloroethane	10.5		ug/L	10.00		105	70-130			
1,2-Dichloropropane	11.7		ug/L	10.00		117	70-130			
1,3-Dichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,4-Dichlorobenzene	10.5		ug/L	10.00		105	70-130			
2-Chloroethyl vinyl ether	47.7		ug/L	50.00		95	70-130			
Acrolein - Screen	12.0		ug/L	10.00		120	70-130			
Acrylonitrile - Screen	10.8		ug/L	10.00		108	70-130			
Benzene	11.2		ug/L	10.00		112	70-130			
Bromodichloromethane	9.9		ug/L	10.00		99	70-130			
Bromoform	10.6		ug/L	10.00		106	70-130			
Bromomethane	11.0		ug/L	10.00		110	70-130			



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ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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624 Volatile Organic Compounds

Batch CC31813 - 50308

Carbon Disulfide	11.7		ug/L	10.00		117	70-130			
Carbon Tetrachloride	10.0		ug/L	10.00		100	70-130			
Chlorobenzene	10.3		ug/L	10.00		103	70-130			
Chloroethane	8.7		ug/L	10.00		87	70-130			
Chloroform	10.5		ug/L	10.00		105	70-130			
Chloromethane	9.6		ug/L	10.00		96	70-130			
cis-1,3-Dichloropropene	10.2		ug/L	10.00		102	70-130			
Dibromochloromethane	9.9		ug/L	10.00		99	70-130			
Dibromomethane	10.0		ug/L	10.00		100	70-130			
Ethylbenzene	11.6		ug/L	10.00		116	70-130			
Methylene Chloride	11.6		ug/L	10.00		116	70-130			
Styrene	10.9		ug/L	10.00		109	70-130			
Tetrachloroethene	9.2		ug/L	10.00		92	70-130			
Toluene	11.4		ug/L	10.00		114	70-130			
trans-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
trans-1,3-Dichloropropene	9.4		ug/L	10.00		94	70-130			
Trichloroethene	10.9		ug/L	10.00		109	70-130			
Trichlorofluoromethane	9.4		ug/L	10.00		94	70-130			
Vinyl Acetate	10.2		ug/L	10.00		102	70-130			
Vinyl Chloride	10.5		ug/L	10.00		105	70-130			
Xylene O	11.0		ug/L	10.00		110	70-130			
Xylene P,M	23.4		ug/L	20.00		117	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.7		ug/L	25.00		95	70-130			
Surrogate: 4-Bromofluorobenzene	27.7		ug/L	25.00		111	70-130			
Surrogate: Dibromofluoromethane	23.8		ug/L	25.00		95	70-130			
Surrogate: Toluene-d8	27.3		ug/L	25.00		109	70-130			

LCS Dup

1,1,1-Trichloroethane	10.0		ug/L	10.00		100	70-130	4	25	
1,1,2,2-Tetrachloroethane	10.8		ug/L	10.00		108	70-130	0.2	25	
1,1,2-Trichloroethane	11.0		ug/L	10.00		110	70-130	2	25	
1,1-Dichloroethane	10.6		ug/L	10.00		106	70-130	3	25	
1,1-Dichloroethene	9.9		ug/L	10.00		99	70-130	5	25	
1,2-Dichlorobenzene	9.9		ug/L	10.00		99	70-130	3	25	
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130	4	25	
1,2-Dichloropropane	11.3		ug/L	10.00		113	70-130	3	25	
1,3-Dichlorobenzene	9.6		ug/L	10.00		96	70-130	4	25	
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	2	25	
2-Chloroethyl vinyl ether	47.2		ug/L	50.00		94	70-130	0.9	25	
Acrolein - Screen	12.8		ug/L	10.00		128	70-130	6	25	
Acrylonitrile - Screen	10.2		ug/L	10.00		102	70-130	5	20	
Benzene	10.8		ug/L	10.00		108	70-130	3	25	
Bromodichloromethane	9.7		ug/L	10.00		97	70-130	2	25	
Bromoform	10.1		ug/L	10.00		101	70-130	5	25	
Bromomethane	10.8		ug/L	10.00		108	70-130	2	25	
Carbon Disulfide	11.1		ug/L	10.00		111	70-130	5	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1303266

Quality Control Data

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624 Volatile Organic Compounds

Batch CC31813 - 50308

Carbon Tetrachloride	9.3		ug/L	10.00		93	70-130	7	25	
Chlorobenzene	9.7		ug/L	10.00		97	70-130	6	25	
Chloroethane	9.7		ug/L	10.00		97	70-130	11	25	
Chloroform	10.1		ug/L	10.00		101	70-130	3	25	
Chloromethane	9.2		ug/L	10.00		92	70-130	4	25	
cis-1,3-Dichloropropene	10.3		ug/L	10.00		103	70-130	0.8	25	
Dibromochloromethane	9.6		ug/L	10.00		96	70-130	3	25	
Dibromomethane	10.2		ug/L	10.00		102	70-130	1	25	
Ethylbenzene	11.0		ug/L	10.00		110	70-130	5	25	
Methylene Chloride	10.8		ug/L	10.00		108	70-130	6	25	
Styrene	10.6		ug/L	10.00		106	70-130	3	25	
Tetrachloroethene	9.1		ug/L	10.00		91	70-130	1	25	
Toluene	11.0		ug/L	10.00		110	70-130	4	25	
trans-1,2-Dichloroethene	9.6		ug/L	10.00		96	70-130	6	25	
trans-1,3-Dichloropropene	9.0		ug/L	10.00		90	70-130	5	25	
Trichloroethene	10.7		ug/L	10.00		107	70-130	2	25	
Trichlorofluoromethane	9.0		ug/L	10.00		90	70-130	4	25	
Vinyl Acetate	10.1		ug/L	10.00		101	70-130	0.9	25	
Vinyl Chloride	9.9		ug/L	10.00		99	70-130	5	25	
Xylene O	10.4		ug/L	10.00		104	70-130	6	25	
Xylene P,M	21.9		ug/L	20.00		109	70-130	7	25	
Surrogate: 1,2-Dichloroethane-d4	23.6		ug/L	25.00		94	70-130			
Surrogate: 4-Bromofluorobenzene	26.2		ug/L	25.00		105	70-130			
Surrogate: Dibromofluoromethane	24.5		ug/L	25.00		98	70-130			
Surrogate: Toluene-d8	27.3		ug/L	25.00		109	70-130			

625 Semi-Volatile Organic Compounds

Batch CC31804 - 3520C

Blank										
1,2,4-Trichlorobenzene	ND	10.0	ug/L							
1,2-Dichlorobenzene	ND	10.0	ug/L							
1,3-Dichlorobenzene	ND	10.0	ug/L							
1,4-Dichlorobenzene	ND	10.0	ug/L							
2,4,5-Trichlorophenol	ND	10.0	ug/L							
2,4,6-Trichlorophenol	ND	10.0	ug/L							
2,4-Dichlorophenol	ND	10.0	ug/L							
2,4-Dimethylphenol	ND	50.0	ug/L							
2,4-Dinitrophenol	ND	50.0	ug/L							
2,4-Dinitrotoluene	ND	10.0	ug/L							
2,6-Dinitrotoluene	ND	10.0	ug/L							
2-Chloronaphthalene	ND	10.0	ug/L							
2-Chlorophenol	ND	10.0	ug/L							
2-Methylnaphthalene	ND	10.0	ug/L							
2-Methylphenol	ND	10.0	ug/L							
2-Nitrophenol	ND	10.0	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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625 Semi-Volatile Organic Compounds

Batch CC31804 - 3520C

3,3'-Dichlorobenzidine	ND	10.0	ug/L
3+4-Methylphenol	ND	20.0	ug/L
4,6-Dinitro-2-Methylphenol	ND	50.0	ug/L
4-Bromophenyl-phenylether	ND	10.0	ug/L
4-Chloro-3-Methylphenol	ND	10.0	ug/L
4-Chloro-phenyl-phenyl ether	ND	10.0	ug/L
4-Nitrophenol	ND	50.0	ug/L
Acenaphthene	ND	10.0	ug/L
Acenaphthylene	ND	10.0	ug/L
Anthracene	ND	10.0	ug/L
Benzidine	ND	50.0	ug/L
Benzo(a)anthracene	ND	10.0	ug/L
Benzo(a)pyrene	ND	10.0	ug/L
Benzo(b)fluoranthene	ND	10.0	ug/L
Benzo(g,h,i)perylene	ND	10.0	ug/L
Benzo(k)fluoranthene	ND	10.0	ug/L
bis(2-Chloroethoxy)methane	ND	10.0	ug/L
bis(2-Chloroethyl)ether	ND	10.0	ug/L
bis(2-chloroisopropyl)Ether	ND	10.0	ug/L
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L
Butylbenzylphthalate	ND	10.0	ug/L
Chrysene	ND	10.0	ug/L
Dibenzo(a,h)Anthracene	ND	10.0	ug/L
Dibenzofuran	ND	10.0	ug/L
Diethylphthalate	ND	10.0	ug/L
Dimethylphthalate	ND	10.0	ug/L
Di-n-butylphthalate	ND	10.0	ug/L
Di-n-octylphthalate	ND	10.0	ug/L
Fluoranthene	ND	10.0	ug/L
Fluorene	ND	10.0	ug/L
Hexachlorobenzene	ND	10.0	ug/L
Hexachlorobutadiene	ND	10.0	ug/L
Hexachlorocyclopentadiene	ND	25.0	ug/L
Hexachloroethane	ND	5.0	ug/L
Indeno(1,2,3-cd)Pyrene	ND	10.0	ug/L
Isophorone	ND	10.0	ug/L
Naphthalene	ND	10.0	ug/L
Nitrobenzene	ND	10.0	ug/L
N-Nitrosodimethylamine	ND	10.0	ug/L
N-Nitroso-Di-n-Propylamine	ND	10.0	ug/L
N-nitrosodiphenylamine	ND	10.0	ug/L
Pentachlorophenol	ND	50.0	ug/L
Phenanthrene	ND	10.0	ug/L
Phenol	ND	10.0	ug/L
Pyrene	ND	10.0	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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625 Semi-Volatile Organic Compounds

Batch CC31804 - 3520C

Surrogate: 1,2-Dichlorobenzene-d4	85.4		ug/L	100.0		85	30-130			
Surrogate: 2,4,6-Tribromophenol	138		ug/L	150.0		92	15-110			
Surrogate: 2-Chlorophenol-d4	124		ug/L	150.0		83	15-110			
Surrogate: 2-Fluorobiphenyl	80.4		ug/L	100.0		80	30-130			
Surrogate: 2-Fluorophenol	102		ug/L	150.0		68	15-110			
Surrogate: Nitrobenzene-d5	82.5		ug/L	100.0		82	30-130			
Surrogate: Phenol-d6	123		ug/L	150.0		82	15-110			
Surrogate: p-Terphenyl-d14	93.3		ug/L	100.0		93	30-130			

LCS

1,2,4-Trichlorobenzene	73.0	10.0	ug/L	100.0		73	40-140			
1,2-Dichlorobenzene	74.8	10.0	ug/L	100.0		75	40-140			
1,3-Dichlorobenzene	71.9	10.0	ug/L	100.0		72	40-140			
1,4-Dichlorobenzene	72.4	10.0	ug/L	100.0		72	40-140			
2,4,5-Trichlorophenol	92.1	10.0	ug/L	100.0		92	30-130			
2,4,6-Trichlorophenol	87.5	10.0	ug/L	100.0		87	30-130			
2,4-Dichlorophenol	82.8	10.0	ug/L	100.0		83	30-130			
2,4-Dimethylphenol	91.5	50.0	ug/L	100.0		92	30-130			
2,4-Dinitrophenol	70.5	50.0	ug/L	100.0		71	30-130			
2,4-Dinitrotoluene	92.6	10.0	ug/L	100.0		93	40-140			
2,6-Dinitrotoluene	93.4	10.0	ug/L	100.0		93	40-140			
2-Chloronaphthalene	77.2	10.0	ug/L	100.0		77	40-140			
2-Chlorophenol	76.4	10.0	ug/L	100.0		76	30-130			
2-Methylnaphthalene	82.4	10.0	ug/L	100.0		82	40-140			
2-Methylphenol	87.7	10.0	ug/L	100.0		88	30-130			
2-Nitrophenol	77.8	10.0	ug/L	100.0		78	30-130			
3,3'-Dichlorobenzidine	85.9	10.0	ug/L	100.0		86	40-140			
3+4-Methylphenol	176	20.0	ug/L	200.0		88	30-130			
4,6-Dinitro-2-Methylphenol	84.7	50.0	ug/L	100.0		85	30-130			
4-Bromophenyl-phenylether	86.6	10.0	ug/L	100.0		87	40-140			
4-Chloro-3-Methylphenol	90.6	10.0	ug/L	100.0		91	30-130			
4-Chloro-phenyl-phenyl ether	85.0	10.0	ug/L	100.0		85	40-140			
4-Nitrophenol	92.6	50.0	ug/L	100.0		93	30-130			
Acenaphthene	85.8	10.0	ug/L	100.0		86	40-140			
Acenaphthylene	84.1	10.0	ug/L	100.0		84	40-140			
Anthracene	86.3	10.0	ug/L	100.0		86	40-140			
Benzidine	42.8	50.0	ug/L	100.0		43	40-140			
Benzo(a)anthracene	88.4	10.0	ug/L	100.0		88	40-140			
Benzo(a)pyrene	78.4	10.0	ug/L	100.0		78	40-140			
Benzo(b)fluoranthene	81.0	10.0	ug/L	100.0		81	40-140			
Benzo(g,h,i)perylene	75.2	10.0	ug/L	100.0		75	40-140			
Benzo(k)fluoranthene	81.3	10.0	ug/L	100.0		81	40-140			
bis(2-Chloroethoxy)methane	85.6	10.0	ug/L	100.0		86	40-140			
bis(2-Chloroethyl)ether	85.0	10.0	ug/L	100.0		85	40-140			
bis(2-chloroisopropyl)Ether	78.3	10.0	ug/L	100.0		78	40-140			
bis(2-Ethylhexyl)phthalate	119	6.0	ug/L	100.0		119	40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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625 Semi-Volatile Organic Compounds

Batch CC31804 - 3520C

Butylbenzylphthalate	87.9	10.0	ug/L	100.0		88	40-140			
Chrysene	87.8	10.0	ug/L	100.0		88	40-140			
Dibenzo(a,h)Anthracene	84.6	10.0	ug/L	100.0		85	40-140			
Dibenzofuran	88.0	10.0	ug/L	100.0		88	40-140			
Diethylphthalate	86.8	10.0	ug/L	100.0		87	40-140			
Dimethylphthalate	87.2	10.0	ug/L	100.0		87	40-140			
Di-n-butylphthalate	88.6	10.0	ug/L	100.0		89	40-140			
Di-n-octylphthalate	82.2	10.0	ug/L	100.0		82	40-140			
Fluoranthene	90.6	10.0	ug/L	100.0		91	40-140			
Fluorene	85.4	10.0	ug/L	100.0		85	40-140			
Hexachlorobenzene	87.6	10.0	ug/L	100.0		88	40-140			
Hexachlorobutadiene	71.1	10.0	ug/L	100.0		71	40-140			
Hexachlorocyclopentadiene	59.2	25.0	ug/L	100.0		59	40-140			
Hexachloroethane	74.7	5.0	ug/L	100.0		75	40-140			
Indeno(1,2,3-cd)Pyrene	82.6	10.0	ug/L	100.0		83	40-140			
Isophorone	84.7	10.0	ug/L	100.0		85	40-140			
Naphthalene	78.3	10.0	ug/L	100.0		78	40-140			
Nitrobenzene	78.3	10.0	ug/L	100.0		78	40-140			
N-Nitrosodimethylamine	55.0	10.0	ug/L	100.0		55	40-140			
N-Nitroso-Di-n-Propylamine	84.1	10.0	ug/L	100.0		84	40-140			
N-nitrosodiphenylamine	88.0	10.0	ug/L	100.0		88	40-140			
Pentachlorophenol	91.3	50.0	ug/L	100.0		91	30-130			
Phenanthrene	88.0	10.0	ug/L	100.0		88	40-140			
Phenol	78.3	10.0	ug/L	100.0		78	30-130			
Pyrene	88.6	10.0	ug/L	100.0		89	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	83.3		ug/L	100.0		83	30-130			
Surrogate: 2,4,6-Tribromophenol	142		ug/L	150.0		95	15-110			
Surrogate: 2-Chlorophenol-d4	122		ug/L	150.0		81	15-110			
Surrogate: 2-Fluorobiphenyl	89.2		ug/L	100.0		89	30-130			
Surrogate: 2-Fluorophenol	102		ug/L	150.0		68	15-110			
Surrogate: Nitrobenzene-d5	81.2		ug/L	100.0		81	30-130			
Surrogate: Phenol-d6	124		ug/L	150.0		83	15-110			
Surrogate: p-Terphenyl-d14	97.7		ug/L	100.0		98	30-130			

LCS Dup

1,2,4-Trichlorobenzene	75.6	10.0	ug/L	100.0		76	40-140	3	200	
1,2-Dichlorobenzene	77.9	10.0	ug/L	100.0		78	40-140	4	200	
1,3-Dichlorobenzene	75.3	10.0	ug/L	100.0		75	40-140	5	200	
1,4-Dichlorobenzene	76.8	10.0	ug/L	100.0		77	40-140	6	200	
2,4,5-Trichlorophenol	93.6	10.0	ug/L	100.0		94	30-130	2	200	
2,4,6-Trichlorophenol	88.0	10.0	ug/L	100.0		88	30-130	0.7	200	
2,4-Dichlorophenol	85.1	10.0	ug/L	100.0		85	30-130	3	200	
2,4-Dimethylphenol	93.3	50.0	ug/L	100.0		93	30-130	2	200	
2,4-Dinitrophenol	73.8	50.0	ug/L	100.0		74	30-130	5	200	
2,4-Dinitrotoluene	95.1	10.0	ug/L	100.0		95	40-140	3	200	
2,6-Dinitrotoluene	94.3	10.0	ug/L	100.0		94	40-140	0.9	200	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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625 Semi-Volatile Organic Compounds

Batch CC31804 - 3520C

2-Chloronaphthalene	76.9	10.0	ug/L	100.0		77	40-140	0.4	200	
2-Chlorophenol	81.1	10.0	ug/L	100.0		81	30-130	6	200	
2-Methylnaphthalene	84.0	10.0	ug/L	100.0		84	40-140	2	200	
2-Methylphenol	91.8	10.0	ug/L	100.0		92	30-130	5	200	
2-Nitrophenol	81.9	10.0	ug/L	100.0		82	30-130	5	200	
3,3'-Dichlorobenzidine	86.6	10.0	ug/L	100.0		87	40-140	0.9	200	
3+4-Methylphenol	181	20.0	ug/L	200.0		91	30-130	3	200	
4,6-Dinitro-2-Methylphenol	90.3	50.0	ug/L	100.0		90	30-130	6	200	
4-Bromophenyl-phenylether	87.1	10.0	ug/L	100.0		87	40-140	0.5	200	
4-Chloro-3-Methylphenol	91.9	10.0	ug/L	100.0		92	30-130	1	200	
4-Chloro-phenyl-phenyl ether	86.7	10.0	ug/L	100.0		87	40-140	2	200	
4-Nitrophenol	98.1	50.0	ug/L	100.0		98	30-130	6	200	
Acenaphthene	86.2	10.0	ug/L	100.0		86	40-140	0.5	200	
Acenaphthylene	84.8	10.0	ug/L	100.0		85	40-140	0.7	200	
Anthracene	85.8	10.0	ug/L	100.0		86	40-140	0.6	200	
Benzidine	40.5	50.0	ug/L	100.0		41	40-140	5	200	
Benzo(a)anthracene	88.4	10.0	ug/L	100.0		88	40-140	0.05	200	
Benzo(a)pyrene	78.7	10.0	ug/L	100.0		79	40-140	0.4	200	
Benzo(b)fluoranthene	82.8	10.0	ug/L	100.0		83	40-140	2	200	
Benzo(g,h,i)perylene	74.4	10.0	ug/L	100.0		74	40-140	1	200	
Benzo(k)fluoranthene	81.3	10.0	ug/L	100.0		81	40-140	0	200	
bis(2-Chloroethoxy)methane	86.4	10.0	ug/L	100.0		86	40-140	0.9	200	
bis(2-Chloroethyl)ether	86.3	10.0	ug/L	100.0		86	40-140	2	200	
bis(2-chloroisopropyl)Ether	81.2	10.0	ug/L	100.0		81	40-140	4	200	
bis(2-Ethylhexyl)phthalate	92.2	6.0	ug/L	100.0		92	40-140	26	200	
Butylbenzylphthalate	88.7	10.0	ug/L	100.0		89	40-140	0.9	200	
Chrysene	87.7	10.0	ug/L	100.0		88	40-140	0.2	200	
Dibenzo(a,h)Anthracene	83.8	10.0	ug/L	100.0		84	40-140	0.9	200	
Dibenzofuran	89.8	10.0	ug/L	100.0		90	40-140	2	200	
Diethylphthalate	88.9	10.0	ug/L	100.0		89	40-140	2	200	
Dimethylphthalate	88.1	10.0	ug/L	100.0		88	40-140	1	200	
Di-n-butylphthalate	88.1	10.0	ug/L	100.0		88	40-140	0.7	200	
Di-n-octylphthalate	84.0	10.0	ug/L	100.0		84	40-140	2	200	
Fluoranthene	88.9	10.0	ug/L	100.0		89	40-140	2	200	
Fluorene	87.1	10.0	ug/L	100.0		87	40-140	2	200	
Hexachlorobenzene	89.0	10.0	ug/L	100.0		89	40-140	2	200	
Hexachlorobutadiene	74.2	10.0	ug/L	100.0		74	40-140	4	200	
Hexachlorocyclopentadiene	60.3	25.0	ug/L	100.0		60	40-140	2	200	
Hexachloroethane	80.7	5.0	ug/L	100.0		81	40-140	8	200	
Indeno(1,2,3-cd)Pyrene	82.2	10.0	ug/L	100.0		82	40-140	0.5	200	
Isophorone	86.3	10.0	ug/L	100.0		86	40-140	2	200	
Naphthalene	80.8	10.0	ug/L	100.0		81	40-140	3	200	
Nitrobenzene	84.0	10.0	ug/L	100.0		84	40-140	7	200	
N-Nitrosodimethylamine	54.7	10.0	ug/L	100.0		55	40-140	0.6	200	
N-Nitroso-Di-n-Propylamine	88.2	10.0	ug/L	100.0		88	40-140	5	200	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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625 Semi-Volatile Organic Compounds

Batch CC31804 - 3520C

N-nitrosodiphenylamine	90.1	10.0	ug/L	100.0		90	40-140	2	200	
Pentachlorophenol	91.0	50.0	ug/L	100.0		91	30-130	0.3	200	
Phenanthrene	88.0	10.0	ug/L	100.0		88	40-140	0.02	200	
Phenol	83.0	10.0	ug/L	100.0		83	30-130	6	200	
Pyrene	87.9	10.0	ug/L	100.0		88	40-140	0.8	200	
Surrogate: 1,2-Dichlorobenzene-d4	82.4		ug/L	100.0		82	30-130			
Surrogate: 2,4,6-Tribromophenol	135		ug/L	150.0		90	15-110			
Surrogate: 2-Chlorophenol-d4	122		ug/L	150.0		81	15-110			
Surrogate: 2-Fluorobiphenyl	84.2		ug/L	100.0		84	30-130			
Surrogate: 2-Fluorophenol	105		ug/L	150.0		70	15-110			
Surrogate: Nitrobenzene-d5	81.4		ug/L	100.0		81	30-130			
Surrogate: Phenol-d6	123		ug/L	150.0		82	15-110			
Surrogate: p-Terphenyl-d14	90.3		ug/L	100.0		90	30-130			

Classical Chemistry

Batch CC32005 - General Preparation

Blank

Oil & Grease	ND	5	mg/L							
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LCS

Oil & Grease	31.2	5	mg/L	38.66		81	79-114			
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MADEP-EPH Extractable Petroleum Hydrocarbons

Batch CC31805 - 3510C

Blank

C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	150	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							

Surrogate: 1-Chlorooctadecane	39.0		ug/L	50.00		78	40-140			
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Blank

2-Methylnaphthalene	ND	5.0	ug/L							
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CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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MADEP-EPH Extractable Petroleum Hydrocarbons

Batch CC31805 - 3510C

Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							
Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	48.7		ug/L	50.00		97	40-140			
Surrogate: 2-Fluorobiphenyl	47.0		ug/L	50.00		94	40-140			
Surrogate: O-Terphenyl	39.4		ug/L	50.00		79	40-140			

Blank

C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	150	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacotane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	39.8		ug/L	50.00		80	40-140			

Blank

2-Methylnaphthalene	ND	5.0	ug/L							
Acenaphthene	ND	5.0	ug/L							
Acenaphthylene	ND	5.0	ug/L							
Anthracene	ND	5.0	ug/L							
Benzo(a)anthracene	ND	5.0	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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MADEP-EPH Extractable Petroleum Hydrocarbons

Batch CC31805 - 3510C

Benzo(a)pyrene	ND	10.0	ug/L							
Benzo(b)fluoranthene	ND	5.0	ug/L							
Benzo(g,h,i)perylene	ND	10.0	ug/L							
Benzo(k)fluoranthene	ND	10.0	ug/L							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Chrysene	ND	10.0	ug/L							
Dibenzo(a,h)Anthracene	ND	5.0	ug/L							
Fluoranthene	ND	10.0	ug/L							
Fluorene	ND	5.0	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	5.0	ug/L							
Naphthalene	ND	10.0	ug/L							
Phenanthrene	ND	5.0	ug/L							
Pyrene	ND	5.0	ug/L							
Surrogate: 2-Bromonaphthalene	48.8		ug/L	50.00		98	40-140			
Surrogate: 2-Fluorobiphenyl	48.4		ug/L	50.00		97	40-140			
Surrogate: O-Terphenyl	43.2		ug/L	50.00		86	40-140			

LCS

C19-C36 Aliphatics1	283	100	ug/L	400.0		71	40-140			
C9-C18 Aliphatics1	222	150	ug/L	300.0		74	40-140			
Decane (C10)	30	5	ug/L	50.00		59	40-140			
Docosane (C22)	43	5	ug/L	50.00		86	40-140			
Dodecane (C12)	34	5	ug/L	50.00		68	40-140			
Eicosane (C20)	43	5	ug/L	50.00		86	40-140			
Hexacosane (C26)	42	5	ug/L	50.00		85	40-140			
Hexadecane (C16)	41	5	ug/L	50.00		82	40-140			
Hexatriacontane (C36)	25	5	ug/L	50.00		50	40-140			
Nonadecane (C19)	43	5	ug/L	50.00		85	40-140			
Nonane (C9)	23	5	ug/L	50.00		46	30-140			
Octacosane (C28)	42	5	ug/L	50.00		83	40-140			
Octadecane (C18)	43	5	ug/L	50.00		86	40-140			
Tetracosane (C24)	44	5	ug/L	50.00		88	40-140			
Tetradecane (C14)	38	5	ug/L	50.00		76	40-140			
triacontane (C30)	40	5	ug/L	50.00		80	40-140			
Surrogate: 1-Chlorooctadecane	45.8		ug/L	50.00		92	40-140			

LCS

2-Methylnaphthalene	34.5	5.0	ug/L	50.00		69	40-140			
Acenaphthene	35.6	5.0	ug/L	50.00		71	40-140			
Acenaphthylene	35.2	5.0	ug/L	50.00		70	40-140			
Anthracene	36.4	5.0	ug/L	50.00		73	40-140			
Benzo(a)anthracene	39.2	5.0	ug/L	50.00		78	40-140			
Benzo(a)pyrene	44.8	10.0	ug/L	50.00		90	40-140			
Benzo(b)fluoranthene	41.6	5.0	ug/L	50.00		83	40-140			
Benzo(g,h,i)perylene	37.9	10.0	ug/L	50.00		76	40-140			
Benzo(k)fluoranthene	42.7	10.0	ug/L	50.00		85	40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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MADEP-EPH Extractable Petroleum Hydrocarbons

Batch CC31805 - 3510C

C11-C22 Unadjusted Aromatics1	667	100	ug/L	850.0		78	40-140			
Chrysene	39.5	10.0	ug/L	50.00		79	40-140			
Dibenzo(a,h)Anthracene	39.8	5.0	ug/L	50.00		80	40-140			
Fluoranthene	38.9	10.0	ug/L	50.00		78	40-140			
Fluorene	36.1	5.0	ug/L	50.00		72	40-140			
Indeno(1,2,3-cd)Pyrene	34.5	5.0	ug/L	50.00		69	40-140			
Naphthalene	31.9	10.0	ug/L	50.00		64	40-140			
Phenanthrene	38.4	5.0	ug/L	50.00		77	40-140			
Pyrene	39.6	5.0	ug/L	50.00		79	40-140			
Surrogate: 2-Bromonaphthalene	47.0		ug/L	50.00		94	40-140			
Surrogate: 2-Fluorobiphenyl	46.2		ug/L	50.00		92	40-140			
Surrogate: O-Terphenyl	44.3		ug/L	50.00		89	40-140			

LCS

2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			

LCS Dup

C19-C36 Aliphatics1	307	100	ug/L	400.0		77	40-140	8	25	
C9-C18 Aliphatics1	238	150	ug/L	300.0		79	40-140	7	25	
Decane (C10)	32	5	ug/L	50.00		64	40-140	7	25	
Docosane (C22)	47	5	ug/L	50.00		93	40-140	8	25	
Dodecane (C12)	37	5	ug/L	50.00		73	40-140	7	25	
Eicosane (C20)	46	5	ug/L	50.00		93	40-140	8	25	
Hexacosane (C26)	46	5	ug/L	50.00		92	40-140	8	25	
Hexadecane (C16)	44	5	ug/L	50.00		89	40-140	8	25	
Hexatriacontane (C36)	27	5	ug/L	50.00		53	40-140	7	25	
Nonadecane (C19)	46	5	ug/L	50.00		92	40-140	8	25	
Nonane (C9)	25	5	ug/L	50.00		50	30-140	8	25	
Octacosane (C28)	45	5	ug/L	50.00		91	40-140	9	25	
Octadecane (C18)	46	5	ug/L	50.00		92	40-140	8	25	
Tetracosane (C24)	48	5	ug/L	50.00		95	40-140	8	25	
Tetradecane (C14)	41	5	ug/L	50.00		82	40-140	8	25	
Triacontane (C30)	44	5	ug/L	50.00		87	40-140	8	25	

Surrogate: 1-Chlorooctadecane	45.7		ug/L	50.00		91	40-140			
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LCS Dup

2-Methylnaphthalene	35.9	5.0	ug/L	50.00		72	40-140	4	20	
Acenaphthene	37.3	5.0	ug/L	50.00		75	40-140	5	20	
Acenaphthylene	37.9	5.0	ug/L	50.00		76	40-140	7	20	
Anthracene	38.4	5.0	ug/L	50.00		77	40-140	5	20	
Benzo(a)anthracene	42.6	5.0	ug/L	50.00		85	40-140	8	20	
Benzo(a)pyrene	48.5	10.0	ug/L	50.00		97	40-140	8	20	
Benzo(b)fluoranthene	44.6	5.0	ug/L	50.00		89	40-140	7	20	
Benzo(g,h,i)perylene	40.5	10.0	ug/L	50.00		81	40-140	7	20	
Benzo(k)fluoranthene	45.3	10.0	ug/L	50.00		91	40-140	6	20	
C11-C22 Unadjusted Aromatics1	712	100	ug/L	850.0		84	40-140	7	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CC31805 - 3510C										
Chrysene	42.0	10.0	ug/L	50.00		84	40-140	6	20	
Dibenzo(a,h)Anthracene	42.5	5.0	ug/L	50.00		85	40-140	7	20	
Fluoranthene	41.7	10.0	ug/L	50.00		83	40-140	7	20	
Fluorene	39.3	5.0	ug/L	50.00		79	40-140	9	20	
Indeno(1,2,3-cd)Pyrene	38.4	5.0	ug/L	50.00		77	40-140	11	20	
Naphthalene	33.8	10.0	ug/L	50.00		68	40-140	6	20	
Phenanthrene	40.4	5.0	ug/L	50.00		81	40-140	5	20	
Pyrene	41.2	5.0	ug/L	50.00		82	40-140	4	20	
Surrogate: 2-Bromonaphthalene	46.8		ug/L	50.00		94	40-140			
Surrogate: 2-Fluorobiphenyl	47.8		ug/L	50.00		96	40-140			
Surrogate: O-Terphenyl	43.6		ug/L	50.00		87	40-140			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

Notes and Definitions

Z16	Aqueous pH measured in water at 12.6 °C.
Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
PP-	This analyte is a poor performer for this method
ICV	Initial Calibration Verification recovery is outside of control limit (ICV).
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
C+	Continuing Calibration recovery is above upper control limit (C+).
C-	Continuing Calibration recovery is below lower control limit (C-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Huran A - Permit

ESS Laboratory Work Order: 1303266

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179
<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/dep/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental-SRI
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 13030266
Date Project Due: 3/22/13
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

☒ **No**

Air No.:

2. Were Custody Seals Present?

☐ **No**

3. Were Custody Seals Intact?

☐ **N/A**

4. Is Radiation count < 100 CPM?

☐ **Yes**

5. Is a cooler present?

☐ **Yes**Cooler Temp: **4.8**Iced With: **Icepacks**

6. Was COC included with samples?

☐ **Yes**

7. Was COC signed and dated by client?

☐ **Yes**

8. Does the COC match the sample

☐ **Yes**

9. Is COC complete and correct?

☐ **Yes**

10. Are the samples properly preserved?

☐ **Yes**

11. Proper sample containers used?

☐ **Yes**

12. Any air bubbles in the VOA vials?

☐ **No**

13. Holding times exceeded?

☐ **No**

14. Sufficient sample volumes?

☐ **Yes**

15. Any Subcontracting needed?

☐ **No**

16. Are ESS labels on correct containers?

☒ **Yes** ☒ **No**

17. Were samples received intact?

☒ **Yes** ☒ **No**

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	4	HCL
1	Yes	1 L Glass	5	NP
1	Yes	250 ml Plastic	1	HNO3
1	Yes	250 ml Plastic	1	NP
1	Yes	40 ml - VOA	3	HCL
2	Yes	40 ml - VOA	1	HCL

Completed By: ACBDate/Time: 3/15/13Reviewed By: MDate/Time: 3/17/13

1303266
(for lab use only)

[illegible]

NOTES: (Unless otherwise noted, all samples have been refrigerated to 4 +/- 2°C)
Specify "Other" preservatives and container types in this space.

~~Must meet 401 Quality Criteria~~

*** Metals: As, ~~Al~~, Cd, Cr, Cu, Pb, Hg, Ni, Sb, Se, & Zn (totals)

Ag per email
3-18-13 mep

055

50

Project Manager: Rich McGanty

ESS Laboratory

185 Frances Ave
Cranston, RI 02910

PROJECT NO: 02.0171434 TASK NO:

PROJECT NO: 02.0171434 TASK NO: HURON A (Contract 8A)

Cambridge MA

COLLECTOR(S)

Joshua Seidel

1. <u>5-7</u> Days 2. <u>Standard</u> 3. <u>Standard</u> 4. <u>Standard</u> 5. <u>Standard</u> 6. <u>Standard</u> 7. <u>Standard</u> 8. <u>Standard</u> 9. <u>Standard</u> 10. <u>Standard</u> 11. <u>Standard</u> 12. <u>Standard</u> 13. <u>Standard</u> 14. <u>Standard</u> 15. <u>Standard</u> 16. <u>Standard</u> 17. <u>Standard</u> 18. <u>Standard</u> 19. <u>Standard</u> 20. <u>Standard</u> 21. <u>Standard</u> 22. <u>Standard</u> 23. <u>Standard</u> 24. <u>Standard</u> 25. <u>Standard</u> 26. <u>Standard</u> 27. <u>Standard</u> 28. <u>Standard</u> 29. <u>Standard</u> 30. <u>Standard</u> 31. <u>Standard</u> 32. <u>Standard</u> 33. <u>Standard</u> 34. <u>Standard</u> 35. <u>Standard</u> 36. <u>Standard</u> 37. <u>Standard</u> 38. <u>Standard</u> 39. <u>Standard</u> 40. <u>Standard</u> 41. <u>Standard</u> 42. <u>Standard</u> 43. <u>Standard</u> 44. <u>Standard</u> 45. <u>Standard</u> 46. <u>Standard</u> 47. <u>Standard</u> 48. <u>Standard</u> 49. <u>Standard</u> 50. <u>Standard</u> 51. <u>Standard</u> 52. <u>Standard</u> 53. <u>Standard</u> 54. <u>Standard</u> 55. <u>Standard</u> 56. <u>Standard</u> 57. <u>Standard</u> 58. <u>Standard</u> 59. <u>Standard</u> 60. <u>Standard</u> 61. <u>Standard</u> 62. <u>Standard</u> 63. <u>Standard</u> 64. <u>Standard</u> 65. <u>Standard</u> 66. <u>Standard</u> 67. <u>Standard</u> 68. <u>Standard</u> 69. <u>Standard</u> 70. <u>Standard</u> 71. <u>Standard</u> 72. <u>Standard</u> 73. <u>Standard</u> 74. <u>Standard</u> 75. <u>Standard</u> 76. <u>Standard</u> 77. <u>Standard</u> 78. <u>Standard</u> 79. <u>Standard</u> 80. <u>Standard</u> 81. <u>Standard</u> 82. <u>Standard</u> 83. <u>Standard</u> 84. <u>Standard</u> 85. <u>Standard</u> 86. <u>Standard</u> 87. <u>Standard</u> 88. <u>Standard</u> 89. <u>Standard</u> 90. <u>Standard</u> 91. <u>Standard</u> 92. <u>Standard</u> 93. <u>Standard</u> 94. <u>Standard</u> 95. <u>Standard</u> 96. <u>Standard</u> 97. <u>Standard</u> 98. <u>Standard</u> 99. <u>Standard</u> 100. <u>Standard</u>	LAB USE: 5-7 Days Approved by:	TEMP. OF COOLER
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W.O. NO.

SHEET 1 OF

Temp Blank
Cooler Air

43

100