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OFFICE OF:
COMMUNITY DEVELOPMENT
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February 21, 2007

Brad Vann
US EPA Region VII (SUPR/STAR)
901 N. 5th Street
Kansas City, KS 66101

Mel Pins, Executive Officer
Iowa Brownfield Redevelopment Program
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, IA 50319-0034

RE: South Main Brownfields Project, Council Bluffs, Iowa
EPA Grant Numbers: BF 98763801-0 and BF 98763701-0

Dear Brad and Mel:

Enclosed please find a copy of the Phase II ESA for Cluster #1, more specifically for 1103 South 6th Street; 1110 South Main Street; 1128 South Main Street; and Lots 3, 4, 5, 6, 7, 10,11,12,13, and 14, Block 15, Riddles Subdivision in Council Bluffs, Iowa.

If you should have any questions or need additional information, please feel free to contact me at (712) 328-4629 or at thochwender@councilbluffs-ia.gov.

Sincerely,

Tina Hochwender
Community Development Project Coordinator

Enclosure

cc: Sheryl Garst, PCDC

RCRA
578703

PHASE II ENVIRONMENTAL SITE ASSESSMENT
COOPERATIVE AGREEMENT NUMBERS:
BF-98763801-0 AND BF-98763701-0

POTTAWATTAMIE COUNTY
DEVELOPMENT CORPORATION PROPERTIES
1103 S. 6TH ST., 1110 S. MAIN ST., 1128 S. MAIN ST.
LOTS 3,4,5,6,7,10,11,12,13, AND 14
BLOCK 15 RIDDLES SUBDIVISION
COUNCIL BLUFFS, IOWA

FEBRUARY 2007

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Date: 2/14/07

Name: Cynthia L. Quast, P.E.

License Number: 12529

My renewal date is: December 31, 2007

Pages or sheets covered by this seal:

Entire Bound Document

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APPENDICES

1.0 EXECUTIVE SUMMARY

Howard R. Green Company was retained by the City of Council Bluffs (City) to conduct a Phase II Environmental Site Assessment (ESA) of the properties located at 1103 South 6th Street, 1110 South Main Street, and 1128 South Main Street, collectively referred to as Cluster #1. It is the intent of the City to assess the property to determine the viability for redevelopment without consideration of remedy for environmental impairment. The property is located in the City's South Main Brownfields Project Area and was assessed with funding from two EPA Brownfields Assessment Grants.

The Phase I ESA of the property was conducted in July 2006. The subject site itself is a recognized environmental condition (REC) being the former location of a small quantity Resource Conservation and Recovery Act (RCRA) generator (SQG) and historical bulk petroleum storage facility. Two off-site RECs were also identified, a former filling station located 50 feet south of the subject site and a former manufactured gas plant (FMGP) located 600 feet west of the subject site. The adjacent railroad to the north also has the potential to impact the site.

Based on the records review, interviews, on-site inspection, and historic information available at the time of the Phase I ESA, Howard R. Green Company recommended that the City conduct a Phase II ESA. All of the properties within the subject site were determined to be eligible for EPA Brownfields Hazardous Substances Assessment. The properties located at 1110 and 1128 S. Main were also determined to be eligible for EPA Brownfields Petroleum Assessment. Prior to conducting the Phase II ESA, a Site Addendum was prepared by the City and approved by EPA. The Site Addendum is in Appendix A.

This Phase II ESA findings and recommendations are summarized as follows:

The Phase II ESA identified limited contamination in Range 1 soil from petroleum hydrocarbons. The total extractable hydrocarbons as diesel (TEH-d) concentration in Range 1 soil at the sample collected from BH2 for REC1 exceeds the Tier 1 Look-Up Level for the soil leaching to groundwater exposure pathway. Additional investigation of TEH-d is needed in the vicinity of BH2. No contamination from hazardous substances was identified in Range 1 soil in excess of site-specific standards.

No petroleum contamination was identified in Range 2 soil in excess of Tier 1 Look-Up Levels. No contamination from hazardous substances was identified in Range 2 soil in excess of site-specific standards.

Petroleum contamination was identified in two of the four groundwater samples collected, but does not exceed the Tier 1 Look-Up Level for nonprotected groundwater. Benzo(a)pyrene was the only hazardous contaminant to exceed the statewide standard for nonprotected groundwater. It was found in MW4 for REC4. Additional investigation of the groundwater in the vicinity of MW4 is needed. Due to the apparent groundwater flow direction to the southwest, the benzo(a)pyrene is like originating upgradient from the site.

2.0 INTRODUCTION

The intent of this Phase II ESA is to assist the City in evaluating if the RECs identified in the Phase I ESA are actual or perceived environmental impairments associated with the subject site. The goal of the South Main Brownfields project is to eliminate false perceptions and gather data that will allow the City and community to plan and manage this potentially environmentally impaired property. In doing so, the City will be able to obtain its goal under its EPA Brownfields Cooperative Agreements to identify the economical and technical viability of redevelopment. In addition, should the City pursue acquisition of the subject properties, the City will meet the requirements of the bona fide prospective purchaser provisions of the Comprehensive Environmental Response and Liability Act's (CERCLA) innocent landowner defense, and the contiguous property owner and all appropriate inquiry due diligence under the Brownfields Revitalization Act.

2.1 Purpose

The City of Council Bluffs applied for and received two EPA Brownfields Grants, a Petroleum Assessment Grant and a Hazardous Substances Assessment Grant to conduct environmental assessments in the South Main Brownfield Project area. The subject site of this Phase II ESA is comprised of three properties. The Pottawattamie County Assessors office describes the property at 1103 South 6th Street as Riddles Subdivision Lots 10 to 13 Block 15 further described in the warranty deed dated May 31, 2000 and recorded as instrument number WD100-55069.

The property located at 1110 South Main Street is described as Riddles Subdivision Lot 3 Block 15 and the alley between the north 45.33 feet of lot 7 Block 15 and all of Lot 4 Block 15 and further described in the property deed dated May 31, 2000 and recorded as instrument number WD100-55070 at the Pottawattamie County Recorder's Office.

The property located at 1128 South Main Street is described as Riddles Subdivision Lots 5, 6, and Lot 7 except the north 45.33 feet of Block 15 and all of the vacated alley and is further described in the property deed dated May 31, 2000 and recorded as instrument WD100-55935 at the Pottawattamie County Recorder's Office.

The EPA grants provide a mechanism for the City to supplement existing efforts to evaluate parcels for redevelopment, stimulate economic reuse of the area, and improve the quality of life for the residents of the area.

2.2 Problem Statement

The Project is evaluating blighted and underutilized properties owned by the City and others with the intent of encouraging redevelopment. The Brownfields Cooperative Agreement Plans call for collection of data through EPA federal funding with this information being subject to specific requirements of quality assurance and control.

Project quality assurance and quality control objectives were identified in the comprehensive generic Quality Assurance Project Plan (QAPP) for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs November 1998 (Updated July 2005). Appropriate elements of the QAPP are activated for use at a specific property through use of the Site Addendum to the QAPP.

The State of Iowa has in place through the Iowa Administrative Codes (IAC), programs for evaluation of environmental impairment. For environmental impairment due to releases from underground storage tanks (USTs), the State of Iowa has in place through IAC 567-135(455B) Chapter 135: Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (IAC 135). Contamination not associated with USTs involves risk-based evaluation and response action through the voluntary Land Recycling Program (LRP) as set forth in IAC 567-137(457B) Chapter 137: Iowa Land Recycling Program and Statewide Response Action Standards (IAC 137). For this Project, soil and groundwater evaluations for public risk will be conducted according to either IAC 135 or IAC 137 based upon the source of the contamination and the eligibility determination for the site for the use of Petroleum Assessment or Hazardous Substance Assessment funds.

It is the purpose of the QAPP to provide a method of decision and assessment that provides data that sufficiently balances the data quantity and quality needed by EPA under the Grants required by state programs. This must be done with limited funds on the maximum number of project sites to provide sufficient value to the City to be meaningful for planning.

2.3 Background

The Site Addendum specifies the sampling requirements intended to address only potentially impacted portions of a property. The brownfields project decision regarding feasibility for redevelopment is a preliminary screening process and does not require a final or complete IAC 135 or IAC 137 demonstration of compliance. This is generally consistent with the IDNR's own approach of using the IAC 135 Tier 1 Look-Up Levels or IAC 137 statewide standards as a screening process for unregulated releases.

Howard R. Green Company conducted the Brownfields Phase I for the Cluster #1 property. Multiple industrial lots comprise the subject site and total 1.19 acres. Currently, the site is vacant. Previous industrial businesses are tabulated below:

Owner	Date	Products Manufactured/Stored
Bradley and Company Farm Machinery	Late 1800s	Farm equipment
Warehouse (1103 South 6th Street)	1891-1968	None
SMV Industries (1103 South 6th Street)	1968-Unknown	Farm Equipment--shock hitches, tools, rake teeth & signs
Penn Consumers Oil Company (1110-1128 South Main Street)	1928--Unknown	Bulk petroleum storage

Ms. Sheryl Garst, owner's representative, indicated that Pottawattamie County Development Corporation (PCDC) purchased the Cluster #1 properties in 2000. Phase I and Phase II Environmental Site Assessments were completed for this area in 2000 by Thiele Geotech. According to the Thiele Phase I report, coal tar constituents were

identified from approximately 64' to 75.5' below grade on the subject property. Soil samples collected at this depth identified total extractable hydrocarbons (TEH), naphthalene, 2-methylnaphthalene, and phenanthrene, and a groundwater sample identified TEH and naphthalene.

The visual inspection of the property was conducted on July 12, 2006. The subject site itself is a REC due to its historical use as a RCRA SQG and bulk petroleum storage facility. The results of the database searches and historical research identified two properties with the potential to impact the subject site. A former filling station with an unregistered UST is located 50 feet south of the subject site. A FMGP is located 600 feet west of the subject site. A railroad is located adjacent to the site to the north. Previous environmental assessments identified petroleum contamination at the former Giant Manufacturing property just west of the subject property. Historic maps identified above ground storage tanks (ASTs), and underground storage tanks (USTs) at this property. A previous environmental assessment identified petroleum contamination possibly originating from a former UST on the property north of the subject property (former International Harvester property). Petroleum impacted soil was identified on this property during previous assessments.

Based on the records review, interviews, on-site inspection, and historic information available at the time of the Phase I ESA, Howard R. Green Company recommended that the City conduct a Phase II ESA.

Howard R. Green Company considered the results of Phase II ESA within the context of Phase II ESA decision logic to produce a hybrid investigation approach to meet the needs of the City within the strictures of data quality needs and limited funding. With the generic QAPP and Site Addendum, Howard R. Green Company provides a balanced approach for agency review.

Howard R. Green Company considered the use of a number of alternative sampling and assessment approaches used on other projects, including mobile field laboratories and direct-push technology. However, in view of probable end use under IAC 137, fixed laboratory analyses and groundwater monitoring wells were required.

2.4 Principal User

The principle end user of Project information will be the City of Council Bluffs. Further reliance by others will be beyond the scope of the EPA Brownfields Assessment Cooperative Agreement.

The City will make primary use of the data to aid in decision-making relative to considering properties for redevelopment. The data will not be the sole nor final determinant in the positive or negative determination of feasibility of a property for redevelopment. It is anticipated that a Phase II ESA evaluation done for preliminary assessment and feasibility for a property will be used as the basis for potential secondary phases of investigation and subsequent remedial actions. Funding for subsequent investigation and remediation by the City or other entities could be external or federal programs.

3.0 SITE CHARACTERISTICS

The subject site is located within the SE ¼ of the NE ¼ of the SW ¼ of Section 36 Township 75 North, Range 44 West in Pottawattamie County, Iowa and is further located by latitude and longitude at 41°15' 30" North and 95° 51' 08" West.

The rectangular shaped parcel at 1103 S. 6th Street in the City of Council Bluffs contains 0.50 acre and is summarized from the property deeds as follows:

> Riddles Subdivision Lots 10 to 13 Block 15.

The rectangular shaped parcel at 1110 S. Main Street in the City of Council Bluffs contains 0.32 acre and is summarized from the property deed as follows:

> Riddles Subdivision Lot 3 Block 15 and the alley and the north 45.33 foot of lot 7 Block 15 and all of Lot 4 Block 15.

The rectangular shaped parcel at 1128 S. Main Street in the City of Council Bluffs contains 0.37 acre and is summarized from the property deed as follows:

> Riddles Subdivision Lots 5, 6, and Lot 7 except the north 45.33 foot Block 15 and all vacated alleys.

(See Figure 1 in Appendix B for the site location).

3.1 Phase I Environmental Site Assessment

The Cluster #1 site is located in the general industrial (I-2) area of the City of Council Bluffs. A ConAgra plant is adjacent to the subject site across Main Street to the east. Burlington Northern Santa Fe Railroad adjoins the subject site to the north, beyond the railroad are vacant industrial buildings. Vacant property is adjacent to the site to the west across South 6th Street. Various industrial and commercial buildings are adjacent to the subject site to the south across 12th Avenue.

The visual inspection of the property was conducted on July 12, 2006, and the overall cleanliness was good.

SMV Industries, previously located on the subject site at 1103 S. 6th Street, has EPA ID IAD984566034 and is listed as a small quantity RCRA generator. J & J Contracting, EPA ID IAD980633028, the adjacent property to the south across 12th Avenue, is also listed as a small quantity RCRA generator. There are five violation records reported at this site for recordkeeping, general and pre-transportation requirements. A RCRA SQG produces between 100 kg and 1,000 kg of hazardous waste per month.

Historical information for the site and surrounding area was based on review of historical aerial photographs provided by Historic Information Gatherers, historical topographic and Sanborn Maps provided by EDR, interviews of current owners and clients, and information obtained from historic city directory listings. The site was developed as D. Bradley and Company Farm Machinery in the late 1800s. In 1928, the site addressed 1110-1128 South Main Street was occupied by Penn Consumers Oil Company bulk

storage facility. A warehouse occupied the site at 1103 South 6th Street from 1891 to circa 1968.

The surrounding properties appear to have been historically used for industrial and commercial purposes. The property to the north was historically developed as the International Harvester Company of America. The properties to the west across South 6th Street were historically manufacturing facilities. Adjacent properties to the south appear to be commercial and industrial. A filling station was developed at 1202 South Main Street. The property to the east historically was developed as a passenger railroad depot in the early to mid-1900s.

4.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

The Phase II ESA was conducted on January 8 and 9, 2007. Four soil borings were advanced, each converted into permanent groundwater monitoring wells. Refer to Figure 2 in Appendix B for a Site Plan. Analytical reports are in Appendix C and soil boring logs in Appendix D.

4.1 Soil and Groundwater Assessment

Four RECs with the potential to impact the site were investigated for this Phase II ESA, the subject site which is the former location of a RCRA SQG and bulk petroleum storage, the former filling station located at 1202 South Main Street, properties located west of the subject property including the FMGP located near 7th Street and 11th Avenue and the former Giant Manufacturing, and the adjacent railroad and UST site to the north.

REC1: Subject Site--RCRA Small Quantity Generator/Bulk Petroleum Storage

Range 1 (<2 feet bgs) and Range 2 (>2 feet bgs) soils were investigated for REC1 with the collection of samples from BH1, BH2, and BH3. Samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Resource Conservation and Recovery Act (RCRA) metals, and TEH.

Range 1 Soil

Analytical results of the Range 1 soil samples identified five RCRA metals, three SVOCs, TEH-d and TEH as waste oil (TEH-wo). No VOCs were identified above the method detection limits (MDLs). None of the RCRA metals or SVOCs was found in a concentration exceeding a statewide standard. The TEH-d concentration in BH2 (6,860 mg/kg) exceeds the Tier 1 Look-Up Level of 3,800 mg/kg. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.5.4. The results of the Phase II ESA are in Table 1. Only contaminants with detectable concentrations are listed in the table. The Soil Contamination Map is in Figure 3 in Appendix B.

Table 1: Range 1 Soil – REC1 (mg/kg)

Analyte	BH1-R1 0-2'	BH2-R1 0-2'	Standard
Metals			***Statewide Standard***
Arsenic	7.02	NS*	19 (w/background)
Barium	225	NS	15,000
Chromium	15.7	NS	210
Lead	10.2	NS	400
Selenium	12.3	NS	390
SVOCs			
Acenaphthene	<0.1	3.69J**	3,400
Chrysene	<0.102	5.56J	310
Pyrene	<0.111	17.4	1,700
UST			***Tier 1 Look-Up Level***
TEH-Diesel	<10	**6,860**	3,800
TEH-Waste oil	<10	57,800	No Standard

*NS—Not sampled.
**J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the MDL. Concentrations within this range are estimated.

Range 2 Soil

Analytical results of the Range 2 soil samples identified five RCRA metals, two SVOCs and 10 VOCs with none exceeding a statewide standard. Concentrations of TEH-d were found in BH3 below the Tier 1 Look-Up Level. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.5.4. The results of the Phase II ESA are in Table 2. Only contaminants with detectable concentrations are listed in the table. The Soil Contamination Map is Figure 3 in Appendix B.

Table 2: Range 2 Soil – REC1 (mg/kg)

Analyte	BH3-R2 15'	FD-2*	Standard
Metals			***Statewide Standard***
Arsenic	7.31	5.65	19 (w/background)
Barium	261	226	15,000
Chromium	16.3	11.2	210
Lead	11.4	11.9	400
Selenium	15.1	14	390
SVOCs			
2-Methylnaphthalene	0.172J**	NS***	240
Naphthalene	0.131J	NS	1,100
VOCs			
n-Butylbenzene	6.14	NS	No Standard
sec-Butylbenzene	1.69	NS	No Standard
tert-Butylbenzene	1.97	NS	No Standard
Ethylbenzene	11.1	NS	7,600
Hexane	8.54	NS	4,600
Isopropylbenzene	2.54	NS	No Standard
n-Propylbenzene	8.06	NS	No Standard
1,2,4-Trimethylbenzene	27.4	NS	3,800
1,3,5-Trimethylbenzene	10.3	NS	3,800
Xylenes	14.3	NS	15,000
UST			***Tier 1 Look-Up Level***
Diesel	10.1	NS	3,800

* Blind duplicate of BH3 R2 15'
**J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the MDL. Concentrations within this range are estimated.
***NS-Not sampled.

Groundwater

Groundwater was investigated for REC1 with the collection of samples from MW1, MW2, and MW3. Samples were analyzed for VOCs, SVOC, dissolved RCRA metals, TEH, and total dissolved solids (TDS). The purpose of collecting TDS is to provide information on whether the groundwater beneath the site is a protected groundwater source. Per IAC 135, groundwater with a TDS concentration in excess of 2,500 mg/L is not considered protected.

Analytical results of the groundwater sample identified two RCRA metals, 10 SVOCs, and 18 VOCs. Both RCRA metals, arsenic (0.0174 mg/L) and barium (2.36 mg/L), exceeded their respective statewide standards of 0.01 mg/L and 2 mg/L. Of the SVOCs, benzo(a)anthracene (0.00093 mg/L) and bis(2-chloroethyl)ether (0.00312 mg/L) exceeded their respective statewide standards of 0.00024 mg/L and 0.00016 mg/L. Of the VOCs, 1,2,4-trimethylbenzene (0.959 mg/L), and 1,3,5-trimethylbenzene (0.36 mg/L) exceeded their statewide standard, both 0.35 mg/L. TEH-d was identified in MW2 (2.76 mg/L) and MW3 (3.72 mg/L), both in excess of the Tier 1 Look-Up Level of 1.2 mg/L.

TEH-wo was also identified in MW2 (2.9 mg/L) and MW3 (0.814 mg/L), both in excess of the Tier 1 Look-Up Level of 0.4 mg/L. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.5.4. The results of the Phase II ESA are in Table 3. Only contaminants with detectable concentrations are listed in the table. The Groundwater Contamination Map is Figure 4 in Appendix B.

Table 3: Groundwater – REC1 (mg/L)

Analyte	MW1	MW2	MW3	FD-1*	Standard
Metals					***Protected Groundwater Standard***
Arsenic	<0.001	NS**	**0.0171**	**0.0174**	0.01
Barium	0.085	NS	**2.34**	**2.36**	2
SVOCs					
Acenaphthene	<0.00068	0.00501J***	<0.00068	<0.00068	0.42
Benzo(a)anthracene	<0.0008	**0.000930J**	<0.0008	<0.0008	0.00024
Butyl benzyl phthalate	<0.00110	<0.0011	0.0116	0.0144	No Standard
Bis(2-chloroethyl)ether	<0.00087	<0.00087	**0.00312J**	<0.00087	0.00016
Di-n-butyl phthalate	0.00166J	0.00232J	0.00266J	0.00196J	0.7
Fluorene	<0.00076	0.00461J	<0.00076	<0.00076	0.28
2-Methylnapthalene	<0.00068	<0.00068	0.0144	0.0247	0.028
Naphthalene	<0.00073	0.00294J	0.0115	0.00205	0.1
Phenanthrene	<0.00073	0.00118J	<0.00073	<0.00073	No Standard
Pyrene	<0.00088	0.00189J	<0.00088	<0.00088	0.21
VOCs					
Acetone	<0.00462	<0.0231FM****	0.0121	0.0102	6.3
Benzene	<0.00016	<0.0008FM	0.00281	0.00285	0.005
n-Butylbenzene	<0.00009	0.00155 FM,J	0.0792	0.0814	No Standard
sec-Butylbenzene	<0.00012	0.00235FM,J	0.038	0.0394	No Standard
tert-Butylbenzene	<0.00014	<0.0007FM	0.0278	0.0299	No Standard
2-Chlorotoluene	<0.0002	0.00255FM,J	<0.0002	<0.0002	0.1
Ethylbenzene	<0.00018	<0.0009FM	0.899	0.96	0.7
Hexane	<0.00044	<0.0022FM	0.172	0.197	0.42
Isopropylbenzene	<0.00019	0.00245FM,J	0.0992	0.0993	No Standard
p-Isopropyltoluene	<0.00013	<0.00065FM	<0.00013	0.00313	No Standard
Naphthalene	<0.00035	0.00305FM,J	0.0293	0.0303	0.1
n-Propylbenzene	<0.00014	0.00210FM,J	0.327	0.329	No Standard
Toluene	<0.0001	<0.0005FM	0.00394	0.00397	1
1,1,2-Trichloroethane	<0.0003	<0.0015FM	0.00204	<0.0003	0.005
Trichloroethene	<0.00017	<0.00085FM	0.0002J	0.00048J	0.005
1,2,4-Trimethylbenzene	<0.00016	<0.0008FM	**0.936**	**0.959**	0.35

Analyte	MW1	MW2	MW3	FD-1*	Standard
1,3,5-Trimethylbenzene	<0.00014	<0.0007FM	**0.36**	**0.357**	0.35
Xylenes	<0.00017	<0.00085FM	0.881	0.898	10
UST					***Tier 1 Look-Up Level***
Diesel	<0.3	**2.76**	**2.61**	**3.72**	1.2
Waste Oil	<0.3	**2.9**	0.389	**0.814**	0.4
Total dissolved solids	1,140	860	1,140	890	2,500

* Blind duplicate of MW3
**NS—Not Sampled.
***J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the MDL. Concentrations within this range are estimated.
****FM—Elevated detection limits due to sample foaming.

REC2: Former Filling Station

Range 2 soil was investigated for REC2 with the collection of a sample from BH2. The sample was analyzed for VOCs, SVOCs, and TEH.

Range 2 Soil

Analytical results of the Range 2 soil sample identified seven VOCs, none above statewide standards. No SVOCs were found in concentrations exceeding the MDL. TEH-d and TEH-wo were both present in concentrations below the Tier 1 Look-Up Levels. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.3. The results of the Phase II ESA are tabulated below. Only contaminants with detectable concentrations are listed in the table. The Soil Contamination Map is Figure 3 in Appendix B.

Table 4: Range 2 Soil – REC2 (mg/kg)

Analyte	BH2-R2 15'	FD-1*	Standard
			Statewide Standard
VOCs			
n-Butylbenzene	0.0112	0.0128	No Standard
sec-Butylbenzene	0.0261	0.0297	No Standard
Isopropylbenzene	0.0134	0.0106	No Standard
n-Propylbenzene	0.00604	0.00621	No Standard
Toluene	0.00864	0.00816	6,100
1,2,4-Trimethylbenzene	<0.00532	0.00697	3,800
Xylenes	<0.016	0.0208	15,000
UST			***Tier 1 Look-Up Level***
Diesel	371	101	3,800
Waste Oil	497	130	No Standard

* Blind duplicate of BH2 R2 15'

Groundwater

Groundwater was investigated for REC2 with the collection of a sample from MW2. The sample was analyzed for VOCs, SVOCs, TEH, and total dissolved solids (TDS).

Analytical results of the groundwater sample identified seven SVOCs and six VOCs. Of the SVOCs only benzo(a)anthracene (0.00093 mg/L) exceeded its statewide standard of 0.00024 mg/L. TEH-d was identified in MW2 (2.76 mg/L) in excess of the Tier 1 Look-Up Level of 1.2 mg/L. TEH-wo was also identified in MW2 (2.9 mg/L) in excess of the Tier 1 Look-Up Level of 0.4 mg/L. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.3. The results of the Phase II ESA are tabulated below. Only contaminants with detectable concentrations are listed in the table. The Groundwater Contamination Map is Figure 4 in Appendix B.

Table 5: Groundwater – REC2 (mg/L)

Analyte	MW2	Standard
SVOCs		***Protected Groundwater Standard***
Acenaphthene	0.00501J*	0.42
Benzo(a)anthracene	**0.000930J**	0.00024
Di-n-butyl phthalate	0.00232J	0.7
Fluorene	0.00461J	0.28
Naphthalene	0.00294J	0.1
Phenanthrene	0.00118J	No Standard
Pyrene	0.00189J	0.21
VOCs		
n-Butylbenzene	0.00155 FM**,J	No Standard
sec-Butylbenzene	0.00235FM,J	No Standard
2-Chlorotoluene	0.00255FM,J	0.1
Isopropylbenzene	0.00245FM,J	No Standard
Naphthalene	0.00305FM,J	0.1
n-Propylbenzene	0.00210FM,J	No Standard
UST		***Tier 1 Look-Up Level***
Diesel	**2.76**	1.2
Waste Oil	**2.9**	0.4
Total dissolved solids	860	2,500

*J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
**FM—Elevated detection limits due to sample foaming.

REC3: Former Manufactured Gas Plant and Giant Manufacturing Facility

Range 2 Soil

Range 2 soil was investigated for REC3 with the collection of a sample from BH3. The sample was analyzed for VOCs, SVOCs, RCRA metals, and TEH.

Analytical results of the Range 2 soil sample identified five RCRA metals, two SVOCs, and 10 VOCs, with none exceeding a statewide standard. TEH-d was also identified in the sample below the Tier 1 Look-Up Level. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.3. The results of the Phase II ESA are tabulated below. Only contaminants with detectable concentrations are listed in the table. The Soil Contamination Map is Figure 3 in Appendix B.

Table 6: Range 2 Soil – REC3 (mg/kg)

Analyte	BH3-R2 15'	FD-2*	Standard
Metals			***Statewide Standard***
Arsenic	7.31	5.65	19 (w/background)
Barium	261	226	15,000
Chromium	16.3	11.2	210
Lead	11.4	11.9	400
Selenium	15.1	14	390
SVOCs			
2-Methylnaphthalene	0.172J**	NS***	240
Naphthalene	0.131J	NS	1,100
VOCs			
n-Butylbenzene	6.14	NS	No Standard
sec-Butylbenzene	1.69	NS	No Standard
tert-Butylbenzene	1.97	NS	No Standard
Ethylbenzene	11.1	NS	7,600
Hexane	8.54	NS	4,600
Isopropylbenzene	2.54	NS	No Standard
n-Propylbenzene	8.06	NS	No Standard
1,2,4-Trimethylbenzene	27.4	NS	3,800
1,3,5-Trimethylbenzene	10.3	NS	3,800
Xylenes	14.3	NS	15,000
UST			***Tier 1 Look-Up Level***
Diesel	10.1	NS	3,800

* Blind duplicate of BH3 R2 15'

**J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

***NS—Not sampled.

Groundwater

Groundwater was investigated for REC3 with the collection of a sample from MW3. The sample was analyzed for VOCs, SVOC, dissolved RCRA metals, TEH, and TDS.

Analytical results of the groundwater sample identified two RCRA metals, five SVOCs, and 17 VOCs. Both RCRA metals, arsenic (0.0174 mg/L) and barium (2.36 mg/L), exceeded their respective statewide standards of 0.01 mg/L and 2 mg/L. Of the SVOCs, benzo(a)anthracene (0.00093 mg/L), and bis(2-chloroethyl)ether (0.00312 mg/L) exceeded their respective statewide standards of 0.00024 mg/L and 0.00016 mg/L Of the VOCs, 1,2,4-trimethylbenzene (0.959 mg/L), and 1,3,5-trimethylbenzene (0.36) exceeded their statewide standard, both 0.35 mg/L. TEH-d was identified in MW3 (3.72 mg/L) in excess of the Tier 1 Look-Up Level of 1.2 mg/L. TEH-wo was also identified in MW3 (0.814 mg/L) in excess of the Tier 1 Look-Up Level of 0.4 mg/L. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.3. The results of the Phase II ESA are tabulated below. Only contaminants with detectable concentrations are listed in the table. The Groundwater Contamination Map is Figure 4 in Appendix B.

Table 7: Groundwater – REC3 (mg/L)

Analyte	MW3	FD-1*	Standard
Metals			***Protected Groundwater Standard***
Arsenic	**0.0171**	**0.0174**	0.01
Barium	**2.34**	**2.36**	2
SVOCs			
Butyl benzyl phthalate	0.0116	0.0144	No Standard
Bis(2-chloroethyl)ether	**0.00312J***	<0.00087	0.00016
Di-n-butyl phthalate	0.00266J	0.00196J	0.7
2-Methylnapthalene	0.0144	0.0247	0.028
Naphthalene	0.0115	0.00205	0.1
VOCs			
Acetone	0.0121	0.0102	6.3
Benzene	0.00281	0.00285	0.005
n-Butylbenzene	0.0792	0.0814	No Standard
sec-Butylbenzene	0.038	0.0394	No Standard
tert-Butylbenzene	0.0278	0.0299	No Standard
Ethylbenzene	0.899	0.96	0.7
Hexane	0.172	0.197	0.42
Isopropylbenzene	0.0992	0.0993	No Standard
p-Isopropyltoluene	<0.00013	0.00313	No Standard
Naphthalene	0.0293	0.0303	0.1
n-Propylbenzene	0.327	0.329	No Standard
Toluene	0.00394	0.00397	1
1,1,2-Trichloroethane	0.00204	<0.0003	0.005
Trichloroethene	0.0002J	0.00048J	0.005
1,2,4-Trimethylbenzene	**0.936**	**0.959**	0.35

Analyte	MW3	FD-1*	Standard
1,3,5-Trimethylbenzene	**0.36**	**0.357**	0.35
Xylenes	0.881	0.898	10
UST			***Tier 1 Look-Up Level***
Diesel	**2.61**	**3.72**	1.2
Waste Oil	0.389	**0.814**	0.4
Total dissolved solids	1,140	890	2,500

* Blind duplicate of MW3
**J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

REC4: Adjacent Railroad and UST site

Range 1 and Range 2 soils were investigated for REC4 with the collection of samples from BH4. The samples were analyzed for VOCs, SVOCs, and TEH.

Range 1 Soil

Analytical results of the Range 1 soil sample identified six RCRA metals and two SVOCs. No organic vapors were detected, so a sample was not submitted for VOC analysis. None of the analytes detected exceeded a statewide standard. A TEH sample was not collected in Range 1 soil. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.3. The results of the Phase II ESA are tabulated below. Only contaminants with detectable concentrations are listed in the table. The Soil Contamination Map is Figure 3 in Appendix B.

Table 8: Range 1 Soil – REC4 (mg/kg)

Analyte	BH4-R1 0-2'	Standard
Metals		***Statewide Standard***
Arsenic	8.57	19 (w/background)
Barium	252	15,000
Chromium	16.4	210
Lead	120	400
Mercury	0.0609	23
Selenium	12.9	390
SVOCs		
Benzo(g,h,i)perylene	0.120J*	No Standard
Fluoranthene	0.121J	2,300
Indeno(1,2,3-c,d)pyrene	0.104J	3.1
Pyrene	0.184J	1,700

*J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

Range 2 Soil

Analytical results of the Range 2 soil sample did not find any indications of contamination. There were no SVOCs in concentrations exceeding the MDLs. No organic vapors were detected, so a sample was not submitted for VOC analysis. The concentration of TEH in the sample was below the MDL. A RCRA metals sample was not collected in Range 2 soil. No further investigation is required for Range 2 soil at REC4. The Soil Contamination Map is Figure 3 in Appendix B.

Groundwater

Groundwater was investigated for REC4 with the collection of a sample from MW4. The sample was analyzed for VOCs, SVOC, dissolved RCRA metals, TEH, and TDS.

Analytical results of the groundwater sample identified one RCRA metal, eight SVOCs, and 10 VOCs. The RCRA metal, barium, did not exceed its statewide standard. Of the SVOCs, benzo(a)anthracene (0.00085 mg/L), benzo(b)fluoranthene (0.00195 mg/L), benzo(a)pyrene (0.00123 mg/kg), and indeno(1,2,3-c,d)pyrene (0.00096 mg/L) exceeded statewide standards. The statewide standard for benzo(a)anthracene, benzo(b)fluoranthene and indeno(1,2,3-c,d)pyrene is 0.00024 mg/L. The statewide standard for benzo(a)pyrene is 0.0002 mg/L. None of the VOCs exceeded a statewide standard. No TEH is identified in the sample in excess of the MDL. Concentrations of contaminants were further evaluated against the site-specific standard in Section 4.3. The results of the Phase II ESA are tabulated below. Only contaminants with detectable concentrations are listed in the table. The Groundwater Contamination Map is Figure 4 in Appendix B.

Table 9: Groundwater – REC4 (mg/L)

Analyte	MW-4	Standard
Metals		***Protected Groundwater Standard***
Barium	0.0976	2
SVOCs		
Benzo(a)anthracene	**0.00085J***	0.00024
Benzo(b)fluoranthene	**0.00105J**	0.00024
Benzo(a)pyrene	**0.00123J**	0.0002
Chrysene	0.00109J	0.024
Di-n-butyl phthalate	0.00179J	0.7
Fluoranthene	0.00107J	0.28
Indeno(1,2,3-cd)pyrene	**0.00096J**	0.00024
Pyrene	0.00125J	0.21
VOCs		
n-Butylbenzene	0.00021J	No Standard
Chloromethane	0.00028J	0.03
2-Chlorotoluene	0.00061J	0.1
Ethylbenzene	0.00102	0.7
Isopropylbenzene	0.00022J	No Standard
p-Isopropyltoluene	0.00029J	No Standard

Analyte	MW-4	Standard
n-Propylbenzene	0.0005J	No Standard
1,2,4-Trimethylbenzene	0.00151	0.35
1,3,5-Trimethylbenzene	0.00079J	0.35
Xylenes	0.00156J	10
UST		***Tier 1 Look-Up Level***
Total dissolved solids	870	2500

*J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

4.2 Aquifer Testing and Groundwater Flow Direction

Aquifer tests were performed on January 9 on monitoring wells MW1, MW2, and MW3. The tests were conducted by removing a volume of water with a disposable bailer, then monitoring the recovery with a Hermit Data Logger. The computer model AQTESOLV© was used to calculated the hydraulic conductivities of the wells from the data collected. The hydraulic conductivities for MW1, MW2, and MW3 were calculated to be 0.09643, 0.09476, and 0.3882 meters per day (m/day), respectively. IDNR considers groundwater sources with a hydraulic conductivity less than 0.44 m/day to be nonprotected. Hydraulic conductivity calculations are in Appendix E.

Groundwater flow direction was determined to be to the southwest. A Groundwater Contour Map is Figure 3 in Appendix B.

4.3 Risk Evaluations

To evaluate overall compliance of soil and groundwater for an REC two steps are taken. For hazardous contaminants, the cumulative concentrations of contaminants in soil or groundwater must meet standards limiting increased cancer risk and increased noncancer health risk. This is done using the Cumulative Risk Calculator on the IDNR website. The maximum contaminant concentration for each REC is initially used to calculate the increased risk. If this results in an unacceptable increased risk, the calculations are refined to use the 95% Upper Confidence Limit (UL_{95}) for each REC. For petroleum contaminants, the contaminant in the specific media is compared to the Iowa Tier 1 Look-Up table for the relevant exposure pathway. Each REC is evaluated for increased risk below.

REC1: Subject Site--RCRA Small Quantity Generator/Bulk Petroleum Storage

The soil borings/groundwater monitoring wells evaluated for this REC include BH1/MW1, BH2/MW2, and BH3/MW3.

Range 1 Soil

Hazardous contaminants in Range 1 soil for REC1 were evaluated for increased health risks. According to the Cumulative Risk Calculator, there is no increased cancer risk for residential exposure to the contaminants in this soil. The maximum noncancer health risk for a target organ is 0.14 which is less than the allowable increased risk of 1. No further action is recommended for the hazardous contaminants found for REC1. Risk calculations are in Appendix F.

The TEH-d concentration in Range 1 soil (6,860 mg/kg) for REC1 exceeds the Tier 1 Look-Up Level of 3,800 mg/kg for the soil leaching to groundwater exposure pathway. Further investigation is needed to determine the extent of the contamination.

Range 2 Soil

Hazardous contaminants in Range 2 soil for REC1 were evaluated for increased health risks. According to the Cumulative Risk Calculator, there is no increased cancer risk for residential exposure to the contaminants in this soil. The maximum noncancer health risk for a target organ is 0.17 which is less than the allowable increased risk of 1. No further action is recommended for the hazardous contaminants found for REC1. Risk calculations are in Appendix F.

The TEH-d concentration in Range 2 soil for REC1 is well below the Tier 1 Look-Up Level of 3,800 mg/kg. No further action is recommended for petroleum hydrocarbons in Range 2 soil.

Groundwater

Hazardous contaminants in groundwater were not evaluated for increased health risks. According to the Cumulative Risk Calculator guidance:

- Groundwater exposure should be included for a site resident or site worker only if their drinking water is obtained from, or may be obtained from, an on-site well.
- In situations where on-site use of impacted groundwater is precluded, groundwater should not be included in cumulative risk calculations.
- The construction worker scenario does not include exposure to groundwater.

Instead of using the Risk Calculator, each contaminant exceeding a statewide standard was compared against the statewide standard for *nonprotected* groundwater since aquifer testing indicated the groundwater at the site did not meet protected groundwater criteria. None of the contaminants exceed a nonprotected groundwater standard. The contaminant concentrations are tabulated below along with the nonprotected groundwater standard. No further action is recommended for hazardous contaminants in groundwater at REC1.

Table 10: Groundwater – REC1 (mg/L) Using Nonprotected Groundwater Standard

Analyte	MW1	MW2	MW3	FD-1*	Standard
Metals					***Nonprotected Groundwater Standard***
Arsenic	<0.001	NS**	0.0171	0.0174	0.05
Barium	0.085	NS	2.34	2.36	10
SVOCs					
Benzo(a)anthracene	<0.0008	0.000930J***	<0.0008	<0.0008	0.0048
Bis(2-chloroethyl)ether	<0.00087	<0.00087	0.00312J	<0.00087	0.0032
VOCs					
1,2,4-Trimethylbenzene	<0.00016	<0.0008FM****	0.936	0.959	1.8
1,3,5-Trimethylbenzene	<0.00014	<0.0007FM	0.36	0.357	1.8

* Blind duplicate of MW3
**NS—Not sampled
***J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
****FM—Elevated detection limits due to sample foaming.

The TEH-d concentration in groundwater for REC1 exceeded the Tier 1 Look-Up Level of 1.2 mg/L in two wells for actual groundwater ingestion. Due the aquifer being nonprotected, the Tier 1 Look-Up Level for potential groundwater ingestion, 75 mg/L may be used instead. The TEH-wo concentration also exceeded the Tier 1 of 0.4 mg/L in one well for actual groundwater ingestion. However, due to the aquifer being nonprotected, the Tier 1 Look-Up Level may be increased to 40 mg/L. No further action is recommended for petroleum hydrocarbons in groundwater at REC2.

REC2: Former Filling Station
The soil boring/groundwater monitoring well evaluated for this REC was BH2/MW2.

Range 1 Soil
Range 1 soil was not a concern for REC2 and was not used to evaluate this REC.

Range 2 Soil
Hazardous contaminants in Range 2 soil for REC2 were evaluated for increased health risks. According to the Cumulative Risk Calculator, there is no increased cancer risk or noncancer health risk for residential exposure to the contaminants in this soil. No further action is recommended for the hazardous contaminants found for REC1. Risk calculations are in Appendix F.

The TEH-d concentration in Range 2 soil for REC2 is well below the Tier 1 Look-Up Level of 3,800 mg/kg. There is no Tier 1 Look-Up Level for TEH-wo in soil. No further action is recommended for petroleum hydrocarbons in Range 2 soil.

Groundwater

Instead of using the Risk Calculator, each contaminant exceeding a statewide standard was compared against the statewide standard for *nonprotected* groundwater since aquifer testing indicated the groundwater at the site did not meet protected groundwater criteria. None of the contaminants exceed a nonprotected groundwater standard. The contaminant concentrations are tabulated below along with the nonprotected groundwater standard. No further action is recommended for hazardous contaminants in groundwater at REC2.

Table 11: Groundwater – REC2 (mg/L) Using Nonprotected Groundwater Standard

Analyte	MW1	MW2	MW3	FD-1*	Standard
					Nonprotected Groundwater Standard
SVOCs					
Benzo(a)anthracene	<0.0008	0.000930J**	<0.0008	<0.0008	0.0048

* Blind duplicate of MW3
**J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

The TEH-d concentration in groundwater for REC2 exceeded the Tier 1 Look-Up Level of 1.2 mg/L for actual groundwater ingestion. Due the aquifer being nonprotected, the Tier 1 Look-Up Level for potential groundwater ingestion, 75 mg/L may be used instead. The TEH-wo concentration also exceeded the Tier 1 of 0.4 mg/L for actual groundwater ingestion. However, due to the aquifer being nonprotected, the Tier 1 Look-Up Level may be increased to 40 mg/L. No further action is recommended for petroleum hydrocarbons in groundwater at REC2.

REC3: Former Manufactured Gas Plant and Giant Manufacturing

The soil boring/groundwater monitoring well evaluated for this REC was BH3/MW3.

Range 1 Soil

Range 1 soil was not a concern for REC3 and was not used to evaluate this REC.

Range 2 Soil

Hazardous contaminants in Range 2 soil for REC3 were evaluated for increased health risks. According to the Cumulative Risk Calculator, there is no increased cancer risk for residential exposure to the contaminants in this soil. The maximum noncancer health risk for a target organ is 0.17 which is less than the allowable increased risk of 1. No further action is recommended for the hazardous contaminants found for REC3. Risk calculations are in Appendix F.

The TEH-d concentration in Range 2 soil for REC3 is well below the Tier 1 Look-Up Level of 3,800 mg/kg. No further action is recommended for petroleum hydrocarbons in Range 2 soil.

Groundwater

Instead of using the Risk Calculator, each contaminant exceeding a statewide standard was compared against the statewide standard for *nonprotected* groundwater since aquifer testing indicated the groundwater at the site did not meet protected groundwater criteria. None of the contaminants exceed a nonprotected groundwater standard. The contaminant concentrations are tabulated below along with the nonprotected groundwater standard. No further action is recommended for hazardous contaminants in groundwater at REC3.

Table 12: Groundwater – REC3 (mg/L) Using Nonprotected Groundwater Standard

Analyte	MW3	FD-1*	Standard
Metals			***Nonprotected Groundwater Standard***
Arsenic	0.0171	0.0174	0.05
Barium	2.34	2.36	10
SVOCs			
Bis(2-chloroethyl)ether	0.00312J	<0.00087	0.0032
VOCs			
1,2,4-Trimethylbenzene	0.936	0.959	1.8
1,3,5-Trimethylbenzene	0.36	0.357	1.8

* Blind duplicate of MW3

**J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

The TEH-d concentration in groundwater for REC3 exceeded the Tier 1 Look-Up Level of 1.2 mg/L for actual groundwater ingestion. Due the aquifer being nonprotected, the Tier 1 Look-Up Level for potential groundwater ingestion, 75 mg/L may be used instead. The TEH-wo concentration also exceeded the Tier 1 of 0.4 mg/L for actual groundwater ingestion. However, due to the aquifer being nonprotected, the Tier 1 Look-Up Level may be increased to 40 mg/L. No further action is recommended for petroleum hydrocarbons in groundwater at REC3.

REC4: Adjacent Railroad and UST site

The soil boring/groundwater monitoring well evaluated for this REC was BH4/MW4.

Range 1 Soil

Hazardous contaminants in Range 1 soil for REC4 were evaluated for increased health risks. According to the Cumulative Risk Calculator, there is no increased cancer risk for residential exposure to the contaminants in this soil. The maximum noncancer health risk for a target organ is 0.43 which is less than the allowable increased risk of 1. No further action is recommended for the hazardous contaminants found for REC4. Risk calculations are in Appendix F.

TEH was not a concern in Range 1 soil for REC4 and was not analyzed.

Range 2 Soil

No contamination was identified in Range 2 soil. No further action is recommended for the hazardous contaminants found for REC4

Groundwater

Instead of using the Risk Calculator, each contaminant exceeding a statewide standard was compared against the statewide standard for *nonprotected* groundwater since aquifer testing indicated the groundwater at the site did not meet protected groundwater criteria. Benzo(a)pyrene was the only contaminant to exceed its nonprotected groundwater standard. The contaminant concentrations are tabulated below along with the nonprotected groundwater standard. Further investigation is recommended for benzo(a)pyrene contamination in groundwater at REC4.

Table 13: Groundwater – REC4 (mg/L) Using Nonprotected Groundwater Standard

Analyte	MW-4	Standard
		Statewide Standard for Nonprotected Groundwater
SVOCs		
Benzo(a)anthracene	0.00085J*	0.0048
Benzo(b)fluoranthene	0.00105J	0.0048
Benzo(a)pyrene	**0.00123J**	0.001
Indeno(1,2,3-cd)pyrene	0.00096J	0.0048

*J—Analyte detected at a level less than the Report Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

TEH was not identified in groundwater at REC4.

5.0 FINDINGS AND CONCLUSIONS

The Phase II ESA identified limited contamination in Range 1 soil from petroleum hydrocarbons. The TEH-d concentration in Range 1 soil at the sample collected from BH2 for REC1 exceeds the Tier 1 Look-Up Level for the soil leaching to groundwater exposure pathway. No contamination from hazardous substances was identified in Range 1 soil in excess of site-specific standards.

No petroleum contamination was identified in Range 2 soil in excess of Tier 1 Look-Up Levels. No contamination from hazardous substances was identified in Range 2 soil in excess of site-specific standards.

Petroleum contamination was identified in two of the four groundwater samples collected, but does not exceed the Tier 1 Look-Up Level for nonprotected groundwater. Benzo(a)pyrene was the only hazardous contaminant to exceed the statewide standard for nonprotected groundwater. It was found in MW4 for REC4.

Refer to the Site Map, Figure 2, in Appendix B. The Phase II ESA findings and conclusions are summarized in the Table 14.

Table 14: Findings and Conclusions

REC	Description	Matrix	Detected	Exceeds Applicable Standards
1	RCRA SQG/Bulk Petroleum Storage	Range 1 Soil	Metals, SVOCs, TEH	TEH-d
		Range 2 Soil	Metals, SVOCs, VOCs, TEH	None
		Groundwater	Metals, SVOCs, VOCs, TEH	None
2	Former Filling Station	Range 2 Soil	VOCs, TEH	None
		Groundwater	SVOCs, VOCs, TEH	None
3	FMGP/Giant Manufacturing	Range 2 Soil	Metals, SVOCs, VOCs, TEH	None
		Groundwater	Metal, SVOCs, VOCs, TEH	None
4	Adjacent Railroad/UST site	Range 1 Soil	Metals, SVOCs	None
		Range 1 Soil	None	None
		Groundwater	Metals, SVOCs, VOCs	Benzo(a)pyrene

6.0 RECOMMENDATIONS

Additional investigation in Range 1 soil is needed in the vicinity of BH2. The concentration of TEH-d exceeds the Tier 1 Look-Up Level for the soil leaching to groundwater exposure pathway.

Additional investigation of the benzo(a)pyrene contamination in groundwater in the vicinity of MW4 is needed. Due to the apparent groundwater flow direction to the southwest, the benzo(a)pyrene is likely originating off site in the upgradient direction.

7.0 DATA VALIDATION

Validation of the data for Cluster #1 is included below. Although some irregularities were identified, the data is considered to be valid for the purpose intended.

7.1 Representativeness

All samples were collected in such a manner and at locations specified in the Site Addendum to accurately reflect the contaminant concentrations in the media from which they were taken at the time of sampling. Sample locations were biased to focus efforts on areas of the most likely contaminant impact.

Representativeness of the data was partially ensured by avoiding cross-contamination, adherence to standard sample handling and analysis procedures and use of proper chain-of-custody and documentation procedures. Trichloroethene (TCE) was identified in small concentrations in the trip blank. Di-n-butyl phthalate, acetone, chloroform, methyl *tert*-butyl ether, and TCE were identified in small concentrations in the equipment blank. This will not affect the validity of the conclusions since none of these contaminants exceeded a standard or were contaminants of concern at the site. Di-n-butyl phthalate is often associated with materials in the disposable sampling equipment. Chloroform is a common laboratory contaminant.

7.2 Comparability

In order that one set of data may be compared with another, all analyses were performed by accepted EPA or state methods, and all analytical results will be reported in similar concentration units and format.

7.3 Completeness

In order for a set of data to be utilized with confidence to make a decision, the data must be complete. The sampling design for Cluster #1 included collecting samples from the four RECs most likely to impact the site. One hundred percent of the samples specified in the approved Site Addendum were collected.

7.4 Sensitivity

Detection and quantification limits for sample data must be below the action levels specified in the IAC 135 Tier 1 Look-Up Table and the statewide and nonresidential standards as calculated according to IAC 137. The MDL for indeno(1,2,3-c,d)pyrene in soil sample BH2-R1 0-2' was the only incident identified with an MDL exceeding the statewide standard. The MDL was 3.35 mg/kg in this sample and the statewide standard for indeno(1,2,3-c,d)pyrene is 3.1 mg/kg.

7.5 Precision

Precision is a measure of the variability of a measurement system. Precision is typically an estimate by means of duplicate and replicate measurements and is expressed in terms of relative percent difference (RPD). If the RPD is greater than 35% for soils and 20% for aqueous samples, corrective action procedures will be implemented. RPD is calculated as follows:

$$RPD = \left[\frac{2x(X_1 - X_2)}{(X_1 + X_2)}\right] x100$$

Where: X_1 = analyzed concentration in the samples

X_2 = analyzed concentration in the duplicate

The RPD of field duplicates for this Phase II ESA are tabulated below

Table 15: Relative Percent Difference Calculations--Soil

Location	Contaminant	Sample Concentration	Duplicate Concentration	RPD
BH2-R2-15'	Pyrene	<0.116	0.116	0.0
	n-Butylbenzene	0.0112	0.0128	13.3
	sec-Butylbenzene	0.0261	0.0297	12.9
	Isopropylbenzene	0.0134	0.0106	23.3
	n-Propylbenzene	0.00604	0.00621	2.8
	Toluene	0.00864	0.00816	5.7
	1,2,4-Trimethylbenzene	<0.00532	0.00697	26.9
	Xylenes	<0.016	0.0208	**65.0**
	TEH-d	371	101	**114.4**
	TEH-wo	497	130	**117.1**
BH3-R2-15'	Arsenic	7.31	5.65	25.6
	Barium	261	226	14.4
	Chromium	16.3	11.2	**37.1**
	Lead	11.4	11.9	4.3
	Selenium	15.1	14.0	7.6

Table 16: Relative Percent Difference Calculations--Groundwater

Location	Contaminant	Sample Concentration	Duplicate Concentration	RPD
MW3	Arsenic	0.171	0.174	1.7
	Barium	2.34	2.36	0.9
	Butyl benzyl phthalate	0.0116	0.0144	**21.5**
	Bis(2-chloroethyl)ether	0.00312	<0.00087	**112.8**
	Di-n-butylphthalate	0.00266	0.00196	**30.3**
	2-Methylnaphthalene	0.0144	0.0247	**52.7**
	Naphthalene	0.00294	0.0205	**56.3**
	Acetone	0.0121	0.0102	17.0
	Benzene	0.00281	0.00285	1.4
	n-Butylbenzene	0.0792	0.0814	2.7
	sec-Butylbenzene	0.038	0.0394	3.6
	tert-Butylbenzene	0.0278	0.0299	7.3
	Chloromethane	<0.0002	0.00032	**46.2**
	Ethylbenzene	0.899	0.96	6.6
	Hexane	0.172	0.197	13.6
	Isopropylbenzene	0.0992	0.0993	0.1

Location	Contaminant	Sample Concentration	Duplicate Concentration	RPD
	p-Isopropyltoluene	<0.00013	0.00313	**184.0**
	Naphthalene	0.0293	0.0303	3.4
	n-Propylbenzene	0.327	0.329	0.6
	Toluene	0.00394	0.00397	0.8
	1,1,2-Trichloroethane	0.00204	<0.0003	**148.7**
	Trichloroethene	0.0002	0.00048	**82.4**
	1,2,4-Trimethylbenzene	0.936	0.959	2.4
	1,3,5-Trimethylbenzene	0.36	0.357	0.8
	Xylenes	0.881	0.898	1.9
	TEH-d	2.76	3.72	**36.1**
	TEH-wo	2.9	0.814	**70.7**

7.6 Accuracy

Field blanks may be used to evaluate the purity of sample containers and chemical preservatives and will be collected as directed by the HRG Project Manager. In most cases, one field blank per sampling event will be sufficient. No field blanks were collected for this Phase II ESA. For future work, field blanks will be included in the QC samples.

APPENDIX A

Site Addendum

Region 7 Brownfields Program
Site Addendum
for the Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs November 1998 (Updated July 2005)

Project Information:

Site Name: City of Council Bluffs South Main Brownfields Area – Cluster #1, Pottawattamie County Development Corporation Properties	**City:** Council Bluffs **State:** Iowa
EPA Project Manager: Mr. Brad Vann	**Contractor Project Manager:** Cynthia Quast, P.E.
Approved By: Cynthia L Quast 9/29/2006 **Title:** Cynthia Quast, P.E. HRG Project Manager **Date:**	**Prepared For:** EPA Region 7 Brownfields Division
Approved By: **Title:** Mr. Don Gross City of Council Bluffs Community Development Director **Date:**	**Prepared By:** Julie Oriano/ Cynthia Quast, P.E. **Date:** September 7, 2006
Approved By: Todd Knause 9-28-06 **Title:** Todd Knause HRG QA/QC Reviewer **Date:**	
Approved By: **Title:** Brad Vann EPA Region 7 Project Manager **Date:**	**Contractor:** Howard R. Green Company
Approved By: **Title:** Diane Harris EPA Region 7 QA Coordinator **Date:**	**Project Number:** 728500J

1.0 Project Management:

1.1 Distribution List

EPA--Region 7:

_____
Brad Vann / EPA Project Manager

_____
Diane Harris / EPA Region 7 QA Coordinator

Howard R. Green: Cynthia L Quast
Cynthia Quast, P.E./Project Manager

1.2 Project/Task Organization

Project personnel and affiliations are provided below. Specific Responsibilities are as assigned in the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs November 1998 (Updated July 2005).**

EPA Region 7
Mr. Brad Vann – Project Manager, EPA Region 7

Contractor / Brownfields Assessment Program
Ms. Cynthia Quast, P.E.- Project Manager, Howard R. Green Company
Ms. Cynthia Quast, P.E.- Contract Administrator, Howard R. Green Company
Mr. Todd Knauss - Quality Assurance Manager, Howard R. Green Company
Ms. Julie Oriano - Technical Staff, Howard R. Green Company

Team Subcontractors / Brownfields Assessment Program
Drilling Subcontractor, to be determined at a later date
Ms. Shawn Hayes – Project Manager, Analytical Testing Laboratory Subcontractor, TestAmerica Inc.

1.3 Problem Definition/Background:

Description: This site-specific Quality Assurance Project Plan form is prepared as an addendum to the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs November 1998 (Updated July 2005),** and contains site-specific data quality objectives for the sampling activities described herein. Details on the problem definition and site background information are provided in Attachment 1.3.

☒ Description attached (Attachment 1.3)
☐ Description in referenced report: _____ _____
Title **Date**

1.4 Project/Task Description:

☐ CERCLA PA ☐ CERCLA SI ☒ Brownfields Assessment
☐ Other (description attached): ☐ Pre-CERCLIS Site Screening ☐ Removal Assessment

Schedule: Field work is scheduled for September/October 2006 (Attachment 1.4)
☐ Description in referenced report: _____ _____
Title Date

1.5 Quality Objectives and Criteria for Measurement Data (QAPP Section 2.5):

a. Accuracy: ☐
b. Precision: ☐
c. Representativeness: ☐
d. Completeness*: ☐
e. Comparability: ☐

Refer to Generic Site Specific Addendum for South Main Brownfields Area, Council Bluffs Iowa, September 2006

Other Description:

*A completeness goal of 100 percent has been established for this project. However, if the completeness goal is not met, EPA may still be able to make site decisions based on any or all of the remaining validated data.

1.6 Special Training/Certification Requirements (QAPP Section 2.7):

☒ OSHA 1910
☐ Special Equipment/Instrument Operator (describe below):
☐ Other (describe below):

1.7 Documentation and Records (QAPP Section 2.8):

☒ Field Sheets ☐ Site Log ☐ Trip Report ☒ Site Maps ☐ Video
☒ Chain of Custody ☒ Health and Safety Plan ☐ Letter Report ☒ Photos

☒ Sample documentation will follow EPA Region 7 SOP 2420.5D.

☐ Other: Analytical information will be handled according to procedures identified in Table 2.

2.0 Measurement and Data Acquisition:

2.1 Sampling Process Design (QAPP Section 3.1):

☐ Random Sampling ☐ Transect Sampling ☒ Biased/Judgmental Sampling ☐ Stratified Random Sampling
☐ Search Sampling ☐ Systematic Grid ☐ Systematic Random Sampling ☐ Definitive Sampling
☐ Screening w/o Definitive Confirmation ☐ Screening w/ Definitive Confirmation
☒ **Soil Sampling Map (Attachment 2.1 - Figure 1)**
☒ **Groundwater Sampling Map (Attachment 2.1 - Figure 2)**

The proposed scheme for soil and groundwater sampling will be biased/judgmental, with fixed laboratory analysis. The investigation will involve soil and groundwater sampling at the property boundaries to determine impact from off site recognized environmental conditions, and at the center of the property to determine impact from any on site activities. Four monitoring wells will be installed on the subject property. Three of the wells will be installed adjacent to the property boundaries on the north, west, and south boundaries of the site, and one monitoring well will be installed near the former SMV Industries building on the east central portion of the site. See Figures 1 and 2 in Attachment 2.1 for additional information and sample locations. The proposed number of samples is a balance between cost and coverage and represents a reasonable attempt to meet the investigation objectives while staying within the budget constraints of a Brownfields Assessment project (see Tables 1 & 2 in Attachment 2.1).

Sample Summary Location	Matrix	# of Samples*	Analysis
East center of property	Soil Groundwater	1 soil 1 groundwater	VOCs, SVOCs, RCRA Metals, TEH, VOCs, SVOCs, RCRA Metals, TEH, TDS
West property boundary	Soil Groundwater	1 soil 1 groundwater	VOCs, SVOCs, RCRA Metals, TEH VOCs, SVOCs, RCRA Metals, TEH, TDS
South property boundary – western area	Soil Groundwater	2 soil 1 groundwater	VOCs, SVOCs, TEH, VOCs, SVOCs, TEH, TDS
North property boundary – eastern area	Soil Groundwater	2 soil 1 groundwater	VOCs, SVOCs, RCRA Metals, TEH, VOCs, SVOCs, RCRA Metals, TEH, TDS

*NOTE: Background/QC samples are not included with these totals. See Attachment 2.1 - Tables 1 & 2 for a complete sample summary.

2.2 Sample Methods Requirements (QAPP Section 3.2):

Matrix	Sampling Method	EPA SOP(s)/Methods
Soil	Continuous sampling utilizing 2.0-inch by 24-inch long split spoon sampler	**EPA SOP 2012 / EPA 4230.03B**
Groundwater	Disposable bailer.	**EPA SOP 4230.15A**

2.3 Sample Handling and Custody Requirements (QAPP Section 3.3):

☒ Samples will be packaged and preserved in accordance with procedures defined in Region 7 EPA SOP 2420.6D.
☒ COC will be maintained as directed by Region 7 EPA SOP 2420.4B.
☒ Samples will be accepted according to Region 7 EPA SOP 2420.1C.
☐ Other (Describe):

2.4 Analytical Methods Requirements (QAPP Section 3.4):

☒ Identified in attached table (Attachment 2.4 – Table 1).
☐ Identified in attached Analytical Services Request (ASR) Form
☐ Other (Describe):

2.5 Quality Control Requirements (QAPP Section 3.5):

☐ Not Applicable
☐ Identified in attached table.
☒ In accordance with the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs**, November 1998 (Updated July 2005).
Describe Field QC Samples to be collected: (see Attachment 2.1 – Table 2: Field Quality Control Sample Summary)
☐ Other (Describe):

2.6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements (QAPP Section 3.6):

☐ Not Applicable
☒ In accordance with the *Generic Quality Assurance Project Plan for Superfund Integrated Site Assessments*, November 1998 (Updated July 2005).
☐ Other (Describe):

2.7 Instrument Calibration and Frequency (QAPP Section 3.7):

☐ Not Applicable
☒ Inspection/acceptance requirements are in accordance with the *Generic* **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs**, November 1998 (Updated July 2005).
☒ Calibration of laboratory equipment will be performed as described in the previously referenced SOPs and/or manufacturers' recommendations.
☐ Other (Describe):

2.8 Inspection/Acceptance Requirements for Supplies and Consumables (QAPP Section 3.8):

☐ Not Applicable
☒ In accordance with the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs**, November 1998 (Updated July 2005).
☐ All sample containers will meet EPA criteria for cleaning procedures for low-level chemical analysis. Sample containers will have Level II certifications provided by the manufacturer in accordance with pre-cleaning criteria established by EPA in *Specifications and Guidelines for Obtaining Contaminant-Free Containers.*
☐ Other (Describe):

2.9 Data Acquisition Requirements (QAPP Section 3.9):

☐ Not Applicable

☒ In accordance with the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs**, November 1998 (Updated July 2005).

☐ Previous data/information pertaining to the site (including other analytical data, reports, photos, maps, etc., which are referenced in this QAPP) have been compiled by EPA and/or its contractor(s) from other sources. Some of that data has not been verified by EPA and/or its contractor(s); however, the information will not be used for decision-making purposes by EPA without verification by an independent professional qualified to verify such data/information.

☐ Other (Describe):

2.10 Data Management (QAPP Section 3.10):

☒ All laboratory data acquired will be managed in accordance with Region 7 EPA SOP 2410.1C.

☐ Other (Describe):

3.0 Assessment and Oversight

3.1 Assessment and Response Actions (QAPP Section 4.1):

☒ Peer Review ☒ Management Review ☒ Field Audit ☐ Lab Audit

☐ Assessment and response actions pertaining to analytical phases of the project are addressed in Region 7 EPA SOPs 2430.5A and 2430.12D.

☐ Other (Describe):

3.1A Corrective Action (QAPP Section 4.1.2):

☒ Corrective actions will be taken at the discretion of the EPA project manager or Contractor QA Manager, whenever there appear to be problems that could adversely affect data quality and/or resulting decisions affecting future response actions pertaining to the site.

☐ Other (Describe):

3.2 Reports to Management (QAPP Section 4.2):

☐ Audit Report ☐ Data Validation Report ☐ Project Status Report ☐ None required

☐ A letter report describing the sampling techniques, locations, problems encountered (with resolutions to those problems), and interpretation of analytical results will be prepared by Brownfields Contractor and submitted to the EPA.

☒ Reports will be prepared in accordance with the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs**, November 1998 (Updated July 2005).

☐ Other (Describe):

4.0 Data Validation and Usability:

4.1 Data Review, Validation, and Verification Requirements (QAPP Section 5.1):

- ☐ Identified in attached table.
- ☒ Data review and verification will be performed in accordance with the **Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Programs,** November 1998 (Updated July 2005).
- ☐ Data review and verification will be performed by a qualified analyst and the laboratory's section manager as described in Region 7 EPA SOPs 2430.5A and 2430.12D.
- ☐ Other (Describe):

4.2 Validation and Verification Methods (QAPP Section 5.2):

- ☐ Identified in attached table.
- ☐ The data will be validated in accordance with Region 7 EPA SOPs 2430.5A and 2430.12D.
- ☒ The EPA site manager will inspect the data to provide a final review. The EPA site manager will review the data, if applicable, for laboratory spikes and duplicates, laboratory blanks, and the field blank to ensure that they are acceptable. The EPA site manager will also compare the sample descriptions with the field sheets for consistency and will ensure that any anomalies in the data are appropriately documented.
- ☐ Other (Describe):

4.3 Reconciliation with User Requirements (QAPP Section 5.3):

- ☐ Identified in attached table
- ☒ If data quality indicators do not meet the project's requirements as outlined in this QAPP, the data may be discarded and re-sampling or re-analysis of the subject samples may be required by the EPA site manager.
- ☐ Other (Describe):

Attachment 1.3

Problem Definition / Background

Attachment 1.3

Problem Definition / Background

The problem is to determine whether recognized environmental conditions (RECs) identified on the subject property or surrounding properties have caused environmental impairment that could impact redevelopment planning. This determination is made by comparing site constituent concentrations to the applicable action levels set forth in Iowa Administrative Code (IAC), Chapter 137: Iowa Land Recycling Program and Response Action Standards or 567 IAC 135: Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks. Site concentrations in excess of these standards do not necessarily suggest the property can not be restored and redeveloped.

During August 2006, a Phase I Environmental Site Assessment (ESA) was conducted on the properties located at 1103 S. 6th Street, 1110 S. Main Street, and 1128 S. Main Street (South Main Brownfields Area - Cluster #1) in the City of Council Bluffs, Iowa (*subject property)*. The assessment revealed three RECs in connection with the property. The subject property, Former SMV Industries at 1103 S. 6th, is listed as a RCRA small quantity generator of hazardous wastes with multiple notices of violation issued. Off site RECs with the potential to impact the subject property were identified to the west (Former manufactured gas plant) and to the south (former filling station). Potential environmental conditions were also identified to the west (Giant manufacturing), and to the north (former railroad).

After completing the Phase I Environmental Site Assessment (ESA), an additional off-site potential REC was identified to the north of the Subject Property. A Phase II investigation was completed in 2003 at 1000 S. Main Street by Thiele Geotech. Petroleum contaminated soils were identified along the west and southwest portion of the property. Information regarding the tank size, contents, date, and status could not be located. Thiele's opinion is that four of the soil borings were located within an abandoned UST excavation.

Previous Phase II ESAs identified volatile organic compounds (VOCs) and polynuclear aromatic compounds (PAHs) in both the soil and groundwater at the subject property. Previous sampling also identified VOCs and extractable hydrocarbons (TEH) in both soil and groundwater samples collected on the Giant Manufacturing property.

The Phase II investigation will include advancing four soil borings on the subject property. Three of the borings will be installed adjacent to the north, west, and south property boundary, and one soil boring will be installed near the former SMV Industries building on the east central portion of the subject property (see Attachment 2.1 – Figures 1 & 2). The borings will be advanced using a truck mounted hollow-stem auger drilling machine. Soil samples will be continuously collected using a split spoon sampling device and field screened with a photo-ionization detector (PID). For Range 1 soil samples, a composite will be collected within the top two feet of the soil column. For Range 2 soil samples, a grab sample will be collected at the interval indicating the highest PID reading. If PID readings provide no indication of organic vapors or there are no obvious visual indicators of contamination, the soil sample from immediately above groundwater will be submitted for laboratory analysis. For both soil ranges, if no organic vapors are detected greater than 10 ppm, no soil sample will be submitted for VOC analysis.

Upon the completion of soil sampling activities, the borings will be completed as groundwater monitoring wells. The wells will be constructed using 2.0 inch outside diameter (O.D.) Schedule 40 PVC slotted screen and 2.0 inch O.D. Schedule 40 PVC riser. The wells will be developed by surging and then bailing in an attempt to produce water that is visually free of suspended sediments. The wells will be allowed to recharge and samples will be collected and submitted for laboratory analysis.

Upon the completion of sampling activities, slug testing will be conducted to evaluate hydraulic conductivity to determine if the groundwater is considered a "protected groundwater source".

Attachment 1.4

Schedule of Activities

Attachment 1.4

Schedule of Activities

Assessment and Evaluation on this property is consistent with the Site Specific Addendum to the Generic QAPP and services of contract for this EPA Brownfields Assessment Grant. Factors of weather, response times by regulatory agencies, utility locators, property owners, and subcontractors, and other logistical influences external to Howard R. Green Company control will extend the project milestones by equivalent days of delay beyond dates estimated. Howard R. Green Company anticipates an expedited review and approval of this Site Specific Addendum to the Generic QAPP by the EPA.

WEEK NUMBER 1: Submission of Site Specific Addendum to EPA Brownfields Project Manager for review & approval

WEEK NUMBER 3: EPA approval of Site Specific Addendum and initiation of mobilization

WEEK NUMBER 4: Notification of EPA Brownfields Project Manager on final field schedules

WEEK NUMBER 5: Completion of utility clearances

WEEK NUMBER 6: Commencement of on-site field activities

WEEK NUMBER 7: Completion of on-site field activities

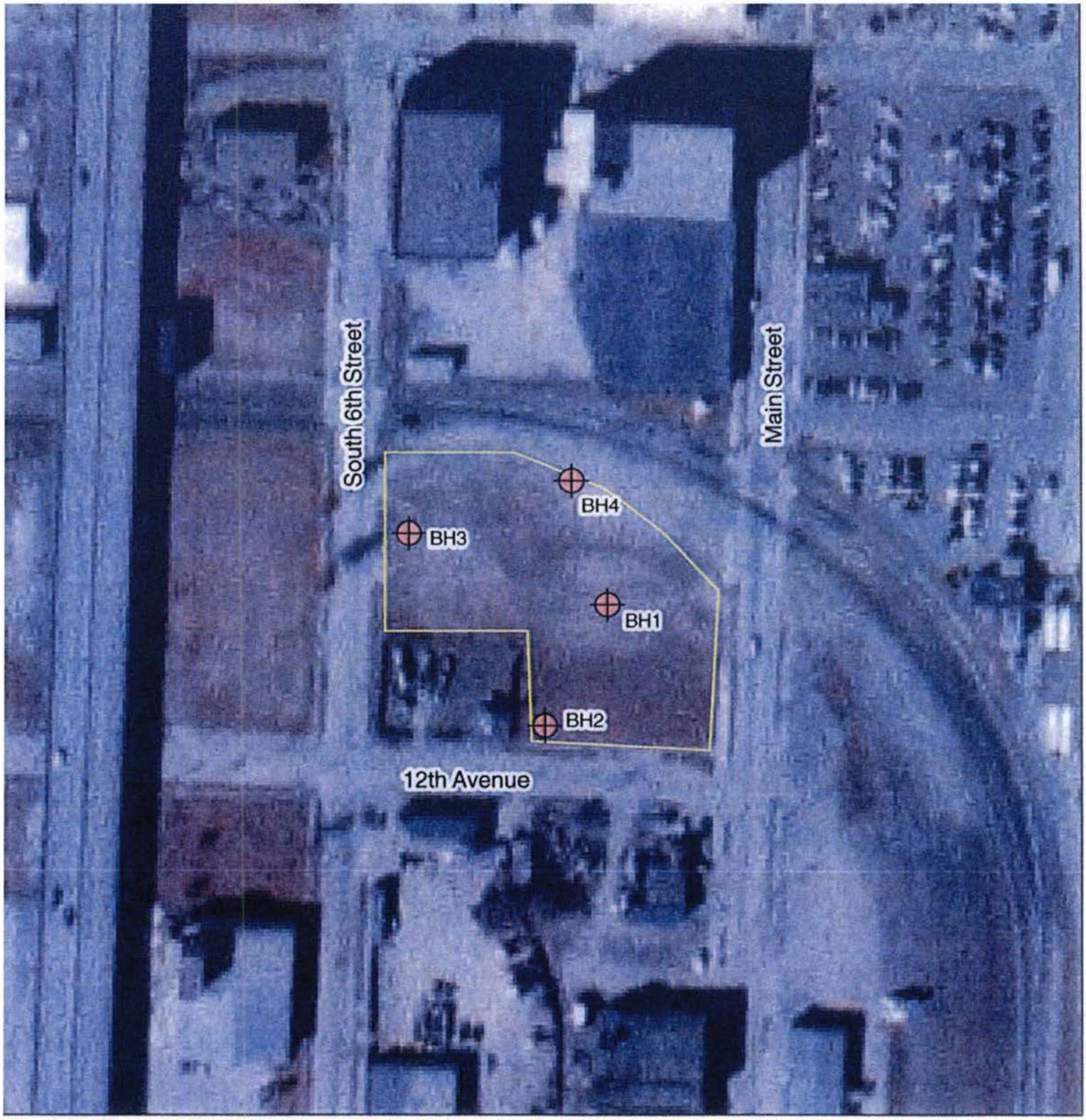
WEEK NUMBER 8: Receipt of written laboratory reports

WEEK NUMBER 9: Final Phase II Report to City and EPA 7

Attachment 2.1

Figure 1 - Soil Sample Locations Map
Figure 2 - Groundwater Sample Locations Map

Table 1 - Field Sample Summary
Table 2 - Field Quality Control Sample Summary
Table 3 - Sample Preservation, Methods, Containers, Volumes, and Holding Times



Legend

Cluster #1 Sites

Soil Sampling Location

DOC ILLEGIBLE

PHASE II ESA

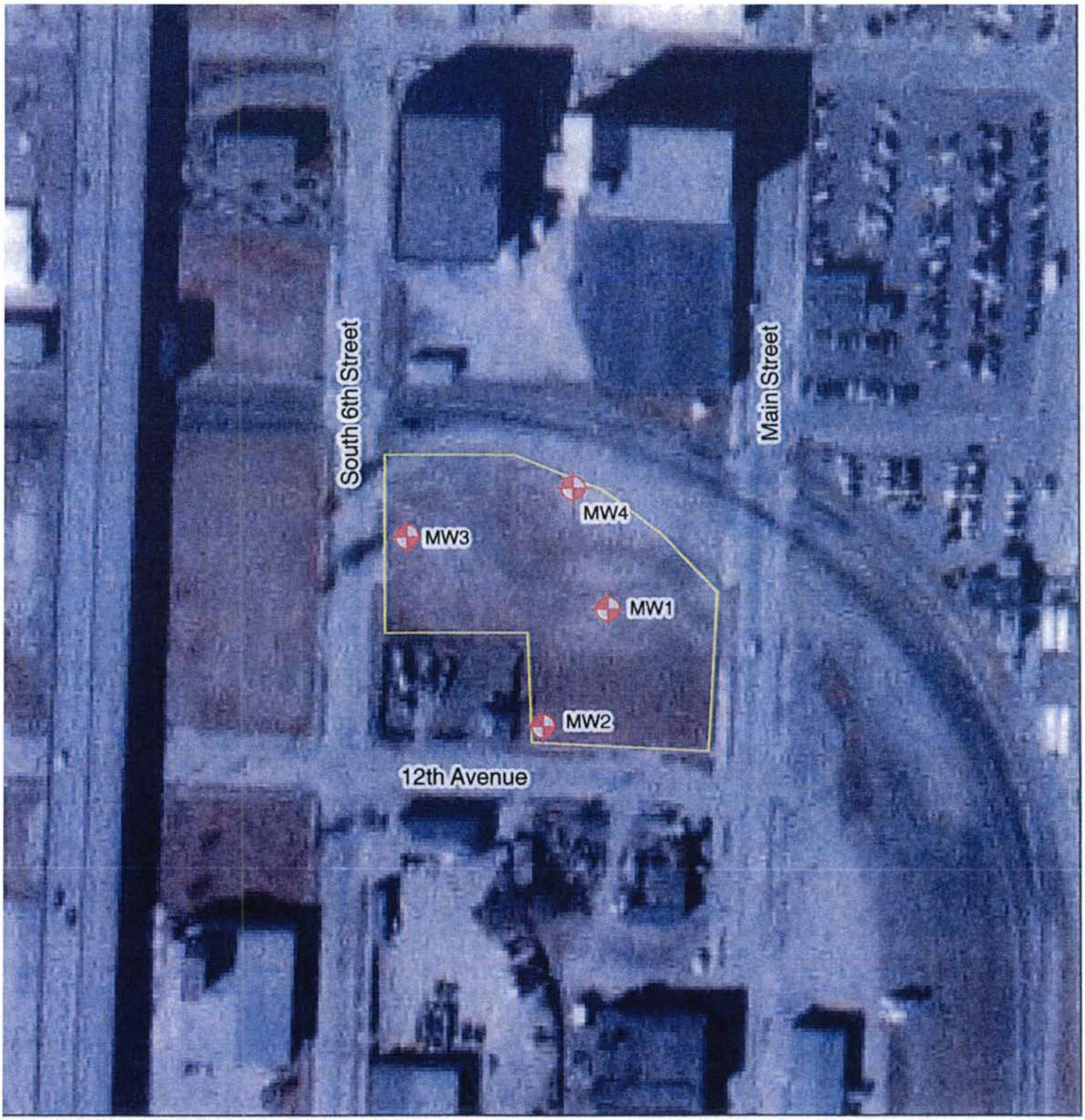
FIGURE 1
SOIL SAMPLE LOCATION MAP

Council Bluffs South Main
Brownfields Redevelopment Project
Cluster #1
Council Bluffs, Iowa

0 25 50
Feet

N

Howard R. Green Company



Legend

Cluster #1 Sites

Monitoring Well Location

DOC IL

PHASE II ESA
FIGURE 2
GROUNDWATER SAMPLE LOCATION MAP

Council Bluffs South Main
Brownfields Redevelopment Project
Cluster #1
Council Bluffs, Iowa

0 25 50
Feet

N

Howard R. Green Company

Attachment 2.4

Table 1 – Analytical Method Requirements

Attachment 2.1 - Table 1

Field Sample Summary

Table 1: Field Sample Summary							
Site Name: Council Bluffs South Main Brownfields Redevelopment Cluster #1				City: Council Bluffs			
Project Manager: Cynthia Quast				Activity #: 728500J-0003		Date: 9/6/2006	
No. of Samples	Matrix	Location	Purpose	Depth or other Descriptor	Requested Analysis	Sampling Method	Analytical Method/SOP
1	Solid	Property east central	On-Site REC Evaluation REC1	Range 1 (<2')	VOCs	5035	8260B
	"	"	"	"	SVOCs	2012	8270C
	"	"	"	"	RCRA Metals	2012	6010B, 7471A
	"	"	"	"	IAC 135 Low-Volatiles	2012	Iowa OA2
1	Aqueous	Property east central	On-Site REC Evaluation REC1	Groundwater	VOCs	4230.15A	8260B
	"	"	"	"	SVOCs	4230.15A	8270C
	"	"	"	"	RCRA Metals *(diss.)	4230.15A	6010B, 7060A, 7131A, 7421, 7740, 7470A
	"	"	"	"	IAC 135 Low-Volatiles	4230.15A	Iowa OA2
	"	"	"	"	TDS	4230.15A	160.1
1	Solid	South Boundary-West	On-Site REC Evaluation REC1	Range 1 (<2')	VOCs	5035	8260B
	"	"	"	"	SVOCs	2012	8270C
	"	"	"	"	IAC 135 Low-Volatiles	2012	Iowa OA2
1	Solid	South Boundary-West	Off-Site REC Evaluation REC2	Range 2 (>2')	VOCs	5035	8260B
	"	"	"	"	SVOCs	2012	8270C
	"	"	"	"	IAC 135 Low-Volatiles	2012	Iowa OA2
1	Aqueous	South Boundary-West	On -Site and Off-Site REC Evaluations REC1 REC2	Groundwater	VOCs	4230.15A	8260B
	"	"	"	"	SVOCs	4230.15A	8270C
	"	"	"	"	IAC 135 Low-Volatiles	4230.15A	Iowa OA2
	"	"	"	"	TDS	4230.15A	160.1
1	Solid	West Boundary	On -Site and Off-Site REC Evaluation REC1 REC3	Range 2 (>2')	VOCs	5035	8260B
	"	"	"	"	SVOCs	2012	8270C
	"	"	"	"	RCRA Metals	2012	6010B, 7471A
	"	"	"	"	IAC 135 Low-Volatiles	2012	Iowa OA2

Attachment 2.1 - Table 1

Field Sample Summary

Table 1: Field Sample Summary (con't)							
Site Name: Council Bluffs South Main Brownfields Redevelopment Cluster #1				City: Council Bluffs			
Project Manager: Cynthia Quast				Activity #: 7285003-0003		Date: 9/6/2006	
No. of Samples	Matrix	Location	Purpose	Depth or other Descriptor	Requested Analysis	Sampling Method	Analytical Method/SOP
1	Aqueous	West Boundary	On –Site and Off-Site REC Evaluation	REC 12E23 Groundwater	VOCs	4230.15A	8260B
	"	"	"	"	SVOCs	4230.15A	8270C
	"	"	"	"	RCRA Metals *(diss.)	4230.15A	6010B, 7060A, 7131A, 7421, 7740, 7470A
	"	"	"	"	IAC 135 Low-Volatiles	4230.15A	Iowa OA2
	"	"	"	"	TDS	4230.15A	160.1
1	Solid	North Boundary	Off-Site REC Evaluation	REC-A Range 1 (<2')	VOCs	5035	8260B
	"	"	"	"	SVOCs	2012	8270C
	"	"	"	"	RCRA Metals	2012	6010B, 7471A
1	Solid	North Boundary	Off-Site REC Evaluation	REC-A Range 2 (>2')	VOCs	5035	8260B
	"	"	"	"	SVOCs	2012	8270C
	"	"	"	"	IAC 135 Low-Volatiles	2012	Iowa OA2
1	Aqueous	North Boundary	Off-Site REC Evaluation	REC-A Groundwater	VOCs	4230.15A	8260B
	"	"	"	"	SVOCs	4230.15A	8270C
	"	"	"	"	RCRA Metals *(diss.)	4230.15A	6010B, 7060A, 7131A, 7421, 7740, 7470A
	"	"	"	"	IAC 135 Low-Volatiles	4230.15A	Iowa OA2
	"	"	"	"	TDS	4230.15A	160.1

* As per IDNR requirement, groundwater samples submitted for metals analysis will be field filtered for comparison to the Statewide Standards set forth in IAC Chapter 137.

Attachment 2.1 – Table 2

Field Quality Control Sample Summary

Table 2: Field Quality Control Sample Summary							
Site Name: Council Bluffs South Main Brownfields Redevelopment Cluster #1				City: Council Bluffs			
Project Manager: Cynthia Quast				Activity #: 728500J-0003		Date: 9/6/2006	
No. of Samples	Matrix	Location	Purpose	Depth or other Descriptor	Requested Analysis	Sampling Method	Analytical Method/SOP
1	Aqueous	Trip Blank	Field QC	Quality Control	VOCs	2420.11D	8260B
1	Aqueous	Equipment Rinsate Blank	Field QC	Quality Control	RCRA Metals	-	6010B, 7060A, 7131A, 7421, 7740, 7470A
	"	"	"	"	VOCs	-	8260B
	"	"	"	"	SVOCs	-	8270C
	"	"	"	"	IAC 135 Low-Volatiles	-	Iowa OA2
1	Aqueous	Field Duplicate	Field QC	Quality Control	RCRA Metals	-	6010B, 7060A, 7131A, 7421, 7740, 7470A
	"	"	"	"	VOCs	-	8260B
	"	"	"	"	SVOCs	-	8270C
	"	"	"	"	IAC 135 Low-Volatiles	-	Iowa OA2
	"	"	"	"	TDS	-	160.1
1	Solid	Field Duplicate	Field QC	Quality Control	RCRA Metals	-	6010B, 7471A
	"	"	"	"	VOCs	-	8260B
	"	"	"	"	SVOCs	-	8270C
	"	"	"	"	IAC 135 Low-Volatiles	-	Iowa OA2

Notes:

1. Should field sample quantities exceed the intended sampling design strategy outlined in Table 1, QC sample collection frequency will be conducted in accordance with the requirements outlined in Table 3.

2. Laboratory QA/QC requirements will be conducted in accordance with the procedures outlined in the TestAmerica Inc Quality Assurance Manual, Effective May 26, 2005 (see Attachment 1.5)

Attachment 2.1 - Table 3

Sample Preservation, Analytical Methods, Containers, Volume, and Holding Times

Table 3 – Sample Preservation, Analytical Methods, Containers, Volumes, and Holding Times						
Matrix	Parameter	Analytical Method	Container Size	Container Type	Preservative	Holding Time
Solid	VOCs	8260B	Two 40 mL	Glass vials	$NaHSO_4$/ Cool 4°C	14 days to extract/ 14 days after extraction
			One 40 mL	Glass Vial	CH_3OH/ Cool 4°C	
Solid	SVOCs	8270C	4-ounce	Glass jar	Cool 4°C	14 days to extract/ 7 days to extraction/ 40 days after extraction
Solid	RCRA Metals	6010B, 7471A	4-ounce	Glass jar	Cool 4°C	180 days to extract/ 180 days after extraction
Solid	IAC 135 Low-Volatiles	Iowa OA2	4-ounce	Glass jar	Cool 4°C	14 days
Aqueous	VOCs	8260B	Two 40 mL	Glass Vials	HCl/ Cool 4°C	14 days
Aqueous	SVOCs	8270C	1 L	Glass jar	Cool 4°C	7 days to extract/ 40 days after extraction
Aqueous	RCRA Metals (Dissolved)	6010B, 7060A, 7131A, 7421, 7740, 7470A	250 mL	Plastic Container	HNO_3/ Cool 4°C	6 months (except Hg - 28 days)
Aqueous	IAC 135 Low-Volatiles	Iowa OA2	1 L	Amber Glass jar	Cool 4°C	7 days
Aqueous	TDS	160.1	250 mL	Plastic Container	Cool 4°C	7 days

Attachment 2.4 - Table 1

Analytical Method Requirements

Table 1 Analytical Method Requirements				
Media				
Range 1 Soils	Range 2 Soils	Groundwater	Chemical Group	Analytical Method
3	2		VOCs	8260B
3	2		SVOCs	8270C
2	1		RCRA Metals	6010B/ 7471A
2	2		IAC 135 Low-Volatiles	Iowa OA2
		4	VOCs	8260B
		4	SVOCs	8270C
		4	RCRA Metals (Diss)	6010B, 7060A, 7131A, 7421, 7740, 7470A
		3	IAC 135 Low-Volatiles	Iowa OA2
		4	TDS	160.1

APPENDIX B

Figures

Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Soil Contamination Map
Figure 4 – Groundwater Contamination Map
Figure 5 – Groundwater Contour Map

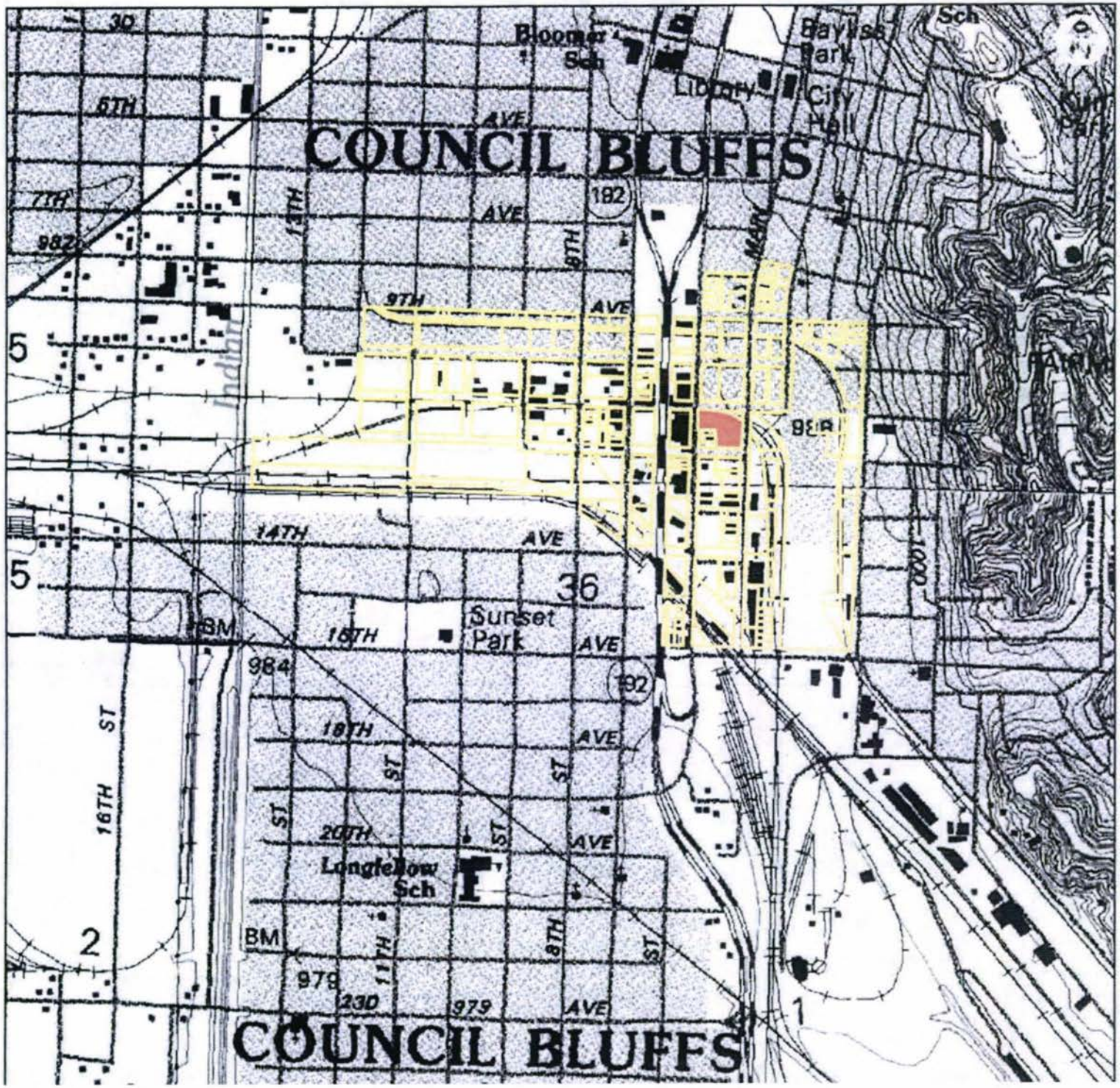


FIGURE 1
Site Location Map
PCDC Properties

South Main
Brownfields Area Map
Council Bluffs, Iowa

0 500 1,000
Feet

Parcels In South Main Brownfields Area

Cluster #1 Sites

N

Howard R. Green Company

FIGURE 2
SITE PLAN
PCDC Properties

South Main
Brownfields Area Map
Council Bluffs, Iowa

Feet
0 150 300

Cluster #1 Sites

N

Howard R Green Company

Cluster #1 Sites

Soil Sampling Location

PHASE II ESA

FIGURE 3
SOIL CONTAMINATION MAP (mg/kg)

Council Bluffs South Main
Brownfields Redevelopment Project
Cluster #1
Council Bluffs, Iowa

N

0 150
Feet

Howard R. Green Company

Cluster #1 Sites

Monitoring Well Location

PHASE II ESA

FIGURE 4
GROUNDWATER
CONTAMINATION MAP (mg/L)

Council Bluffs South Main
Brownfields Redevelopment Project
Cluster #1
Council Bluffs, Iowa

N

0 150 Feet

Howard R. Green Company

FIGURE 5
GROUNDWATER CONTOUR MAP
Cluster #1

South Main
Brownfields Area Map

Council Bluffs, Iowa

Feet
0 50 100

Cluster #1 Sites
Potential REC Locations
Monitoring Well Location

Potential REC Locations

1. **Former SMV Industries - 1103 S 6th St - Subject Site**
2. **Former Filling Station - 1202 S Main St - UST**
3. **Former Manufactured Gas Plant - 11th Ave at 7th St - FMGP**

APPENDIX C

Laboratory Reports/
Chain of Custody Documentation

TestAmerica
ANALYTICAL TESTING CORPORATION
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

January 22, 2007

Client:
HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404

Attn: Julie Oriano

Work Order: CQA0462
Project Name: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Date Received: 01/10/07

An executed copy of the chain of custody is also included as an addendum to this report

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
BH1-R1 0-2'	CQA0462-01	01/08/07 12:45
BH2-R1 0-2'	CQA0462-02	01/08/07 14:45
BH2-R2 15'	CQA0462-03	01/08/07 15:35
BH3-R2 15'	CQA0462-04	01/09/07 10:30
BH4-R1 0-2'	CQA0462-05	01/09/07 11:15
BH4-R2 14'	CQA0462-06	01/09/07 12:30
FD-1	CQA0462-07	01/09/07
FD-2	CQA0462-08	01/09/07

Samples were received into laboratory at a temperature of 1 °C.

Most environmental analytical testing methods require a sample temperature of 4 degrees C +/- 2 degrees C for preservation of the sample constituents prior to analysis. If sample temperatures are outside of this temperature range at the time of sample receipt, results may be impacted. Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:

TestAmerica - Cedar Falls, IA

TestAmerica
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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-01 (BH1-R1 0-2' - Soil)						**Sampled: 01/08/07 12:45**				**Recvd: 01/10/07 08:50**
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
General Chemistry Parameters										
% Solids	**81.0**		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
Total Metals by SW 846 Series Methods										
Arsenic	**7.02**	M1	mg/kg dry		1.23	0.973	01/16/07 20:41	lbb	7010599	SW 7060A
Barium	**225**		mg/kg dry		0.617	0.956	01/15/07 22:45	llw	7010548	SW 6010B
Cadmium	<1.23		mg/kg dry		1.23	0.956	01/15/07 22:45	llw	7010548	SW 6010B
Chromium	**15.7**		mg/kg dry		1.23	0.956	01/15/07 22:45	llw	7010548	SW 6010B
Lead	**10.2**		mg/kg dry		6.17	0.956	01/15/07 22:45	llw	7010548	SW 6010B
Mercury	<0.0247		mg/kg dry		0.0247	0.924	01/12/07 13:46	lmc	7010463	SW 7471A
Selenium	**12.3**		mg/kg dry		9.26	0.956	01/15/07 22:45	llw	7010548	SW 6010B
Silver	<1.23		mg/kg dry		1.23	0.956	01/15/07 22:45	llw	7010548	SW 6010B
Semivolatile Organics by GC/MS										
Acenaphthene	<0.100		mg/kg dry	0.100	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Acenaphthylene	<0.0926		mg/kg dry	0.0926	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Anthracene	<0.0963		mg/kg dry	0.0963	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzidine	<0.0395		mg/kg dry	0.0395	4.07	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzo (a) anthracene	<0.104		mg/kg dry	0.104	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<0.101		mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<0.104		mg/kg dry	0.104	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzo (a) pyrene	<0.0914		mg/kg dry	0.0914	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	<0.0926		mg/kg dry	0.0926	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzyl alcohol	<0.0802		mg/kg dry	0.0802	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<0.104		mg/kg dry	0.104	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<0.102		mg/kg dry	0.102	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<0.101	A-01	mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<0.0395		mg/kg dry	0.0395	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<0.0988		mg/kg dry	0.0988	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<0.107		mg/kg dry	0.107	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Carbazole	<0.100		mg/kg dry	0.100	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Chloroaniline	<0.128		mg/kg dry	0.128	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2-Chloronaphthalene	<0.109		mg/kg dry	0.109	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<0.116		mg/kg dry	0.116	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Chrysene	<0.102		mg/kg dry	0.102	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<0.0728		mg/kg dry	0.0728	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Dibenzofuran	<0.101		mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Di-n-butyl phthalate	<0.109		mg/kg dry	0.109	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
1,2-Dichlorobenzene	<0.0938		mg/kg dry	0.0938	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
1,3-Dichlorobenzene	<0.102		mg/kg dry	0.102	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
1,4-Dichlorobenzene	<0.106		mg/kg dry	0.106	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
3,3'-Dichlorobenzidine	<0.0951		mg/kg dry	0.0951	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Diethyl phthalate	<0.110		mg/kg dry	0.110	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Dimethyl phthalate	<0.100		mg/kg dry	0.100	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,4-Dinitrotoluene	<0.0728		mg/kg dry	0.0728	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,6-Dinitrotoluene	<0.0753		mg/kg dry	0.0753	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Di-n-octyl phthalate	<0.105		mg/kg dry	0.105	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Fluoranthene	<0.0938		mg/kg dry	0.0938	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Fluorene	<0.101		mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Hexachlorobenzene	<0.101		mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Hexachlorobutadiene	<0.105		mg/kg dry	0.105	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C

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8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-01 (BH1-R1 0-2' - Soil) - cont.						**Sampled: 01/08/07 12:45**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
Hexachlorocyclopentadiene	<0.0728		mg/kg dry	0.0728	0.815	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Hexachloroethane	<0.101		mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
ndeno (1,2,3-cd) pyrene	<0.0914		mg/kg dry	0.0914	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Isophorone	<0.101		mg/kg dry	0.101	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2-Methylnaphthalene	<0.100		mg/kg dry	0.100	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Naphthalene	<0.0951		mg/kg dry	0.0951	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2-Nitroaniline	<0.0864		mg/kg dry	0.0864	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
3-Nitroaniline	<0.0790		mg/kg dry	0.0790	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Nitroaniline	<0.0691		mg/kg dry	0.0691	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Nitrobenzene	<0.119		mg/kg dry	0.119	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
N-Nitrosodimethylamine	<0.162		mg/kg dry	0.162	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
N-Nitrosodiphenylamine	<0.0914	A-01	mg/kg dry	0.0914	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
N-Nitrosodi-n-propylamine	<0.0840		mg/kg dry	0.0840	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Phenanthrene	<0.100		mg/kg dry	0.100	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Pyrene	<0.111		mg/kg dry	0.111	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Pyridine	<0.0469		mg/kg dry	0.0469	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
1,2,4-Trichlorobenzene	<0.112		mg/kg dry	0.112	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Benzoic acid	<0.0284		mg/kg dry	0.0284	0.815	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Chloro-3-methylphenol	<0.0531		mg/kg dry	0.0531	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2-Chlorophenol	<0.0506		mg/kg dry	0.0506	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Cresol(s)	<0.0556		mg/kg dry	0.0556	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,4-Dichlorophenol	<0.0593		mg/kg dry	0.0593	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,4-Dimethylphenol	<0.0531		mg/kg dry	0.0531	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,4-Dinitrophenol	<0.0383	CIN	mg/kg dry	0.0383	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4,6-Dinitro-2-methylphenol	<0.0235		mg/kg dry	0.0235	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2-Methylphenol (o-Cresol)	<0.0556		mg/kg dry	0.0556	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Methylphenol (p-Cresol)	<0.0494		mg/kg dry	0.0494	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2-Nitrophenol	<0.0556		mg/kg dry	0.0556	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
4-Nitrophenol	<0.0407		mg/kg dry	0.0407	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Pentachlorophenol	<0.0432		mg/kg dry	0.0432	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Phenol	<0.0383		mg/kg dry	0.0383	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,4,5-Trichlorophenol	<0.0605		mg/kg dry	0.0605	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
2,4,6-Trichlorophenol	<0.0543		mg/kg dry	0.0543	0.407	0.991	01/11/07 16:25	AKE	7010393	SW 8270C
Surr: Nitrobenzene-d5 (25-110%)	*70 %*									
Surr: 2-Fluorobiphenyl (20-115%)	*58 %*									
Surr: Terphenyl-d14 (40-135%)	*63 %*									
Surr: Phenol-d6 (30-125%)	*74 %*									
Surr: 2-Fluorophenol (25-120%)	*68 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*81 %*									
JST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	<10.0		mg/kg		10.0	1	01/15/07 18:24	fmk	[CALC]	OA-2 - 8015B
Diesel	<10.0		mg/kg		10.0	0.99	01/15/07 18:24	fmk	7010391	OA-2
Gasoline	<10.0		mg/kg		10.0	0.99	01/15/07 18:24	fmk	7010391	OA-2
Motor Oil	<10.0		mg/kg		10.0	0.99	01/15/07 18:24	fmk	7010391	OA-2
Surr: Octacosane (55-120%)	*93 %*									

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Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-02 (BH2-R1 0-2' - Soil)						**Sampled: 01/08/07 14:45**				**Recvd: 01/10/07 08:50**
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
General Chemistry Parameters										
% Solids	88.2		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
Volatile Organic Compounds										
Acetone	<167		ug/kg dry		167	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Acrylonitrile	<167		ug/kg dry		167	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Benzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Bromobenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Bromochloromethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Bromodichloromethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Bromoform	<33.4		ug/kg dry		33.4	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Bromomethane	<66.9		ug/kg dry		66.9	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
2-Butanone (MEK)	<167		ug/kg dry		167	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
n-Butylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
sec-Butylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
tert-Butylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Carbon disulfide	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Carbon Tetrachloride	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Chlorobenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Chlorodibromomethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Chloroethane	<66.9		ug/kg dry		66.9	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Chloroform	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Chloromethane	<66.9		ug/kg dry		66.9	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
2-Chlorotoluene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
4-Chlorotoluene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2-Dibromo-3-chloropropane	<167		ug/kg dry		167	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2-Dibromoethane (EDB)	<167		ug/kg dry		167	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Dibromomethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2-Dichlorobenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,3-Dichlorobenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,4-Dichlorobenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Dichlorodifluoromethane	<50.1		ug/kg dry		50.1	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1-Dichloroethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2-Dichloroethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1-Dichloroethene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
cis-1,2-Dichloroethene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
trans-1,2-Dichloroethene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2-Dichloropropane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,3-Dichloropropane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
2,2-Dichloropropane	<66.9		ug/kg dry		66.9	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1-Dichloropropene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
cis-1,3-Dichloropropene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
trans-1,3-Dichloropropene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Ethylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Hexachlorobutadiene	<83.6		ug/kg dry		83.6	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Hexane	<83.6		ug/kg dry		83.6	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Isopropylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
p-Isopropyltoluene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Methylene Chloride	<167		ug/kg dry		167	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Methyl tert-Butyl Ether	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-02 (BH2-R1 0-2' - Soil) - cont.						**Sampled: 01/08/07 14:45**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
Naphthalene	<83.6		ug/kg dry		83.6	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
n-Propylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Styrene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1,1,2-Tetrachloroethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1,2,2-Tetrachloroethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Tetrachloroethene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Toluene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2,3-Trichlorobenzene	<83.6		ug/kg dry		83.6	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2,4-Trichlorobenzene	<83.6		ug/kg dry		83.6	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1,1-Trichloroethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,1,2-Trichloroethane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Trichloroethene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Trichlorofluoromethane	<66.9		ug/kg dry		66.9	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2,3-Trichloropropane	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,2,4-Trimethylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
1,3,5-Trimethylbenzene	<16.7		ug/kg dry		16.7	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Vinyl chloride	<50.1		ug/kg dry		50.1	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Xylenes, total	<50.1		ug/kg dry		50.1	2.95	01/16/07 13:47	MMK	7010633	SW 8260B
Surr: Dibromofluoromethane (75-125%)	*105 %*									
Surr: Toluene-d8 (65-130%)	*100 %*									
Surr: 4-Bromofluorobenzene (70-125%)	*93 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	**3.69**	J	mg/kg dry	3.66	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Acenaphthylene	<3.39		mg/kg dry	3.39	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Anthracene	<3.53		mg/kg dry	3.53	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzidine	<1.45		mg/kg dry	1.45	149	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzo (a) anthracene	<3.80		mg/kg dry	3.80	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<3.71		mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<3.80		mg/kg dry	3.80	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzo (a) pyrene	<3.35		mg/kg dry	3.35	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	<3.39		mg/kg dry	3.39	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Benzyl alcohol	<2.94		mg/kg dry	2.94	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<3.80		mg/kg dry	3.80	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<3.75		mg/kg dry	3.75	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<3.71	A-01	mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<1.45		mg/kg dry	1.45	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<3.62		mg/kg dry	3.62	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<3.94		mg/kg dry	3.94	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Carbazole	<3.66		mg/kg dry	3.66	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
4-Chloroaniline	<4.70		mg/kg dry	4.70	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
2-Chloronaphthalene	<3.98		mg/kg dry	3.98	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<4.25		mg/kg dry	4.25	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Chrysene	**5.56**	J	mg/kg dry	3.75	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<2.67		mg/kg dry	2.67	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Dibenzofuran	<3.71		mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Di-n-butyl phthalate	<3.98		mg/kg dry	3.98	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
1,2-Dichlorobenzene	<3.44		mg/kg dry	3.44	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
1,3-Dichlorobenzene	<3.75		mg/kg dry	3.75	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
1,4-Dichlorobenzene	<3.89		mg/kg dry	3.89	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
3,3'-Dichlorobenzidine	<3.48		mg/kg dry	3.48	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-02 (BH2-R1 0-2' - Soil) - cont.						**Sampled: 01/08/07 14:45**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
Diethyl phthalate	<4.03		mg/kg dry	4.03	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Dimethyl phthalate	<3.66		mg/kg dry	3.66	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,4-Dinitrotoluene	<2.67		mg/kg dry	2.67	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,6-Dinitrotoluene	<2.76		mg/kg dry	2.76	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
Di-n-octyl phthalate	<3.85		mg/kg dry	3.85	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
luoranthene	<3.44		mg/kg dry	3.44	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
luorene	<3.71		mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
lexachlorobenzene	<3.71		mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
lexachlorobutadiene	<3.85		mg/kg dry	3.85	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
lexachlorocyclopentadiene	<2.67		mg/kg dry	2.67	29.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
lexachloroethane	<3.71		mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
ndeno (1,2,3-cd) pyrene	<3.35		mg/kg dry	3.35	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
sophorone	<3.71		mg/kg dry	3.71	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Methylnaphthalene	<3.66		mg/kg dry	3.66	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
laphthalene	<3.48		mg/kg dry	3.48	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitroaniline	<3.17		mg/kg dry	3.17	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitroaniline	<2.90		mg/kg dry	2.90	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitroaniline	<2.53		mg/kg dry	2.53	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
litrobenzene	<4.34		mg/kg dry	4.34	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitrosodimethylamine	<5.93		mg/kg dry	5.93	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitrosodiphenylamine	<3.35	A-01	mg/kg dry	3.35	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitrosodi-n-propylamine	<3.08		mg/kg dry	3.08	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
henanthrene	<3.66		mg/kg dry	3.66	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
yrene	**17.4**		mg/kg dry	4.07	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
yridine	<1.72		mg/kg dry	1.72	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,2,4-Trichlorobenzene	<4.12		mg/kg dry	4.12	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
lenzoic acid	<1.04		mg/kg dry	1.04	29.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Chloro-3-methylphenol	<1.95		mg/kg dry	1.95	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Chlorophenol	<1.85		mg/kg dry	1.85	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
resol(s)	<2.04		mg/kg dry	2.04	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,4-Dichlorophenol	<2.17		mg/kg dry	2.17	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,4-Dimethylphenol	<1.95		mg/kg dry	1.95	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,4-Dinitrophenol	<1.40	CIN	mg/kg dry	1.40	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,6-Dinitro-2-methylphenol	<0.859		mg/kg dry	0.859	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Methylphenol (o-Cresol)	<2.04		mg/kg dry	2.04	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Methylphenol (p-Cresol)	<1.81		mg/kg dry	1.81	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitrophenol	<2.04		mg/kg dry	2.04	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
-Nitrophenol	<1.49		mg/kg dry	1.49	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
entachlorophenol	<1.58		mg/kg dry	1.58	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
henol	<1.40		mg/kg dry	1.40	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,4,5-Trichlorophenol	<2.22		mg/kg dry	2.22	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
,4,6-Trichlorophenol	<1.99		mg/kg dry	1.99	14.9	39.9	01/12/07 10:56	AKE	7010393	SW 8270C
urr: Nitrobenzene-d5 (25-110%)	*66 %*									
urr: 2-Fluorobiphenyl (20-115%)	*66 %*									
urr: Terphenyl-d14 (40-135%)	*70 %*									
urr: Phenol-d6 (30-125%)	*53 %*									
urr: 2-Fluorophenol (25-120%)	*46 %*									
urr: 2,4,6-Tribromophenol (35-130%)	*56 %*									
ST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	**64900**		mg/kg		519	39	01/18/07 21:38	fmk	[CALC]	OA-2 - 8015E

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Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-02RE1 (BH2-R1 0-2' - Soil) - cont.						**Sampled: 01/08/07 14:45**			**Recvd: 01/10/07 08:50**	
JST ANALYSIS PARAMETERS - cont.										
Diesel	**6860**		mg/kg		120	12	01/18/07 20:42	fmk	7010391	OA-2
Gasoline	**215**		mg/kg		13.3	1.33	01/15/07 12:54	fmk	7010391	OA-2
Motor Oil	**57800**		mg/kg		519	51.9	01/18/07 21:38	fmk	7010391	OA-2
Surr: Octacosane (55-120%)	*46988 %*	*ZX*								

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-03 (BH2-R2 15' - Soil)						**Sampled: 01/08/07 15:35**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano				**Phone**		**800-728-7805**				
eneral Chemistry Parameters										
% Solids	**77.4**		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
olatile Organic Compounds										
Acetone	<53.2		ug/kg dry		53.2	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Benzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Bromobenzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Bromochloromethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Bromodichloromethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Bromoform	<10.6		ug/kg dry		10.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Bromomethane	<21.3		ug/kg dry		21.3	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
2-Butanone (MEK)	<53.2		ug/kg dry		53.2	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
n-Butylbenzene	**11.2**		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
sec-Butylbenzene	**26.1**		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
ert-Butylbenzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Carbon disulfide	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Carbon Tetrachloride	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Chlorobenzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Chlorodibromomethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Chloroethane	<21.3		ug/kg dry		21.3	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Chloroform	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Chloromethane	<21.3		ug/kg dry		21.3	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
2-Chlorotoluene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
4-Chlorotoluene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Dibromomethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Dichlorodifluoromethane	<16.0		ug/kg dry		16.0	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,1-Dichloroethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,2-Dichloroethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,1-Dichloroethene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
cis-1,2-Dichloroethene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
rans-1,2-Dichloroethene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,2-Dichloropropane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,3-Dichloropropane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
2,2-Dichloropropane	<21.3		ug/kg dry		21.3	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,1-Dichloropropene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
cis-1,3-Dichloropropene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
rans-1,3-Dichloropropene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Ethylbenzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Hexachlorobutadiene	<26.6		ug/kg dry		26.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Hexane	<26.6		ug/kg dry		26.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
2-Hexanone	<53.2		ug/kg dry		53.2	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Isopropylbenzene	**13.4**		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
p-Isopropyltoluene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
4-Methyl-2-pentanone (MIBK)	<53.2		ug/kg dry		53.2	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Methylene Chloride	<53.2		ug/kg dry		53.2	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Methyl tert-Butyl Ether	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Naphthalene	<26.6		ug/kg dry		26.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
n-Propylbenzene	**6.04**		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Styrene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,1,1,2-Tetrachloroethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-03 (BH2-R2 15' - Soil) - cont.						**Sampled: 01/08/07 15:35**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
1,1,2,2-Tetrachloroethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Tetrachloroethene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Toluene	**8.64**		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,2,3-Trichlorobenzene	<26.6		ug/kg dry		26.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,2,4-Trichlorobenzene	<26.6		ug/kg dry		26.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,1,1-Trichloroethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,1,2-Trichloroethane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Trichloroethene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Trichlorofluoromethane	<21.3		ug/kg dry		21.3	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,2,3-Trichloropropane	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,2,4-Trimethylbenzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
1,3,5-Trimethylbenzene	<5.32		ug/kg dry		5.32	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Vinyl Acetate	<10.6		ug/kg dry		10.6	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Vinyl chloride	<16.0		ug/kg dry		16.0	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Xylenes, total	<16.0		ug/kg dry		16.0	0.823	01/11/07 12:31	MMK	7010477	SW 8260B
Surr: Dibromofluoromethane (75-125%)	*114 %*									
Surr: Toluene-d8 (65-130%)	*103 %*									
Surr: 4-Bromofluorobenzene (70-125%)	*89 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.105		mg/kg dry	0.105	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Acenaphthylene	<0.0969		mg/kg dry	0.0969	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Anthracene	<0.101		mg/kg dry	0.101	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzidine	<0.0413		mg/kg dry	0.0413	4.26	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzo (a) anthracene	<0.109		mg/kg dry	0.109	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<0.106		mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<0.109		mg/kg dry	0.109	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzo (a) pyrene	<0.0956		mg/kg dry	0.0956	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	<0.0969		mg/kg dry	0.0969	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Benzyl alcohol	<0.0840		mg/kg dry	0.0840	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<0.109		mg/kg dry	0.109	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<0.107		mg/kg dry	0.107	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<0.106	A-01	mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<0.0413		mg/kg dry	0.0413	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<0.103		mg/kg dry	0.103	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<0.112		mg/kg dry	0.112	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Carbazole	<0.105		mg/kg dry	0.105	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
4-Chloroaniline	<0.134		mg/kg dry	0.134	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
2-Chloronaphthalene	<0.114		mg/kg dry	0.114	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<0.121		mg/kg dry	0.121	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Chrysene	<0.107		mg/kg dry	0.107	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<0.0762		mg/kg dry	0.0762	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Dibenzofuran	<0.106		mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Di-n-butyl phthalate	<0.114		mg/kg dry	0.114	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
1,2-Dichlorobenzene	<0.0982		mg/kg dry	0.0982	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
1,3-Dichlorobenzene	<0.107		mg/kg dry	0.107	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
1,4-Dichlorobenzene	<0.111		mg/kg dry	0.111	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
3,3'-Dichlorobenzidine	<0.0995		mg/kg dry	0.0995	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Diethyl phthalate	<0.115		mg/kg dry	0.115	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
Dimethyl phthalate	<0.105		mg/kg dry	0.105	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
2,4-Dinitrotoluene	<0.0762		mg/kg dry	0.0762	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-03 (BH2-R2 15' - Soil) - cont.						**Sampled: 01/08/07 15:35**			**Recvd: 01/10/07 08:50**	
:mivolatile Organics by GC/MS - cont.										
,6-Dinitrotoluene	<0.0788		mg/kg dry	0.0788	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
)i-n-octyl phthalate	<0.110		mg/kg dry	0.110	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
luoranthene	<0.0982		mg/kg dry	0.0982	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
luorene	<0.106		mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
lexachlorobenzene	<0.106		mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
lexachlorobutadiene	<0.110		mg/kg dry	0.110	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
lexachlorocyclopentadiene	<0.0762		mg/kg dry	0.0762	0.853	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
lexachloroethane	<0.106		mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
ıdeno (1,2,3-cd) pyrene	<0.0956		mg/kg dry	0.0956	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
;ophorone	<0.106		mg/kg dry	0.106	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Methylnaphthalene	<0.105		mg/kg dry	0.105	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
laphthalene	<0.0995		mg/kg dry	0.0995	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Nitroaniline	<0.0904		mg/kg dry	0.0904	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Nitroaniline	<0.0827		mg/kg dry	0.0827	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Nitroaniline	<0.0724		mg/kg dry	0.0724	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
litrobenzene	<0.124		mg/kg dry	0.124	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
I-Nitrosodimethylamine	<0.169		mg/kg dry	0.169	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
I-Nitrosodiphenylamine	<0.0956	A-01	mg/kg dry	0.0956	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
I-Nitrosodi-n-propylamine	<0.0879		mg/kg dry	0.0879	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
henanthrene	<0.105		mg/kg dry	0.105	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
yrene	<0.116		mg/kg dry	0.116	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
yridine	<0.0491		mg/kg dry	0.0491	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,2,4-Trichlorobenzene	<0.118		mg/kg dry	0.118	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
lenzoic acid	<0.0297		mg/kg dry	0.0297	0.853	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Chloro-3-methylphenol	<0.0556		mg/kg dry	0.0556	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Chlorophenol	<0.0530		mg/kg dry	0.0530	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
:resol(s)	<0.0581		mg/kg dry	0.0581	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,4-Dichlorophenol	<0.0620		mg/kg dry	0.0620	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,4-Dimethylphenol	<0.0556		mg/kg dry	0.0556	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,4-Dinitrophenol	<0.0401	CIN	mg/kg dry	0.0401	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,6-Dinitro-2-methylphenol	<0.0245		mg/kg dry	0.0245	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Methylphenol (o-Cresol)	<0.0581		mg/kg dry	0.0581	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Methylphenol (p-Cresol)	<0.0517		mg/kg dry	0.0517	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Nitrophenol	<0.0581		mg/kg dry	0.0581	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
-Nitrophenol	<0.0426		mg/kg dry	0.0426	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
entachlorophenol	<0.0452		mg/kg dry	0.0452	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
henol	<0.0401		mg/kg dry	0.0401	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,4,5-Trichlorophenol	<0.0633		mg/kg dry	0.0633	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
,4,6-Trichlorophenol	<0.0568		mg/kg dry	0.0568	0.426	0.992	01/11/07 16:54	AKE	7010393	SW 8270C
urr: Nitrobenzene-d5 (25-110%)	*73 %*									
urr: 2-Fluorobiphenyl (20-115%)	*70 %*									
urr: Terphenyl-d14 (40-135%)	*70 %*									
urr: Phenol-d6 (30-125%)	*76 %*									
urr: 2-Fluorophenol (25-120%)	*70 %*									
urr: 2,4,6-Tribromophenol (35-130%)	*84 %*									
ST ANALYSIS PARAMETERS										
otal Extractable Hydrocarbons	**916**		**mg/kg**		**10.0**	**1**	01/15/07 19:19	fmk	[CALC]	OA-2 - 8015E
)iesel	**371**		**mg/kg**		**10.0**	**0.973**	01/15/07 19:19	fmk	7010391	OA-2
;asoline	**48.3**		**mg/kg**		**10.0**	**0.973**	01/15/07 19:19	fmk	7010391	OA-2
lotor Oil	**497**		**mg/kg**		**10.0**	**0.973**	01/15/07 19:19	fmk	7010391	OA-2

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Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-03 (BH2-R2 15' - Soil) - cont.							**Sampled: 01/08/07 15:35**			**Recvd: 01/10/07 08:50**
JST ANALYSIS PARAMETERS - cont.										
Surr: Octacosane (55-120%)	*429 %*	*ZX*								

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
mple ID: CQA0462-04 (BH3-R2 15' - Soil)						**Sampled: 01/09/07 10:30**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
eneral Chemistry Parameters										
% Solids	**80.1**		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
otal Metals by SW 846 Series Methods										
rsenic	**7.31**		mg/kg dry		1.25	0.952	01/16/07 20:57	lbb	7010599	SW 7060A
arium	**261**		mg/kg dry		0.624	0.999	01/15/07 22:50	llw	7010548	SW 6010B
admium	<1.25		mg/kg dry		1.25	0.999	01/15/07 22:50	llw	7010548	SW 6010B
hromium	**16.3**		mg/kg dry		1.25	0.999	01/15/07 22:50	llw	7010548	SW 6010B
ead	**11.4**		mg/kg dry		6.24	0.999	01/15/07 22:50	llw	7010548	SW 6010B
lercury	<0.0250		mg/kg dry		0.0250	0.91	01/12/07 13:48	lmc	7010463	SW 7471A
elenium	**15.1**		mg/kg dry		9.36	0.999	01/15/07 22:50	llw	7010548	SW 6010B
ilver	<1.25		mg/kg dry		1.25	0.999	01/15/07 22:50	llw	7010548	SW 6010B
olatile Organic Compounds										
cetone	<12100		ug/kg dry		12100	193	01/12/07 08:17	MMK	7010490	SW 8260B
enzene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
romobenzene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
romochloromethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
romodichloromethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
romoform	<2410		ug/kg dry		2410	193	01/12/07 08:17	MMK	7010490	SW 8260B
romomethane	<4830		ug/kg dry		4830	193	01/12/07 08:17	MMK	7010490	SW 8260B
-Butanone (MEK)	<12100		ug/kg dry		12100	193	01/12/07 08:17	MMK	7010490	SW 8260B
-Butylbenzene	**6140**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
ec-Butylbenzene	**1690**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
ert-Butylbenzene	**1970**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
arbon disulfide	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
arbon Tetrachloride	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
hlorobenzene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
hlorodibromomethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
hloroethane	<4830		ug/kg dry		4830	193	01/12/07 08:17	MMK	7010490	SW 8260B
hloroform	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
hloromethane	<4830		ug/kg dry		4830	193	01/12/07 08:17	MMK	7010490	SW 8260B
-Chlorotoluene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
-Chlorotoluene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
ibromomethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
ichlorodifluoromethane	<3620		ug/kg dry		3620	193	01/12/07 08:17	MMK	7010490	SW 8260B
,1-Dichloroethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
,2-Dichloroethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
,1-Dichloroethene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
is-1,2-Dichloroethene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
ans-1,2-Dichloroethene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
,2-Dichloropropane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
,3-Dichloropropane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
,2-Dichloropropane	<4830		ug/kg dry		4830	193	01/12/07 08:17	MMK	7010490	SW 8260B
,1-Dichloropropene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
is-1,3-Dichloropropene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
ans-1,3-Dichloropropene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
thylbenzene	**11100**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
exachlorobutadiene	<6040		ug/kg dry		6040	193	01/12/07 08:17	MMK	7010490	SW 8260B
lexane	**8540**		ug/kg dry		6040	193	01/12/07 08:17	MMK	7010490	SW 8260B
-Hexanone	<12100		ug/kg dry		12100	193	01/12/07 08:17	MMK	7010490	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-04 (BH3-R2 15' - Soil) - cont.						**Sampled: 01/09/07 10:30**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
Isopropylbenzene	**2540**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
p-Isopropyltoluene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
4-Methyl-2-pentanone (MIBK)	<12100		ug/kg dry		12100	193	01/12/07 08:17	MMK	7010490	SW 8260B
Methylene Chloride	<12100		ug/kg dry		12100	193	01/12/07 08:17	MMK	7010490	SW 8260B
Methyl tert-Butyl Ether	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Naphthalene	<6040		ug/kg dry		6040	193	01/12/07 08:17	MMK	7010490	SW 8260B
n-Propylbenzene	**8060**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Styrene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,1,1,2-Tetrachloroethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,1,2,2-Tetrachloroethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Tetrachloroethene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Toluene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,2,3-Trichlorobenzene	<6040		ug/kg dry		6040	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,2,4-Trichlorobenzene	<6040		ug/kg dry		6040	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,1,1-Trichloroethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,1,2-Trichloroethane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Trichloroethene	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Trichlorofluoromethane	<4830		ug/kg dry		4830	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,2,3-Trichloropropane	<1210		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,2,4-Trimethylbenzene	**27400**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
1,3,5-Trimethylbenzene	**10300**		ug/kg dry		1210	193	01/12/07 08:17	MMK	7010490	SW 8260B
Vinyl Acetate	<2410		ug/kg dry		2410	193	01/12/07 08:17	MMK	7010490	SW 8260B
Vinyl chloride	<3620		ug/kg dry		3620	193	01/12/07 08:17	MMK	7010490	SW 8260B
Xylenes, total	**14300**		ug/kg dry		3620	193	01/12/07 08:17	MMK	7010490	SW 8260B
Surr: Dibromofluoromethane (75-125%)	*86 %*									
Surr: Toluene-d8 (65-130%)	*96 %*									
Surr: 4-Bromofluorobenzene (70-125%)	*94 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.101		mg/kg dry	0.101	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Acenaphthylene	<0.0936		mg/kg dry	0.0936	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Anthracene	<0.0974		mg/kg dry	0.0974	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzidine	<0.0400		mg/kg dry	0.0400	4.12	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzo (a) anthracene	<0.105		mg/kg dry	0.105	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<0.102		mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<0.105		mg/kg dry	0.105	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzo (a) pyrene	<0.0924		mg/kg dry	0.0924	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	<0.0936		mg/kg dry	0.0936	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Benzyl alcohol	<0.0811		mg/kg dry	0.0811	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<0.105		mg/kg dry	0.105	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<0.104		mg/kg dry	0.104	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<0.102	A-01	mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<0.0400		mg/kg dry	0.0400	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<0.0999		mg/kg dry	0.0999	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<0.109		mg/kg dry	0.109	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Carbazole	<0.101		mg/kg dry	0.101	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
4-Chloroaniline	<0.130		mg/kg dry	0.130	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
2-Chloronaphthalene	<0.110		mg/kg dry	0.110	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<0.117		mg/kg dry	0.117	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Chrysene	<0.104		mg/kg dry	0.104	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<0.0737		mg/kg dry	0.0737	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-04 (BH3-R2	**15' - Soil) - cont.**					**Sampled: 01/09/07 10:30**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
ibenzofuran	<0.102		mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
i-n-butyl phthalate	<0.110		mg/kg dry	0.110	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,2-Dichlorobenzene	<0.0949		mg/kg dry	0.0949	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,3-Dichlorobenzene	<0.104		mg/kg dry	0.104	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4-Dichlorobenzene	<0.107		mg/kg dry	0.107	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,3'-Dichlorobenzidine	<0.0961		mg/kg dry	0.0961	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
iethyl phthalate	<0.111		mg/kg dry	0.111	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
imethyl phthalate	<0.101		mg/kg dry	0.101	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4-Dinitrotoluene	<0.0737		mg/kg dry	0.0737	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,6-Dinitrotoluene	<0.0762		mg/kg dry	0.0762	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
i-n-octyl phthalate	<0.106		mg/kg dry	0.106	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
luoranthene	<0.0949		mg/kg dry	0.0949	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
luorene	<0.102		mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
lexachlorobenzene	<0.102		mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
lexachlorobutadiene	<0.106		mg/kg dry	0.106	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
lexachlorocyclopentadiene	<0.0737		mg/kg dry	0.0737	0.824	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
lexachloroethane	<0.102		mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
ndeno (1,2,3-cd) pyrene	<0.0924		mg/kg dry	0.0924	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
sophorone	<0.102		mg/kg dry	0.102	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Methylnaphthalene	**0.172**	J	mg/kg dry	0.101	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
laphthalene	**0.131**	J	mg/kg dry	0.0961	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Nitroaniline	<0.0874		mg/kg dry	0.0874	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Nitroaniline	<0.0799		mg/kg dry	0.0799	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Nitroaniline	<0.0699		mg/kg dry	0.0699	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
litrobenzene	<0.120		mg/kg dry	0.120	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
l-Nitrosodimethylamine	<0.164		mg/kg dry	0.164	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
l-Nitrosodiphenylamine	<0.0924	A-01	mg/kg dry	0.0924	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
l-Nitrosodi-n-propylamine	<0.0849		mg/kg dry	0.0849	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
henanthrene	<0.101		mg/kg dry	0.101	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
yrene	<0.112		mg/kg dry	0.112	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
yridine	<0.0474		mg/kg dry	0.0474	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,2,4-Trichlorobenzene	<0.114		mg/kg dry	0.114	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
enzoic acid	<0.0287		mg/kg dry	0.0287	0.824	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Chloro-3-methylphenol	<0.0537		mg/kg dry	0.0537	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Chlorophenol	<0.0512		mg/kg dry	0.0512	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
resol(s)	<0.0562		mg/kg dry	0.0562	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4-Dichlorophenol	<0.0599		mg/kg dry	0.0599	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4-Dimethylphenol	<0.0537		mg/kg dry	0.0537	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4-Dinitrophenol	<0.0387	CIN	mg/kg dry	0.0387	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,6-Dinitro-2-methylphenol	<0.0237		mg/kg dry	0.0237	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Methylphenol (o-Cresol)	<0.0562		mg/kg dry	0.0562	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Methylphenol (p-Cresol)	<0.0499		mg/kg dry	0.0499	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Nitrophenol	<0.0562		mg/kg dry	0.0562	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
-Nitrophenol	<0.0412		mg/kg dry	0.0412	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
entachlorophenol	<0.0437		mg/kg dry	0.0437	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
henol	<0.0387		mg/kg dry	0.0387	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4,5-Trichlorophenol	<0.0612		mg/kg dry	0.0612	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
,4,6-Trichlorophenol	<0.0549		mg/kg dry	0.0549	0.412	0.993	01/11/07 17:22	AKE	7010393	SW 8270C
urr: Nitrobenzene-d5 (25-110%)	*57 %*									
urr: 2-Fluorobiphenyl (20-115%)	*55 %*									

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Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-04 (BH3-R2 15' - Soil) - cont.						**Sampled: 01/09/07 10:30**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
Surr: Terphenyl-d14 (40-135%)	*75 %*									
Surr: Phenol-d6 (30-125%)	*61 %*									
Surr: 2-Fluorophenol (25-120%)	*57 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*84 %*									
JST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	**87.5**		mg/kg		10.0	1	01/15/07 20:14	fmk	[CALC]	OA-2 - 8015B
Diesel	**10.1**		mg/kg		10.0	0.998	01/15/07 20:14	fmk	7010391	OA-2
Gasoline	**77.4**		mg/kg		10.0	0.998	01/15/07 20:14	fmk	7010391	OA-2
Motor Oil	<10.0		mg/kg		10.0	0.998	01/15/07 20:14	fmk	7010391	OA-2
Surr: Octacosane (55-120%)	*94 %*									

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Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-05 (BH4-R1 0-2' - Soil)						**Sampled: 01/09/07 11:15**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
General Chemistry Parameters										
% Solids	77.9		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
Total Metals by SW 846 Series Methods										
Arsenic	**8.57**		mg/kg dry		1.28	0.968	01/16/07 21:07	lbb	7010599	SW 7060A
Barium	**252**		mg/kg dry		0.642	0.945	01/15/07 22:55	llw	7010548	SW 6010B
Cadmium	<1.28		mg/kg dry		1.28	0.945	01/15/07 22:55	llw	7010548	SW 6010B
Chromium	**16.4**		mg/kg dry		1.28	0.945	01/15/07 22:55	llw	7010548	SW 6010B
Lead	**120**		mg/kg dry		6.42	0.945	01/15/07 22:55	llw	7010548	SW 6010B
Mercury	**0.0609**		mg/kg dry		0.0257	0.941	01/12/07 13:50	lmc	7010463	SW 7471A
Selenium	**12.9**		mg/kg dry		9.63	0.945	01/15/07 22:55	llw	7010548	SW 6010B
Silver	<1.28		mg/kg dry		1.28	0.945	01/15/07 22:55	llw	7010548	SW 6010B
Semivolatile Organics by GC/MS										
Acenaphthene	<0.104		mg/kg dry	0.104	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Acenaphthylene	<0.0963		mg/kg dry	0.0963	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Anthracene	<0.100		mg/kg dry	0.100	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzidine	<0.0411		mg/kg dry	0.0411	4.24	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzo (a) anthracene	<0.108		mg/kg dry	0.108	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<0.105		mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<0.108		mg/kg dry	0.108	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzo (a) pyrene	<0.0950		mg/kg dry	0.0950	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	**0.120**	J	mg/kg dry	0.0963	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzyl alcohol	<0.0834		mg/kg dry	0.0834	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<0.108		mg/kg dry	0.108	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<0.107		mg/kg dry	0.107	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<0.105	A-01	mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<0.0411		mg/kg dry	0.0411	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<0.103		mg/kg dry	0.103	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<0.112		mg/kg dry	0.112	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Carbazole	<0.104		mg/kg dry	0.104	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Chloroaniline	<0.134		mg/kg dry	0.134	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2-Chloronaphthalene	<0.113		mg/kg dry	0.113	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<0.121		mg/kg dry	0.121	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Chrysene	<0.107		mg/kg dry	0.107	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<0.0757		mg/kg dry	0.0757	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Dibenzofuran	<0.105		mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Di-n-butyl phthalate	<0.113		mg/kg dry	0.113	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
1,2-Dichlorobenzene	<0.0976		mg/kg dry	0.0976	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
1,3-Dichlorobenzene	<0.107		mg/kg dry	0.107	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
1,4-Dichlorobenzene	<0.110		mg/kg dry	0.110	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
3,3'-Dichlorobenzidine	<0.0988		mg/kg dry	0.0988	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Diethyl phthalate	<0.114		mg/kg dry	0.114	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Dimethyl phthalate	<0.104		mg/kg dry	0.104	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,4-Dinitrotoluene	<0.0757		mg/kg dry	0.0757	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,6-Dinitrotoluene	<0.0783		mg/kg dry	0.0783	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Di-n-octyl phthalate	<0.109		mg/kg dry	0.109	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Fluoranthene	**0.121**	J	mg/kg dry	0.0976	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Fluorene	<0.105		mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Hexachlorobenzene	<0.105		mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Hexachlorobutadiene	<0.109		mg/kg dry	0.109	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Sample ID: CQA0462-05 (BH4-R1 0-2' - Soil) - cont. **Sampled: 01/09/07 11:15** **Recvd: 01/10/07 08:50**

Semivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Hexachlorocyclopentadiene	<0.0757		mg/kg dry	0.0757	0.847	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Hexachloroethane	<0.105		mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Indeno (1,2,3-cd) pyrene	**0.104**	J	mg/kg dry	0.0950	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Isophorone	<0.105		mg/kg dry	0.105	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2-Methylnaphthalene	<0.104		mg/kg dry	0.104	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Naphthalene	<0.0988		mg/kg dry	0.0988	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2-Nitroaniline	<0.0899		mg/kg dry	0.0899	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
3-Nitroaniline	<0.0822		mg/kg dry	0.0822	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Nitroaniline	<0.0719		mg/kg dry	0.0719	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Nitrobenzene	<0.123		mg/kg dry	0.123	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
N-Nitrosodimethylamine	<0.168		mg/kg dry	0.168	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
N-Nitrosodiphenylamine	<0.0950	A-01	mg/kg dry	0.0950	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
N-Nitrosodi-n-propylamine	<0.0873		mg/kg dry	0.0873	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Phenanthrene	<0.104		mg/kg dry	0.104	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Pyrene	**0.184**	J	mg/kg dry	0.116	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Pyridine	<0.0488		mg/kg dry	0.0488	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
1,2,4-Trichlorobenzene	<0.117		mg/kg dry	0.117	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Benzoic acid	<0.0295		mg/kg dry	0.0295	0.847	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Chloro-3-methylphenol	<0.0552		mg/kg dry	0.0552	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2-Chlorophenol	<0.0526		mg/kg dry	0.0526	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Cresol(s)	<0.0578		mg/kg dry	0.0578	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,4-Dichlorophenol	<0.0616		mg/kg dry	0.0616	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,4-Dimethylphenol	<0.0552		mg/kg dry	0.0552	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,4-Dinitrophenol	<0.0398	CIN	mg/kg dry	0.0398	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4,6-Dinitro-2-methylphenol	<0.0244		mg/kg dry	0.0244	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2-Methylphenol (o-Cresol)	<0.0578		mg/kg dry	0.0578	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Methylphenol (p-Cresol)	<0.0513		mg/kg dry	0.0513	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2-Nitrophenol	<0.0578		mg/kg dry	0.0578	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
4-Nitrophenol	<0.0424		mg/kg dry	0.0424	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Pentachlorophenol	<0.0449		mg/kg dry	0.0449	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Phenol	<0.0398		mg/kg dry	0.0398	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,4,5-Trichlorophenol	<0.0629		mg/kg dry	0.0629	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
2,4,6-Trichlorophenol	<0.0565		mg/kg dry	0.0565	0.424	0.97	01/11/07 17:51	AKE	7010393	SW 8270C
Surr: Nitrobenzene-d5 (25-110%)	*69 %*									
Surr: 2-Fluorobiphenyl (20-115%)	*66 %*									
Surr: Terphenyl-d14 (40-135%)	*71 %*									
Surr: Phenol-d6 (30-125%)	*72 %*									
Surr: 2-Fluorophenol (25-120%)	*63 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*82 %*									

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

ample ID: CQA0462-06 (BH4-R2 14' - Soil) **Sampled: 01/09/07 12:30** **Recvd: 01/10/07 08:50**

Sampled By: Julie Oriano **Phone 800-728-7805**

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ieneral Chemistry Parameters										
% Solids	76.0		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
emivolatile Organics by GC/MS										
Acenaphthene	<0.107		mg/kg dry	0.107	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Acenaphthylene	<0.0987		mg/kg dry	0.0987	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Anthracene	<0.103		mg/kg dry	0.103	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzidine	<0.0421		mg/kg dry	0.0421	4.34	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzo (a) anthracene	<0.111		mg/kg dry	0.111	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<0.108		mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<0.111		mg/kg dry	0.111	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzo (a) pyrene	<0.0974		mg/kg dry	0.0974	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	<0.0987		mg/kg dry	0.0987	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzyl alcohol	<0.0855		mg/kg dry	0.0855	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<0.111		mg/kg dry	0.111	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<0.109		mg/kg dry	0.109	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<0.108	A-01	mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<0.0421		mg/kg dry	0.0421	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<0.105		mg/kg dry	0.105	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<0.114		mg/kg dry	0.114	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Carbazole	<0.107		mg/kg dry	0.107	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Chloroaniline	<0.137		mg/kg dry	0.137	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2-Chloronaphthalene	<0.116		mg/kg dry	0.116	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<0.124		mg/kg dry	0.124	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Chrysene	<0.109		mg/kg dry	0.109	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<0.0776		mg/kg dry	0.0776	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Dibenzofuran	<0.108		mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Di-n-butyl phthalate	<0.116		mg/kg dry	0.116	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
1,2-Dichlorobenzene	<0.100		mg/kg dry	0.100	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
1,3-Dichlorobenzene	<0.109		mg/kg dry	0.109	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
1,4-Dichlorobenzene	<0.113		mg/kg dry	0.113	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
3,3'-Dichlorobenzidine	<0.101		mg/kg dry	0.101	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Diethyl phthalate	<0.117		mg/kg dry	0.117	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Dimethyl phthalate	<0.107		mg/kg dry	0.107	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,4-Dinitrotoluene	<0.0776		mg/kg dry	0.0776	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,6-Dinitrotoluene	<0.0803		mg/kg dry	0.0803	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Di-n-octyl phthalate	<0.112		mg/kg dry	0.112	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Fluoranthene	<0.100		mg/kg dry	0.100	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Fluorene	<0.108		mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Hexachlorobenzene	<0.108		mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Hexachlorobutadiene	<0.112		mg/kg dry	0.112	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Hexachlorocyclopentadiene	<0.0776		mg/kg dry	0.0776	0.868	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Hexachloroethane	<0.108		mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Indeno (1,2,3-cd) pyrene	<0.0974		mg/kg dry	0.0974	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Isophorone	<0.108		mg/kg dry	0.108	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2-Methylnaphthalene	<0.107		mg/kg dry	0.107	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Naphthalene	<0.101		mg/kg dry	0.101	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2-Nitroaniline	<0.0921		mg/kg dry	0.0921	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
3-Nitroaniline	<0.0842		mg/kg dry	0.0842	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Nitroaniline	<0.0737		mg/kg dry	0.0737	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-06 (BH4-R2 14' - Soil) - cont.						**Sampled: 01/09/07 12:30**			**Recvd: 01/10/07 08:50**	
Semivolatile Organics by GC/MS - cont.										
Nitrobenzene	<0.126		mg/kg dry	0.126	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
N-Nitrosodimethylamine	<0.172		mg/kg dry	0.172	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
N-Nitrosodiphenylamine	<0.0974	A-01	mg/kg dry	0.0974	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
N-Nitrosodi-n-propylamine	<0.0895		mg/kg dry	0.0895	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Phenanthrene	<0.107		mg/kg dry	0.107	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Pyrene	<0.118		mg/kg dry	0.118	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Pyridine	<0.0500		mg/kg dry	0.0500	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
1,2,4-Trichlorobenzene	<0.120		mg/kg dry	0.120	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Benzoic acid	<0.0303		mg/kg dry	0.0303	0.868	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Chloro-3-methylphenol	<0.0566		mg/kg dry	0.0566	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2-Chlorophenol	<0.0539		mg/kg dry	0.0539	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Cresol(s)	<0.0592		mg/kg dry	0.0592	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,4-Dichlorophenol	<0.0632		mg/kg dry	0.0632	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,4-Dimethylphenol	<0.0566		mg/kg dry	0.0566	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,4-Dinitrophenol	<0.0408	CIN	mg/kg dry	0.0408	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4,6-Dinitro-2-methylphenol	<0.0250		mg/kg dry	0.0250	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2-Methylphenol (o-Cresol)	<0.0592		mg/kg dry	0.0592	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Methylphenol (p-Cresol)	<0.0526		mg/kg dry	0.0526	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2-Nitrophenol	<0.0592		mg/kg dry	0.0592	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
4-Nitrophenol	<0.0434		mg/kg dry	0.0434	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Pentachlorophenol	<0.0461		mg/kg dry	0.0461	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Phenol	<0.0408		mg/kg dry	0.0408	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,4,5-Trichlorophenol	<0.0645		mg/kg dry	0.0645	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
2,4,6-Trichlorophenol	<0.0579		mg/kg dry	0.0579	0.434	0.973	01/11/07 18:19	AKE	7010393	SW 8270C
Surr: Nitrobenzene-d5 (25-110%)	*64 %*									
Surr: 2-Fluorobiphenyl (20-115%)	*60 %*									
Surr: Terphenyl-d14 (40-135%)	*74 %*									
Surr: Phenol-d6 (30-125%)	*68 %*									
Surr: 2-Fluorophenol (25-120%)	*62 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*81 %*									
JST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	<10.0		mg/kg		10.0	1	01/15/07 21:08	fmk	[CALC]	OA-2 - 8015E
Diesel	<10.0		mg/kg		10.0	0.997	01/15/07 21:08	fmk	7010391	OA-2
Gasoline	<10.0		mg/kg		10.0	0.997	01/15/07 21:08	fmk	7010391	OA-2
Motor Oil	<10.0		mg/kg		10.0	0.997	01/15/07 21:08	fmk	7010391	OA-2
Surr: Octacosane (55-120%)	*96 %*									

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0462-07 (FD-1 - Soil)						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
eneral Chemistry Parameters										
% Solids	77.7		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
olatile Organic Compounds										
cetone	<52.7		ug/kg dry		52.7	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
enzene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
romobenzene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
romochloromethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
romodichloromethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
romoform	<10.5		ug/kg dry		10.5	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
romomethane	<21.1		ug/kg dry		21.1	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Butanone (MEK)	<52.7		ug/kg dry		52.7	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Butylbenzene	**12.8**		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
ec-Butylbenzene	**29.7**		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
rt-Butylbenzene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
arbon disulfide	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
arbon Tetrachloride	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
hlorobenzene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
hlorodibromomethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
hloroethane	<21.1		ug/kg dry		21.1	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
hloroform	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
hloromethane	<21.1		ug/kg dry		21.1	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Chlorotoluene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Chlorotoluene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
ibromomethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
ichlorodifluoromethane	<15.8		ug/kg dry		15.8	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,1-Dichloroethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,2-Dichloroethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,1-Dichloroethene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
is-1,2-Dichloroethene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
ans-1,2-Dichloroethene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,2-Dichloropropane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,3-Dichloropropane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,2-Dichloropropane	<21.1		ug/kg dry		21.1	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,1-Dichloropropene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
is-1,3-Dichloropropene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
ans-1,3-Dichloropropene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
thylbenzene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
lexachlorobutadiene	<26.3		ug/kg dry		26.3	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
lexane	<26.3		ug/kg dry		26.3	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Hexanone	<52.7		ug/kg dry		52.7	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
sopropylbenzene	**10.6**		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Isopropyltoluene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Methyl-2-pentanone (MIBK)	<52.7		ug/kg dry		52.7	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
lethylene Chloride	<52.7		ug/kg dry		52.7	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
lethyl tert-Butyl Ether	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
laphthalene	<26.3		ug/kg dry		26.3	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
-Propylbenzene	**6.21**		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
tyrene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
,1,1,2-Tetrachloroethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-07 (FD-1 - Soil) - cont.						**Sampled: 01/09/07**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
1,1,2,2-Tetrachloroethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Tetrachloroethene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Toluene	**8.16**		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,2,3-Trichlorobenzene	<26.3		ug/kg dry		26.3	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,2,4-Trichlorobenzene	<26.3		ug/kg dry		26.3	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,1,1-Trichloroethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,1,2-Trichloroethane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Trichloroethene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Trichlorofluoromethane	<21.1		ug/kg dry		21.1	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,2,3-Trichloropropane	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,2,4-Trimethylbenzene	**6.97**		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
1,3,5-Trimethylbenzene	<5.27		ug/kg dry		5.27	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Vinyl Acetate	<10.5		ug/kg dry		10.5	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Vinyl chloride	<15.8		ug/kg dry		15.8	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Xylenes, total	**20.8**		ug/kg dry		15.8	0.819	01/12/07 08:06	MMK	7010482	SW 8260B
Surr: Dibromofluoromethane (75-125%)	*122 %*									
Surr: Toluene-d8 (65-130%)	*103 %*									
Surr: 4-Bromofluorobenzene (70-125%)	*82 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.104		mg/kg dry	0.104	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Acenaphthylene	<0.0965		mg/kg dry	0.0965	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Anthracene	<0.100		mg/kg dry	0.100	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzidine	<0.0412		mg/kg dry	0.0412	4.25	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzo (a) anthracene	<0.108		mg/kg dry	0.108	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzo (b) fluoranthene	<0.106		mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzo (k) fluoranthene	<0.108		mg/kg dry	0.108	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzo (a) pyrene	<0.0952		mg/kg dry	0.0952	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzo (g,h,i) perylene	<0.0965		mg/kg dry	0.0965	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Benzyl alcohol	<0.0837		mg/kg dry	0.0837	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Butyl benzyl phthalate	<0.108		mg/kg dry	0.108	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Bis(2-chloroethyl)ether	<0.107		mg/kg dry	0.107	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Bis(2-chloroethoxy)methane	<0.106	A-01	mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Bis(2-ethylhexyl)phthalate	<0.0412		mg/kg dry	0.0412	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Bis(2-chloroisopropyl) ether	<0.103		mg/kg dry	0.103	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4-Bromophenyl phenyl ether	<0.112		mg/kg dry	0.112	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Carbazole	<0.104		mg/kg dry	0.104	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4-Chloroaniline	<0.134		mg/kg dry	0.134	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
2-Chloronaphthalene	<0.113		mg/kg dry	0.113	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4-Chlorophenyl phenyl ether	<0.121		mg/kg dry	0.121	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Chrysene	<0.107		mg/kg dry	0.107	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Dibenzo (a,h) anthracene	<0.0759		mg/kg dry	0.0759	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Dibenzofuran	<0.106		mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Di-n-butyl phthalate	<0.113		mg/kg dry	0.113	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
1,2-Dichlorobenzene	<0.0978		mg/kg dry	0.0978	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
1,3-Dichlorobenzene	<0.107		mg/kg dry	0.107	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
1,4-Dichlorobenzene	<0.111		mg/kg dry	0.111	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
3,3'-Dichlorobenzidine	<0.0991		mg/kg dry	0.0991	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Diethyl phthalate	<0.115		mg/kg dry	0.115	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Dimethyl phthalate	<0.104		mg/kg dry	0.104	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
2,4-Dinitrotoluene	<0.0759		mg/kg dry	0.0759	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
mple ID: CQA0462-07 (FD-1 - Soil) - cont.						**Sampled: 01/09/07**			**Recvd: 01/10/07 08:50**	
mivolatile Organics by GC/MS - cont.										
6-Dinitrotoluene	<0.0785		mg/kg dry	0.0785	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
i-n-octyl phthalate	<0.109		mg/kg dry	0.109	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
uoranthene	<0.0978		mg/kg dry	0.0978	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
uorene	<0.106		mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
exachlorobenzene	<0.106		mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
exachlorobutadiene	<0.109		mg/kg dry	0.109	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
exachlorocyclopentadiene	<0.0759		mg/kg dry	0.0759	0.849	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
exachloroethane	<0.106		mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
deno (1,2,3-cd) pyrene	<0.0952		mg/kg dry	0.0952	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
ophorone	<0.106		mg/kg dry	0.106	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Methylnaphthalene	<0.104		mg/kg dry	0.104	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
aphthalene	<0.0991		mg/kg dry	0.0991	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Nitroaniline	<0.0901		mg/kg dry	0.0901	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Nitroaniline	<0.0824		mg/kg dry	0.0824	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Nitroaniline	<0.0721		mg/kg dry	0.0721	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
itrobenzene	<0.124		mg/kg dry	0.124	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
-Nitrosodimethylamine	<0.169		mg/kg dry	0.169	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
-Nitrosodiphenylamine	<0.0952	A-01	mg/kg dry	0.0952	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
-Nitrosodi-n-propylamine	<0.0875		mg/kg dry	0.0875	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
ıenanthrene	<0.104		mg/kg dry	0.104	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
yrene	**0.116**	**J**	mg/kg dry	0.116	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
ridine	<0.0489		mg/kg dry	0.0489	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
2,4-Trichlorobenzene	<0.117		mg/kg dry	0.117	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
enzoic acid	<0.0296		mg/kg dry	0.0296	0.849	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Chloro-3-methylphenol	<0.0553		mg/kg dry	0.0553	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Chlorophenol	<0.0528		mg/kg dry	0.0528	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
resol(s)	<0.0579		mg/kg dry	0.0579	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4-Dichlorophenol	<0.0618		mg/kg dry	0.0618	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4-Dimethylphenol	<0.0553		mg/kg dry	0.0553	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4-Dinitrophenol	<0.0399	CIN	mg/kg dry	0.0399	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
6-Dinitro-2-methylphenol	<0.0245		mg/kg dry	0.0245	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Methylphenol (o-Cresol)	<0.0579		mg/kg dry	0.0579	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Methylphenol (p-Cresol)	<0.0515		mg/kg dry	0.0515	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Nitrophenol	<0.0579		mg/kg dry	0.0579	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
Nitrophenol	<0.0425		mg/kg dry	0.0425	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
ntachlorophenol	<0.0450		mg/kg dry	0.0450	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
ıenol	<0.0399		mg/kg dry	0.0399	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4,5-Trichlorophenol	<0.0631		mg/kg dry	0.0631	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
4,6-Trichlorophenol	<0.0566		mg/kg dry	0.0566	0.425	0.979	01/11/07 18:48	AKE	7010393	SW 8270C
rr: Nitrobenzene-d5 (25-110%)	*67 %*									
rr: 2-Fluorobiphenyl (20-115%)	*63 %*									
rr: Terphenyl-d14 (40-135%)	*70 %*									
rr: Phenol-d6 (30-125%)	*68 %*									
rr: 2-Fluorophenol (25-120%)	*62 %*									
rr: 2,4,6-Tribromophenol (35-130%)	*80 %*									
ST ANALYSIS PARAMETERS										
otal Extractable Hydrocarbons	**243**		mg/kg		10.0	1	01/15/07 22:03	fmk	[CALC]	OA-2 - 8015B
iesel	**101**		mg/kg		10.0	0.986	01/15/07 22:03	fmk	7010391	OA-2
asoline	**11.8**		mg/kg		10.0	0.986	01/15/07 22:03	fmk	7010391	OA-2
lotor Oil	**130**		mg/kg		10.0	0.986	01/15/07 22:03	fmk	7010391	OA-2

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0462-07 (FD-1 - Soil) - cont.						**Sampled: 01/09/07**			**Recvd: 01/10/07 08:50**	
UST ANALYSIS PARAMETERS - cont.										
Surr: Octacosane (55-120%)	*189 %*	*ZX*								

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Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
mple ID: CQA0462-08 (FD-2 - Soil)						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
neral Chemistry Parameters										
Solids	**80.0**		%		1.00	1	01/10/07 15:30	sas	7010434	SM 2540 G
tal Metals by SW 846 Series Methods										
rsenic	**5.65**		mg/kg dry		1.25	0.911	01/16/07 21:10	lbb	7010599	SW 7060A
arium	**226**		mg/kg dry		0.625	0.985	01/15/07 23:00	llw	7010548	SW 6010B
admium	<1.25		mg/kg dry		1.25	0.985	01/15/07 23:00	llw	7010548	SW 6010B
hromium	**11.2**		mg/kg dry		1.25	0.985	01/15/07 23:00	llw	7010548	SW 6010B
ead	**11.9**		mg/kg dry		6.25	0.985	01/15/07 23:00	llw	7010548	SW 6010B
lercury	<0.0250		mg/kg dry		0.0250	0.944	01/12/07 13:52	lmc	7010463	SW 7471A
elenium	**14.0**		mg/kg dry		9.38	0.985	01/15/07 23:00	llw	7010548	SW 6010B
ilver	<1.25		mg/kg dry		1.25	0.985	01/15/07 23:00	llw	7010548	SW 6010B

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Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Semivolatile Organics by GC/MS							
SW 8270C	7010393	CQA0462-01	30	1	01/10/07 15:11	FMK	SW 3550B GCMS
SW 8270C	7010393	CQA0462-02	30	4	01/10/07 15:11	FMK	SW 3550B GCMS
SW 8270C	7010393	CQA0462-03	30	1	01/10/07 15:11	FMK	SW 3550B GCMS
SW 8270C	7010393	CQA0462-04	30	1	01/10/07 15:11	FMK	SW 3550B GCMS
SW 8270C	7010393	CQA0462-05	31	1	01/10/07 15:11	FMK	SW 3550B GCMS
SW 8270C	7010393	CQA0462-06	31	1	01/10/07 15:11	FMK	SW 3550B GCMS
SW 8270C	7010393	CQA0462-07	31	1	01/10/07 15:11	FMK	SW 3550B GCMS
UST ANALYSIS PARAMETERS							
OA-2	7010391	CQA0462-01	30	3	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-02	30	4	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-02RE1	30	4	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-02RE2	30	4	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-03	31	3	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-04	30	3	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-06	30	3	01/10/07 15:08	FMK	SW 3550B GC
OA-2	7010391	CQA0462-07	30	3	01/10/07 15:08	FMK	SW 3550B GC
OA-2 - 8015B	[CALC]	CQA0462-01	1	1	01/10/07 15:08		[CALC]
OA-2 - 8015B	[CALC]	CQA0462-02	1	1	01/10/07 15:08		[CALC]
OA-2 - 8015B	[CALC]	CQA0462-03	1	1	01/10/07 15:08		[CALC]
OA-2 - 8015B	[CALC]	CQA0462-04	1	1	01/10/07 15:08		[CALC]
OA-2 - 8015B	[CALC]	CQA0462-06	1	1	01/10/07 15:08		[CALC]
OA-2 - 8015B	[CALC]	CQA0462-07	1	1	01/10/07 15:08		[CALC]

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Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
otal Metals by SW 846 Series Methods														
lercury	7010463			mg/kg wet	N/A	0.0200	<0.0200							
arium	7010548			mg/kg wet	N/A	0.500	<0.500							
admium	7010548			mg/kg wet	N/A	1.00	<1.00							
hromium	7010548			mg/kg wet	N/A	1.00	<1.00							
ead	7010548			mg/kg wet	N/A	5.00	<5.00							
elenium	7010548			mg/kg wet	N/A	7.50	<7.50							
ilver	7010548			mg/kg wet	N/A	1.00	<1.00							
rsenic	7010599			mg/kg wet	N/A	1.00	<1.00							
olatile Organic Compounds														
cetone	7010477			ug/kg wet	N/A	80.2	<80.2							
enzene	7010477			ug/kg wet	N/A	8.02	<8.02							
romobenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
romochloromethane	7010477			ug/kg wet	N/A	8.02	<8.02							
romodichloromethane	7010477			ug/kg wet	N/A	8.02	<8.02							
romoform	7010477			ug/kg wet	N/A	16.0	<16.0							
romomethane	7010477			ug/kg wet	N/A	32.1	<32.1							
-Butanone (MEK)	7010477			ug/kg wet	N/A	80.2	<80.2							
-Butylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
ec-Butylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
ert-Butylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
arbon disulfide	7010477			ug/kg wet	N/A	8.02	<8.02							
arbon Tetrachloride	7010477			ug/kg wet	N/A	8.02	<8.02							
hlorobenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
hlorodibromomethane	7010477			ug/kg wet	N/A	8.02	<8.02							
hloroethane	7010477			ug/kg wet	N/A	32.1	<32.1							
hloroform	7010477			ug/kg wet	N/A	8.02	<8.02							
hloromethane	7010477			ug/kg wet	N/A	32.1	<32.1							
-Chlorotoluene	7010477			ug/kg wet	N/A	8.02	<8.02							
-Chlorotoluene	7010477			ug/kg wet	N/A	8.02	<8.02							
ibromomethane	7010477			ug/kg wet	N/A	8.02	<8.02							
ichlorodifluoromethane	7010477			ug/kg wet	N/A	24.1	<24.1							
,1-Dichloroethane	7010477			ug/kg wet	N/A	8.02	<8.02							
,2-Dichloroethane	7010477			ug/kg wet	N/A	8.02	<8.02							
,1-Dichloroethene	7010477			ug/kg wet	N/A	8.02	<8.02							
is-1,2-Dichloroethene	7010477			ug/kg wet	N/A	8.02	<8.02							
ans-1,2-Dichloroethene	7010477			ug/kg wet	N/A	8.02	<8.02							
,2-Dichloropropane	7010477			ug/kg wet	N/A	8.02	<8.02							
,3-Dichloropropane	7010477			ug/kg wet	N/A	8.02	<8.02							
,2-Dichloropropane	7010477			ug/kg wet	N/A	32.1	<32.1							
,1-Dichloropropene	7010477			ug/kg wet	N/A	8.02	<8.02							
is-1,3-Dichloropropene	7010477			ug/kg wet	N/A	8.02	<8.02							
ans-1,3-Dichloropropene	7010477			ug/kg wet	N/A	8.02	<8.02							
thylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
lexachlorobutadiene	7010477			ug/kg wet	N/A	40.1	<40.1							
lexane	7010477			ug/kg wet	N/A	40.1	<40.1							

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8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
2-Hexanone	7010477			ug/kg wet	N/A	80.2	<80.2							
Isopropylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
p-Isopropyltoluene	7010477			ug/kg wet	N/A	8.02	<8.02							
4-Methyl-2-pentanone (MIBK)	7010477			ug/kg wet	N/A	80.2	<80.2							
Methylene Chloride	7010477			ug/kg wet	N/A	80.2	<80.2							
Methyl tert-Butyl Ether	7010477			ug/kg wet	N/A	8.02	<8.02							
Naphthalene	7010477			ug/kg wet	N/A	40.1	<40.1							
n-Propylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
Styrene	7010477			ug/kg wet	N/A	8.02	<8.02							
1,1,1,2-Tetrachloroethane	7010477			ug/kg wet	N/A	8.02	<8.02							
1,1,2,2-Tetrachloroethane	7010477			ug/kg wet	N/A	8.02	<8.02							
Tetrachloroethene	7010477			ug/kg wet	N/A	8.02	<8.02							
Toluene	7010477			ug/kg wet	N/A	8.02	<8.02							
1,2,3-Trichlorobenzene	7010477			ug/kg wet	N/A	40.1	<40.1							
1,2,4-Trichlorobenzene	7010477			ug/kg wet	N/A	40.1	<40.1							
1,1,1-Trichloroethane	7010477			ug/kg wet	N/A	8.02	<8.02							
1,1,2-Trichloroethane	7010477			ug/kg wet	N/A	8.02	<8.02							
Trichloroethene	7010477			ug/kg wet	N/A	8.02	<8.02							
Trichlorofluoromethane	7010477			ug/kg wet	N/A	32.1	<32.1							
1,2,3-Trichloropropane	7010477			ug/kg wet	N/A	8.02	<8.02							
1,2,4-Trimethylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
1,3,5-Trimethylbenzene	7010477			ug/kg wet	N/A	8.02	<8.02							
Vinyl Acetate	7010477			ug/kg wet	N/A	16.0	<16.0							
Vinyl chloride	7010477			ug/kg wet	N/A	24.1	<24.1							
Xylenes, total	7010477			ug/kg wet	N/A	24.1	<24.1							
Surrogate: Dibromofluoromethane	*7010477*			ug/L					*94*		*75-125*			
Surrogate: Toluene-d8	*7010477*			ug/L					*94*		*65-130*			
Surrogate: 4-Bromofluorobenzene	*7010477*			ug/L					*96*		*70-125*			
Acetone	7010482			ug/kg wet	N/A	67.7	<67.7							
Benzene	7010482			ug/kg wet	N/A	6.77	<6.77							
Bromobenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
Bromochloromethane	7010482			ug/kg wet	N/A	6.77	<6.77							
Bromodichloromethane	7010482			ug/kg wet	N/A	6.77	<6.77							
Bromoform	7010482			ug/kg wet	N/A	13.5	<13.5							
Bromomethane	7010482			ug/kg wet	N/A	27.1	<27.1							
2-Butanone (MEK)	7010482			ug/kg wet	N/A	67.7	<67.7							
n-Butylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
sec-Butylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
tert-Butylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
Carbon disulfide	7010482			ug/kg wet	N/A	6.77	<6.77							
Carbon Tetrachloride	7010482			ug/kg wet	N/A	6.77	<6.77							
Chlorobenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
Chlorodibromomethane	7010482			ug/kg wet	N/A	6.77	<6.77							
Chloroethane	7010482			ug/kg wet	N/A	27.1	<27.1							

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Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
hloroform	7010482			ug/kg wet	N/A	6.77	<6.77							
hloromethane	7010482			ug/kg wet	N/A	27.1	<27.1							
-Chlorotoluene	7010482			ug/kg wet	N/A	6.77	<6.77							
-Chlorotoluene	7010482			ug/kg wet	N/A	6.77	<6.77							
ibromomethane	7010482			ug/kg wet	N/A	6.77	<6.77							
ichlorodifluoromethane	7010482			ug/kg wet	N/A	20.3	<20.3							
1-Dichloroethane	7010482			ug/kg wet	N/A	6.77	<6.77							
2-Dichloroethane	7010482			ug/kg wet	N/A	6.77	<6.77							
1-Dichloroethene	7010482			ug/kg wet	N/A	6.77	<6.77							
s-1,2-Dichloroethene	7010482			ug/kg wet	N/A	6.77	<6.77							
ans-1,2-Dichloroethene	7010482			ug/kg wet	N/A	6.77	<6.77							
2-Dichloropropane	7010482			ug/kg wet	N/A	6.77	<6.77							
3-Dichloropropane	7010482			ug/kg wet	N/A	6.77	<6.77							
2-Dichloropropane	7010482			ug/kg wet	N/A	27.1	<27.1							
1-Dichloropropene	7010482			ug/kg wet	N/A	6.77	<6.77							
s-1,3-Dichloropropene	7010482			ug/kg wet	N/A	6.77	<6.77							
ans-1,3-Dichloropropene	7010482			ug/kg wet	N/A	6.77	<6.77							
thylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
exachlorobutadiene	7010482			ug/kg wet	N/A	33.8	<33.8							
exane	7010482			ug/kg wet	N/A	33.8	<33.8							
-Hexanone	7010482			ug/kg wet	N/A	67.7	<67.7							
opropylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
-Isopropyltoluene	7010482			ug/kg wet	N/A	6.77	<6.77							
-Methyl-2-pentanone (MIBK)	7010482			ug/kg wet	N/A	67.7	<67.7							
lethylene Chloride	7010482			ug/kg wet	N/A	67.7	<67.7							
lethyl tert-Butyl Ether	7010482			ug/kg wet	N/A	6.77	<6.77							
aphthalene	7010482			ug/kg wet	N/A	33.8	<33.8							
-Propylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
tyrene	7010482			ug/kg wet	N/A	6.77	<6.77							
1,1,2-Tetrachloroethane	7010482			ug/kg wet	N/A	6.77	<6.77							
1,2,2-Tetrachloroethane	7010482			ug/kg wet	N/A	6.77	<6.77							
etrachloroethene	7010482			ug/kg wet	N/A	6.77	<6.77							
oluene	7010482			ug/kg wet	N/A	6.77	<6.77							
2,3-Trichlorobenzene	7010482			ug/kg wet	N/A	33.8	<33.8							
2,4-Trichlorobenzene	7010482			ug/kg wet	N/A	33.8	<33.8							
1,1-Trichloroethane	7010482			ug/kg wet	N/A	6.77	<6.77							
1,2-Trichloroethane	7010482			ug/kg wet	N/A	6.77	<6.77							
richloroethene	7010482			ug/kg wet	N/A	6.77	<6.77							
richlorofluoromethane	7010482			ug/kg wet	N/A	27.1	<27.1							
2,3-Trichloropropane	7010482			ug/kg wet	N/A	6.77	<6.77							
2,4-Trimethylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
3,5-Trimethylbenzene	7010482			ug/kg wet	N/A	6.77	<6.77							
inyl Acetate	7010482			ug/kg wet	N/A	13.5	<13.5							
inyl chloride	7010482			ug/kg wet	N/A	20.3	<20.3							
ylenes, total	7010482			ug/kg wet	N/A	20.3	<20.3							

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Project Number: 728500J - Cluster #1

Received: 01/10/07
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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
Surrogate: Dibromofluoromethane	*7010482*			ug/L					*91*		*75-125*			
Surrogate: Toluene-d8	*7010482*			ug/L					*95*		*65-130*			
Surrogate: 4-Bromofluorobenzene	*7010482*			ug/L					*97*		*70-125*			
Acetone	7010490			ug/kg wet	N/A	2330	<2330							
Benzene	7010490			ug/kg wet	N/A	233	<233							
Bromobenzene	7010490			ug/kg wet	N/A	233	<233							
Bromochloromethane	7010490			ug/kg wet	N/A	233	<233							
Bromodichloromethane	7010490			ug/kg wet	N/A	233	<233							
Bromoform	7010490			ug/kg wet	N/A	466	<466							
Bromomethane	7010490			ug/kg wet	N/A	933	<933							
2-Butanone (MEK)	7010490			ug/kg wet	N/A	2330	<2330							
n-Butylbenzene	7010490			ug/kg wet	N/A	233	<233							
sec-Butylbenzene	7010490			ug/kg wet	N/A	233	<233							
tert-Butylbenzene	7010490			ug/kg wet	N/A	233	<233							
Carbon disulfide	7010490			ug/kg wet	N/A	233	<233							
Carbon Tetrachloride	7010490			ug/kg wet	N/A	233	<233							
Chlorobenzene	7010490			ug/kg wet	N/A	233	<233							
Chlorodibromomethane	7010490			ug/kg wet	N/A	233	<233							
Chloroethane	7010490			ug/kg wet	N/A	933	<933							
Chloroform	7010490			ug/kg wet	N/A	233	<233							
Chloromethane	7010490			ug/kg wet	N/A	933	<933							
2-Chlorotoluene	7010490			ug/kg wet	N/A	233	<233							
4-Chlorotoluene	7010490			ug/kg wet	N/A	233	<233							
Dibromomethane	7010490			ug/kg wet	N/A	233	<233							
Dichlorodifluoromethane	7010490			ug/kg wet	N/A	699	<699							
1,1-Dichloroethane	7010490			ug/kg wet	N/A	233	<233							
1,2-Dichloroethane	7010490			ug/kg wet	N/A	233	<233							
1,1-Dichloroethene	7010490			ug/kg wet	N/A	233	<233							
cis-1,2-Dichloroethene	7010490			ug/kg wet	N/A	233	<233							
trans-1,2-Dichloroethene	7010490			ug/kg wet	N/A	233	<233							
1,2-Dichloropropane	7010490			ug/kg wet	N/A	233	<233							
1,3-Dichloropropane	7010490			ug/kg wet	N/A	233	<233							
2,2-Dichloropropane	7010490			ug/kg wet	N/A	933	<933							
1,1-Dichloropropene	7010490			ug/kg wet	N/A	233	<233							
cis-1,3-Dichloropropene	7010490			ug/kg wet	N/A	233	<233							
trans-1,3-Dichloropropene	7010490			ug/kg wet	N/A	233	<233							
Ethylbenzene	7010490			ug/kg wet	N/A	233	<233							
Hexachlorobutadiene	7010490			ug/kg wet	N/A	1170	<1170							
Hexane	7010490			ug/kg wet	N/A	1170	<1170							
2-Hexanone	7010490			ug/kg wet	N/A	2330	<2330							
Isopropylbenzene	7010490			ug/kg wet	N/A	233	<233							
p-Isopropyltoluene	7010490			ug/kg wet	N/A	233	<233							
4-Methyl-2-pentanone (MIBK)	7010490			ug/kg wet	N/A	2330	<2330							
Methylene Chloride	7010490			ug/kg wet	N/A	2330	<2330							

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
lethyl tert-Butyl Ether	7010490			ug/kg wet	N/A	233	<233							
aphthalene	7010490			ug/kg wet	N/A	1170	<1170							
-Propylbenzene	7010490			ug/kg wet	N/A	233	<233							
tyrene	7010490			ug/kg wet	N/A	233	<233							
,1,1,2-Tetrachloroethane	7010490			ug/kg wet	N/A	233	<233							
,1,2,2-Tetrachloroethane	7010490			ug/kg wet	N/A	233	<233							
etrachloroethene	7010490			ug/kg wet	N/A	233	<233							
oluene	7010490			ug/kg wet	N/A	233	<233							
,2,3-Trichlorobenzene	7010490			ug/kg wet	N/A	1170	<1170							
,2,4-Trichlorobenzene	7010490			ug/kg wet	N/A	1170	<1170							
,1,1-Trichloroethane	7010490			ug/kg wet	N/A	233	<233							
,1,2-Trichloroethane	7010490			ug/kg wet	N/A	233	<233							
richloroethene	7010490			ug/kg wet	N/A	233	<233							
richlorofluoromethane	7010490			ug/kg wet	N/A	933	<933							
,2,3-Trichloropropane	7010490			ug/kg wet	N/A	233	<233							
,2,4-Trimethylbenzene	7010490			ug/kg wet	N/A	233	<233							
,3,5-Trimethylbenzene	7010490			ug/kg wet	N/A	233	<233							
'inyl Acetate	7010490			ug/kg wet	N/A	466	<466							
'inyl chloride	7010490			ug/kg wet	N/A	699	<699							
ylenes, total	7010490			ug/kg wet	N/A	699	<699							
urrogate: Dibromofluoromethane	*7010490*			ug/L					*87*		*75-125*			
urrogate: Toluene-d8	*7010490*			ug/L					*94*		*65-130*			
urrogate: 4-Bromofluorobenzene	*7010490*			ug/L					*97*		*70-125*			
cetone	7010633			ug/kg wet	N/A	76.8	<76.8							
crylonitrile	7010633			ug/kg wet	N/A	76.8	<76.8							
enzene	7010633			ug/kg wet	N/A	7.68	<7.68							
romobenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
romochloromethane	7010633			ug/kg wet	N/A	7.68	<7.68							
romodichloromethane	7010633			ug/kg wet	N/A	7.68	<7.68							
romoform	7010633			ug/kg wet	N/A	15.4	<15.4							
romomethane	7010633			ug/kg wet	N/A	30.7	<30.7							
-Butanone (MEK)	7010633			ug/kg wet	N/A	76.8	<76.8							
-Butylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
ec-Butylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
rt-Butylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
arbon disulfide	7010633			ug/kg wet	N/A	7.68	<7.68							
arbon Tetrachloride	7010633			ug/kg wet	N/A	7.68	<7.68							
hlorobenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
hlorodibromomethane	7010633			ug/kg wet	N/A	7.68	<7.68							
hloroethane	7010633			ug/kg wet	N/A	30.7	<30.7							
hloroform	7010633			ug/kg wet	N/A	7.68	<7.68							
hloromethane	7010633			ug/kg wet	N/A	30.7	<30.7							
-Chlorotoluene	7010633			ug/kg wet	N/A	7.68	<7.68							
-Chlorotoluene	7010633			ug/kg wet	N/A	7.68	<7.68							

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Project Number: 728500J - Cluster #1

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
/olatile Organic Compounds														
,2-Dibromo-3-chloropropane	7010633			ug/kg wet	N/A	76.8	<76.8							
,2-Dibromoethane (EDB)	7010633			ug/kg wet	N/A	76.8	<76.8							
)ibromomethane	7010633			ug/kg wet	N/A	7.68	<7.68							
,2-Dichlorobenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
,3-Dichlorobenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
,4-Dichlorobenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
)ichlorodifluoromethane	7010633			ug/kg wet	N/A	23.0	<23.0							
,1-Dichloroethane	7010633			ug/kg wet	N/A	7.68	<7.68							
,2-Dichloroethane	7010633			ug/kg wet	N/A	7.68	<7.68							
,1-Dichloroethene	7010633			ug/kg wet	N/A	7.68	<7.68							
is-1,2-Dichloroethene	7010633			ug/kg wet	N/A	7.68	<7.68							
rans-1,2-Dichloroethene	7010633			ug/kg wet	N/A	7.68	<7.68							
,2-Dichloropropane	7010633			ug/kg wet	N/A	7.68	<7.68							
,3-Dichloropropane	7010633			ug/kg wet	N/A	7.68	<7.68							
,2-Dichloropropane	7010633			ug/kg wet	N/A	30.7	<30.7							
,1-Dichloropropene	7010633			ug/kg wet	N/A	7.68	<7.68							
is-1,3-Dichloropropene	7010633			ug/kg wet	N/A	7.68	<7.68							
rans-1,3-Dichloropropene	7010633			ug/kg wet	N/A	7.68	<7.68							
thylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
lexachlorobutadiene	7010633			ug/kg wet	N/A	38.4	<38.4							
lexane	7010633			ug/kg wet	N/A	38.4	<38.4							
sopropylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
-Isopropyltoluene	7010633			ug/kg wet	N/A	7.68	<7.68							
Aethylene Chloride	7010633			ug/kg wet	N/A	76.8	<76.8							
Aethyl tert-Butyl Ether	7010633			ug/kg wet	N/A	7.68	<7.68							
Japhthalene	7010633			ug/kg wet	N/A	38.4	<38.4							
-Propylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
tyrene	7010633			ug/kg wet	N/A	7.68	<7.68							
,1,1,2-Tetrachloroethane	7010633			ug/kg wet	N/A	7.68	<7.68							
,1,2,2-Tetrachloroethane	7010633			ug/kg wet	N/A	7.68	<7.68							
etrachloroethene	7010633			ug/kg wet	N/A	7.68	<7.68							
oluene	7010633			ug/kg wet	N/A	7.68	<7.68							
,2,3-Trichlorobenzene	7010633			ug/kg wet	N/A	38.4	<38.4							
,2,4-Trichlorobenzene	7010633			ug/kg wet	N/A	38.4	<38.4							
,1,1-Trichloroethane	7010633			ug/kg wet	N/A	7.68	<7.68							
,1,2-Trichloroethane	7010633			ug/kg wet	N/A	7.68	<7.68							
richloroethene	7010633			ug/kg wet	N/A	7.68	<7.68							
richlorofluoromethane	7010633			ug/kg wet	N/A	30.7	<30.7							
,2,3-Trichloropropane	7010633			ug/kg wet	N/A	7.68	<7.68							
,2,4-Trimethylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
,3,5-Trimethylbenzene	7010633			ug/kg wet	N/A	7.68	<7.68							
/inyl chloride	7010633			ug/kg wet	N/A	23.0	<23.0							
Cylenes, total	7010633			ug/kg wet	N/A	23.0	<23.0							
urrogate: Dibromofluoromethane	*7010633*			ug/L					*92*		*75-125*			
urrogate: Toluene-d8	*7010633*			ug/L					*97*		*65-130*			

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Project Number: 728500J - Cluster #1

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
ırrogate: 4-Bromofluorobenzene	*7010633*			ug/L					*100*		*70-125*			
emivolatile Organics by GC/MS														
cenaphthene	7010393			mg/kg wet	0.0810	0.330	<0.0810							
cenaphthylene	7010393			mg/kg wet	0.0750	0.330	<0.0750							
nthracene	7010393			mg/kg wet	0.0780	0.330	<0.0780							
enzidine	7010393			mg/kg wet	0.0320	3.30	<0.0320							
enzo (a) anthracene	7010393			mg/kg wet	0.0840	0.330	<0.0840							
enzo (b) fluoranthene	7010393			mg/kg wet	0.0820	0.330	<0.0820							
enzo (k) fluoranthene	7010393			mg/kg wet	0.0840	0.330	<0.0840							
enzo (a) pyrene	7010393			mg/kg wet	0.0740	0.330	<0.0740							
enzo (g,h,i) perylene	7010393			mg/kg wet	0.0750	0.330	<0.0750							
enzyl alcohol	7010393			mg/kg wet	0.0650	0.330	<0.0650							
utyl benzyl phthalate	7010393			mg/kg wet	0.0840	0.330	<0.0840							
is(2-chloroethyl)ether	7010393			mg/kg wet	0.0830	0.330	<0.0830							
is(2-chloroethoxy)methane	7010393			mg/kg wet	0.0820	0.330	<0.0820							A-01
is(2-ethylhexyl)phthalate	7010393			mg/kg wet	0.0320	0.330	<0.0320							
is(2-chloroisopropyl) ether	7010393			mg/kg wet	0.0800	0.330	<0.0800							
-Bromophenyl phenyl ether	7010393			mg/kg wet	0.0870	0.330	<0.0870							
arbazole	7010393			mg/kg wet	0.0810	0.330	<0.0810							
-Chloroaniline	7010393			mg/kg wet	0.104	0.330	<0.104							
-Chloronaphthalene	7010393			mg/kg wet	0.0880	0.330	<0.0880							
-Chlorophenyl phenyl ether	7010393			mg/kg wet	0.0940	0.330	<0.0940							
hrysene	7010393			mg/kg wet	0.0830	0.330	<0.0830							
ibenzo (a,h) anthracene	7010393			mg/kg wet	0.0590	0.330	<0.0590							
ibenzofuran	7010393			mg/kg wet	0.0820	0.330	<0.0820							
i-n-butyl phthalate	7010393			mg/kg wet	0.0880	0.330	<0.0880							
2-Dichlorobenzene	7010393			mg/kg wet	0.0760	0.330	<0.0760							
3-Dichlorobenzene	7010393			mg/kg wet	0.0830	0.330	<0.0830							
4-Dichlorobenzene	7010393			mg/kg wet	0.0860	0.330	<0.0860							
3'-Dichlorobenzidine	7010393			mg/kg wet	0.0770	0.330	<0.0770							
iethyl phthalate	7010393			mg/kg wet	0.0890	0.330	<0.0890							
imethyl phthalate	7010393			mg/kg wet	0.0810	0.330	<0.0810							
4-Dinitrotoluene	7010393			mg/kg wet	0.0590	0.330	<0.0590							
6-Dinitrotoluene	7010393			mg/kg wet	0.0610	0.330	<0.0610							
i-n-octyl phthalate	7010393			mg/kg wet	0.0850	0.330	<0.0850							
luoranthene	7010393			mg/kg wet	0.0760	0.330	<0.0760							
luorene	7010393			mg/kg wet	0.0820	0.330	<0.0820							
exachlorobenzene	7010393			mg/kg wet	0.0820	0.330	<0.0820							
exachlorobutadiene	7010393			mg/kg wet	0.0850	0.330	<0.0850							
exachlorocyclopentadiene	7010393			mg/kg wet	0.0590	0.660	<0.0590							
exachloroethane	7010393			mg/kg wet	0.0820	0.330	<0.0820							
ıdeno (1,2,3-cd) pyrene	7010393			mg/kg wet	0.0740	0.330	<0.0740							
ophorone	7010393			mg/kg wet	0.0820	0.330	<0.0820							
-Methylnaphthalene	7010393			mg/kg wet	0.0810	0.330	<0.0810							

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
Naphthalene	7010393			mg/kg wet	0.0770	0.330	<0.0770							
2-Nitroaniline	7010393			mg/kg wet	0.0700	0.330	<0.0700							
3-Nitroaniline	7010393			mg/kg wet	0.0640	0.330	<0.0640							
4-Nitroaniline	7010393			mg/kg wet	0.0560	0.330	<0.0560							
Nitrobenzene	7010393			mg/kg wet	0.0960	0.330	<0.0960							
N-Nitrosodimethylamine	7010393			mg/kg wet	0.131	0.330	<0.131							
N-Nitrosodiphenylamine	7010393			mg/kg wet	0.0740	0.330	<0.0740							A-01
N-Nitrosodi-n-propylamine	7010393			mg/kg wet	0.0680	0.330	<0.0680							
Phenanthrene	7010393			mg/kg wet	0.0810	0.330	<0.0810							
Pyrene	7010393			mg/kg wet	0.0900	0.330	<0.0900							
Pyridine	7010393			mg/kg wet	0.0380	0.330	<0.0380							
1,2,4-Trichlorobenzene	7010393			mg/kg wet	0.0910	0.330	<0.0910							
Benzoic acid	7010393			mg/kg wet	0.0230	0.660	<0.0230							
4-Chloro-3-methylphenol	7010393			mg/kg wet	0.0430	0.330	<0.0430							
2-Chlorophenol	7010393			mg/kg wet	0.0410	0.330	<0.0410							
Cresol(s)	7010393			mg/kg wet	0.0450	0.330	<0.0450							
2,4-Dichlorophenol	7010393			mg/kg wet	0.0480	0.330	<0.0480							
2,4-Dimethylphenol	7010393			mg/kg wet	0.0430	0.330	<0.0430							
2,4-Dinitrophenol	7010393			mg/kg wet	0.0310	0.330	<0.0310							CIN
4,6-Dinitro-2-methylphenol	7010393			mg/kg wet	0.0190	0.330	<0.0190							
2-Methylphenol (o-Cresol)	7010393			mg/kg wet	0.0450	0.330	<0.0450							
4-Methylphenol (p-Cresol)	7010393			mg/kg wet	0.0400	0.330	<0.0400							
2-Nitrophenol	7010393			mg/kg wet	0.0450	0.330	<0.0450							
4-Nitrophenol	7010393			mg/kg wet	0.0330	0.330	<0.0330							
Pentachlorophenol	7010393			mg/kg wet	0.0350	0.330	<0.0350							
Phenol	7010393			mg/kg wet	0.0310	0.330	<0.0310							
2,4,5-Trichlorophenol	7010393			mg/kg wet	0.0490	0.330	<0.0490							
2,4,6-Trichlorophenol	7010393			mg/kg wet	0.0440	0.330	<0.0440							
Surrogate: Nitrobenzene-d5	*7010393*			mg/kg wet					*74*		*25-110*			
Surrogate: 2-Fluorobiphenyl	*7010393*			mg/kg wet					*71*		*20-115*			
Surrogate: Terphenyl-d14	*7010393*			mg/kg wet					*83*		*40-135*			
Surrogate: Phenol-d6	*7010393*			mg/kg wet					*75*		*30-125*			
Surrogate: 2-Fluorophenol	*7010393*			mg/kg wet					*69*		*25-120*			
Surrogate: 2,4,6-Tribromophenol	*7010393*			mg/kg wet					*72*		*35-130*			
UST ANALYSIS PARAMETERS														
Diesel	7010391			mg/kg	N/A	10.0	<10.0							
Gasoline	7010391			mg/kg	N/A	10.0	<10.0							
Motor Oil	7010391			mg/kg	N/A	10.0	<10.0							
Surrogate: Octacosane	*7010391*			mg/kg					*80*		*55-120*			

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

CCV QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS													
.cenaphthene	7A12001		60.0	ug/mL	N/A	N/A	64.4	107		80-120			
.cenaphthene	7A12001		60.0	ug/mL	N/A	N/A	64.4	107		80-120			
.cenaphthylene	7A12001		60.0	ug/mL	N/A	N/A	62.7	104		80-120			
.cenaphthylene	7A12001		60.0	ug/mL	N/A	N/A	62.7	104		80-120			
.nthracene	7A12001		60.0	ug/mL	N/A	N/A	63.8	106		80-120			
.nthracene	7A12001		60.0	ug/mL	N/A	N/A	63.8	106		80-120			
enzidine	7A12001		60.0	ug/mL	N/A	N/A	50.6	84		80-120			
enzidine	7A12001		60.0	ug/mL	N/A	N/A	50.6	84		50-150			
enzo (a) anthracene	7A12001		60.0	ug/mL	N/A	N/A	63.0	105		80-120			
enzo (a) anthracene	7A12001		60.0	ug/mL	N/A	N/A	63.0	105		80-120			
enzo (b) fluoranthene	7A12001		60.0	ug/mL	N/A	N/A	63.6	106		80-120			
enzo (b) fluoranthene	7A12001		60.0	ug/mL	N/A	N/A	63.6	106		80-120			
enzo (k) fluoranthene	7A12001		60.0	ug/mL	N/A	N/A	63.3	106		80-120			
enzo (k) fluoranthene	7A12001		60.0	ug/mL	N/A	N/A	63.3	106		80-120			
enzo (a) pyrene	7A12001		60.0	ug/mL	N/A	N/A	64.4	107		80-120			
enzo (a) pyrene	7A12001		60.0	ug/mL	N/A	N/A	64.4	107		80-120			
enzo (g,h,i) perylene	7A12001		60.0	ug/mL	N/A	N/A	63.1	105		80-120			
enzo (g,h,i) perylene	7A12001		60.0	ug/mL	N/A	N/A	63.1	105		80-120			
enzyl alcohol	7A12001		60.0	ug/mL	N/A	N/A	60.6	101		80-120			
enzyl alcohol	7A12001		60.0	ug/mL	N/A	N/A	60.6	101		80-120			
utyl benzyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	64.6	108		80-120			
utyl benzyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	64.6	108		80-120			
is(2-chloroethyl)ether	7A12001		60.0	ug/mL	N/A	N/A	62.0	103		80-120			
is(2-chloroethyl)ether	7A12001		60.0	ug/mL	N/A	N/A	62.0	103		80-120			
is(2-chloroethoxy)methane	7A12001		60.0	ug/mL	N/A	N/A	65.3	109		80-120			ICV
is(2-chloroethoxy)methane	7A12001		60.0	ug/mL	N/A	N/A	65.3	109		80-120			A-01
is(2-ethylhexyl)phthalate	7A12001		60.0	ug/mL	N/A	N/A	63.5	106		80-120			
is(2-ethylhexyl)phthalate	7A12001		60.0	ug/mL	N/A	N/A	63.5	106		80-120			
is(2-chloroisopropyl) ether	7A12001		60.0	ug/mL	N/A	N/A	60.0	100		80-120			
is(2-chloroisopropyl) ether	7A12001		60.0	ug/mL	N/A	N/A	60.0	100		80-120			
-Bromophenyl phenyl ether	7A12001		60.0	ug/mL	N/A	N/A	67.4	112		80-120			
-Bromophenyl phenyl ether	7A12001		60.0	ug/mL	N/A	N/A	67.4	112		80-120			
arbazole	7A12001		60.0	ug/mL	N/A	N/A	65.9	110		80-120			
arbazole	7A12001		60.0	ug/mL	N/A	N/A	65.9	110		80-120			
-Chloroaniline	7A12001		60.0	ug/mL	N/A	N/A	63.2	105		80-120			
-Chloroaniline	7A12001		60.0	ug/mL	N/A	N/A	63.2	105		80-120			
-Chloronaphthalene	7A12001		60.0	ug/mL	N/A	N/A	65.1	108		80-120			
-Chloronaphthalene	7A12001		60.0	ug/mL	N/A	N/A	65.1	108		80-120			
-Chlorophenyl phenyl ether	7A12001		60.0	ug/mL	N/A	N/A	63.0	105		80-120			
-Chlorophenyl phenyl ether	7A12001		60.0	ug/mL	N/A	N/A	63.0	105		80-120			
hrysene	7A12001		60.0	ug/mL	N/A	N/A	62.1	104		80-120			
hrysene	7A12001		60.0	ug/mL	N/A	N/A	62.1	104		80-120			
ibenzo (a,h) anthracene	7A12001		60.0	ug/mL	N/A	N/A	65.8	110		80-120			
ibenzo (a,h) anthracene	7A12001		60.0	ug/mL	N/A	N/A	65.8	110		80-120			
ibenzofuran	7A12001		60.0	ug/mL	N/A	N/A	63.8	106		80-120			
ibenzofuran	7A12001		60.0	ug/mL	N/A	N/A	63.8	106		80-120			
i-n-butyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	64.6	108		80-120			
i-n-butyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	64.6	108		80-120			
,2-Dichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	64.0	107		80-120			

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Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
1,2-Dichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	64.0		107		80-120			
1,3-Dichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	63.6		106		80-120			
1,3-Dichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	63.6		106		80-120			
1,4-Dichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	63.1		105		80-120			
1,4-Dichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	63.1		105		80-120			
3,3'-Dichlorobenzidine	7A12001		60.0	ug/mL	N/A	N/A	65.2		109		80-120			
3,3'-Dichlorobenzidine	7A12001		60.0	ug/mL	N/A	N/A	65.2		109		80-120			
Diethyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	64.4		107		80-120			
Diethyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	64.4		107		80-120			
Dimethyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	63.3		106		80-120			
Dimethyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	63.3		106		80-120			
2,4-Dinitrotoluene	7A12001		60.0	ug/mL	N/A	N/A	66.4		111		80-120			
2,4-Dinitrotoluene	7A12001		60.0	ug/mL	N/A	N/A	66.4		111		80-120			
2,6-Dinitrotoluene	7A12001		60.0	ug/mL	N/A	N/A	64.2		107		80-120			
2,6-Dinitrotoluene	7A12001		60.0	ug/mL	N/A	N/A	64.2		107		80-120			
Di-n-octyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	65.8		110		80-120			
Di-n-octyl phthalate	7A12001		60.0	ug/mL	N/A	N/A	65.8		110		80-120			
Fluoranthene	7A12001		60.0	ug/mL	N/A	N/A	63.9		106		80-120			
Fluoranthene	7A12001		60.0	ug/mL	N/A	N/A	63.9		106		80-120			
Fluorene	7A12001		60.0	ug/mL	N/A	N/A	62.2		104		80-120			
Fluorene	7A12001		60.0	ug/mL	N/A	N/A	62.2		104		80-120			
Hexachlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	67.6		113		80-120			
Hexachlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	67.6		113		80-120			
Hexachlorobutadiene	7A12001		60.0	ug/mL	N/A	N/A	64.4		107		80-120			
Hexachlorobutadiene	7A12001		60.0	ug/mL	N/A	N/A	64.4		107		80-120			
Hexachlorocyclopentadiene	7A12001		60.0	ug/mL	N/A	N/A	67.2		112		80-120			
Hexachlorocyclopentadiene	7A12001		60.0	ug/mL	N/A	N/A	67.2		112		80-120			
Hexachloroethane	7A12001		60.0	ug/mL	N/A	N/A	64.3		107		80-120			
Hexachloroethane	7A12001		60.0	ug/mL	N/A	N/A	64.3		107		80-120			
Indeno (1,2,3-cd) pyrene	7A12001		60.0	ug/mL	N/A	N/A	64.6		108		80-120			
Indeno (1,2,3-cd) pyrene	7A12001		60.0	ug/mL	N/A	N/A	64.6		108		80-120			
Isophorone	7A12001		60.0	ug/mL	N/A	N/A	64.2		107		80-120			
Isophorone	7A12001		60.0	ug/mL	N/A	N/A	64.2		107		80-120			
2-Methylnaphthalene	7A12001		60.0	ug/mL	N/A	N/A	60.6		101		80-120			
2-Methylnaphthalene	7A12001		60.0	ug/mL	N/A	N/A	60.6		101		80-120			
Naphthalene	7A12001		60.0	ug/mL	N/A	N/A	63.0		105		80-120			
Naphthalene	7A12001		60.0	ug/mL	N/A	N/A	63.0		105		80-120			
2-Nitroaniline	7A12001		60.0	ug/mL	N/A	N/A	65.4		109		80-120			
2-Nitroaniline	7A12001		60.0	ug/mL	N/A	N/A	65.4		109		80-120			
3-Nitroaniline	7A12001		60.0	ug/mL	N/A	N/A	65.4		109		80-120			
3-Nitroaniline	7A12001		60.0	ug/mL	N/A	N/A	65.4		109		80-120			
4-Nitroaniline	7A12001		60.0	ug/mL	N/A	N/A	63.6		106		80-120			
4-Nitroaniline	7A12001		60.0	ug/mL	N/A	N/A	63.6		106		80-120			
Nitrobenzene	7A12001		60.0	ug/mL	N/A	N/A	66.2		110		80-120			
Nitrobenzene	7A12001		60.0	ug/mL	N/A	N/A	66.2		110		80-120			
N-Nitrosodimethylamine	7A12001		60.0	ug/mL	N/A	N/A	65.1		108		80-120			
N-Nitrosodimethylamine	7A12001		60.0	ug/mL	N/A	N/A	65.1		108		80-120			
N-Nitrosodiphenylamine	7A12001		60.0	ug/mL	N/A	N/A	65.3		109		80-120			ICV
N-Nitrosodiphenylamine	7A12001		60.0	ug/mL	N/A	N/A	65.3		109		80-120			A-01

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Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS													
-Nitrosodi-n-propylamine	7A12001		60.0	ug/mL	N/A	N/A	59.2	99		80-120			
-Nitrosodi-n-propylamine	7A12001		60.0	ug/mL	N/A	N/A	59.2	99		80-120			
ienanthrene	7A12001		60.0	ug/mL	N/A	N/A	63.3	106		80-120			
ienanthrene	7A12001		60.0	ug/mL	N/A	N/A	63.3	106		80-120			
/rene	7A12001		60.0	ug/mL	N/A	N/A	61.3	102		80-120			
/rene	7A12001		60.0	ug/mL	N/A	N/A	61.3	102		80-120			
yridine	7A12001		60.0	ug/mL	N/A	N/A	66.7	111		80-120			
yridine	7A12001		60.0	ug/mL	N/A	N/A	66.7	111		80-120			
2,4-Trichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	66.7	111		80-120			
2,4-Trichlorobenzene	7A12001		60.0	ug/mL	N/A	N/A	66.7	111		80-120			
enzoic acid	7A12001		60.0	ug/mL	N/A	N/A	63.4	106		80-120			
-Chloro-3-methylphenol	7A12001		60.0	ug/mL	N/A	N/A	59.5	99		80-120			
-Chlorophenol	7A12001		60.0	ug/mL	N/A	N/A	62.7	104		80-120			
resol(s)	7A12001		120	ug/mL	N/A	N/A	119	99		80-120			
4-Dichlorophenol	7A12001		60.0	ug/mL	N/A	N/A	65.6	109		80-120			
4-Dimethylphenol	7A12001		60.0	ug/mL	N/A	N/A	63.4	106		80-120			
4-Dinitrophenol	7A12001		60.0	ug/mL	N/A	N/A	74.4	124		50-150			CIN
6-Dinitro-2-methylphenol	7A12001		60.0	ug/mL	N/A	N/A	67.9	113		80-120			
-Methylphenol (o-Cresol)	7A12001		60.0	ug/mL	N/A	N/A	59.7	100		80-120			
-Methylphenol (p-Cresol)	7A12001		60.0	ug/mL	N/A	N/A	59.0	98		80-120			
-Nitrophenol	7A12001		60.0	ug/mL	N/A	N/A	68.6	114		80-120			
-Nitrophenol	7A12001		60.0	ug/mL	N/A	N/A	62.8	105		80-120			
entachlorophenol	7A12001		60.0	ug/mL	N/A	N/A	66.6	111		80-120			
henol	7A12001		60.0	ug/mL	N/A	N/A	61.3	102		80-120			
,4,5-Trichlorophenol	7A12001		60.0	ug/mL	N/A	N/A	64.6	108		80-120			
,4,6-Trichlorophenol	7A12001		60.0	ug/mL	N/A	N/A	63.9	106		80-120			
urrogate: Nitrobenzene-d5	*7A12001*			ug/mL				*107*		*80-120*			
urrogate: Nitrobenzene-d5	*7A12001*			ug/mL				*107*		*80-120*			
urrogate: 2-Fluorobiphenyl	*7A12001*			ug/mL				*106*		*80-120*			
urrogate: 2-Fluorobiphenyl	*7A12001*			ug/mL				*106*		*80-120*			
urrogate: Terphenyl-d14	*7A12001*			ug/mL				*102*		*80-120*			
urrogate: Terphenyl-d14	*7A12001*			ug/mL				*102*		*80-120*			
urrogate: Phenol-d6	*7A12001*			ug/mL				*103*		*80-120*			
urrogate: 2-Fluorophenol	*7A12001*			ug/mL				*107*		*80-120*			
urrogate: 2,4,6-Tribromophenol	*7A12001*			ug/mL				*110*		*80-120*			
cenaphthene	7A15001		50.0	ug/mL	N/A	N/A	49.5	99		80-120			
cenaphthene	7A15001		50.0	ug/mL	N/A	N/A	49.5	99		80-120			
cenaphthylene	7A15001		50.0	ug/mL	N/A	N/A	48.8	98		80-120			
cenaphthylene	7A15001		50.0	ug/mL	N/A	N/A	48.8	98		80-120			
nthracene	7A15001		50.0	ug/mL	N/A	N/A	49.6	99		80-120			
nthracene	7A15001		50.0	ug/mL	N/A	N/A	49.6	99		80-120			
enzidine	7A15001		50.0	ug/mL	N/A	N/A	37.2	74		50-150			
enzidine	7A15001		50.0	ug/mL	N/A	N/A	37.2	74		50-150			
enzo (a) anthracene	7A15001		50.0	ug/mL	N/A	N/A	48.9	98		80-120			
enzo (a) anthracene	7A15001		50.0	ug/mL	N/A	N/A	48.9	98		80-120			
enzo (b) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.4	97		80-120			
enzo (b) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.4	97		80-120			
enzo (k) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.3	97		80-120			
enzo (k) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.3	97		80-120			

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Semivolatile Organics by GC/MS														
Benzo (a) pyrene	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
Benzo (a) pyrene	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
Benzo (g,h,i) perylene	7A15001		50.0	ug/mL	N/A	N/A	47.5		95		80-120			
Benzo (g,h,i) perylene	7A15001		50.0	ug/mL	N/A	N/A	47.5		95		80-120			
Benzyl alcohol	7A15001		50.0	ug/mL	N/A	N/A	52.5		105		80-120			
Benzyl alcohol	7A15001		50.0	ug/mL	N/A	N/A	52.5		105		80-120			
Butyl benzyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	49.6		99		80-120			
Butyl benzyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	49.6		99		80-120			
Bis(2-chloroethyl)ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
Bis(2-chloroethyl)ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
Bis(2-chloroethoxy)methane	7A15001		50.0	ug/mL	N/A	N/A	50.3		101		80-120			A-01
Bis(2-chloroethoxy)methane	7A15001		50.0	ug/mL	N/A	N/A	50.3		101		80-120			ICV
Bis(2-ethylhexyl)phthalate	7A15001		50.0	ug/mL	N/A	N/A	51.2		102		80-120			
Bis(2-ethylhexyl)phthalate	7A15001		50.0	ug/mL	N/A	N/A	51.2		102		80-120			
Bis(2-chloroisopropyl) ether	7A15001		50.0	ug/mL	N/A	N/A	50.5		101		80-120			
Bis(2-chloroisopropyl) ether	7A15001		50.0	ug/mL	N/A	N/A	50.5		101		80-120			
4-Bromophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
4-Bromophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
Carbazole	7A15001		50.0	ug/mL	N/A	N/A	50.6		101		80-120			
Carbazole	7A15001		50.0	ug/mL	N/A	N/A	50.6		101		80-120			
4-Chloroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.2		98		80-120			
4-Chloroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.2		98		80-120			
2-Chloronaphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.0		98		80-120			
2-Chloronaphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.0		98		80-120			
4-Chlorophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
4-Chlorophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
Chrysene	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
Chrysene	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
Dibenzo (a,h) anthracene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
Dibenzo (a,h) anthracene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
Dibenzofuran	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
Dibenzofuran	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
Di-n-butyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
Di-n-butyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
1,2-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.4		103		80-120			
1,2-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.4		103		80-120			
1,3-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.9		100		80-120			
1,3-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.9		100		80-120			
1,4-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
1,4-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
3,3'-Dichlorobenzidine	7A15001		50.0	ug/mL	N/A	N/A	49.8		100		80-120			
3,3'-Dichlorobenzidine	7A15001		50.0	ug/mL	N/A	N/A	49.8		100		80-120			
Diethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.8		98		80-120			
Diethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.8		98		80-120			
Dimethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
Dimethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
2,4-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
2,4-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
2,6-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

CCV QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS													
6-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	48.4	97		80-120			
i-n-octyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	52.9	106		80-120			
i-n-octyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	52.9	106		80-120			
luoranthene	7A15001		50.0	ug/mL	N/A	N/A	49.2	98		80-120			
luoranthene	7A15001		50.0	ug/mL	N/A	N/A	49.2	98		80-120			
luorene	7A15001		50.0	ug/mL	N/A	N/A	48.4	97		80-120			
luorene	7A15001		50.0	ug/mL	N/A	N/A	48.4	97		80-120			
exachlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.3	103		80-120			
exachlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.3	103		80-120			
exachlorobutadiene	7A15001		50.0	ug/mL	N/A	N/A	47.4	95		80-120			
exachlorobutadiene	7A15001		50.0	ug/mL	N/A	N/A	47.4	95		80-120			
exachlorocyclopentadiene	7A15001		50.0	ug/mL	N/A	N/A	46.2	92		80-120			
exachlorocyclopentadiene	7A15001		50.0	ug/mL	N/A	N/A	46.2	92		80-120			
exachloroethane	7A15001		50.0	ug/mL	N/A	N/A	50.0	100		80-120			
exachloroethane	7A15001		50.0	ug/mL	N/A	N/A	50.0	100		80-120			
ıdeno (1,2,3-cd) pyrene	7A15001		50.0	ug/mL	N/A	N/A	49.3	99		80-120			
ıdeno (1,2,3-cd) pyrene	7A15001		50.0	ug/mL	N/A	N/A	49.3	99		80-120			
ophorone	7A15001		50.0	ug/mL	N/A	N/A	50.3	101		80-120			
ophorone	7A15001		50.0	ug/mL	N/A	N/A	50.3	101		80-120			
-Methylnaphthalene	7A15001		50.0	ug/mL	N/A	N/A	46.5	93		80-120			
-Methylnaphthalene	7A15001		50.0	ug/mL	N/A	N/A	46.5	93		80-120			
laphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.7	99		80-120			
laphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.7	99		80-120			
-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	51.1	102		80-120			
-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	51.1	102		80-120			
-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.3	99		80-120			
-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.3	99		80-120			
-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.4	99		80-120			
-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.4	99		80-120			
litrobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.1	102		80-120			
litrobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.1	102		80-120			
I-Nitrosodimethylamine	7A15001		50.0	ug/mL	N/A	N/A	52.6	105		80-120			
I-Nitrosodimethylamine	7A15001		50.0	ug/mL	N/A	N/A	52.6	105		80-120			
I-Nitrosodiphenylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1	98		80-120			A-01
I-Nitrosodiphenylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1	98		80-120			ICV
I-Nitrosodi-n-propylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1	98		80-120			
I-Nitrosodi-n-propylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1	98		80-120			
henanthrene	7A15001		50.0	ug/mL	N/A	N/A	50.1	100		80-120			
henanthrene	7A15001		50.0	ug/mL	N/A	N/A	50.1	100		80-120			
yrene	7A15001		50.0	ug/mL	N/A	N/A	47.9	96		80-120			
yrene	7A15001		50.0	ug/mL	N/A	N/A	47.9	96		80-120			
yridine	7A15001		50.0	ug/mL	N/A	N/A	48.9	98		80-120			
yridine	7A15001		50.0	ug/mL	N/A	N/A	48.9	98		80-120			
,2,4-Trichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.0	98		80-120			
,2,4-Trichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.0	98		80-120			
enzoic acid	7A15001		50.0	ug/mL	N/A	N/A	53.2	106		80-120			
-Chloro-3-methylphenol	7A15001		50.0	ug/mL	N/A	N/A	47.3	95		80-120			
-Chlorophenol	7A15001		50.0	ug/mL	N/A	N/A	51.7	103		80-120			
resol(s)	7A15001		100	ug/mL	N/A	N/A	100	100		80-120			

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Julie Oriano

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Project Number: 728500J - Cluster #1

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CCV QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
2,4-Dichlorophenol	7A15001		50.0	ug/mL	N/A	N/A	51.1		102		80-120			
2,4-Dimethylphenol	7A15001		50.0	ug/mL	N/A	N/A	49.7		99		80-120			
2,4-Dinitrophenol	7A15001		50.0	ug/mL	N/A	N/A	55.1		110		80-120			CIN
4,6-Dinitro-2-methylphenol	7A15001		50.0	ug/mL	N/A	N/A	51.7		103		80-120			
2-Methylphenol (o-Cresol)	7A15001		50.0	ug/mL	N/A	N/A	50.2		100		80-120			
4-Methylphenol (p-Cresol)	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
2-Nitrophenol	7A15001		50.0	ug/mL	N/A	N/A	53.0		106		80-120			
4-Nitrophenol	7A15001		50.0	ug/mL	N/A	N/A	46.7		93		80-120			
Pentachlorophenol	7A15001		50.0	ug/mL	N/A	N/A	54.3		109		80-120			
Phenol	7A15001		50.0	ug/mL	N/A	N/A	51.3		103		80-120			
2,4,5-Trichlorophenol	7A15001		50.0	ug/mL	N/A	N/A	49.7		99		80-120			
2,4,6-Trichlorophenol	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
Surrogate: Nitrobenzene-d5	*7A15001*			ug/mL					*100*		*80-110*			
Surrogate: Nitrobenzene-d5	*7A15001*			ug/mL					*100*		*80-110*			
Surrogate: 2-Fluorobiphenyl	*7A15001*			ug/mL					*96*		*80-110*			
Surrogate: 2-Fluorobiphenyl	*7A15001*			ug/mL					*96*		*80-110*			
Surrogate: Terphenyl-d14	*7A15001*			ug/mL					*96*		*80-115*			
Surrogate: Terphenyl-d14	*7A15001*			ug/mL					*96*		*80-115*			
Surrogate: Phenol-d6	*7A15001*			ug/mL					*103*		*80-120*			
Surrogate: 2-Fluorophenol	*7A15001*			ug/mL					*101*		*80-120*			
Surrogate: 2,4,6-Tribromophenol	*7A15001*			ug/mL					*103*		*80-120*			
UST ANALYSIS PARAMETERS														
Gasoline	7A11011		2500	ug/mL	N/A	N/A	2400		96		80-120			
Surrogate: Octacosane	*7A11011*			ug/mL					*100*		*80-120*			
Gasoline	7A16003		2500	ug/mL	N/A	N/A	2400		96		80-120			
Surrogate: Octacosane	*7A16003*			ug/mL					*106*		*80-120*			

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LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	% REC Limits	RPD	RPD Limit	Q
eneral Chemistry Parameters												
C Source Sample: CQA0387-01												
Solids	7010434	74.0		%	N/A	0.100	73.4			1	10	
C Source Sample: CQA0367-01												
Solids	7010434	18.1		%	N/A	0.100	18.4			2	10	
C Source Sample: CQA0462-05												
Solids	7010434	77.9		%	N/A	0.100	77.5			1	10	

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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Total Metals by SW 846 Series Methods													
Mercury	7010463		0.160	mg/kg wet	N/A	0.0200	0.151	94		70-105			
Barium	7010548		50.0	mg/kg wet	N/A	0.500	52.2	104		80-110			
Cadmium	7010548		50.0	mg/kg wet	N/A	1.00	48.3	97		80-115			
Chromium	7010548		50.0	mg/kg wet	N/A	1.00	47.8	96		80-110			
Lead	7010548		100	mg/kg wet	N/A	5.00	97.1	97		80-115			
Selenium	7010548		200	mg/kg wet	N/A	7.50	185	92		80-110			
Silver	7010548		50.0	mg/kg wet	N/A	1.00	48.6	97		80-110			
Arsenic	7010599		2.00	mg/kg wet	N/A	1.00	1.96	98		80-120			
Volatile Organic Compounds													
Benzene	7010477		30.2	ug/kg wet	N/A	7.55	30.2	100		75-135			
Bromobenzene	7010477		30.2	ug/kg wet	N/A	7.55	30.3	100		65-140			
Bromochloromethane	7010477		30.2	ug/kg wet	N/A	7.55	31.2	103		70-140			
Bromodichloromethane	7010477		30.2	ug/kg wet	N/A	7.55	30.8	102		70-135			
Bromoform	7010477		30.2	ug/kg wet	N/A	15.1	30.2	100		65-120			
Bromomethane	7010477		30.2	ug/kg wet	N/A	30.2	30.0	99		45-130			
n-Butylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	27.9	92		50-130			
sec-Butylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	27.6	91		60-130			
tert-Butylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	28.0	93		60-130			
Carbon Tetrachloride	7010477		30.2	ug/kg wet	N/A	7.55	29.0	96		60-145			
Chlorobenzene	7010477		30.2	ug/kg wet	N/A	7.55	31.2	103		65-130			
Chlorodibromomethane	7010477		30.2	ug/kg wet	N/A	7.55	28.4	94		70-125			
2-Chloroethylvinyl ether	7010477		30.2	ug/kg wet	N/A	75.5	22.0	73		50-130			
Chloroethane	7010477		30.2	ug/kg wet	N/A	30.2	26.9	89		50-135			
Chloroform	7010477		30.2	ug/kg wet	N/A	7.55	30.7	102		70-135			
Chloromethane	7010477		30.2	ug/kg wet	N/A	30.2	29.5	98		50-125			
2-Chlorotoluene	7010477		30.2	ug/kg wet	N/A	7.55	31.8	105		55-145			
4-Chlorotoluene	7010477		30.2	ug/kg wet	N/A	7.55	30.3	100		60-140			
Cyclohexane	7010477		30.2	ug/kg wet	N/A	151	25.3	84		45-130			
1,2-Dibromo-3-chloropropane	7010477		30.2	ug/kg wet	N/A	75.5	28.0	93		40-125			
1,2-Dibromoethane (EDB)	7010477		30.2	ug/kg wet	N/A	75.5	28.9	96		65-130			
Dibromomethane	7010477		30.2	ug/kg wet	N/A	7.55	32.1	106		75-140			
1,2-Dichlorobenzene	7010477		30.2	ug/kg wet	N/A	7.55	29.4	97		65-125			
1,3-Dichlorobenzene	7010477		30.2	ug/kg wet	N/A	7.55	28.3	94		60-135			
1,4-Dichlorobenzene	7010477		30.2	ug/kg wet	N/A	7.55	29.8	99		55-130			
Dichlorodifluoromethane	7010477		30.2	ug/kg wet	N/A	22.6	28.3	94		45-115			
1,1-Dichloroethane	7010477		30.2	ug/kg wet	N/A	7.55	24.3	80		65-135			
1,2-Dichloroethane	7010477		30.2	ug/kg wet	N/A	7.55	33.6	111		70-140			
1,1-Dichloroethene	7010477		30.2	ug/kg wet	N/A	7.55	25.0	83		60-140			
cis-1,2-Dichloroethene	7010477		30.2	ug/kg wet	N/A	7.55	32.4	107		65-135			
trans-1,2-Dichloroethene	7010477		30.2	ug/kg wet	N/A	7.55	23.5	78		65-135			
trans-1,4-Dichloro-2-butene	7010477		30.2	ug/kg wet	N/A	15.1	29.5	98		60-130			
1,2-Dichloropropane	7010477		30.2	ug/kg wet	N/A	7.55	32.3	107		55-135			
1,3-Dichloropropane	7010477		30.2	ug/kg wet	N/A	7.55	31.3	104		75-135			

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Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds													
2-Dichloropropane	7010477		30.2	ug/kg wet	N/A	30.2	33.4	111		65-130			
1-Dichloropropene	7010477		30.2	ug/kg wet	N/A	7.55	32.2	107		70-135			
s-1,3-Dichloropropene	7010477		30.2	ug/kg wet	N/A	7.55	30.8	102		70-125			
ans-1,3-Dichloropropene	7010477		30.2	ug/kg wet	N/A	7.55	30.4	101		65-125			
i-isopropyl ether	7010477		30.2	ug/kg wet	N/A	37.7	25.7	85		70-130			
hanol	7010477		3020	ug/kg wet	N/A	755	2210	73		45-140			
hylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	31.2	103		65-140			
eptane	7010477		30.2	ug/kg wet	N/A	15.1	25.6	85		55-125			
exachlorobutadiene	7010477		30.2	ug/kg wet	N/A	37.7	26.0	86		55-125			
domethane	7010477		30.2	ug/kg wet	N/A	7.55	24.2	80		35-125			
opropylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	30.2	100		65-140			
Isopropyltoluene	7010477		30.2	ug/kg wet	N/A	7.55	29.4	97		65-135			
lethylene Chloride	7010477		30.2	ug/kg wet	N/A	75.5	28.5	94		65-145			
lethyl tert-Butyl Ether	7010477		30.2	ug/kg wet	N/A	7.55	28.2	93		75-145			
aphthalene	7010477		30.2	ug/kg wet	N/A	37.7	31.8	105		55-125			
-Propylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	26.3	87		60-135			
yrene	7010477		30.2	ug/kg wet	N/A	7.55	32.5	108		65-135			
1,1,2-Tetrachloroethane	7010477		30.2	ug/kg wet	N/A	7.55	30.4	101		65-135			
1,2,2-Tetrachloroethane	7010477		30.2	ug/kg wet	N/A	7.55	31.4	104		60-125			
etrachloroethene	7010477		30.2	ug/kg wet	N/A	7.55	26.8	89		65-135			
oluene	7010477		30.2	ug/kg wet	N/A	7.55	30.1	100		60-135			
2,3-Trichlorobenzene	7010477		30.2	ug/kg wet	N/A	37.7	28.6	95		50-125			
2,4-Trichlorobenzene	7010477		30.2	ug/kg wet	N/A	37.7	27.8	92		50-125			
1,1-Trichloroethane	7010477		30.2	ug/kg wet	N/A	7.55	29.2	97		65-140			
1,2-Trichloroethane	7010477		30.2	ug/kg wet	N/A	7.55	32.1	106		75-130			
richloroethene	7010477		30.2	ug/kg wet	N/A	7.55	27.7	92		80-130			
richlorofluoromethane	7010477		30.2	ug/kg wet	N/A	30.2	24.0	79		50-130			
2,3-Trichloropropane	7010477		30.2	ug/kg wet	N/A	7.55	31.1	103		65-140			
2,4-Trimethylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	33.3	110		55-135			
3,5-Trimethylbenzene	7010477		30.2	ug/kg wet	N/A	7.55	30.3	100		60-140			
inyl chloride	7010477		30.2	ug/kg wet	N/A	22.6	26.4	87		55-125			
ylenes, total	7010477		90.6	ug/kg wet	N/A	22.6	97.3	107		65-135			
urrogate: Dibromofluoromethane	*7010477*			ug/L				*105*		*80-115*			
urrogate: Toluene-d8	*7010477*			ug/L				*101*		*85-110*			
urrogate: 4-Bromofluorobenzene	*7010477*			ug/L				*102*		*85-120*			
enzene	7010482		29.3	ug/kg wet	N/A	7.34	26.4	90		75-135			
romobenzene	7010482		29.3	ug/kg wet	N/A	7.34	26.1	89		65-140			
romochloromethane	7010482		29.3	ug/kg wet	N/A	7.34	26.9	92		70-140			
romodichloromethane	7010482		29.3	ug/kg wet	N/A	7.34	26.0	89		70-135			
romoform	7010482		29.3	ug/kg wet	N/A	14.7	25.2	86		65-120			
romomethane	7010482		29.3	ug/kg wet	N/A	29.3	26.4	90		45-130			
-Butylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	23.9	82		50-130			
c-Butylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	24.9	85		60-130			
rt-Butylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	24.4	83		60-130			

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds													
Carbon Tetrachloride	7010482		29.3	ug/kg wet	N/A	7.34	24.9	85		60-145			
Chlorobenzene	7010482		29.3	ug/kg wet	N/A	7.34	27.4	94		65-130			
Chlorodibromomethane	7010482		29.3	ug/kg wet	N/A	7.34	23.3	80		70-125			
2-Chloroethylvinyl ether	7010482		29.3	ug/kg wet	N/A	73.4	16.4	56		50-130			
Chloroethane	7010482		29.3	ug/kg wet	N/A	29.3	23.6	81		50-135			
Chloroform	7010482		29.3	ug/kg wet	N/A	7.34	24.1	82		70-135			
Chloromethane	7010482		29.3	ug/kg wet	N/A	29.3	25.4	87		50-125			
2-Chlorotoluene	7010482		29.3	ug/kg wet	N/A	7.34	23.3	80		55-145			
4-Chlorotoluene	7010482		29.3	ug/kg wet	N/A	7.34	26.0	89		60-140			
Cyclohexane	7010482		29.3	ug/kg wet	N/A	147	20.7	71		45-130			
1,2-Dibromo-3-chloropropane	7010482		29.3	ug/kg wet	N/A	73.4	24.3	83		40-125			
1,2-Dibromoethane (EDB)	7010482		29.3	ug/kg wet	N/A	73.4	24.4	83		65-130			
Dibromomethane	7010482		29.3	ug/kg wet	N/A	7.34	27.1	92		75-140			
1,2-Dichlorobenzene	7010482		29.3	ug/kg wet	N/A	7.34	24.7	84		65-125			
1,3-Dichlorobenzene	7010482		29.3	ug/kg wet	N/A	7.34	23.8	81		60-135			
1,4-Dichlorobenzene	7010482		29.3	ug/kg wet	N/A	7.34	24.9	85		55-130			
Dichlorodifluoromethane	7010482		29.3	ug/kg wet	N/A	22.0	19.9	68		45-115			
1,1-Dichloroethane	7010482		29.3	ug/kg wet	N/A	7.34	25.9	88		65-135			
1,2-Dichloroethane	7010482		29.3	ug/kg wet	N/A	7.34	25.6	87		70-140			
1,1-Dichloroethene	7010482		29.3	ug/kg wet	N/A	7.34	25.1	86		60-140			
cis-1,2-Dichloroethene	7010482		29.3	ug/kg wet	N/A	7.34	27.8	95		65-135			
trans-1,2-Dichloroethene	7010482		29.3	ug/kg wet	N/A	7.34	24.2	83		65-135			
trans-1,4-Dichloro-2-butene	7010482		29.3	ug/kg wet	N/A	14.7	19.0	65		60-130			
1,2-Dichloropropane	7010482		29.3	ug/kg wet	N/A	7.34	27.2	93		55-135			
1,3-Dichloropropane	7010482		29.3	ug/kg wet	N/A	7.34	26.0	89		75-135			
2,2-Dichloropropane	7010482		29.3	ug/kg wet	N/A	29.3	21.2	72		65-130			
1,1-Dichloropropene	7010482		29.3	ug/kg wet	N/A	7.34	26.3	90		70-135			
cis-1,3-Dichloropropene	7010482		29.3	ug/kg wet	N/A	7.34	23.7	81		70-125			
trans-1,3-Dichloropropene	7010482		29.3	ug/kg wet	N/A	7.34	23.2	79		65-125			
Di-isopropyl ether	7010482		29.3	ug/kg wet	N/A	36.7	24.8	85		70-130			M1
Ethanol	7010482		2930	ug/kg wet	N/A	734	2350	80		45-140			
Ethylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	27.1	92		65-140			
Heptane	7010482		29.3	ug/kg wet	N/A	14.7	22.3	76		55-125			
Hexachlorobutadiene	7010482		29.3	ug/kg wet	N/A	36.7	22.2	76		55-125			
Iodomethane	7010482		29.3	ug/kg wet	N/A	7.34	17.8	61		35-125			
Isopropylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	26.2	89		65-140			
p-Isopropyltoluene	7010482		29.3	ug/kg wet	N/A	7.34	24.8	85		65-135			
Methylene Chloride	7010482		29.3	ug/kg wet	N/A	73.4	26.6	91		65-145			
Methyl tert-Butyl Ether	7010482		29.3	ug/kg wet	N/A	7.34	27.6	94		75-145			
Naphthalene	7010482		29.3	ug/kg wet	N/A	36.7	27.0	92		55-125			
n-Propylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	23.5	80		60-135			
Styrene	7010482		29.3	ug/kg wet	N/A	7.34	27.7	95		65-135			
1,1,1,2-Tetrachloroethane	7010482		29.3	ug/kg wet	N/A	7.34	24.2	83		65-135			
1,1,2,2-Tetrachloroethane	7010482		29.3	ug/kg wet	N/A	7.34	24.3	83		60-125			
Tetrachloroethene	7010482		29.3	ug/kg wet	N/A	7.34	24.4	83		65-135			

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
oluene	7010482		29.3	ug/kg wet	N/A	7.34	26.9		92		60-135			
2,3-Trichlorobenzene	7010482		29.3	ug/kg wet	N/A	36.7	25.1		86		50-125			
2,4-Trichlorobenzene	7010482		29.3	ug/kg wet	N/A	36.7	23.8		81		50-125			
1,1-Trichloroethane	7010482		29.3	ug/kg wet	N/A	7.34	24.5		84		65-140			
1,2-Trichloroethane	7010482		29.3	ug/kg wet	N/A	7.34	25.9		88		75-130			
richloroethene	7010482		29.3	ug/kg wet	N/A	7.34	25.0		85		80-130			
richlorofluoromethane	7010482		29.3	ug/kg wet	N/A	29.3	22.5		77		50-130			
2,3-Trichloropropane	7010482		29.3	ug/kg wet	N/A	7.34	25.0		85		65-140			
2,4-Trimethylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	27.3		93		55-135			
3,5-Trimethylbenzene	7010482		29.3	ug/kg wet	N/A	7.34	26.1		89		60-140			
inyl chloride	7010482		29.3	ug/kg wet	N/A	22.0	23.0		78		55-125			
ylenes, total	7010482		88.0	ug/kg wet	N/A	22.0	82.1		93		65-135			
urrogate: Dibromofluoromethane	*7010482*			ug/L					*98*		*80-115*			
urrogate: Toluene-d8	*7010482*			ug/L					*97*		*85-110*			
urrogate: 4-Bromofluorobenzene	*7010482*			ug/L					*101*		*85-120*			
enzene	7010490		990	ug/kg wet	N/A	247	1130		114		75-135			
romobenzene	7010490		990	ug/kg wet	N/A	247	1130		114		65-140			
romochloromethane	7010490		990	ug/kg wet	N/A	247	948		96		70-140			
romodichloromethane	7010490		990	ug/kg wet	N/A	247	1000		101		70-135			
romoform	7010490		990	ug/kg wet	N/A	495	1100		111		65-120			
romomethane	7010490		990	ug/kg wet	N/A	990	751		76		45-130			
-Butylbenzene	7010490		990	ug/kg wet	N/A	247	1040		105		50-130			
c-Butylbenzene	7010490		990	ug/kg wet	N/A	247	1060		107		60-130			
rt-Butylbenzene	7010490		990	ug/kg wet	N/A	247	1070		108		60-130			
arbon Tetrachloride	7010490		990	ug/kg wet	N/A	247	992		100		60-145			
hlorobenzene	7010490		990	ug/kg wet	N/A	247	1120		113		65-130			
hlorodibromomethane	7010490		990	ug/kg wet	N/A	247	870		88		70-125			
-Chloroethylvinyl ether	7010490		990	ug/kg wet	N/A	2470	3500		354		50-130			L1
hloroethane	7010490		990	ug/kg wet	N/A	990	800		81		50-135			
hloroform	7010490		990	ug/kg wet	N/A	247	1070		108		70-135			
hloromethane	7010490		990	ug/kg wet	N/A	990	914		92		50-125			
-Chlorotoluene	7010490		990	ug/kg wet	N/A	247	1160		117		55-145			
-Chlorotoluene	7010490		990	ug/kg wet	N/A	247	1120		113		60-140			
yclohexane	7010490		990	ug/kg wet	N/A	4950	918		93		45-130			
2-Dibromo-3-chloropropane	7010490		990	ug/kg wet	N/A	2470	810		82		40-125			
2-Dibromoethane (EDB)	7010490		990	ug/kg wet	N/A	2470	1040		105		65-130			
ibromomethane	7010490		990	ug/kg wet	N/A	247	1030		104		75-140			
2-Dichlorobenzene	7010490		990	ug/kg wet	N/A	247	1050		106		65-125			
3-Dichlorobenzene	7010490		990	ug/kg wet	N/A	247	1020		103		60-135			
4-Dichlorobenzene	7010490		990	ug/kg wet	N/A	247	1150		116		55-130			
ichlorodifluoromethane	7010490		990	ug/kg wet	N/A	742	885		89		45-115			
1-Dichloroethane	7010490		990	ug/kg wet	N/A	247	1030		104		65-135			
2-Dichloroethane	7010490		990	ug/kg wet	N/A	247	1040		105		70-140			
1-Dichloroethene	7010490		990	ug/kg wet	N/A	247	1160		117		60-140			

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
cis-1,2-Dichloroethene	7010490		990	ug/kg wet	N/A	247	1120		113		65-135			
trans-1,2-Dichloroethene	7010490		990	ug/kg wet	N/A	247	1080		109		65-135			
trans-1,4-Dichloro-2-butene	7010490		990	ug/kg wet	N/A	495	925		93		60-130			
1,2-Dichloropropane	7010490		990	ug/kg wet	N/A	247	1120		113		55-135			
1,3-Dichloropropane	7010490		990	ug/kg wet	N/A	247	1110		112		75-135			
2,2-Dichloropropane	7010490		990	ug/kg wet	N/A	990	588		59		65-130			L1
1,1-Dichloropropene	7010490		990	ug/kg wet	N/A	247	1070		108		70-135			
cis-1,3-Dichloropropene	7010490		990	ug/kg wet	N/A	247	827		84		70-125			
trans-1,3-Dichloropropene	7010490		990	ug/kg wet	N/A	247	821		83		65-125			
Di-isopropyl ether	7010490		990	ug/kg wet	N/A	1240	1040		105		70-130			
Ethanol	7010490		99000	ug/kg wet	N/A	24700	88600		89		45-140			
Ethylbenzene	7010490		990	ug/kg wet	N/A	247	1080		109		65-140			
Heptane	7010490		990	ug/kg wet	N/A	495	1060		107		55-125			
Hexachlorobutadiene	7010490		990	ug/kg wet	N/A	1240	970		98		55-125			
Iodomethane	7010490		990	ug/kg wet	N/A	247	3650		369		35-125			L1
Isopropylbenzene	7010490		990	ug/kg wet	N/A	247	1090		110		65-140			
p-Isopropyltoluene	7010490		990	ug/kg wet	N/A	247	1030		104		65-135			
Methylene Chloride	7010490		990	ug/kg wet	N/A	2470	1090		110		65-145			
Methyl tert-Butyl Ether	7010490		990	ug/kg wet	N/A	247	924		93		75-145			
Naphthalene	7010490		990	ug/kg wet	N/A	1240	752		76		55-125			
n-Propylbenzene	7010490		990	ug/kg wet	N/A	247	1090		110		60-135			
Styrene	7010490		990	ug/kg wet	N/A	247	1090		110		65-135			
1,1,1,2-Tetrachloroethane	7010490		990	ug/kg wet	N/A	247	1050		106		65-135			
1,1,2,2-Tetrachloroethane	7010490		990	ug/kg wet	N/A	247	1030		104		60-125			
Tetrachloroethene	7010490		990	ug/kg wet	N/A	247	1140		115		65-135			
Toluene	7010490		990	ug/kg wet	N/A	247	1030		104		60-135			
1,2,3-Trichlorobenzene	7010490		990	ug/kg wet	N/A	1240	1080		109		50-125			
1,2,4-Trichlorobenzene	7010490		990	ug/kg wet	N/A	1240	1130		114		50-125			
1,1,1-Trichloroethane	7010490		990	ug/kg wet	N/A	247	1040		105		65-140			
1,1,2-Trichloroethane	7010490		990	ug/kg wet	N/A	247	1120		113		75-130			
Trichloroethene	7010490		990	ug/kg wet	N/A	247	1150		116		80-130			
Trichlorofluoromethane	7010490		990	ug/kg wet	N/A	990	1010		102		50-130			
1,2,3-Trichloropropane	7010490		990	ug/kg wet	N/A	247	1030		104		65-140			
1,2,4-Trimethylbenzene	7010490		990	ug/kg wet	N/A	247	1110		112		55-135			
1,3,5-Trimethylbenzene	7010490		990	ug/kg wet	N/A	247	1110		112		60-140			
Vinyl chloride	7010490		990	ug/kg wet	N/A	742	1040		105		55-125			
Xylenes, total	7010490		2970	ug/kg wet	N/A	742	3270		110		65-135			
Surrogate: Dibromofluoromethane	*7010490*			ug/L					*92*		*80-115*			
Surrogate: Toluene-d8	*7010490*			ug/L					*93*		*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010490*			ug/L					*97*		*85-120*			

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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'olatile Organic Compounds														
cetone	7010633		29.3	ug/kg wet	N/A	73.2	27.4		94		55-150			
crylonitrile	7010633		29.3	ug/kg wet	N/A	73.2	28.5		97		45-140			
enzene	7010633		29.3	ug/kg wet	N/A	7.32	25.7		88		60-135			
romobenzene	7010633		29.3	ug/kg wet	N/A	7.32	24.1		82		55-140			
romochloromethane	7010633		29.3	ug/kg wet	N/A	7.32	26.6		91		60-145			
romodichloromethane	7010633		29.3	ug/kg wet	N/A	7.32	25.6		87		55-135			
romoform	7010633		29.3	ug/kg wet	N/A	14.6	24.2		83		55-120			
romomethane	7010633		29.3	ug/kg wet	N/A	29.3	26.8		91		45-140			
-Butanone (MEK)	7010633		29.3	ug/kg wet	N/A	73.2	29.0		99		50-145			
-Butylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	22.8		78		35-130			
:c-Butylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	24.2		83		45-130			
:rt-Butylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	23.9		82		45-130			
'arbon disulfide	7010633		29.3	ug/kg wet	N/A	7.32	24.7		84		45-130			
'arbon Tetrachloride	7010633		29.3	ug/kg wet	N/A	7.32	24.3		83		55-145			
'hlorobenzene	7010633		29.3	ug/kg wet	N/A	7.32	25.9		88		55-130			
'hlorodibromomethane	7010633		29.3	ug/kg wet	N/A	7.32	24.6		84		55-125			
'hloroethane	7010633		29.3	ug/kg wet	N/A	29.3	24.3		83		50-135			
'hloroform	7010633		29.3	ug/kg wet	N/A	7.32	25.8		88		50-135			
'hloromethane	7010633		29.3	ug/kg wet	N/A	29.3	26.8		91		50-125			
-Chlorotoluene	7010633		29.3	ug/kg wet	N/A	7.32	27.0		92		50-145			
-Chlorotoluene	7010633		29.3	ug/kg wet	N/A	7.32	23.6		81		45-140			
,2-Dibromo-3-chloropropane	7010633		29.3	ug/kg wet	N/A	73.2	22.5		77		40-125			
,2-Dibromoethane (EDB)	7010633		29.3	ug/kg wet	N/A	73.2	24.4		83		60-135			
)ibromomethane	7010633		29.3	ug/kg wet	N/A	7.32	26.9		92		60-145			
,2-Dichlorobenzene	7010633		29.3	ug/kg wet	N/A	7.32	24.2		83		50-125			
,3-Dichlorobenzene	7010633		29.3	ug/kg wet	N/A	7.32	23.7		81		40-135			
,4-Dichlorobenzene	7010633		29.3	ug/kg wet	N/A	7.32	24.6		84		45-130			
)ichlorodifluoromethane	7010633		29.3	ug/kg wet	N/A	22.0	19.9		68		45-115			
,1-Dichloroethane	7010633		29.3	ug/kg wet	N/A	7.32	25.1		86		50-145			
,2-Dichloroethane	7010633		29.3	ug/kg wet	N/A	7.32	26.0		89		50-140			
,1-Dichloroethene	7010633		29.3	ug/kg wet	N/A	7.32	25.2		86		55-140			
is-1,2-Dichloroethene	7010633		29.3	ug/kg wet	N/A	7.32	27.9		95		60-140			
'ans-1,2-Dichloroethene	7010633		29.3	ug/kg wet	N/A	7.32	25.7		88		50-140			
,2-Dichloropropane	7010633		29.3	ug/kg wet	N/A	7.32	27.5		94		55-135			
,3-Dichloropropane	7010633		29.3	ug/kg wet	N/A	7.32	26.8		91		65-135			
,2-Dichloropropane	7010633		29.3	ug/kg wet	N/A	29.3	27.0		92		40-130			
,1-Dichloropropene	7010633		29.3	ug/kg wet	N/A	7.32	27.8		95		55-135			
is-1,3-Dichloropropene	7010633		29.3	ug/kg wet	N/A	7.32	25.7		88		50-130			
'ans-1,3-Dichloropropene	7010633		29.3	ug/kg wet	N/A	7.32	25.0		85		50-130			
:thylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	25.3		86		50-140			
Iexachlorobutadiene	7010633		29.3	ug/kg wet	N/A	36.6	21.2		72		30-125			
Iexane	7010633		29.3	ug/kg wet	N/A	36.6	21.8		74		30-125			
;opropylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	24.4		83		50-140			
-Isopropyltoluene	7010633		29.3	ug/kg wet	N/A	7.32	23.8		81		40-135			
Iethylene Chloride	7010633		29.3	ug/kg wet	N/A	73.2	42.4		145		50-145			

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds													
Methyl tert-Butyl Ether	7010633		29.3	ug/kg wet	N/A	7.32	27.5	94		50-145			
Naphthalene	7010633		29.3	ug/kg wet	N/A	36.6	25.9	88		50-125			
n-Propylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	21.0	72		40-135			
Styrene	7010633		29.3	ug/kg wet	N/A	7.32	25.8	88		55-135			
1,1,1,2-Tetrachloroethane	7010633		29.3	ug/kg wet	N/A	7.32	23.9	82		55-135			
1,1,2,2-Tetrachloroethane	7010633		29.3	ug/kg wet	N/A	7.32	25.6	87		60-125			
Tetrachloroethene	7010633		29.3	ug/kg wet	N/A	7.32	23.0	78		45-135			
Toluene	7010633		29.3	ug/kg wet	N/A	7.32	25.5	87		55-135			
1,2,3-Trichlorobenzene	7010633		29.3	ug/kg wet	N/A	36.6	22.9	78		40-125			
1,2,4-Trichlorobenzene	7010633		29.3	ug/kg wet	N/A	36.6	22.3	76		30-125			
1,1,1-Trichloroethane	7010633		29.3	ug/kg wet	N/A	7.32	24.2	83		45-140			
1,1,2-Trichloroethane	7010633		29.3	ug/kg wet	N/A	7.32	27.0	92		65-130			
Trichloroethene	7010633		29.3	ug/kg wet	N/A	7.32	23.9	82		50-135			
Trichlorofluoromethane	7010633		29.3	ug/kg wet	N/A	29.3	21.9	75		50-130			
1,2,3-Trichloropropane	7010633		29.3	ug/kg wet	N/A	7.32	24.7	84		55-150			
1,2,4-Trimethylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	25.5	87		55-135			
1,3,5-Trimethylbenzene	7010633		29.3	ug/kg wet	N/A	7.32	24.3	83		50-140			
Vinyl chloride	7010633		29.3	ug/kg wet	N/A	22.0	24.1	82		55-125			
Xylenes, total	7010633		87.8	ug/kg wet	N/A	22.0	77.5	88		55-135			
Surrogate: Dibromofluoromethane	*7010633*			ug/L				*105*		*80-125*			
Surrogate: Toluene-d8	*7010633*			ug/L				*95*		*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010633*			ug/L				*100*		*85-120*			
Semivolatile Organics by GC/MS													
Acenaphthene	7010393		3.33	mg/kg wet	0.0810	0.330	2.60	78		55-110			
Acenaphthylene	7010393		3.33	mg/kg wet	0.0750	0.330	2.56	77		55-110			
Anthracene	7010393		3.33	mg/kg wet	0.0780	0.330	2.80	84		60-120			
Benzidine	7010393		3.33	mg/kg wet	0.0320	3.30	1.90	57		35-105			J
Benzo (a) anthracene	7010393		3.33	mg/kg wet	0.0840	0.330	2.83	85		60-125			
Benzo (b) fluoranthene	7010393		3.33	mg/kg wet	0.0820	0.330	2.82	85		60-135			
Benzo (k) fluoranthene	7010393		3.33	mg/kg wet	0.0840	0.330	2.78	83		55-135			
Benzo (a) pyrene	7010393		3.33	mg/kg wet	0.0740	0.330	2.88	86		60-130			
Benzo (g,h,i) perylene	7010393		3.33	mg/kg wet	0.0750	0.330	2.84	85		60-130			
Benzyl alcohol	7010393		3.33	mg/kg wet	0.0650	0.330	2.32	70		45-115			
Butyl benzyl phthalate	7010393		3.33	mg/kg wet	0.0840	0.330	2.91	87		55-140			
Bis(2-chloroethyl)ether	7010393		3.33	mg/kg wet	0.0830	0.330	2.19	66		35-105			
Bis(2-chloroethoxy)methane	7010393		3.33	mg/kg wet	0.0820	0.330	2.38	71		40-105			A-01
Bis(2-ethylhexyl)phthalate	7010393		3.33	mg/kg wet	0.0320	0.330	2.88	86		55-140			
Bis(2-chloroisopropyl) ether	7010393		3.33	mg/kg wet	0.0800	0.330	2.14	64		35-105			
4-Bromophenyl phenyl ether	7010393		3.33	mg/kg wet	0.0870	0.330	3.02	91		60-135			
Carbazole	7010393		3.33	mg/kg wet	0.0810	0.330	2.97	89		55-135			
4-Chloroaniline	7010393		3.33	mg/kg wet	0.104	0.330	2.35	71		35-120			
2-Chloronaphthalene	7010393		3.33	mg/kg wet	0.0880	0.330	2.55	77		55-115			
4-Chlorophenyl phenyl ether	7010393		3.33	mg/kg wet	0.0940	0.330	2.82	85		60-130			
Chrysene	7010393		3.33	mg/kg wet	0.0830	0.330	2.82	85		60-125			

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Project Number: 728500J - Cluster #1

Received: 01/10/07
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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS														
ibenzo (a,h) anthracene	7010393		3.33	mg/kg wet	0.0590	0.330	3.01		90		60-135			
ibenzofuran	7010393		3.33	mg/kg wet	0.0820	0.330	2.74		82		60-130			
i-n-butyl phthalate	7010393		3.33	mg/kg wet	0.0880	0.330	2.95		89		60-135			
2-Dichlorobenzene	7010393		3.33	mg/kg wet	0.0760	0.330	2.10		63		40-100			
3-Dichlorobenzene	7010393		3.33	mg/kg wet	0.0830	0.330	2.09		63		35-100			
4-Dichlorobenzene	7010393		3.33	mg/kg wet	0.0860	0.330	2.08		62		35-100			
3'-Dichlorobenzidine	7010393		3.33	mg/kg wet	0.0770	0.330	2.75		83		60-135			
iethyl phthalate	7010393		3.33	mg/kg wet	0.0890	0.330	2.86		86		60-140			
imethyl phthalate	7010393		3.33	mg/kg wet	0.0810	0.330	2.91		87		60-130			
4-Dinitrotoluene	7010393		3.33	mg/kg wet	0.0590	0.330	3.04		91		65-140			
6-Dinitrotoluene	7010393		3.33	mg/kg wet	0.0610	0.330	2.91		87		65-140			
i-n-octyl phthalate	7010393		3.33	mg/kg wet	0.0850	0.330	2.90		87		60-145			
luoranthene	7010393		3.33	mg/kg wet	0.0760	0.330	2.82		85		60-130			
luorene	7010393		3.33	mg/kg wet	0.0820	0.330	2.68		80		60-115			
exachlorobenzene	7010393		3.33	mg/kg wet	0.0820	0.330	2.96		89		65-135			
exachlorobutadiene	7010393		3.33	mg/kg wet	0.0850	0.330	2.16		65		35-110			
exachlorocyclopentadiene	7010393		3.33	mg/kg wet	0.0590	0.660	1.77		53		20-115			
exachloroethane	7010393		3.33	mg/kg wet	0.0820	0.330	2.07		62		35-105			
ıdeno (1,2,3-cd) pyrene	7010393		3.33	mg/kg wet	0.0740	0.330	2.98		89		60-135			
ophorone	7010393		3.33	mg/kg wet	0.0820	0.330	2.50		75		50-120			
-Methylnaphthalene	7010393		3.33	mg/kg wet	0.0810	0.330	2.23		67		45-110			
aphthalene	7010393		3.33	mg/kg wet	0.0770	0.330	2.11		63		40-100			
-Nitroaniline	7010393		3.33	mg/kg wet	0.0700	0.330	3.03		91		55-140			
-Nitroaniline	7010393		3.33	mg/kg wet	0.0640	0.330	3.03		91		55-140			
-Nitroaniline	7010393		3.33	mg/kg wet	0.0560	0.330	3.02		91		50-145			
itrobenzene	7010393		3.33	mg/kg wet	0.0960	0.330	2.24		67		40-105			
-Nitrosodimethylamine	7010393		3.33	mg/kg wet	0.131	0.330	2.22		67		35-105			
-Nitrosodiphenylamine	7010393		3.33	mg/kg wet	0.0740	0.330	3.04		91		50-130			A-01
-Nitrosodi-n-propylamine	7010393		3.33	mg/kg wet	0.0680	0.330	2.27		68		45-115			
henanthrene	7010393		3.33	mg/kg wet	0.0810	0.330	2.80		84		60-125			
yrene	7010393		3.33	mg/kg wet	0.0900	0.330	2.76		83		55-130			
yridine	7010393		3.33	mg/kg wet	0.0380	0.330	1.72		52		25-90			
,2,4-Trichlorobenzene	7010393		3.33	mg/kg wet	0.0910	0.330	2.24		67		40-105			
enzoic acid	7010393		3.33	mg/kg wet	0.0230	0.660	0.536		16		10-75			J
-Chloro-3-methylphenol	7010393		3.33	mg/kg wet	0.0430	0.330	2.55		77		55-115			
-Chlorophenol	7010393		3.33	mg/kg wet	0.0410	0.330	2.10		63		45-100			
resol(s)	7010393		6.67	mg/kg wet	0.0450	0.330	4.17		63		45-100			
,4-Dichlorophenol	7010393		3.33	mg/kg wet	0.0480	0.330	2.32		70		50-105			
,4-Dimethylphenol	7010393		3.33	mg/kg wet	0.0430	0.330	2.14		64		45-100			
,4-Dinitrophenol	7010393		3.33	mg/kg wet	0.0310	0.330	1.11		33		10-75			CIN
,6-Dinitro-2-methylphenol	7010393		3.33	mg/kg wet	0.0190	0.330	1.89		57		15-90			
-Methylphenol (o-Cresol)	7010393		3.33	mg/kg wet	0.0450	0.330	2.07		62		45-100			
-Methylphenol (p-Cresol)	7010393		3.33	mg/kg wet	0.0400	0.330	2.10		63		50-100			
-Nitrophenol	7010393		3.33	mg/kg wet	0.0450	0.330	2.18		65		45-100			
-Nitrophenol	7010393		3.33	mg/kg wet	0.0330	0.330	2.91		87		50-135			

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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
Pentachlorophenol	7010393		3.33	mg/kg wet	0.0350	0.330	2.57		77		25-110			
Phenol	7010393		3.33	mg/kg wet	0.0310	0.330	2.09		63		45-100			
2,4,5-Trichlorophenol	7010393		3.33	mg/kg wet	0.0490	0.330	2.64		79		65-125			
2,4,6-Trichlorophenol	7010393		3.33	mg/kg wet	0.0440	0.330	2.67		80		60-120			
Surrogate: Nitrobenzene-d5	*7010393*			mg/kg wet					*62*		*45-100*			
Surrogate: 2-Fluorobiphenyl	*7010393*			mg/kg wet					*68*		*55-105*			
Surrogate: Terphenyl-d14	*7010393*			mg/kg wet					*80*		*65-125*			
Surrogate: Phenol-d6	*7010393*			mg/kg wet					*63*		*45-105*			
Surrogate: 2-Fluorophenol	*7010393*			mg/kg wet					*57*		*40-95*			
Surrogate: 2,4,6-Tribromophenol	*7010393*			mg/kg wet					*84*		*55-135*			
UST ANALYSIS PARAMETERS														
Motor Oil	7010391		66.7	mg/kg	N/A	10.0	53.6		80		65-130			
Surrogate: Octacosane	*7010391*			mg/kg					*111*		*60-120*			

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MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'otal Metals by SW 846 Series Methods														
)C Source Sample: CQA0458-01														
lercury	7010463	0.00341	0.176	mg/kg dry	N/A	0.0223	0.164	0.162	91	90	70-105	1	35	
)C Source Sample: CQA0356-01														
arium	7010548	1710	187	mg/kg dry	N/A	0.933	1880	1870	91	86	75-125	1	20	
admium	7010548	0.739	187	mg/kg dry	N/A	1.87	180	179	96	96	75-115	1	20	
hromium	7010548	19.5	187	mg/kg dry	N/A	1.87	197	196	95	95	75-125	1	20	
ead	7010548	21.3	373	mg/kg dry	N/A	9.33	375	373	95	95	75-125	1	20	
elenium	7010548	21.4	747	mg/kg dry	N/A	14.0	797	794	104	104	75-120	0	20	
ilver	7010548	<1.00	187	mg/kg dry	N/A	1.87	175	144	94	77	75-125	19	20	
)C Source Sample: CQA0462-01														
rsenic	7010599	7.02	4.71	mg/kg dry	N/A	1.23	11.3	14.4	91	150	75-125	24	20	M1
'olatile Organic Compounds														
)C Source Sample: CQA0458-04														
enzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	50.4	47.9	92	95	45-135	5	35	
romobenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	46.1	46.5	84	92	40-135	1	25	
romochloromethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	50.6	50.2	93	99	50-140	1	30	
romodichloromethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	50.6	49.0	93	97	45-135	3	25	
romoform	7010477	<10.0	54.7	ug/kg dry	N/A	27.4	48.1	47.2	88	93	35-125	2	20	
romomethane	7010477	<20.0	54.7	ug/kg dry	N/A	54.7	40.9	36.6	75	72	40-130	11	35	
-Butylbenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	36.8	40.7	67	80	30-120	10	40	
ec-Butylbenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	40.3	43.5	74	86	35-125	8	25	
rt-Butylbenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	42.7	44.0	78	87	35-120	3	40	
arbon Tetrachloride	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	49.0	45.7	90	90	45-135	7	30	
hlorobenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	48.9	48.3	89	95	40-135	1	20	
hlorodibromomethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	46.3	45.5	85	90	40-135	2	25	
-Chloroethylvinyl ether	7010477	<50.0	54.7	ug/kg dry	N/A	137	35.7	31.3	65	62	30-105	13	40	
hloroethane	7010477	<20.0	54.7	ug/kg dry	N/A	54.7	40.0	39.9	73	79	50-125	0	30	
hloroform	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	51.6	49.6	94	98	45-140	4	35	
hloromethane	7010477	<20.0	54.7	ug/kg dry	N/A	54.7	39.7	33.2	73	66	35-130	18	30	
-Chlorotoluene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	50.8	51.8	93	102	40-135	2	30	
-Chlorotoluene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	46.0	46.7	84	92	40-130	2	40	
yclohexane	7010477	<100	54.7	ug/kg dry	N/A	274	42.0	43.2	77	85	35-130	3	40	
,2-Dibromo-3-chloropropane	7010477	<50.0	54.7	ug/kg dry	N/A	137	45.6	47.5	83	94	40-130	4	40	
,2-Dibromoethane (EDB)	7010477	<50.0	54.7	ug/kg dry	N/A	137	47.1	46.1	86	91	45-130	2	25	
ibromomethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	53.3	49.9	97	99	55-140	7	25	
,2-Dichlorobenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	43.5	43.7	80	86	35-125	1	25	
,3-Dichlorobenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	42.0	41.8	77	83	35-125	1	20	
,4-Dichlorobenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	44.1	44.4	81	88	35-130	1	25	
ichlorodifluoromethane	7010477	<15.0	54.7	ug/kg dry	N/A	41.0	51.4	51.1	94	101	30-120	1	35	
,1-Dichloroethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	40.7	42.7	74	84	45-130	5	35	
,2-Dichloroethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	54.5	54.4	100	108	45-140	0	35	
,1-Dichloroethene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	40.8	41.1	75	81	45-135	1	35	
is-1,2-Dichloroethene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	55.6	53.1	102	105	50-135	5	35	
ans-1,2-Dichloroethene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	35.6	36.5	65	72	45-135	2	35	
ans-1,4-Dichloro-2-butene	7010477	<10.0	54.7	ug/kg dry	N/A	27.4	41.9	40.6	77	80	35-130	3	40	
,2-Dichloropropane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	52.6	49.3	96	97	45-135	6	25	
,3-Dichloropropane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	51.5	48.2	94	95	50-135	7	25	
,2-Dichloropropane	7010477	<20.0	54.7	ug/kg dry	N/A	54.7	56.6	55.1	103	109	40-135	3	35	
,1-Dichloropropene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	53.6	52.6	98	104	40-135	2	35	

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
QC Source Sample: CQA0458-04														
cis-1,3-Dichloropropene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	48.4	43.8	88	87	40-130	10	30	
trans-1,3-Dichloropropene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	48.7	45.2	89	89	40-130	7	25	
Di-isopropyl ether	7010477	<25.0	54.7	ug/kg dry	N/A	68.4	41.5	42.7	76	84	70-130	3	20	
Ethylbenzene	7010477	1.55	54.7	ug/kg dry	N/A	13.7	49.2	49.1	87	94	45-130	0	40	
Heptane	7010477	<10.0	54.7	ug/kg dry	N/A	27.4	33.8	34.8	62	69	30-110	3	40	
Hexachlorobutadiene	7010477	<25.0	54.7	ug/kg dry	N/A	68.4	27.6	30.5	50	60	35-115	10	30	
Iodomethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	36.1	35.5	66	70	30-120	2	40	
Isopropylbenzene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	46.9	47.4	86	94	45-135	1	30	
p-Isopropyltoluene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	40.4	41.7	74	82	40-135	3	40	
Methylene Chloride	7010477	12.2	54.7	ug/kg dry	N/A	137	46.8	45.8	63	66	40-130	2	30	
Methyl tert-Butyl Ether	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	43.0	47.8	79	94	50-140	11	30	
Naphthalene	7010477	5.05	54.7	ug/kg dry	N/A	68.4	43.2	43.2	70	75	20-115	0	40	
n-Propylbenzene	7010477	0.847	54.7	ug/kg dry	N/A	13.7	45.0	46.0	81	89	40-125	2	40	
Styrene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	48.5	47.2	89	93	40-135	3	20	
1,1,1,2-Tetrachloroethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	45.6	46.2	83	91	45-135	1	25	
1,1,2,2-Tetrachloroethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	49.1	51.9	90	103	45-130	6	40	
Tetrachloroethene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	42.6	42.5	78	84	40-135	0	35	
Toluene	7010477	1.16	54.7	ug/kg dry	N/A	13.7	48.9	49.0	87	95	40-130	0	40	
1,2,3-Trichlorobenzene	7010477	<25.0	54.7	ug/kg dry	N/A	68.4	32.6	34.0	60	67	25-120	4	40	
1,2,4-Trichlorobenzene	7010477	<25.0	54.7	ug/kg dry	N/A	68.4	32.6	34.8	60	69	25-120	7	30	
1,1,1-Trichloroethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	48.3	45.9	88	91	45-140	5	25	
1,1,2-Trichloroethane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	51.2	49.6	94	98	50-140	3	25	
Trichloroethene	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	45.3	43.4	83	86	45-135	4	25	
Trichlorofluoromethane	7010477	<20.0	54.7	ug/kg dry	N/A	54.7	38.2	38.7	70	76	45-120	1	35	
1,2,3-Trichloropropane	7010477	<5.00	54.7	ug/kg dry	N/A	13.7	49.6	49.8	91	98	45-130	0	30	
1,2,4-Trimethylbenzene	7010477	6.53	54.7	ug/kg dry	N/A	13.7	48.9	50.2	77	86	40-130	3	35	
1,3,5-Trimethylbenzene	7010477	1.91	54.7	ug/kg dry	N/A	13.7	44.7	47.4	78	90	45-130	6	30	
Vinyl chloride	7010477	<15.0	54.7	ug/kg dry	N/A	41.0	37.4	31.7	68	63	50-120	16	35	
Xylenes, total	7010477	9.39	164	ug/kg dry	N/A	41.0	155	155	89	96	45-130	0	40	
Surrogate: Dibromofluoromethane	*7010477*			ug/L					*103*	*107*	*80-120*			
Surrogate: Toluene-d8	*7010477*			ug/L					*98*	*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*7010477*			ug/L					*100*	*100*	*80-119*			
QC Source Sample: CQA0476-01														
Benzene	7010482	1490	31.8	ug/kg wet	N/A	7.96	562	594	-2918	-2517	45-135	6	35	M1
Bromobenzene	7010482	1.93	31.8	ug/kg wet	N/A	7.96	17.8	20.2	50	51	40-135	13	25	
Bromochloromethane	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	32.8	36.1	103	101	50-140	10	30	
Bromodichloromethane	7010482	13.8	31.8	ug/kg wet	N/A	7.96	31.7	36.7	56	64	45-135	15	25	
Bromoform	7010482	<10.0	31.8	ug/kg wet	N/A	15.9	18.1	21.5	57	60	35-125	17	20	
Bromomethane	7010482	<20.0	31.8	ug/kg wet	N/A	31.8	31.6	32.6	99	92	40-130	3	35	
n-Butylbenzene	7010482	204	31.8	ug/kg wet	N/A	7.96	142	173	-195	-87	30-120	20	40	M1
sec-Butylbenzene	7010482	1250	31.8	ug/kg wet	N/A	7.96	42.6	50.8	-3797	-3369	35-125	18	25	M1
tert-Butylbenzene	7010482	472	31.8	ug/kg wet	N/A	7.96	18.3	20.3	-1427	-1269	35-120	10	40	M1
Carbon Tetrachloride	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	13.6	15.0	43	42	45-135	10	30	M1
Chlorobenzene	7010482	0.729	31.8	ug/kg wet	N/A	7.96	21.0	23.6	64	64	40-135	12	20	
Chlorodibromomethane	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	22.1	25.1	69	71	40-135	13	25	

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Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
C Source Sample: CQA0476-01														
-Chloroethylvinyl ether	7010482	16.5	31.8	ug/kg wet	N/A	79.6	23.9	27.8	23	32	30-105	15	40	M1
hloroethane	7010482	7.87	31.8	ug/kg wet	N/A	31.8	32.0	35.5	76	78	50-125	10	30	
hloroform	7010482	168	31.8	ug/kg wet	N/A	7.96	130	138	-119	-84	45-140	6	35	M1
hloromethane	7010482	<20.0	31.8	ug/kg wet	N/A	31.8	<31.8	<31.8			35-130		30	M1
-Chlorotoluene	7010482	1410	31.8	ug/kg wet	N/A	7.96	263	282	-3607	-3169	40-135	7	30	M1
-Chlorotoluene	7010482	112	31.8	ug/kg wet	N/A	7.96	69.7	78.7	-133	-94	40-130	12	40	M1
yclohexane	7010482	1170	31.8	ug/kg wet	N/A	159	645	645	-1651	-1475	35-130	0	40	M1
,2-Dibromo-3-chloropropane	7010482	42.3	31.8	ug/kg wet	N/A	79.6	23.6	23.6	-59	-53	40-130	0	40	M1
,2-Dibromoethane (EDB)	7010482	<50.0	31.8	ug/kg wet	N/A	79.6	27.6	31.9	87	90	45-130	14	25	
ibromomethane	7010482	7.91	31.8	ug/kg wet	N/A	7.96	35.8	42.6	88	97	55-140	17	25	
,2-Dichlorobenzene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	12.4	14.7	39	41	35-125	17	25	
,3-Dichlorobenzene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	13.2	15.3	42	43	35-125	15	20	
,4-Dichlorobenzene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	13.6	15.9	43	45	35-130	16	25	
ichlorodifluoromethane	7010482	<15.0	31.8	ug/kg wet	N/A	23.9	22.7	24.6	71	69	30-120	8	35	
,1-Dichloroethane	7010482	10.5	31.8	ug/kg wet	N/A	7.96	42.0	44.8	99	96	45-130	6	35	
,2-Dichloroethane	7010482	7.36	31.8	ug/kg wet	N/A	7.96	60.6	65.1	167	162	45-140	7	35	M1
,1-Dichloroethene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	29.6	29.9	93	84	45-135	1	35	
is-1,2-Dichloroethene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	32.0	34.5	101	97	50-135	8	35	
ans-1,2-Dichloroethene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	25.7	27.5	81	77	45-135	7	35	
ans-1,4-Dichloro-2-butene	7010482	76.3	31.8	ug/kg wet	N/A	15.9	76.6	86.1	1	28	35-130	12	40	M1
,2-Dichloropropane	7010482	18.6	31.8	ug/kg wet	N/A	7.96	39.0	44.9	64	74	45-135	14	25	
,3-Dichloropropane	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	27.5	32.1	86	90	50-135	15	25	
,2-Dichloropropane	7010482	4.66	31.8	ug/kg wet	N/A	31.8	22.6	23.5	56	53	40-135	4	35	
,1-Dichloropropene	7010482	16.5	31.8	ug/kg wet	N/A	7.96	30.0	31.3	42	42	40-135	4	35	
is-1,3-Dichloropropene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	21.2	24.6	67	69	40-130	15	30	
ans-1,3-Dichloropropene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	21.8	24.9	69	70	40-130	13	25	
i-isopropyl ether	7010482	<25.0	31.8	ug/kg wet	N/A	39.8	38.7	41.5	122	117	70-130	7	20	M1
thylbenzene	7010482	1210	31.8	ug/kg wet	N/A	7.96	1480	1530	849	899	45-130	3	40	M1
leptane	7010482	660	31.8	ug/kg wet	N/A	15.9	454	566	-648	-264	30-110	22	40	M1
lexachlorobutadiene	7010482	<25.0	31.8	ug/kg wet	N/A	39.8	9.98	10.2	31	29	35-115	2	30	M1
odomethane	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	13.7	16.9	43	47	30-120	21	40	
sopropylbenzene	7010482	294	31.8	ug/kg wet	N/A	7.96	183	210	-349	-236	45-135	14	30	M1
-Isopropyltoluene	7010482	85.1	31.8	ug/kg wet	N/A	7.96	28.0	61.9	-180	-65	40-135	75	40	M1,R
lethylene Chloride	7010482	<50.0	31.8	ug/kg wet	N/A	79.6	<79.6	<79.6			40-130		30	M1
lethyl tert-Butyl Ether	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	34.5	39.9	108	112	50-140	15	30	
laphthalene	7010482	1210	31.8	ug/kg wet	N/A	39.8	678	730	-1673	-1348	20-115	7	40	M1
-Propylbenzene	7010482	663	31.8	ug/kg wet	N/A	7.96	414	456	-783	-581	40-125	10	40	M1
tyrene	7010482	39.7	31.8	ug/kg wet	N/A	7.96	34.0	35.8	-18	-11	40-135	5	20	M1
,1,1,2-Tetrachloroethane	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	21.0	23.6	66	66	45-135	12	25	
,1,2,2-Tetrachloroethane	7010482	9.22	31.8	ug/kg wet	N/A	7.96	28.5	33.7	61	69	45-130	17	40	
etrachloroethene	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	17.2	19.6	54	55	40-135	13	35	
oluene	7010482	761	31.8	ug/kg wet	N/A	7.96	1120	1060	1129	840	40-130	6	40	M1
,2,3-Trichlorobenzene	7010482	<25.0	31.8	ug/kg wet	N/A	39.8	8.93	10.3	28	29	25-120	14	40	
,2,4-Trichlorobenzene	7010482	<25.0	31.8	ug/kg wet	N/A	39.8	8.34	9.69	26	27	25-120	15	30	
,1,1-Trichloroethane	7010482	<5.00	31.8	ug/kg wet	N/A	7.96	22.4	24.7	70	69	45-140	10	25	

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Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
QC Source Sample: CQA0476-01														
1,1,2-Trichloroethane	7010482	23.3	31.8	ug/kg wet	N/A	7.96	40.6	52.8	54	83	50-140	26	25	R
Trichloroethene	7010482	53.4	31.8	ug/kg wet	N/A	7.96	52.7	59.7	-2	18	45-135	12	25	M1
Trichlorofluoromethane	7010482	<20.0	31.8	ug/kg wet	N/A	31.8	20.7	22.2	65	62	45-120	7	35	
1,2,3-Trichloropropane	7010482	26.2	31.8	ug/kg wet	N/A	7.96	23.6	27.7	-8	4	45-130	16	30	M1
1,2,4-Trimethylbenzene	7010482	1640	31.8	ug/kg wet	N/A	7.96	1720	1880	252	674	40-130	9	35	M1
1,3,5-Trimethylbenzene	7010482	1130	31.8	ug/kg wet	N/A	7.96	677	762	-1425	-1034	45-130	12	30	M1
Vinyl chloride	7010482	<15.0	31.8	ug/kg wet	N/A	23.9	14.3	16.1	45	45	50-120	12	35	M1
Xylenes, total	7010482	2940	95.5	ug/kg wet	N/A	23.9	2860	2700	-84	-224	45-130	6	40	M1
Surrogate: Dibromofluoromethane	*7010482*			ug/L					*131*	*130*	*80-120*			Z6
Surrogate: Toluene-d8	*7010482*			ug/L					*98*	*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*7010482*			ug/L					*97*	*97*	*80-119*			
QC Source Sample: CQA0341-04RE1														
Benzene	7010490	<5.00	956	ug/kg wet	N/A	239	1150	1100	120	115	45-135	4	35	
Bromobenzene	7010490	<5.00	956	ug/kg wet	N/A	239	1150	1120	120	118	40-135	3	25	
Bromochloromethane	7010490	<5.00	956	ug/kg wet	N/A	239	1010	990	106	104	50-140	2	30	
Bromodichloromethane	7010490	<5.00	956	ug/kg wet	N/A	239	1010	981	106	103	45-135	3	25	
Bromoform	7010490	<10.0	956	ug/kg wet	N/A	478	994	853	104	90	35-125	15	20	
Bromomethane	7010490	<20.0	956	ug/kg wet	N/A	956	844	799	88	84	40-130	5	35	
n-Butylbenzene	7010490	4400	956	ug/kg wet	N/A	239	6000	6040	167	172	30-120	1	40	M1
sec-Butylbenzene	7010490	36700	956	ug/kg wet	N/A	239	1890	1680	-3641	-3675	35-125	12	25	M1
tert-Butylbenzene	7010490	1540	956	ug/kg wet	N/A	239	1620	1470	8	-7	35-120	10	40	M1
Carbon Tetrachloride	7010490	<5.00	956	ug/kg wet	N/A	239	972	930	102	98	45-135	4	30	
Chlorobenzene	7010490	11.5	956	ug/kg wet	N/A	239	1120	1060	116	110	40-135	6	20	
Chlorodibromomethane	7010490	61.1	956	ug/kg wet	N/A	239	923	826	90	80	40-135	11	25	
2-Chloroethylvinyl ether	7010490	<50.0	956	ug/kg wet	N/A	2390	2690	3240	281	340	30-105	19	40	M1
Chloroethane	7010490	<20.0	956	ug/kg wet	N/A	956	826	790	86	83	50-125	4	30	
Chloroform	7010490	<5.00	956	ug/kg wet	N/A	239	1090	1040	114	109	45-140	5	35	
Chloromethane	7010490	<20.0	956	ug/kg wet	N/A	956	865	763	90	80	35-130	13	30	
2-Chlorotoluene	7010490	4690	956	ug/kg wet	N/A	239	5820	5670	118	103	40-135	3	30	
4-Chlorotoluene	7010490	1230	956	ug/kg wet	N/A	239	2320	2470	114	130	40-130	6	40	
Cyclohexane	7010490	<100	956	ug/kg wet	N/A	4780	946	907	99	95	35-130	4	40	
1,2-Dibromo-3-chloropropane	7010490	166	956	ug/kg wet	N/A	2390	806	804	67	67	40-130	0	40	
1,2-Dibromoethane (EDB)	7010490	<50.0	956	ug/kg wet	N/A	2390	1070	1020	112	107	45-130	5	25	
Dibromomethane	7010490	<5.00	956	ug/kg wet	N/A	239	975	1030	102	108	55-140	5	25	
1,2-Dichlorobenzene	7010490	<5.00	956	ug/kg wet	N/A	239	1050	987	110	104	35-125	6	25	
1,3-Dichlorobenzene	7010490	33.4	956	ug/kg wet	N/A	239	1060	1130	107	115	35-125	6	20	
1,4-Dichlorobenzene	7010490	35.7	956	ug/kg wet	N/A	239	1130	1080	114	110	35-130	5	25	
Dichlorodifluoromethane	7010490	<15.0	956	ug/kg wet	N/A	717	790	713	83	75	30-120	10	35	
1,1-Dichloroethane	7010490	<5.00	956	ug/kg wet	N/A	239	1060	998	111	105	45-130	6	35	
1,2-Dichloroethane	7010490	<5.00	956	ug/kg wet	N/A	239	1060	1040	111	109	45-140	2	35	
1,1-Dichloroethene	7010490	<5.00	956	ug/kg wet	N/A	239	1160	1130	121	119	45-135	3	35	
cis-1,2-Dichloroethene	7010490	<5.00	956	ug/kg wet	N/A	239	1110	1080	116	113	50-135	3	35	
trans-1,2-Dichloroethene	7010490	<5.00	956	ug/kg wet	N/A	239	1060	1030	111	108	45-135	3	35	
trans-1,4-Dichloro-2-butene	7010490	<10.0	956	ug/kg wet	N/A	478	832	838	87	88	35-130	1	40	
1,2-Dichloropropane	7010490	<5.00	956	ug/kg wet	N/A	239	1080	1090	113	114	45-135	1	25	

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds													
C Source Sample: CQA0341-04RE1													
,3-Dichloropropane	7010490	<5.00	956	ug/kg wet	N/A	239	1080	1070	113	112	50-135	1	25	
,2-Dichloropropane	7010490	<20.0	956	ug/kg wet	N/A	956	511	527	53	55	40-135	3	35	
,1-Dichloropropene	7010490	<5.00	956	ug/kg wet	N/A	239	1100	1090	115	114	40-135	1	35	
s-1,3-Dichloropropene	7010490	<5.00	956	ug/kg wet	N/A	239	869	861	91	90	40-130	1	30	
ans-1,3-Dichloropropene	7010490	<5.00	956	ug/kg wet	N/A	239	787	779	82	82	40-130	1	25	
i-isopropyl ether	7010490	<25.0	956	ug/kg wet	N/A	1190	1070	1040	112	109	70-130	3	20	
thylbenzene	7010490	4430	956	ug/kg wet	N/A	239	5680	5920	131	156	45-130	4	40	M1
eptane	7010490	244	956	ug/kg wet	N/A	478	2190	2110	204	196	30-110	4	40	M1
exachlorobutadiene	7010490	83.0	956	ug/kg wet	N/A	1190	1670	1470	166	146	35-115	13	30	M1
odomethane	7010490	<5.00	956	ug/kg wet	N/A	239	2710	2460	283	258	30-120	10	40	M1
opropylbenzene	7010490	851	956	ug/kg wet	N/A	239	1920	1960	112	116	45-135	2	30	
-Isopropyltoluene	7010490	5240	956	ug/kg wet	N/A	239	6080	6090	88	89	40-135	0	40	
lethylene Chloride	7010490	<50.0	956	ug/kg wet	N/A	2390	1160	1100	121	115	40-130	5	30	
lethyl tert-Butyl Ether	7010490	<5.00	956	ug/kg wet	N/A	239	952	899	100	94	50-140	6	30	
aphthalene	7010490	7540	956	ug/kg wet	N/A	1190	8700	8900	121	143	20-115	2	40	M1
-Propylbenzene	7010490	3770	956	ug/kg wet	N/A	239	5230	5380	153	169	40-125	3	40	M1
tyrene	7010490	572	956	ug/kg wet	N/A	239	1490	1540	96	102	40-135	3	20	
,1,1,2-Tetrachloroethane	7010490	<5.00	956	ug/kg wet	N/A	239	1030	1020	108	107	45-135	1	25	
,1,2,2-Tetrachloroethane	7010490	345	956	ug/kg wet	N/A	239	1040	1240	73	94	45-130	18	40	
etrachloroethene	7010490	<5.00	956	ug/kg wet	N/A	239	1210	1140	127	120	40-135	6	35	
oluene	7010490	666	956	ug/kg wet	N/A	239	1640	1620	102	100	40-130	1	40	
,2,3-Trichlorobenzene	7010490	98.0	956	ug/kg wet	N/A	1190	1240	1180	119	114	25-120	5	40	
,2,4-Trichlorobenzene	7010490	50.7	956	ug/kg wet	N/A	1190	1300	1130	131	113	25-120	14	30	M1
,1,1-Trichloroethane	7010490	<5.00	956	ug/kg wet	N/A	239	995	1000	104	105	45-140	1	25	
,1,2-Trichloroethane	7010490	<5.00	956	ug/kg wet	N/A	239	1270	1110	133	116	50-140	13	25	
richloroethene	7010490	<5.00	956	ug/kg wet	N/A	239	1150	1130	120	119	45-135	2	25	
richlorofluoromethane	7010490	<20.0	956	ug/kg wet	N/A	956	994	971	104	102	45-120	2	35	
,2,3-Trichloropropane	7010490	235	956	ug/kg wet	N/A	239	1040	989	84	79	45-130	5	30	
,2,4-Trimethylbenzene	7010490	41200	956	ug/kg wet	N/A	239	42100	43300	94	220	40-130	3	35	M1,R
,3,5-Trimethylbenzene	7010490	12900	956	ug/kg wet	N/A	239	15200	15300	241	252	45-130	1	30	M1
inyl chloride	7010490	<15.0	956	ug/kg wet	N/A	717	1050	964	110	101	50-120	9	35	
ylenes, total	7010490	49500	2870	ug/kg wet	N/A	717	48600	50800	-31	45	45-130	4	40	M1
urrogate: Dibromofluoromethane	*7010490*			ug/L					*92*	*91*	*80-120*			
urrogate: Toluene-d8	*7010490*			ug/L					*96*	*94*	*70-130*			
urrogate: 4-Bromofluorobenzene	*7010490*			ug/L					*99*	*99*	*80-119*			
C Source Sample: CQA0656-13													
cetone	7010633	<50.0	60.4	ug/kg dry	N/A	151	54.6	54.6	90	95	45-140	0	40	
crylonitrile	7010633	<50.0	60.4	ug/kg dry	N/A	151	55.1	53.4	91	93	45-140	3	40	
enzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	51.7	48.7	86	85	40-135	6	35	
romobenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	47.2	45.8	78	80	40-135	3	40	
romochloromethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	53.8	51.3	89	90	50-145	5	35	
romodichloromethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	50.4	48.6	83	85	45-140	4	40	
romoform	7010633	<10.0	60.4	ug/kg dry	N/A	30.2	49.3	48.1	82	84	35-125	2	40	
romomethane	7010633	<20.0	60.4	ug/kg dry	N/A	60.4	54.5	51.3	90	90	40-130	6	35	
-Butanone (MEK)	7010633	<50.0	60.4	ug/kg dry	N/A	151	56.4	56.3	93	98	40-135	0	40	

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Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
QC Source Sample: CQA0656-13														
n-Butylbenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	40.6	37.7	67	66	25-120	7	40	
sec-Butylbenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	43.0	41.4	71	72	30-125	4	40	
tert-Butylbenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	44.8	40.9	74	71	25-120	9	40	
Carbon disulfide	7010633	0.755	60.4	ug/kg dry	N/A	15.1	47.5	45.2	77	78	45-120	5	35	
Carbon Tetrachloride	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	46.1	42.8	76	75	40-135	7	35	
Chlorobenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	49.4	48.2	82	84	40-135	2	35	
Chlorodibromomethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	48.1	47.4	80	83	40-135	1	35	
Chloroethane	7010633	<20.0	60.4	ug/kg dry	N/A	60.4	51.0	48.6	84	85	50-125	5	35	
Chloroform	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	48.5	46.2	80	81	45-140	5	35	
Chloromethane	7010633	<20.0	60.4	ug/kg dry	N/A	60.4	54.4	51.0	90	89	35-130	6	30	
2-Chlorotoluene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	50.4	41.5	83	72	40-135	19	40	
4-Chlorotoluene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	45.1	42.7	75	75	35-130	5	40	
1,2-Dibromo-3-chloropropane	7010633	<50.0	60.4	ug/kg dry	N/A	151	42.7	43.1	71	75	35-130	1	40	
1,2-Dibromoethane (EDB)	7010633	<50.0	60.4	ug/kg dry	N/A	151	47.1	44.9	78	78	45-140	5	35	
Dibromomethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	54.5	50.7	90	88	55-145	7	35	
1,2-Dichlorobenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	46.2	42.9	76	75	35-125	7	40	
1,3-Dichlorobenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	43.4	42.3	72	74	30-125	3	40	
1,4-Dichlorobenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	45.8	43.8	76	76	35-130	4	40	
Dichlorodifluoromethane	7010633	<15.0	60.4	ug/kg dry	N/A	45.3	39.1	38.0	65	66	25-120	3	35	
1,1-Dichloroethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	48.9	46.9	81	82	45-140	4	35	
1,2-Dichloroethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	51.5	48.2	85	84	45-140	7	35	
1,1-Dichloroethene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	48.7	46.3	81	81	45-140	5	35	
cis-1,2-Dichloroethene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	53.5	50.6	89	88	50-145	6	35	
trans-1,2-Dichloroethene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	47.9	44.6	79	78	45-140	7	35	
1,2-Dichloropropane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	52.4	51.1	87	89	45-140	3	35	
1,3-Dichloropropane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	51.4	49.7	85	87	50-145	3	35	
2,2-Dichloropropane	7010633	<20.0	60.4	ug/kg dry	N/A	60.4	50.9	48.1	84	84	40-135	6	35	
1,1-Dichloropropene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	52.5	49.5	87	86	40-135	6	35	
cis-1,3-Dichloropropene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	49.8	47.9	82	84	40-135	4	35	
trans-1,3-Dichloropropene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	48.7	47.7	81	83	40-135	2	40	
Ethylbenzene	7010633	0.824	60.4	ug/kg dry	N/A	15.1	49.2	46.8	80	80	35-130	5	40	
Hexachlorobutadiene	7010633	<25.0	60.4	ug/kg dry	N/A	75.5	34.6	31.2	57	54	20-115	10	40	
Hexane	7010633	<25.0	60.4	ug/kg dry	N/A	75.5	39.4	37.4	65	65	20-110	5	40	
Isopropylbenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	47.4	45.3	78	79	45-140	5	40	
p-Isopropyltoluene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	43.1	41.7	71	73	40-135	3	40	
Methylene Chloride	7010633	39.8	60.4	ug/kg dry	N/A	151	92.6	89.2	87	86	40-135	4	30	
Methyl tert-Butyl Ether	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	52.9	50.1	88	87	45-140	5	30	
Naphthalene	7010633	<25.0	60.4	ug/kg dry	N/A	75.5	47.6	46.1	79	80	20-115	3	40	
n-Propylbenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	39.3	40.7	65	71	30-125	4	40	
Styrene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	50.0	48.1	83	84	40-135	4	35	
1,1,1,2-Tetrachloroethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	45.7	44.6	76	78	45-140	2	30	
1,1,2,2-Tetrachloroethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	50.8	50.2	84	88	45-140	1	40	
Tetrachloroethene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	41.4	40.1	69	70	40-135	3	35	
Toluene	7010633	1.55	60.4	ug/kg dry	N/A	15.1	49.3	46.2	79	78	35-130	6	40	
1,2,3-Trichlorobenzene	7010633	<25.0	60.4	ug/kg dry	N/A	75.5	41.0	37.6	68	66	25-120	9	40	

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Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'olatile Organic Compounds														
)C Source Sample: CQA0656-13														
,2,4-Trichlorobenzene	7010633	<25.0	60.4	ug/kg dry	N/A	75.5	38.8	35.8	64	62	25-120	8	40	
,1,1-Trichloroethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	46.1	43.2	76	75	45-140	6	35	
,1,2-Trichloroethane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	53.7	52.8	89	92	50-145	2	40	
'richloroethene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	45.2	43.5	75	76	45-140	4	35	
'richlorofluoromethane	7010633	<20.0	60.4	ug/kg dry	N/A	60.4	41.1	38.6	68	67	45-120	6	35	
,2,3-Trichloropropane	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	47.8	47.0	79	82	45-140	2	35	
,2,4-Trimethylbenzene	7010633	3.71	60.4	ug/kg dry	N/A	15.1	48.4	47.1	74	76	35-130	3	40	
,3,5-Trimethylbenzene	7010633	<5.00	60.4	ug/kg dry	N/A	15.1	46.8	44.2	77	77	35-130	6	35	
'inyl chloride	7010633	<15.0	60.4	ug/kg dry	N/A	45.3	46.7	44.4	77	77	50-120	5	35	
'ylenes, total	7010633	4.22	181	ug/kg dry	N/A	45.3	153	147	82	83	35-130	4	40	
'urrogate: Dibromofluoromethane	*7010633*			ug/L					*103*	*103*	*80-120*			
'urrogate: Toluene-d8	*7010633*			ug/L					*95*	*96*	*70-130*			
'urrogate: 4-Bromofluorobenzene	*7010633*			ug/L					*100*	*99*	*80-120*			
)emivolatile Organics by GC/MS														
)C Source Sample: CQA0306-01														
'cenaphthene	7010393	0.413	3.90	mg/kg dry	0.0957	0.390	3.09	3.49	69	78	35-125	12	20	
'cenaphthylene	7010393	<0.075	3.90	mg/kg dry	0.0887	0.390	2.89	2.91	74	74	40-125	1	20	
'nthracene	7010393	1.08	3.90	mg/kg dry	0.0922	0.390	3.40	4.52	59	88	35-130	28	25	M1
)enzidine	7010393	<0.032	3.90	mg/kg dry	0.0378	3.90	0.745	1.04	19	27	20-105	33	40	M1,J
)enzo (a) anthracene	7010393	2.62	3.90	mg/kg dry	0.0993	0.390	4.06		37		40-135			M1
)enzo (b) fluoranthene	7010393	2.11	3.90	mg/kg dry	0.0969	0.390	3.91		46		40-130			
)enzo (k) fluoranthene	7010393	1.93	3.90	mg/kg dry	0.0993	0.390	3.59	4.45	43	64	40-120	21	30	
)enzo (a) pyrene	7010393	1.93	3.90	mg/kg dry	0.0875	0.390	3.84		49		40-125			
)enzo (g,h,i) perylene	7010393	1.14	3.90	mg/kg dry	0.0887	0.390	3.39	3.88	58	70	35-125	13	30	
)enzyl alcohol	7010393	<0.065	3.90	mg/kg dry	0.0768	0.390	3.07	3.39	79	86	40-120	10	30	
)utyl benzyl phthalate	7010393	<0.084	3.90	mg/kg dry	0.0993	0.390	2.99	3.07	77	78	45-130	3	25	
)is(2-chloroethyl)ether	7010393	<0.083	3.90	mg/kg dry	0.0981	0.390	3.10	3.22	79	82	30-120	4	30	
)is(2-chloroethoxy)methane	7010393	<0.082	3.90	mg/kg dry	0.0969	0.390	3.00	3.23	77	82	30-120	7	25	A-01
)is(2-ethylhexyl)phthalate	7010393	<0.032	3.90	mg/kg dry	0.0378	0.390	2.92	2.91	75	74	45-130	0	40	
)is(2-chloroisopropyl) ether	7010393	<0.080	3.90	mg/kg dry	0.0946	0.390	2.87	2.99	74	76	30-115	4	25	
-Bromophenyl phenyl ether	7010393	<0.087	3.90	mg/kg dry	0.103	0.390	3.09	3.13	79	80	40-130	1	25	
:arbazole	7010393	0.873	3.90	mg/kg dry	0.0957	0.390	3.62		70		45-135			
-Chloroaniline	7010393	<0.10	3.90	mg/kg dry	0.123	0.390	3.01	3.26	77	83	30-120	8	20	
-Chloronaphthalene	7010393	<0.088	3.90	mg/kg dry	0.104	0.390	3.05	3.11	78	79	35-120	2	20	
-Chlorophenyl phenyl ether	7010393	<0.094	3.90	mg/kg dry	0.111	0.390	2.99	3.14	77	80	40-125	5	20	
:hrysene	7010393	2.96	3.90	mg/kg dry	0.0981	0.390	4.23		33		40-135			M1
)ibenzo (a,h) anthracene	7010393	0.332	3.90	mg/kg dry	0.0697	0.390	3.44	3.77	80	88	40-125	9	30	
)ibenzofuran	7010393	0.471	3.90	mg/kg dry	0.0969	0.390	3.17	3.84	69	86	40-130	19	20	
)i-n-butyl phthalate	7010393	<0.088	3.90	mg/kg dry	0.104	0.390	3.01	3.10	77	79	40-130	3	25	
,2-Dichlorobenzene	7010393	<0.076	3.90	mg/kg dry	0.0898	0.390	2.82	3.01	72	77	25-110	7	30	
,3-Dichlorobenzene	7010393	<0.083	3.90	mg/kg dry	0.0981	0.390	2.66	2.91	68	74	25-110	9	35	
,4-Dichlorobenzene	7010393	<0.086	3.90	mg/kg dry	0.102	0.390	2.72	2.94	70	75	25-110	8	30	
,3'-Dichlorobenzidine	7010393	<0.077	3.90	mg/kg dry	0.0910	0.390	2.78	3.01	71	77	40-125	8	30	
)iethyl phthalate	7010393	<0.089	3.90	mg/kg dry	0.105	0.390	3.08	3.18	79	81	45-130	3	30	
)imethyl phthalate	7010393	<0.081	3.90	mg/kg dry	0.0957	0.390	3.24	3.33	83	85	50-130	3	35	

TestAmerica
ANALYTICAL TESTING CORPORATION
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
QC Source Sample: CQA0306-01														
2,4-Dinitrotoluene	7010393	<0.059	3.90	mg/kg dry	0.0697	0.390	3.47	3.70	89	94	40-135	6	30	
2,6-Dinitrotoluene	7010393	<0.061	3.90	mg/kg dry	0.0721	0.390	3.29	3.45	84	88	40-125	5	30	
Di-n-octyl phthalate	7010393	<0.085	3.90	mg/kg dry	0.100	0.390	3.04	2.92	78	74	50-130	4	25	
Fluorene	7010393	0.528	3.90	mg/kg dry	0.0969	0.390	3.20	4.00	69	89	40-130	22	20	R
Hexachlorobenzene	7010393	<0.082	3.90	mg/kg dry	0.0969	0.390	3.27	3.37	84	86	40-135	3	25	
Hexachlorobutadiene	7010393	<0.085	3.90	mg/kg dry	0.100	0.390	2.59	2.68	66	68	30-110	3	30	
Hexachlorocyclopentadiene	7010393	<0.059	3.90	mg/kg dry	0.0697	0.780	2.19	1.84	56	47	10-95	17	40	
Hexachloroethane	7010393	<0.082	3.90	mg/kg dry	0.0969	0.390	2.59	2.78	66	71	25-110	7	30	
Indeno (1,2,3-cd) pyrene	7010393	1.29	3.90	mg/kg dry	0.0875	0.390	3.63	4.20	60	74	40-125	15	40	
Isophorone	7010393	<0.082	3.90	mg/kg dry	0.0969	0.390	2.98	3.28	76	84	40-115	10	30	
2-Methylnaphthalene	7010393	0.130	3.90	mg/kg dry	0.0957	0.390	2.75	3.22	67	79	35-120	16	25	
Naphthalene	7010393	0.272	3.90	mg/kg dry	0.0910	0.390	2.86	3.35	66	79	35-115	16	30	
2-Nitroaniline	7010393	<0.070	3.90	mg/kg dry	0.0827	0.390	3.50	3.73	90	95	45-135	6	25	
3-Nitroaniline	7010393	<0.064	3.90	mg/kg dry	0.0757	0.390	3.55	3.75	91	96	45-135	5	40	
4-Nitroaniline	7010393	<0.056	3.90	mg/kg dry	0.0662	0.390	3.54	3.80	91	97	45-135	7	40	
Nitrobenzene	7010393	<0.096	3.90	mg/kg dry	0.113	0.390	3.07	3.27	79	83	35-115	6	25	
N-Nitrosodimethylamine	7010393	<0.13	3.90	mg/kg dry	0.155	0.390	3.09	3.33	79	85	35-110	7	40	
N-Nitrosodiphenylamine	7010393	<0.074	3.90	mg/kg dry	0.0875	0.390	3.16	3.32	81	85	40-125	5	25	A-01
N-Nitrosodi-n-propylamine	7010393	<0.068	3.90	mg/kg dry	0.0804	0.390	2.91	3.23	75	82	35-110	10	30	
Pyridine	7010393	<0.038	3.90	mg/kg dry	0.0449	0.390	2.52	2.71	65	69	25-105	7	40	
1,2,4-Trichlorobenzene	7010393	<0.091	3.90	mg/kg dry	0.108	0.390	2.86	2.93	73	75	30-115	2	25	
Benzoic acid	7010393	<0.023	3.90	mg/kg dry	0.0272	0.780	0.169	0.132	4	3	52-30	25	40	M1,J
4-Chloro-3-methylphenol	7010393	<0.043	3.90	mg/kg dry	0.0508	0.390	2.93	3.21	75	82	50-125	9	25	
2-Chlorophenol	7010393	<0.041	3.90	mg/kg dry	0.0485	0.390	2.93	3.03	75	77	35-115	3	30	
Cresol(s)	7010393	<0.045	7.81	mg/kg dry	0.0532	0.390	5.64	6.15	72	79	45-115	9	25	
2,4-Dichlorophenol	7010393	<0.048	3.90	mg/kg dry	0.0567	0.390	3.03	3.18	78	81	35-115	5	40	
2,4-Dimethylphenol	7010393	<0.043	3.90	mg/kg dry	0.0508	0.390	2.76	2.93	71	75	40-110	6	20	
2,4-Dinitrophenol	7010393	<0.031	3.90	mg/kg dry	0.0366	0.390	0.896	1.09	23	28	10-60	20	40	CIN
4,6-Dinitro-2-methylphenol	7010393	<0.019	3.90	mg/kg dry	0.0225	0.390	2.09	2.29	54	58	10-90	9	40	
2-Methylphenol (o-Cresol)	7010393	<0.045	3.90	mg/kg dry	0.0532	0.390	2.86	3.02	73	77	40-115	5	20	
4-Methylphenol (p-Cresol)	7010393	<0.040	3.90	mg/kg dry	0.0473	0.390	2.78	3.13	71	80	45-115	12	25	
2-Nitrophenol	7010393	<0.045	3.90	mg/kg dry	0.0532	0.390	3.10	3.15	79	80	25-120	2	30	
4-Nitrophenol	7010393	<0.033	3.90	mg/kg dry	0.0390	0.390	3.54	3.66	91	93	25-115	3	40	
Pentachlorophenol	7010393	<0.035	3.90	mg/kg dry	0.0414	0.390	2.92	2.97	75	76	15-95	2	40	
Phenol	7010393	<0.031	3.90	mg/kg dry	0.0366	0.390	2.94	3.09	75	79	40-115	5	30	
2,4,5-Trichlorophenol	7010393	<0.049	3.90	mg/kg dry	0.0579	0.390	3.13	3.09	80	79	35-125	1	40	
2,4,6-Trichlorophenol	7010393	<0.044	3.90	mg/kg dry	0.0520	0.390	3.31	3.19	85	81	30-120	4	40	
Surrogate: Nitrobenzene-d5	*7010393*			mg/kg dry					*76*	*73*	*56-113*			
Surrogate: 2-Fluorobiphenyl	*7010393*			mg/kg dry					*72*	*65*	*64-107*			
Surrogate: Terphenyl-d14	*7010393*			mg/kg dry					*73*	*68*	*66-115*			
Surrogate: Phenol-d6	*7010393*			mg/kg dry					*77*	*80*	*55-106*			
Surrogate: 2-Fluorophenol	*7010393*			mg/kg dry					*69*	*70*	*52-96*			
Surrogate: 2,4,6-Tribromophenol	*7010393*			mg/kg dry					*88*	*86*	*66-135*			

TestAmerica
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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS														
C Source Sample: CQA0306-01														
luoranthene	7010393	38700000	3.90	mg/kg dry	0.359	1.56	4.87	9.15	92308008724500		40-135	61	40	M1
henanthrene	7010393	38700000	3.90	mg/kg dry	0.383	1.56	4.55	9.77	92308008724500		40-130	73	40	M1
yrene	7010393	38700000	3.90	mg/kg dry	0.426	1.56	4.33	7.07	92308008724500		40-135	48	40	M1
'ST ANALYSIS PARAMETERS														
C Source Sample: CQA0341-01														
lotor Oil	7010391	428	66.3	mg/kg	N/A	10.0	480	488	78	90	45-135	2	40	
urrogate: Octacosane	*7010391*			mg/kg					*127*	*130*	*60-120*			ZX

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0462
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:34

CERTIFICATION SUMMARY

TestAmerica - Cedar Falls, IA

Method	Matrix	Nelac	Iowa
OA-2 - 8015B	Solid/Soil		
OA-2	Solid/Soil		X
SM 2540 G	Solid/Soil		
SW 6010B	Solid/Soil	X	X
SW 7060A	Solid/Soil	X	X
SW 7471A	Solid/Soil	X	X
SW 8260B	Solid/Soil	X	X
SW 8270C	Solid/Soil	X	X

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Termperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DATA QUALIFIERS AND DEFINITIONS

A-01	ICV recovery was below laboratory control limits.
CIN	The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria specified in EPA methods 8260B/8270C.
ICV	ICV recovery was above control limits. Analyte not detected, data not impacted.
J	Analyte detected at a level less than the Reporting Limit(RL) and greater than or equal to the Method Detection Limit(MDL). Concentrations within this range are estimated.
L1	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits.
M1	The MS and/or MSD were outside control limits.
R	Sample duplicate RPD exceeded the laboratory control limit.
Z6	Surrogate recovery was outside control limits.
ZX	Due to sample matrix effects, the surrogate recovery was outside the control limits.

ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

TestAmerica
ANALYTICAL TESTING CORPORATION

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: HOWARD R. GREEN Co. Client #: _____
Address: 6710 EARHART LANE SW
City/State/Zip Code: CEDAR RAPIDS IA 52409
Project Manager: C. Quast
Telephone Number: 3198914000 Fax: _____
Sampler Name: (Print Name) JULIE ORIANO
Sampler Signature: J. Oriano
Email Address: JORIANO@hrgreen.com

Project Name: CLUSTER #1 - South Main Brownfields
Project #: 7295007
Site/Location ID: COUNCIL BLUFFS State: IA
Report To: J. ORIANO
Invoice To: J. ORIANO
Quote #: _____ PO#: _____

TAT
___ Standard
___ Rush (surcharges may apply)
Date Needed: _____
Fax Results: Y N
Email Results: Y N

Matrix: SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other
Preservation & # of Containers: HNO_3, HCl, NaOH, H_2SO_4, Methanol, None, Other (Specify), Sodium Bisulfate
Analyze For: VOCs-8260B, SVOCs-8270C, PCBs Metals 6010B 7471A, TEH-OA2
QC Deliverables: ___ None, ___ Level 2 (Batch QC), ___ Level 3, ___ Level 4, Other: _____

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix	HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify)	Sodium Bisulfate	VOCs-8260B	SVOCs-8270C	PCBs Metals 6010B 7471A	TEH-OA2	REMARKS
BH1-R1-0-2'	1/9/7	1245	G	N	S						3				X	X	X	
*BH2-R1-0-2'	1/9/7	1445	G	N	S					1	3	2		X	X		X	
BH2-R2-15'	1/9/7	1535	G	N	S					1	2	2		X	X		X	
BH3-R2-15'	1/9/7	1630	G	N	S					1	3	2		X	X	X	X	
BH4-R1-0-2'	1/9/7	1115	G	N	S						3				X	X		
BH4-R2-14'	1/9/7	1220	G	N	S						3				X		X	
FD1	—	—	G	N	S					1	1	2		X	X		X	
FD2	—	—	G	N	S						2					X		

Special Instructions:
*Vols marked BH1-R1 s/b BH2 R1 - cancel VOC analyses 1-10-07 mk
Per Julie

Relinquished By:	Date: 1/9/7	Time: 5pm	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date: 1/10/07	Time: 8:25	

LABORATORY COMMENTS:

TestAmerica INCORPORATED

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring ____

Client Name: Howard R. Green Co. Client #: ____
Address: 8710 Earhart Lane SW
City/State/Zip Code: Cedar Rapids IA 52409
Project Manager: Cindy Crist
Telephone Number: 319 841 4000 Fax: ____
Sampler Name: (Print Name) Julie Oriano
Sampler Signature: [signature]

Project Name: Cluster #1 South main Brownfield
Project #: 729500I
Site/Location ID: Council Bluffs State: IA
Report To: Julie Oriano
Invoice To: Julie Oriano
Quote #: ____ PO#: ____

TAT
___ Standard
___ Rush (surcharges may apply)
Date Needed: ____
Fax Results: Y N

QC Deliverables
___ None
___ Level 2 (Batch QC)
___ Level 3
___ Level 4
Other: ____

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other	Preservation & # of Containers: HNO_3	HCl	NaOH	H_2SO_4	Methanol	None	Other (Specify)	Analyze For: VOCs - 8260B	SVOCs - 8270C	RCRA Metals 6010A/7470A	TEH - DRO	REMARKS
BH2-R1-0-2'	1/10/07	1105	G	N	S					1		2	X				Requested

Special Instructions:

LABORATORY COMMENTS:
Init Lab Temp:
Rec Lab Temp:
Custody Seals: Y N N/A
Bottles Supplied by Test America: Y N
Method of Shipment:

Relinquished By: [signature]	Date:	Time:	Received By: Shawn Hays	Date: 1/12/07	Time: 10:00
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TestAmerica
ANALYTICAL TESTING CORPORATION
704 ENTERPRISE DRIVE • CEDAR FALLS, IA 50613 • 800-750-2401 • 319-277-2425 FAX

Sample Receipt and Temperature Log Form

Client: Howard R Green Project: Cluster #1

City: _____

Date: 1/10/07 Receiver's Initials: MR Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable) BDF-31

1 °C / On Ice

☒ Temp Blank

☐ Temperature out of compliance

Thermometer:

☐ IR - 905085 "A"
☒ IR - 809065 "B"
☐ IR - 61854108
☐ 22126775

Courier:

☒ UPS ☐ TA Courier
☐ FedEx ☐ TA Field Services
☐ DHL ☐ Client
☐ US Postal Service ☐ Other
☐ Spee-Dee _____

Custody seals present?
☒ Yes
Custody seals intact?
☒ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.
☐ Samples(s) received same day of sampling.
☐ Evidence of a chilling process
☐ Temperature not taken:

_____

*Refer to SOP CF01-01 for Temperature Criteria

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Sample Receipt and Temperature Log Form

Client: Howard R Green Project: Cluster #1

City: CR

Date: 1-12-07 Receiver's Initials: CH Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable)
569

1° °C / On Ice

Thermometer:

- [X] IR - 905085 "A"
- [ ] IR - 809065 "B"
- [ ] IR - 61854108
- [ ] 22126775

Courier:

- [X] UPS
- [ ] TA Courier
- [ ] FedEx
- [ ] TA Field Service
- [ ] DHL
- [ ] Client
- [ ] US Postal Service
- [ ] Other
- [ ] Spee-Dee

[X] Temp Blank Purge Vials
1 Set Trip Blanks

[ ] Temperature out of compliance

Custody seals present?
[X] Yes

Custody seals intact?
[X] Yes [ ] No

[ ] Non-Conformance report started

Exceptions Noted

- [ ] Sample(s) not received in a cooler.
- [ ] Samples(s) received same day of sampling.
- [ ] Evidence of a chilling process
- [ ] Temperature not taken:

3-amber Qts Equip Blank
2 MW 1 amber Qts
1 FD-1 amber Qt.

*Refer to SOP CF01-01 for Temperature Criteria

TestAmerica
ANALYTICAL TESTING CORPORATION
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

January 22, 2007

Client:
HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404

Attn: Julie Oriano

Work Order: CQA0461
Project Name: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Date Received: 01/10/07

An executed copy of the chain of custody is also included as an addendum to this report

If you have any questions relating to this analytical report please contact your Laboratory Project Manager at 1-(800)750-2401

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
MW-1	CQA0461-01	01/09/07 13:15
MW-2	CQA0461-02	01/09/07 07:30
MW-3	CQA0461-03	01/09/07 15:00
MW-4	CQA0461-04	01/09/07 15:30
Trip Blank	CQA0461-05	01/09/07
Equipment Blank	CQA0461-06	01/09/07 12:45
FD-1	CQA0461-07	01/09/07

Samples were received into laboratory at a temperature of 3 °C.

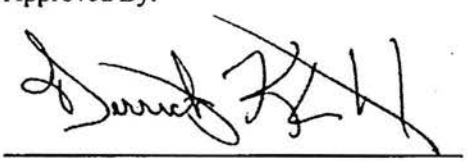
Most environmental analytical testing methods require a sample temperature of 4 degrees C +/- 2 degrees C for preservation of the sample constituents prior to analysis. If sample temperatures are outside of this temperature range at the time of sample receipt, results may be impacted. Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.
Iowa Certification Number: 007

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample analyzed.

Approved By:



TestAmerica - Cedar Falls, IA
Derrick Klinkenberg

TestAmerica
ANALYTICAL TESTING CORPORATION
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-01 (MW-1 - Ground Water)						**Sampled: 01/09/07 13:15**				**Recvd: 01/10/07 08:50**
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
eneral Chemistry Parameters										
'otal Dissolved Solids	**1140**		mg/L		20.0	1	01/10/07 16:00	sas	7010442	SM2540C
issolved Metals by SW 846 Series Methods										
ırsenic	<0.00100		mg/L		0.00100	1	01/16/07 13:13	lbb	7010619	SW 7060A
Barium	**0.0850**		mg/L		0.0100	1	01/16/07 23:44	llw	7010594	SW 6010B
Cadmium	<0.000500		mg/L		0.000500	1	01/15/07 14:15	evb	7010583	SW 7131A
Chromium	<0.0200		mg/L		0.0200	1	01/16/07 23:44	llw	7010594	SW 6010B
ead	<0.00400		mg/L		0.00400	1	01/16/07 11:26	lbb	7010604	SW 7421
Mercury	<0.000200		mg/L		0.000200	1	01/12/07 11:41	lmc	7010458	SW 7470A
elenium	<0.00500		mg/L		0.00500	1	01/16/07 20:14	lbb	7010631	SW 7740
ilver	<0.0200		mg/L		0.0200	1	01/16/07 23:44	llw	7010594	SW 6010B
olatile Organic Compounds										
Acetone	<4.62		ug/L	4.62	10.0	1	01/13/07 19:14	DMD	7010565	SW 8260B
Acrylonitrile	<1.28		ug/L	1.28	10.0	1	01/13/07 19:14	DMD	7010565	SW 8260B
Benzene	<0.160		ug/L	0.160	0.500	1	01/13/07 19:14	DMD	7010565	SW 8260B
Bromobenzene	<0.170		ug/L	0.170	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Bromochloromethane	<0.310		ug/L	0.310	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Bromodichloromethane	<0.120		ug/L	0.120	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Bromoform	<0.150	L	ug/L	0.150	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Bromomethane	<0.480		ug/L	0.480	4.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
2-Butanone (MEK)	<0.910		ug/L	0.910	10.0	1	01/13/07 19:14	DMD	7010565	SW 8260B
n-Butylbenzene	<0.0900		ug/L	0.0900	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
ec-Butylbenzene	<0.120		ug/L	0.120	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
ert-Butylbenzene	<0.140		ug/L	0.140	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Carbon disulfide	<0.140		ug/L	0.140	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Carbon Tetrachloride	<0.130		ug/L	0.130	2.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Chlorobenzene	<0.0800		ug/L	0.0800	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Chlorodibromomethane	<0.250		ug/L	0.250	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Chloroethane	<0.500		ug/L	0.500	4.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Chloroform	<0.0800		ug/L	0.0800	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Chloromethane	<0.200		ug/L	0.200	3.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
2-Chlorotoluene	<0.200		ug/L	0.200	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
4-Chlorotoluene	<0.150		ug/L	0.150	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2-Dibromo-3-chloropropane	<0.750		ug/L	0.750	10.0	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2-Dibromoethane (EDB)	<0.130		ug/L	0.130	10.0	1	01/13/07 19:14	DMD	7010565	SW 8260B
Dibromomethane	<0.220		ug/L	0.220	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2-Dichlorobenzene	<0.150		ug/L	0.150	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,3-Dichlorobenzene	<0.130		ug/L	0.130	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,4-Dichlorobenzene	<0.120		ug/L	0.120	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Dichlorodifluoromethane	<0.170		ug/L	0.170	3.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1-Dichloroethane	<0.0900		ug/L	0.0900	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2-Dichloroethane	<0.160		ug/L	0.160	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1-Dichloroethene	<0.190		ug/L	0.190	2.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
cis-1,2-Dichloroethene	<0.200		ug/L	0.200	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
trans-1,2-Dichloroethene	<0.150		ug/L	0.150	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2-Dichloropropane	<0.400		ug/L	0.400	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,3-Dichloropropane	<0.190		ug/L	0.190	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
2,2-Dichloropropane	<0.240		ug/L	0.240	4.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1-Dichloropropene	<0.170		ug/L	0.170	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-01 (MW-1 - Ground Water) - cont.						**Sampled: 01/09/07 13:15**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
cis-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
trans-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Ethylbenzene	<0.180		ug/L	0.180	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Hexachlorobutadiene	<0.390		ug/L	0.390	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Hexane	<0.440		ug/L	0.440	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Isopropylbenzene	<0.190		ug/L	0.190	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
p-Isopropyltoluene	<0.130		ug/L	0.130	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Methylene Chloride	<0.450		ug/L	0.450	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Methyl tert-Butyl Ether	<0.120		ug/L	0.120	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Naphthalene	<0.350		ug/L	0.350	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
n-Propylbenzene	<0.140		ug/L	0.140	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Styrene	<0.100		ug/L	0.100	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1,1,2-Tetrachloroethane	<0.160		ug/L	0.160	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1,2,2-Tetrachloroethane	<0.230	L	ug/L	0.230	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Tetrachloroethene	<0.240		ug/L	0.240	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Toluene	<0.100		ug/L	0.100	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2,3-Trichlorobenzene	<2.15		ug/L	2.15	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2,4-Trichlorobenzene	<0.490	L	ug/L	0.490	5.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1,1-Trichloroethane	<0.150		ug/L	0.150	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,1,2-Trichloroethane	<0.300		ug/L	0.300	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Trichloroethene	<0.170		ug/L	0.170	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Trichlorofluoromethane	<0.150		ug/L	0.150	4.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2,3-Trichloropropane	<0.180		ug/L	0.180	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,2,4-Trimethylbenzene	<0.160		ug/L	0.160	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
1,3,5-Trimethylbenzene	<0.140		ug/L	0.140	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Vinyl chloride	<0.160		ug/L	0.160	1.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Xylenes, total	<0.170		ug/L	0.170	3.00	1	01/13/07 19:14	DMD	7010565	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*90 %*									
Surr: Toluene-d8 (80-110%)	*91 %*									
Surr: 4-Bromofluorobenzene (65-115%)	*94 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.680		ug/L	0.680	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Acenaphthylene	<0.860		ug/L	0.860	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Anthracene	<1.10		ug/L	1.10	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzidine	<33.0		ug/L	33.0	100	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzo (a) anthracene	<0.800		ug/L	0.800	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzo (b) fluoranthene	<0.980		ug/L	0.980	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzo (k) fluoranthene	<1.10		ug/L	1.10	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzo (a) pyrene	<0.920		ug/L	0.920	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzo (g,h,i) perylene	<1.00		ug/L	1.00	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Benzyl alcohol	<0.730		ug/L	0.730	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Butyl benzyl phthalate	<1.10		ug/L	1.10	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Bis(2-chloroethyl)ether	<0.870		ug/L	0.870	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Bis(2-chloroethoxy)methane	<0.840	A-01	ug/L	0.840	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Bis(2-ethylhexyl)phthalate	<1.70		ug/L	1.70	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Bis(2-chloroisopropyl) ether	<0.990		ug/L	0.990	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Bromophenyl phenyl ether	<0.720		ug/L	0.720	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Carbazole	<1.00		ug/L	1.00	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Chloroaniline	<1.40		ug/L	1.40	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
2-Chloronaphthalene	<0.920		ug/L	0.920	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

mple ID: CQA0461-01 (MW-1 - Ground Water) - cont. **Sampled: 01/09/07 13:15** **Recvd: 01/10/07 08:50**

mivolatile Organics by GC/MS - cont.

nalyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Chlorophenyl phenyl ether	<0.750		ug/L	0.750	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
hrysene	<0.630		ug/L	0.630	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
ibenzo (a,h) anthracene	<1.30		ug/L	1.30	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
ibenzofuran	<0.830		ug/L	0.830	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
i-n-butyl phthalate	**1.66**	**J**	ug/L	0.750	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
2-Dichlorobenzene	<0.870		ug/L	0.870	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
3-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
3'-Dichlorobenzidine	<2.20		ug/L	2.20	50.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
iethyl phthalate	<0.760		ug/L	0.760	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
imethyl phthalate	<0.780		ug/L	0.780	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Dinitrotoluene	<0.720		ug/L	0.720	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
6-Dinitrotoluene	<0.710		ug/L	0.710	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
i-n-octyl phthalate	<1.30		ug/L	1.30	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
uoranthene	<0.700		ug/L	0.700	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
uorene	<0.760		ug/L	0.760	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
exachlorobenzene	<0.670		ug/L	0.670	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
exachlorobutadiene	<0.740		ug/L	0.740	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
exachlorocyclopentadiene	<0.620		ug/L	0.620	20.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
exachloroethane	<0.620		ug/L	0.620	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
deno (1,2,3-cd) pyrene	<0.890		ug/L	0.890	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
ophorone	<0.740		ug/L	0.740	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Methylnaphthalene	<0.680		ug/L	0.680	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
aphthalene	<0.730		ug/L	0.730	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitroaniline	<0.890		ug/L	0.890	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitroaniline	<0.980		ug/L	0.980	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitroaniline	<0.690		ug/L	0.690	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
itrobenzene	<0.940		ug/L	0.940	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitrosodimethylamine	<0.640		ug/L	0.640	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitrosodiphenylamine	<0.980	A-01	ug/L	0.980	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitrosodi-n-propylamine	<0.680		ug/L	0.680	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
henanthrene	<0.730		ug/L	0.730	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
yrene	<0.880		ug/L	0.880	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
yridine	<1.10		ug/L	1.10	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
2,4-Trichlorobenzene	<0.800		ug/L	0.800	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
enzoic acid	<13.0		ug/L	13.0	20.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Chloro-3-methylphenol	<0.510		ug/L	0.510	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Chlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
resol(s)	<0.870		ug/L	0.870	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Dichlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Dimethylphenol	<7.90		ug/L	7.90	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
4-Dinitrophenol	<0.490	CIN	ug/L	0.490	20.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
6-Dinitro-2-methylphenol	<0.420		ug/L	0.420	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Methylphenol (o-Cresol)	<0.870		ug/L	0.870	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Methylphenol (p-Cresol)	<0.910		ug/L	0.910	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitrophenol	<0.720		ug/L	0.720	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
-Nitrophenol	<0.360		ug/L	0.360	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
entachlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
henol	<0.390		ug/L	0.390	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
,4,5-Trichlorophenol	<0.670		ug/L	0.670	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-01 (MW-1 - Ground Water) - cont.						**Sampled: 01/09/07 13:15**				**Recvd: 01/10/07 08:50**
Semivolatile Organics by GC/MS - cont.										
2,4,6-Trichlorophenol	<0.690		ug/L	0.690	10.0	1	01/12/07 13:18	AKE	7010456	SW 8270C
Surr: Nitrobenzene-d5 (15-110%)	*72 %*									
Surr: 2-Fluorobiphenyl (15-110%)	*66 %*									
Surr: Terphenyl-d14 (20-115%)	*69 %*									
Surr: Phenol-d6 (10-75%)	*31 %*									
Surr: 2-Fluorophenol (10-85%)	*46 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*82 %*									
VOC Preservation Check										
pH	<2.00		units		2.00	1	01/15/07 14:54	ake	7010575	SW
TEST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	<300		ug/L		300	1	01/12/07 13:33	fmk	[CALC]	OA-2 - 8015B
Diesel	<300		ug/L		300	1	01/12/07 13:33	fmk	7010392	OA-2
Gasoline	<300		ug/L		300	1	01/12/07 13:33	fmk	7010392	OA-2
Motor Oil	<300		ug/L		300	1	01/12/07 13:33	fmk	7010392	OA-2
Surr: Octacosane (40-135%)	*80 %*									

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Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-02 (MW-2 - Ground Water)						**Sampled: 01/09/07 07:30**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
eneral Chemistry Parameters										
Total Dissolved Solids	860		mg/L		20.0	1	01/10/07 16:00	sas	7010442	SM2540C
olatile Organic Compounds										
Acetone	<23.1	FM	ug/L	23.1	50.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Acrylonitrile	<6.40	FM	ug/L	6.40	50.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Benzene	<0.800	FM	ug/L	0.800	2.50	5	01/13/07 18:42	DMD	7010565	SW 8260B
Bromobenzene	<0.850	FM	ug/L	0.850	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Bromochloromethane	<1.55	FM	ug/L	1.55	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Bromodichloromethane	<0.600	FM	ug/L	0.600	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Bromoform	<0.750	FM,L	ug/L	0.750	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Bromomethane	<2.40	FM	ug/L	2.40	20.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
2-Butanone (MEK)	<4.55	FM	ug/L	4.55	50.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
n-Butylbenzene	**1.55**	FM,J	ug/L	0.450	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
sec-Butylbenzene	**2.35**	FM,J	ug/L	0.600	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
tert-Butylbenzene	<0.700	FM	ug/L	0.700	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Carbon disulfide	<0.700	FM	ug/L	0.700	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Carbon Tetrachloride	<0.650	FM	ug/L	0.650	10.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Chlorobenzene	<0.400	FM	ug/L	0.400	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Chlorodibromomethane	<1.25	FM	ug/L	1.25	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Chloroethane	<2.50	FM	ug/L	2.50	20.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Chloroform	<0.400	FM	ug/L	0.400	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Chloromethane	<1.00	FM	ug/L	1.00	15.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
2-Chlorotoluene	**2.55**	FM,J	ug/L	1.00	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
4-Chlorotoluene	<0.750	FM	ug/L	0.750	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2-Dibromo-3-chloropropane	<3.75	FM	ug/L	3.75	50.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2-Dibromoethane (EDB)	<0.650	FM	ug/L	0.650	50.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Dibromomethane	<1.10	FM	ug/L	1.10	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2-Dichlorobenzene	<0.750	FM	ug/L	0.750	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,3-Dichlorobenzene	<0.650	FM	ug/L	0.650	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,4-Dichlorobenzene	<0.600	FM	ug/L	0.600	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Dichlorodifluoromethane	<0.850	FM	ug/L	0.850	15.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1-Dichloroethane	<0.450	FM	ug/L	0.450	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2-Dichloroethane	<0.800	FM	ug/L	0.800	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1-Dichloroethene	<0.950	FM	ug/L	0.950	10.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
cis-1,2-Dichloroethene	<1.00	FM	ug/L	1.00	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
trans-1,2-Dichloroethene	<0.750	FM	ug/L	0.750	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2-Dichloropropane	<2.00	FM	ug/L	2.00	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,3-Dichloropropane	<0.950	FM	ug/L	0.950	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
2,2-Dichloropropane	<1.20	FM	ug/L	1.20	20.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1-Dichloropropene	<0.850	FM	ug/L	0.850	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
cis-1,3-Dichloropropene	<0.800	FM	ug/L	0.800	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
trans-1,3-Dichloropropene	<0.800	FM	ug/L	0.800	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Ethylbenzene	<0.900	FM	ug/L	0.900	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Hexachlorobutadiene	<1.95	FM	ug/L	1.95	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Hexane	<2.20	FM	ug/L	2.20	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Isopropylbenzene	**2.45**	FM,J	ug/L	0.950	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
p-Isopropyltoluene	<0.650	FM	ug/L	0.650	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Methylene Chloride	<2.25	FM	ug/L	2.25	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Methyl tert-Butyl Ether	<0.600	FM	ug/L	0.600	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-02 (MW-2 - Ground Water) - cont.						**Sampled: 01/09/07 07:30**		**Recvd: 01/10/07 08:50**		
Volatile Organic Compounds - cont.										
Naphthalene	**3.05**	FM,J	ug/L	1.75	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
n-Propylbenzene	**2.10**	FM,J	ug/L	0.700	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Styrene	<0.500	FM	ug/L	0.500	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1,1,2-Tetrachloroethane	<0.800	FM	ug/L	0.800	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1,2,2-Tetrachloroethane	<1.15	FM,L	ug/L	1.15	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Tetrachloroethene	<1.20	FM	ug/L	1.20	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Toluene	<0.500	FM	ug/L	0.500	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2,3-Trichlorobenzene	<10.8	FM	ug/L	10.8	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2,4-Trichlorobenzene	<2.45	FM,L	ug/L	2.45	25.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1,1-Trichloroethane	<0.750	FM	ug/L	0.750	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,1,2-Trichloroethane	<1.50	FM	ug/L	1.50	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Trichloroethene	<0.850	FM	ug/L	0.850	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Trichlorofluoromethane	<0.750	FM	ug/L	0.750	20.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2,3-Trichloropropane	<0.900	FM	ug/L	0.900	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,2,4-Trimethylbenzene	<0.800	FM	ug/L	0.800	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
1,3,5-Trimethylbenzene	<0.700	FM	ug/L	0.700	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Vinyl chloride	<0.800	FM	ug/L	0.800	5.00	5	01/13/07 18:42	DMD	7010565	SW 8260B
Xylenes, total	<0.850	FM	ug/L	0.850	15.0	5	01/13/07 18:42	DMD	7010565	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*89 %*	*FM*								
Surr: Toluene-d8 (80-110%)	*93 %*	*FM*								
Surr: 4-Bromofluorobenzene (65-115%)	*97 %*	*FM*								
Semivolatile Organics by GC/MS										
Acenaphthene	**5.01**	J	ug/L	0.680	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Acenaphthylene	<0.860		ug/L	0.860	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Anthracene	<1.10		ug/L	1.10	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzidine	<33.0		ug/L	33.0	100	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzo (a) anthracene	**0.930**	J	ug/L	0.800	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzo (b) fluoranthene	<0.980		ug/L	0.980	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzo (k) fluoranthene	<1.10		ug/L	1.10	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzo (a) pyrene	<0.920		ug/L	0.920	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzo (g,h,i) perylene	<1.00		ug/L	1.00	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzyl alcohol	<0.730		ug/L	0.730	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Butyl benzyl phthalate	<1.10		ug/L	1.10	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Bis(2-chloroethyl)ether	<0.870		ug/L	0.870	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Bis(2-chloroethoxy)methane	<0.840	A-01	ug/L	0.840	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Bis(2-ethylhexyl)phthalate	<1.70		ug/L	1.70	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Bis(2-chloroisopropyl) ether	<0.990		ug/L	0.990	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
4-Bromophenyl phenyl ether	<0.720		ug/L	0.720	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Carbazole	<1.00		ug/L	1.00	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
4-Chloroaniline	<1.40		ug/L	1.40	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
2-Chloronaphthalene	<0.920		ug/L	0.920	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
4-Chlorophenyl phenyl ether	<0.750		ug/L	0.750	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Chrysene	<0.630		ug/L	0.630	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Dibenzo (a,h) anthracene	<1.30		ug/L	1.30	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Dibenzofuran	<0.830		ug/L	0.830	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Di-n-butyl phthalate	**2.32**	J	ug/L	0.750	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
1,2-Dichlorobenzene	<0.870		ug/L	0.870	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
1,3-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
1,4-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
3,3'-Dichlorobenzidine	<2.20		ug/L	2.20	50.0	1	01/12/07 13:47	AKE	7010456	SW 8270C

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-02 (MW-2 - Ground Water) - cont.						**Sampled:**	**01/09/07 07:30**		**Recvd: 01/10/07 08:50**	
:mivolatile Organics by GC/MS - cont.										
)iethyl phthalate	<0.760		ug/L	0.760	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
)imethyl phthalate	<0.780		ug/L	0.780	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
,4-Dinitrotoluene	<0.720		ug/L	0.720	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
,6-Dinitrotoluene	<0.710		ug/L	0.710	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
)i-n-octyl phthalate	<1.30		ug/L	1.30	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
'luoranthene	<0.700		ug/L	0.700	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
'luorene	**4.61**	J	ug/L	0.760	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Iexachlorobenzene	<0.670		ug/L	0.670	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Iexachlorobutadiene	<0.740		ug/L	0.740	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Iexachlorocyclopentadiene	<0.620		ug/L	0.620	20.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Iexachloroethane	<0.620		ug/L	0.620	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
ndeno (1,2,3-cd) pyrene	<0.890		ug/L	0.890	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
sophorone	<0.740		ug/L	0.740	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
-Methylnaphthalene	<0.680		ug/L	0.680	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Naphthalene	**2.94**	J	ug/L	0.730	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
:-Nitroaniline	<0.890		ug/L	0.890	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
-Nitroaniline	<0.980		ug/L	0.980	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
-Nitroaniline	<0.690		ug/L	0.690	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Nitrobenzene	<0.940		ug/L	0.940	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
N-Nitrosodimethylamine	<0.640		ug/L	0.640	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
N-Nitrosodiphenylamine	<0.980	A-01	ug/L	0.980	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
N-Nitrosodi-n-propylamine	<0.680		ug/L	0.680	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Phenanthrene	**1.18**	J	ug/L	0.730	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Pyrene	**1.89**	J	ug/L	0.880	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Pyridine	<1.10		ug/L	1.10	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
,2,4-Trichlorobenzene	<0.800		ug/L	0.800	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Benzoic acid	<13.0		ug/L	13.0	20.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
l-Chloro-3-methylphenol	<0.510		ug/L	0.510	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!-Chlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Cresol(s)	<0.870		ug/L	0.870	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!,4-Dichlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!,4-Dimethylphenol	<7.90		ug/L	7.90	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!,4-Dinitrophenol	<0.490	CIN	ug/L	0.490	20.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
l,6-Dinitro-2-methylphenol	<0.420		ug/L	0.420	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!-Methylphenol (o-Cresol)	<0.870		ug/L	0.870	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
l-Methylphenol (p-Cresol)	<0.910		ug/L	0.910	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!-Nitrophenol	<0.720		ug/L	0.720	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
l-Nitrophenol	<0.360		ug/L	0.360	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Pentachlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Phenol	<0.390		ug/L	0.390	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!,4,5-Trichlorophenol	<0.670		ug/L	0.670	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
!,4,6-Trichlorophenol	<0.690		ug/L	0.690	10.0	1	01/12/07 13:47	AKE	7010456	SW 8270C
Surr: Nitrobenzene-d5 (15-110%)	*71 %*									
Surr: 2-Fluorobiphenyl (15-110%)	*74 %*									
Surr: Terphenyl-d14 (20-115%)	*74 %*									
Surr: Phenol-d6 (10-75%)	*30 %*									
Surr: 2-Fluorophenol (10-85%)	*44 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*84 %*									
'OC Preservation Check										
)H	<2.00		units		2.00	1	01/12/07 12:39	sjn	7010509	SW

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Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-02 (MW-2 - Ground Water) - cont.						**Sampled: 01/09/07 07:30**			**Recvd: 01/10/07 08:50**	
ST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	**5660**		ug/L		300	1	01/12/07 14:27	fmk	[CALC]	OA-2 - 8015B
Diesel	**2760**		ug/L		300	1	01/12/07 14:27	fmk	7010392	OA-2
Gasoline	<300		ug/L		300	1	01/12/07 14:27	fmk	7010392	OA-2
Motor Oil	**2900**		ug/L		300	1	01/12/07 14:27	fmk	7010392	OA-2
Surr: Octacosane (40-135%)	*155 %*	*ZX*								

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Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
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Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-03 (MW-3 - Ground Water)						**Sampled: 01/09/07 15:00**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
eneral Chemistry Parameters										
'otal Dissolved Solids	**1140**		mg/L		20.0	1	01/10/07 16:00	sas	7010442	SM2540C
issolved Metals by SW 846 Series Methods										
ırsenic	**0.0171**		mg/L		0.00100	1	01/16/07 17:47	lbb	7010598	SW 7060A
Barium	**2.34**		mg/L		0.0100	1	01/17/07 00:04	llw	7010594	SW 6010B
Cadmium	<0.000500		mg/L		0.000500	1	01/17/07 15:57	evb	7010598	SW 7131A
Chromium	<0.0200		mg/L		0.0200	1	01/17/07 00:04	llw	7010594	SW 6010B
Lead	<0.00400		mg/L		0.00400	1	01/17/07 19:34	evb	7010598	SW 7421
Mercury	<0.000200		mg/L		0.000200	1	01/12/07 11:42	lmc	7010458	SW 7470A
Selenium	<0.00500		mg/L		0.00500	1	01/16/07 19:05	lbb	7010598	SW 7740
Silver	<0.0200		mg/L		0.0200	1	01/17/07 00:04	llw	7010594	SW 6010B
olatile Organic Compounds										
Acetone	**12.1**		ug/L	4.62	10.0	1	01/13/07 19:46	DMD	7010565	SW 8260B
Acrylonitrile	<1.28		ug/L	1.28	10.0	1	01/13/07 19:46	DMD	7010565	SW 8260B
Benzene	**2.81**		ug/L	0.160	0.500	1	01/13/07 19:46	DMD	7010565	SW 8260B
Bromobenzene	<0.170		ug/L	0.170	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Bromochloromethane	<0.310		ug/L	0.310	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Bromodichloromethane	<0.120		ug/L	0.120	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Bromoform	<0.150	L	ug/L	0.150	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Bromomethane	<0.480		ug/L	0.480	4.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
2-Butanone (MEK)	<0.910		ug/L	0.910	10.0	1	01/13/07 19:46	DMD	7010565	SW 8260B
n-Butylbenzene	**79.2**		ug/L	0.0900	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
sec-Butylbenzene	**38.0**		ug/L	0.120	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
ert-Butylbenzene	**27.8**		ug/L	0.140	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Carbon disulfide	<0.140		ug/L	0.140	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Carbon Tetrachloride	<0.130		ug/L	0.130	2.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Chlorobenzene	<0.0800		ug/L	0.0800	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Chlorodibromomethane	<0.250		ug/L	0.250	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Chloroethane	<0.500		ug/L	0.500	4.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Chloroform	<0.0800		ug/L	0.0800	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Chloromethane	<0.200		ug/L	0.200	3.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
2-Chlorotoluene	<0.200		ug/L	0.200	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
4-Chlorotoluene	<0.150		ug/L	0.150	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2-Dibromo-3-chloropropane	<0.750		ug/L	0.750	10.0	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2-Dibromoethane (EDB)	<0.130		ug/L	0.130	10.0	1	01/13/07 19:46	DMD	7010565	SW 8260B
Dibromomethane	<0.220		ug/L	0.220	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2-Dichlorobenzene	<0.150		ug/L	0.150	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,3-Dichlorobenzene	<0.130		ug/L	0.130	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,4-Dichlorobenzene	<0.120		ug/L	0.120	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Dichlorodifluoromethane	<0.170		ug/L	0.170	3.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1-Dichloroethane	<0.0900		ug/L	0.0900	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2-Dichloroethane	<0.160		ug/L	0.160	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1-Dichloroethene	<0.190		ug/L	0.190	2.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
cis-1,2-Dichloroethene	<0.200		ug/L	0.200	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
rans-1,2-Dichloroethene	<0.150		ug/L	0.150	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2-Dichloropropane	<0.400		ug/L	0.400	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,3-Dichloropropane	<0.190		ug/L	0.190	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
2,2-Dichloropropane	<0.240		ug/L	0.240	4.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1-Dichloropropene	<0.170		ug/L	0.170	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-03 (MW-3 - Ground Water) - cont.						**Sampled: 01/09/07 15:00**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
cis-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
trans-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Ethylbenzene	**899**		ug/L	3.60	20.0	20	01/15/07 18:54	DMD	7010618	SW 8260B
Hexachlorobutadiene	<0.390		ug/L	0.390	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Hexane	**172**		ug/L	0.440	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Isopropylbenzene	**99.2**		ug/L	0.190	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
p-Isopropyltoluene	<0.130		ug/L	0.130	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Methylene Chloride	<0.450		ug/L	0.450	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Methyl tert-Butyl Ether	<0.120		ug/L	0.120	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Naphthalene	**29.3**		ug/L	0.350	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
n-Propylbenzene	**327**		ug/L	0.140	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Styrene	<0.100		ug/L	0.100	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1,1,2-Tetrachloroethane	<0.160		ug/L	0.160	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1,2,2-Tetrachloroethane	<0.230	L	ug/L	0.230	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Tetrachloroethene	<0.240		ug/L	0.240	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Toluene	**3.94**		ug/L	0.100	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2,3-Trichlorobenzene	<2.15		ug/L	2.15	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2,4-Trichlorobenzene	<0.490	L	ug/L	0.490	5.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1,1-Trichloroethane	<0.150		ug/L	0.150	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,1,2-Trichloroethane	**2.04**		ug/L	0.300	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Trichloroethene	**0.200**	J	ug/L	0.170	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Trichlorofluoromethane	<0.150		ug/L	0.150	4.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2,3-Trichloropropane	<0.180		ug/L	0.180	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
1,2,4-Trimethylbenzene	**936**		ug/L	3.20	20.0	20	01/15/07 18:54	DMD	7010618	SW 8260B
1,3,5-Trimethylbenzene	**360**		ug/L	0.140	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Vinyl chloride	<0.160		ug/L	0.160	1.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Xylenes, total	**881**		ug/L	0.170	3.00	1	01/13/07 19:46	DMD	7010565	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*89 %*									
Surr: Toluene-d8 (80-110%)	*93 %*									
Surr: 4-Bromofluorobenzene (65-115%)	*96 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.680		ug/L	0.680	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Acenaphthylene	<0.860		ug/L	0.860	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Anthracene	<1.10		ug/L	1.10	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzidine	<33.0		ug/L	33.0	100	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzo (a) anthracene	<0.800		ug/L	0.800	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzo (b) fluoranthene	<0.980		ug/L	0.980	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzo (k) fluoranthene	<1.10		ug/L	1.10	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzo (a) pyrene	<0.920		ug/L	0.920	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzo (g,h,i) perylene	<1.00		ug/L	1.00	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzyl alcohol	<0.730		ug/L	0.730	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Butyl benzyl phthalate	**11.6**		ug/L	1.10	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Bis(2-chloroethyl)ether	**3.12**	J	ug/L	0.870	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Bis(2-chloroethoxy)methane	<0.840	A-01	ug/L	0.840	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Bis(2-ethylhexyl)phthalate	<1.70		ug/L	1.70	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Bis(2-chloroisopropyl) ether	<0.990		ug/L	0.990	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
4-Bromophenyl phenyl ether	<0.720		ug/L	0.720	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Carbazole	<1.00		ug/L	1.00	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
4-Chloroaniline	<1.40		ug/L	1.40	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2-Chloronaphthalene	<0.920		ug/L	0.920	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

ample ID: CQA0461-03 (MW-3 - Ground Water) - cont. **Sampled: 01/09/07 15:00** **Recvd: 01/10/07 08:50**

emivolatile Organics by GC/MS - cont.

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
-Chlorophenyl phenyl ether	<0.750		ug/L	0.750	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Chrysene	<0.630		ug/L	0.630	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Dibenzo (a,h) anthracene	<1.30		ug/L	1.30	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Dibenzofuran	<0.830		ug/L	0.830	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Di-n-butyl phthalate	**2.66**	J	ug/L	0.750	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
,2-Dichlorobenzene	<0.870		ug/L	0.870	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
,3-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
,4-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
,3'-Dichlorobenzidine	<2.20		ug/L	2.20	50.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Diethyl phthalate	<0.760		ug/L	0.760	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Dimethyl phthalate	<0.780		ug/L	0.780	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
,4-Dinitrotoluene	<0.720		ug/L	0.720	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
,6-Dinitrotoluene	<0.710		ug/L	0.710	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Di-n-octyl phthalate	<1.30		ug/L	1.30	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Fluoranthene	<0.700		ug/L	0.700	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Fluorene	<0.760		ug/L	0.760	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Hexachlorobenzene	<0.670		ug/L	0.670	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Hexachlorobutadiene	<0.740		ug/L	0.740	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Hexachlorocyclopentadiene	<0.620		ug/L	0.620	20.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Hexachloroethane	<0.620		ug/L	0.620	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
ndeno (1,2,3-cd) pyrene	<0.890		ug/L	0.890	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
sophorone	<0.740		ug/L	0.740	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
-Methylnaphthalene	**14.4**		ug/L	0.680	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Naphthalene	**11.5**		ug/L	0.730	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
-Nitroaniline	<0.890		ug/L	0.890	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
-Nitroaniline	<0.980		ug/L	0.980	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
-Nitroaniline	<0.690		ug/L	0.690	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Nitrobenzene	<0.940		ug/L	0.940	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
N-Nitrosodimethylamine	<0.640		ug/L	0.640	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
N-Nitrosodiphenylamine	<0.980	A-01	ug/L	0.980	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
N-Nitrosodi-n-propylamine	<0.680		ug/L	0.680	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Phenanthrene	<0.730		ug/L	0.730	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Pyrene	<0.880		ug/L	0.880	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Pyridine	<1.10		ug/L	1.10	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
1,2,4-Trichlorobenzene	<0.800		ug/L	0.800	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Benzoic acid	<13.0		ug/L	13.0	20.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
-Chloro-3-methylphenol	<0.510		ug/L	0.510	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
-Chlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Cresol(s)	<0.870		ug/L	0.870	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2,4-Dichlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2,4-Dimethylphenol	<7.90		ug/L	7.90	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2,4-Dinitrophenol	<0.490	CIN	ug/L	0.490	20.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
4,6-Dinitro-2-methylphenol	<0.420		ug/L	0.420	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2-Methylphenol (o-Cresol)	<0.870		ug/L	0.870	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
4-Methylphenol (p-Cresol)	<0.910		ug/L	0.910	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2-Nitrophenol	<0.720		ug/L	0.720	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
4-Nitrophenol	<0.360		ug/L	0.360	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Pentachlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Phenol	<0.390		ug/L	0.390	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
2,4,5-Trichlorophenol	<0.670		ug/L	0.670	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C

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Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-03 (MW-3 - Ground Water) - cont.						**Sampled: 01/09/07 15:00**				**Recvd: 01/10/07 08:50**
Semivolatile Organics by GC/MS - cont.										
2,4,6-Trichlorophenol	<0.690		ug/L	0.690	10.0	1	01/12/07 14:15	AKE	7010456	SW 8270C
Surr: Nitrobenzene-d5 (15-110%)	*40 %*									
Surr: 2-Fluorobiphenyl (15-110%)	*35 %*									
Surr: Terphenyl-d14 (20-115%)	*43 %*									
Surr: Phenol-d6 (10-75%)	*22 %*									
Surr: 2-Fluorophenol (10-85%)	*31 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*49 %*									
VOC Preservation Check										
pH	<2.00		units		2.00	1	01/15/07 14:54	ake	7010575	SW
LIST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	**12500**		ug/L		300	1	01/12/07 15:23	fmk	[CALC]	OA-2 - 8015E
Diesel	**2610**		ug/L		300	1	01/12/07 15:23	fmk	7010392	OA-2
Gasoline	**9480**		ug/L		300	1	01/12/07 15:23	fmk	7010392	OA-2
Motor Oil	**389**		ug/L		300	1	01/12/07 15:23	fmk	7010392	OA-2
Surr: Octacosane (40-135%)	*87 %*									

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704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-04 (MW-4 - Ground Water)						**Sampled: 01/09/07 15:30**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
eneral Chemistry Parameters										
'otal Dissolved Solids	**870**		mg/L		20.0	1	01/10/07 16:00	sas	7010442	SM2540C
issolved Metals by SW 846 Series Methods										
ırsenic	<0.00100		mg/L		0.00100	1	01/16/07 13:20	lbb	7010619	SW 7060A
Barium	**0.0976**		mg/L		0.0100	1	01/17/07 00:25	llw	7010594	SW 6010B
Cadmium	<0.000500		mg/L		0.000500	1	01/15/07 14:21	evb	7010583	SW 7131A
Chromium	<0.0200		mg/L		0.0200	1	01/17/07 00:25	llw	7010594	SW 6010B
ead	<0.00400		mg/L		0.00400	1	01/16/07 11:32	lbb	7010604	SW 7421
Mercury	<0.000200		mg/L		0.000200	1	01/12/07 11:44	lmc	7010458	SW 7470A
elenium	<0.00500		mg/L		0.00500	1	01/16/07 20:21	lbb	7010631	SW 7740
ilver	<0.0200		mg/L		0.0200	1	01/17/07 00:25	llw	7010594	SW 6010B
olatile Organic Compounds										
cetone	<4.62		ug/L	4.62	10.0	1	01/12/07 18:12	DMD	7010579	SW 8260B
crylonitrile	<1.28		ug/L	1.28	10.0	1	01/12/07 18:12	DMD	7010579	SW 8260B
Benzene	<0.160		ug/L	0.160	0.500	1	01/12/07 18:12	DMD	7010579	SW 8260B
Bromobenzene	<0.170		ug/L	0.170	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Bromochloromethane	<0.310		ug/L	0.310	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Bromodichloromethane	<0.120		ug/L	0.120	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Bromoform	<0.150		ug/L	0.150	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Bromomethane	<0.480		ug/L	0.480	4.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
-Butanone (MEK)	<0.910		ug/L	0.910	10.0	1	01/12/07 18:12	DMD	7010579	SW 8260B
n-Butylbenzene	**0.210**	J	ug/L	0.0900	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
ec-Butylbenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
ert-Butylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Carbon disulfide	<0.140		ug/L	0.140	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Carbon Tetrachloride	<0.130		ug/L	0.130	2.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Chlorobenzene	<0.0800		ug/L	0.0800	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Chlorodibromomethane	<0.250		ug/L	0.250	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Chloroethane	<0.500		ug/L	0.500	4.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Chloroform	<0.0800		ug/L	0.0800	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Chloromethane	**0.280**	J	ug/L	0.200	3.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
2-Chlorotoluene	**0.610**	J	ug/L	0.200	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
4-Chlorotoluene	<0.150		ug/L	0.150	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2-Dibromo-3-chloropropane	<0.750		ug/L	0.750	10.0	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2-Dibromoethane (EDB)	<0.130		ug/L	0.130	10.0	1	01/12/07 18:12	DMD	7010579	SW 8260B
Dibromomethane	<0.220		ug/L	0.220	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2-Dichlorobenzene	<0.150		ug/L	0.150	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,3-Dichlorobenzene	<0.130		ug/L	0.130	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,4-Dichlorobenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Dichlorodifluoromethane	<0.170		ug/L	0.170	3.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1-Dichloroethane	<0.0900		ug/L	0.0900	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2-Dichloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1-Dichloroethene	<0.190		ug/L	0.190	2.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
cis-1,2-Dichloroethene	<0.200		ug/L	0.200	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
rans-1,2-Dichloroethene	<0.150		ug/L	0.150	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2-Dichloropropane	<0.400		ug/L	0.400	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,3-Dichloropropane	<0.190		ug/L	0.190	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
2,2-Dichloropropane	<0.240		ug/L	0.240	4.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1-Dichloropropene	<0.170		ug/L	0.170	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-04 (MW-4 - Ground Water) - cont.						**Sampled: 01/09/07 15:30**		**Recvd: 01/10/07 08:50**		
Volatile Organic Compounds - cont.										
cis-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
trans-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Ethylbenzene	**1.02**		ug/L	0.180	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Hexachlorobutadiene	<0.390		ug/L	0.390	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Hexane	<0.440		ug/L	0.440	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Isopropylbenzene	**0.220**	J	ug/L	0.190	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
p-Isopropyltoluene	**0.290**	J	ug/L	0.130	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Methylene Chloride	<0.450		ug/L	0.450	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Methyl tert-Butyl Ether	<0.120		ug/L	0.120	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Naphthalene	<0.350		ug/L	0.350	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
n-Propylbenzene	**0.500**	J	ug/L	0.140	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Styrene	<0.100		ug/L	0.100	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1,1,2-Tetrachloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1,2,2-Tetrachloroethane	<0.230		ug/L	0.230	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Tetrachloroethene	<0.240		ug/L	0.240	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Toluene	<0.100		ug/L	0.100	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2,3-Trichlorobenzene	<2.15		ug/L	2.15	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2,4-Trichlorobenzene	<0.490		ug/L	0.490	5.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1,1-Trichloroethane	<0.150		ug/L	0.150	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,1,2-Trichloroethane	<0.300		ug/L	0.300	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Trichloroethene	<0.170		ug/L	0.170	1.00	1	01/15/07 16:13	DMD	7010618	SW 8260B
Trichlorofluoromethane	<0.150		ug/L	0.150	4.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2,3-Trichloropropane	<0.180		ug/L	0.180	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,2,4-Trimethylbenzene	**1.51**		ug/L	0.160	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
1,3,5-Trimethylbenzene	**0.790**	J	ug/L	0.140	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Vinyl chloride	<0.160		ug/L	0.160	1.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Xylenes, total	**1.56**	J	ug/L	0.170	3.00	1	01/12/07 18:12	DMD	7010579	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*93 %*									
Surr: Toluene-d8 (80-110%)	*94 %*									
Surr: 4-Bromofluorobenzene (65-115%)	*92 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.680		ug/L	0.680	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Acenaphthylene	<0.860		ug/L	0.860	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Anthracene	<1.10		ug/L	1.10	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzidine	<33.0		ug/L	33.0	100	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzo (a) anthracene	**0.850**	J	ug/L	0.800	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzo (b) fluoranthene	**1.05**	J	ug/L	0.980	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzo (k) fluoranthene	<1.10		ug/L	1.10	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzo (a) pyrene	**1.23**	J	ug/L	0.920	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzo (g,h,i) perylene	<1.00		ug/L	1.00	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Benzyl alcohol	<0.730		ug/L	0.730	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Butyl benzyl phthalate	<1.10		ug/L	1.10	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Bis(2-chloroethyl)ether	<0.870		ug/L	0.870	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Bis(2-chloroethoxy)methane	<0.840	A-01	ug/L	0.840	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Bis(2-ethylhexyl)phthalate	<1.70		ug/L	1.70	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Bis(2-chloroisopropyl) ether	<0.990		ug/L	0.990	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
4-Bromophenyl phenyl ether	<0.720		ug/L	0.720	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Carbazole	<1.00		ug/L	1.00	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
4-Chloroaniline	<1.40		ug/L	1.40	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
2-Chloronaphthalene	<0.920		ug/L	0.920	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C

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ample ID: CQA0461-04 (MW-4 - Ground Water) - cont.						**Sampled: 01/09/07 15:30**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
-Chlorophenyl phenyl ether	<0.750		ug/L	0.750	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
hrysene	**1.09**	J	ug/L	0.630	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
ibenzo (a,h) anthracene	<1.30		ug/L	1.30	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
ibenzofuran	<0.830		ug/L	0.830	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
i-n-butyl phthalate	**1.79**	J	ug/L	0.750	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,2-Dichlorobenzene	<0.870		ug/L	0.870	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,3-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,4-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,3'-Dichlorobenzidine	<2.20		ug/L	2.20	50.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
iethyl phthalate	<0.760		ug/L	0.760	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
imethyl phthalate	<0.780		ug/L	0.780	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,4-Dinitrotoluene	<0.720		ug/L	0.720	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,6-Dinitrotoluene	<0.710		ug/L	0.710	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
i-n-octyl phthalate	<1.30		ug/L	1.30	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
luoranthene	**1.07**	J	ug/L	0.700	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
luorene	<0.760		ug/L	0.760	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
lexachlorobenzene	<0.670		ug/L	0.670	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
lexachlorobutadiene	<0.740		ug/L	0.740	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
lexachlorocyclopentadiene	<0.620		ug/L	0.620	20.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
lexachloroethane	<0.620		ug/L	0.620	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
ndeno (1,2,3-cd) pyrene	**0.960**	J	ug/L	0.890	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
sophorone	<0.740		ug/L	0.740	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Methylnaphthalene	<0.680		ug/L	0.680	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
laphthalene	<0.730		ug/L	0.730	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Nitroaniline	<0.890		ug/L	0.890	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Nitroaniline	<0.980		ug/L	0.980	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Nitroaniline	<0.690		ug/L	0.690	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
litrobenzene	<0.940		ug/L	0.940	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
N-Nitrosodimethylamine	<0.640		ug/L	0.640	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
N-Nitrosodiphenylamine	<0.980	A-01	ug/L	0.980	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
N-Nitrosodi-n-propylamine	<0.680		ug/L	0.680	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
henanthrene	<0.730		ug/L	0.730	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
yrene	**1.25**	J	ug/L	0.880	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
yridine	<1.10		ug/L	1.10	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,2,4-Trichlorobenzene	<0.800		ug/L	0.800	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
enzoic acid	<13.0		ug/L	13.0	20.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Chloro-3-methylphenol	<0.510		ug/L	0.510	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Chlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
resol(s)	<0.870		ug/L	0.870	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,4-Dichlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,4-Dimethylphenol	<7.90		ug/L	7.90	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,4-Dinitrophenol	<0.490	CIN	ug/L	0.490	20.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,6-Dinitro-2-methylphenol	<0.420		ug/L	0.420	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Methylphenol (o-Cresol)	<0.870		ug/L	0.870	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Methylphenol (p-Cresol)	<0.910		ug/L	0.910	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Nitrophenol	<0.720		ug/L	0.720	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
-Nitrophenol	<0.360		ug/L	0.360	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
entachlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
henol	<0.390		ug/L	0.390	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
,4,5-Trichlorophenol	<0.670		ug/L	0.670	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-04 (MW-4 - Ground Water) - cont.						**Sampled: 01/09/07 15:30**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
2,4,6-Trichlorophenol	<0.690		ug/L	0.690	10.0	1	01/12/07 14:43	AKE	7010456	SW 8270C
Surr: Nitrobenzene-d5 (15-110%)	*75 %*									
Surr: 2-Fluorobiphenyl (15-110%)	*71 %*									
Surr: Terphenyl-d14 (20-115%)	*74 %*									
Surr: Phenol-d6 (10-75%)	*32 %*									
Surr: 2-Fluorophenol (10-85%)	*47 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*92 %*									
/OC Preservation Check										
pH	<2.00		units		2.00	1	01/16/07 13:00	sjn	7010605	SW
JST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	<300		ug/L		300	1	01/12/07 16:18	fmk	[CALC]	OA-2 - 8015B
Diesel	<300		ug/L		300	1	01/12/07 16:18	fmk	7010392	OA-2
Gasoline	<300		ug/L		300	1	01/12/07 16:18	fmk	7010392	OA-2
Motor Oil	<300		ug/L		300	1	01/12/07 16:18	fmk	7010392	OA-2
Surr: Octacosane (40-135%)	*69 %*									

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

ample ID: CQA0461-05 (Trip Blank - Water) — **Sampled: 01/09/07** — **Recvd: 01/10/07 08:50**

Sampled By: *Julie Oriano* — **Phone** — **800-728-7805**

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
olatile Organic Compounds										
Acetone	<4.62		ug/L	4.62	10.0	1	01/12/07 16:36	DMD	7010579	SW 8260B
Acrylonitrile	<1.28		ug/L	1.28	10.0	1	01/12/07 16:36	DMD	7010579	SW 8260B
Benzene	<0.160		ug/L	0.160	0.500	1	01/12/07 16:36	DMD	7010579	SW 8260B
Bromobenzene	<0.170		ug/L	0.170	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Bromochloromethane	<0.310		ug/L	0.310	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Bromodichloromethane	<0.120		ug/L	0.120	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Bromoform	<0.150		ug/L	0.150	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Bromomethane	<0.480		ug/L	0.480	4.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
2-Butanone (MEK)	<0.910		ug/L	0.910	10.0	1	01/12/07 16:36	DMD	7010579	SW 8260B
n-Butylbenzene	<0.0900		ug/L	0.0900	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
sec-Butylbenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
tert-Butylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Carbon disulfide	<0.140		ug/L	0.140	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Carbon Tetrachloride	<0.130		ug/L	0.130	2.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Chlorobenzene	<0.0800		ug/L	0.0800	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Chlorodibromomethane	<0.250		ug/L	0.250	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Chloroethane	<0.500		ug/L	0.500	4.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Chloroform	<0.0800		ug/L	0.0800	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Chloromethane	<0.200		ug/L	0.200	3.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
2-Chlorotoluene	<0.200		ug/L	0.200	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
4-Chlorotoluene	<0.150		ug/L	0.150	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2-Dibromo-3-chloropropane	<0.750		ug/L	0.750	10.0	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2-Dibromoethane (EDB)	<0.130		ug/L	0.130	10.0	1	01/12/07 16:36	DMD	7010579	SW 8260B
Dibromomethane	<0.220		ug/L	0.220	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2-Dichlorobenzene	<0.150		ug/L	0.150	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,3-Dichlorobenzene	<0.130		ug/L	0.130	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,4-Dichlorobenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Dichlorodifluoromethane	<0.170		ug/L	0.170	3.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,1-Dichloroethane	<0.0900		ug/L	0.0900	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2-Dichloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,1-Dichloroethene	<0.190		ug/L	0.190	2.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
cis-1,2-Dichloroethene	<0.200		ug/L	0.200	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
trans-1,2-Dichloroethene	<0.150		ug/L	0.150	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2-Dichloropropane	<0.400		ug/L	0.400	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,3-Dichloropropane	<0.190		ug/L	0.190	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
2,2-Dichloropropane	<0.240		ug/L	0.240	4.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,1-Dichloropropene	<0.170		ug/L	0.170	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
cis-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
trans-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Ethylbenzene	<0.180		ug/L	0.180	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Hexachlorobutadiene	<0.390		ug/L	0.390	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Hexane	<0.440		ug/L	0.440	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Isopropylbenzene	<0.190		ug/L	0.190	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
p-Isopropyltoluene	<0.130		ug/L	0.130	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Methylene Chloride	<0.450		ug/L	0.450	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Methyl tert-Butyl Ether	<0.120		ug/L	0.120	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Naphthalene	<0.350		ug/L	0.350	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
n-Propylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Styrene	<0.100		ug/L	0.100	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-05 (Trip Blank - Water) - cont.						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
olatile Organic Compounds - cont.										
1,1,1,2-Tetrachloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
,1,2,2-Tetrachloroethane	<0.230		ug/L	0.230	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Tetrachloroethene	<0.240		ug/L	0.240	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Toluene	<0.100		ug/L	0.100	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2,3-Trichlorobenzene	<2.15		ug/L	2.15	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2,4-Trichlorobenzene	<0.490		ug/L	0.490	5.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,1,1-Trichloroethane	<0.150		ug/L	0.150	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,1,2-Trichloroethane	<0.300		ug/L	0.300	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Trichloroethene	**0.530**	J	ug/L	0.170	1.00	1	01/16/07 15:59	DMD	7010738	SW 8260B
Trichlorofluoromethane	<0.150		ug/L	0.150	4.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2,3-Trichloropropane	<0.180		ug/L	0.180	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,2,4-Trimethylbenzene	<0.160		ug/L	0.160	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
1,3,5-Trimethylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Vinyl chloride	<0.160		ug/L	0.160	1.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Xylenes, total	<0.170		ug/L	0.170	3.00	1	01/12/07 16:36	DMD	7010579	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*94 %*									
Surr: Toluene-d8 (80-110%)	*93 %*									
Surr: 4-Bromofluorobenzene (65-115%)	*94 %*									
OC Preservation Check										
pH	<2.00		units		2.00	1	01/16/07 13:00	sjn	7010605	SW

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
mple ID: CQA0461-06 (Equipment Blank - Ground Water)						**Sampled: 01/09/07 12:45**			**Recvd: 01/10/07 08:50**	
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
ssolved Metals by SW 846 Series Methods										
rsenic	<0.00100		mg/L		0.00100	1	01/16/07 13:27	lbb	7010619	SW 7060A
arium	<0.0100		mg/L		0.0100	1	01/17/07 00:30	llw	7010594	SW 6010B
admium	<0.000500		mg/L		0.000500	1	01/15/07 14:40	evb	7010583	SW 7131A
hromium	<0.0200		mg/L		0.0200	1	01/17/07 00:30	llw	7010594	SW 6010B
ead	<0.00400		mg/L		0.00400	1	01/16/07 11:39	lbb	7010604	SW 7421
lercury	<0.000200		mg/L		0.000200	1	01/12/07 11:50	lmc	7010458	SW 7470A
elenium	<0.00500		mg/L		0.00500	1	01/16/07 20:27	lbb	7010631	SW 7740
ilver	<0.0200		mg/L		0.0200	1	01/17/07 00:30	llw	7010594	SW 6010B
olatile Organic Compounds										
cetone	**4.79**	**J**	ug/L	4.62	10.0	1	01/12/07 17:08	DMD	7010579	SW 8260B
crylonitrile	<1.28		ug/L	1.28	10.0	1	01/12/07 17:08	DMD	7010579	SW 8260B
enzene	<0.160		ug/L	0.160	0.500	1	01/12/07 17:08	DMD	7010579	SW 8260B
romobenzene	<0.170		ug/L	0.170	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
romochloromethane	<0.310		ug/L	0.310	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
romodichloromethane	<0.120		ug/L	0.120	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
romoform	<0.150		ug/L	0.150	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
romomethane	<0.480		ug/L	0.480	4.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
-Butanone (MEK)	<0.910		ug/L	0.910	10.0	1	01/12/07 17:08	DMD	7010579	SW 8260B
-Butylbenzene	<0.0900		ug/L	0.0900	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
c-Butylbenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
rt-Butylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
arbon disulfide	<0.140		ug/L	0.140	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
arbon Tetrachloride	<0.130		ug/L	0.130	2.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
hlorobenzene	<0.0800		ug/L	0.0800	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
hlorodibromomethane	<0.250		ug/L	0.250	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
hloroethane	<0.500		ug/L	0.500	4.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
hloroform	**0.160**	**J**	ug/L	0.0800	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
hloromethane	<0.200		ug/L	0.200	3.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
-Chlorotoluene	<0.200		ug/L	0.200	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
-Chlorotoluene	<0.150		ug/L	0.150	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,2-Dibromo-3-chloropropane	<0.750		ug/L	0.750	10.0	1	01/12/07 17:08	DMD	7010579	SW 8260B
,2-Dibromoethane (EDB)	<0.130		ug/L	0.130	10.0	1	01/12/07 17:08	DMD	7010579	SW 8260B
ibromomethane	<0.220		ug/L	0.220	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,2-Dichlorobenzene	<0.150		ug/L	0.150	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,3-Dichlorobenzene	<0.130		ug/L	0.130	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,4-Dichlorobenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
ichlorodifluoromethane	<0.170		ug/L	0.170	3.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,1-Dichloroethane	<0.0900		ug/L	0.0900	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,2-Dichloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,1-Dichloroethene	<0.190		ug/L	0.190	2.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
is-1,2-Dichloroethene	<0.200		ug/L	0.200	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
ans-1,2-Dichloroethene	<0.150		ug/L	0.150	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,2-Dichloropropane	<0.400		ug/L	0.400	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,3-Dichloropropane	<0.190		ug/L	0.190	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,2-Dichloropropane	<0.240		ug/L	0.240	4.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
,1-Dichloropropene	<0.170		ug/L	0.170	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
is-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
ans-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-06 (Equipment Blank - Ground Water) - cont.						**Sampled: 01/09/07 12:45**			**Recvd: 01/10/07 08:50**	
Volatile Organic Compounds - cont.										
Ethylbenzene	<0.180		ug/L	0.180	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Hexachlorobutadiene	<0.390		ug/L	0.390	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Hexane	<0.440		ug/L	0.440	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Isopropylbenzene	<0.190		ug/L	0.190	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
p-Isopropyltoluene	<0.130		ug/L	0.130	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Methylene Chloride	<0.450		ug/L	0.450	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Methyl tert-Butyl Ether	**0.890**	J	ug/L	0.120	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Naphthalene	<0.350		ug/L	0.350	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
n-Propylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Styrene	<0.100		ug/L	0.100	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,1,1,2-Tetrachloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,1,2,2-Tetrachloroethane	<0.230		ug/L	0.230	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Tetrachloroethene	<0.240		ug/L	0.240	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Toluene	<0.100		ug/L	0.100	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,2,3-Trichlorobenzene	<2.15		ug/L	2.15	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,2,4-Trichlorobenzene	<0.490		ug/L	0.490	5.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,1,1-Trichloroethane	<0.150		ug/L	0.150	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,1,2-Trichloroethane	<0.300		ug/L	0.300	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Trichloroethene	**0.860**	J	ug/L	0.170	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Trichlorofluoromethane	<0.150		ug/L	0.150	4.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,2,3-Trichloropropane	<0.180		ug/L	0.180	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,2,4-Trimethylbenzene	<0.160		ug/L	0.160	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
1,3,5-Trimethylbenzene	<0.140		ug/L	0.140	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Vinyl chloride	<0.160		ug/L	0.160	1.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Xylenes, total	<0.170		ug/L	0.170	3.00	1	01/12/07 17:08	DMD	7010579	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*96 %*									
Surr: Toluene-d8 (80-110%)	*91 %*									
Surr: 4-Bromofluorobenzene (65-115%)	*94 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<1.21		ug/L	1.21	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Acenaphthylene	<1.54		ug/L	1.54	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Anthracene	<1.96		ug/L	1.96	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzidine	<58.9		ug/L	58.9	179	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzo (a) anthracene	<1.43		ug/L	1.43	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzo (b) fluoranthene	<1.75		ug/L	1.75	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzo (k) fluoranthene	<1.96		ug/L	1.96	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzo (a) pyrene	<1.64		ug/L	1.64	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzo (g,h,i) perylene	<1.79		ug/L	1.79	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Benzyl alcohol	<1.30		ug/L	1.30	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Butyl benzyl phthalate	<1.96		ug/L	1.96	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Bis(2-chloroethyl)ether	<1.55		ug/L	1.55	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Bis(2-chloroethoxy)methane	<1.50	A-01	ug/L	1.50	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Bis(2-ethylhexyl)phthalate	<3.04		ug/L	3.04	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Bis(2-chloroisopropyl) ether	<1.77		ug/L	1.77	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
4-Bromophenyl phenyl ether	<1.29		ug/L	1.29	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Carbazole	<1.79		ug/L	1.79	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
4-Chloroaniline	<2.50		ug/L	2.50	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
2-Chloronaphthalene	<1.64		ug/L	1.64	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
4-Chlorophenyl phenyl ether	<1.34		ug/L	1.34	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
Chrysene	<1.12		ug/L	1.12	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-06 (Equipment Blank - Ground Water) - cont.						**Sampled: 01/09/07 12:45**			**Recvd: 01/10/07 08:50**	
emivolatile Organics by GC/MS - cont.										
ibenzo (a,h) anthracene	<2.32		ug/L	2.32	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
ibenzofuran	<1.48		ug/L	1.48	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
i-n-butyl phthalate	**4.39**	J	ug/L	1.34	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,2-Dichlorobenzene	<1.55		ug/L	1.55	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,3-Dichlorobenzene	<1.61		ug/L	1.61	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4-Dichlorobenzene	<1.61		ug/L	1.61	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,3'-Dichlorobenzidine	<3.93		ug/L	3.93	89.3	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
iethyl phthalate	<1.36		ug/L	1.36	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
imethyl phthalate	<1.39		ug/L	1.39	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4-Dinitrotoluene	<1.29		ug/L	1.29	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,6-Dinitrotoluene	<1.27		ug/L	1.27	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
i-n-octyl phthalate	<2.32		ug/L	2.32	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
luoranthene	<1.25		ug/L	1.25	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
luorene	<1.36		ug/L	1.36	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
lexachlorobenzene	<1.20		ug/L	1.20	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
lexachlorobutadiene	<1.32		ug/L	1.32	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
lexachlorocyclopentadiene	<1.11		ug/L	1.11	35.7	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
lexachloroethane	<1.11		ug/L	1.11	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
ideno (1,2,3-cd) pyrene	<1.59		ug/L	1.59	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
sophorone	<1.32		ug/L	1.32	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Methylnaphthalene	<1.21		ug/L	1.21	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
laphthalene	<1.30		ug/L	1.30	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Nitroaniline	<1.59		ug/L	1.59	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Nitroaniline	<1.75		ug/L	1.75	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Nitroaniline	<1.23		ug/L	1.23	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
litrobenzene	<1.68		ug/L	1.68	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
I-Nitrosodimethylamine	<1.14		ug/L	1.14	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
I-Nitrosodiphenylamine	<1.75	A-01	ug/L	1.75	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
I-Nitrosodi-n-propylamine	<1.21		ug/L	1.21	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
henanthrene	<1.30		ug/L	1.30	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
yrene	<1.57		ug/L	1.57	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
yridine	<1.96		ug/L	1.96	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,2,4-Trichlorobenzene	<1.43		ug/L	1.43	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
enzoic acid	<23.2		ug/L	23.2	35.7	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Chloro-3-methylphenol	<0.911		ug/L	0.911	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Chlorophenol	<1.38		ug/L	1.38	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
resol(s)	<1.55		ug/L	1.55	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4-Dichlorophenol	<1.38		ug/L	1.38	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4-Dimethylphenol	<14.1		ug/L	14.1	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4-Dinitrophenol	<0.875	CIN	ug/L	0.875	35.7	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,6-Dinitro-2-methylphenol	<0.750		ug/L	0.750	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Methylphenol (o-Cresol)	<1.55		ug/L	1.55	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Methylphenol (p-Cresol)	<1.62		ug/L	1.62	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Nitrophenol	<1.29		ug/L	1.29	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
-Nitrophenol	<0.643		ug/L	0.643	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
entachlorophenol	<1.38		ug/L	1.38	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
henol	<0.696		ug/L	0.696	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4,5-Trichlorophenol	<1.20		ug/L	1.20	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
,4,6-Trichlorophenol	<1.23		ug/L	1.23	17.9	1.79	01/12/07 15:12	AKE	7010456	SW 8270C
urr: Nitrobenzene-d5 (15-110%)	*66 %*									

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-06 (Equipment Blank - Ground Water) - cont.						**Sampled: 01/09/07 12:45**			**Recvd: 01/10/07 08:50**	
Semivolatile Organics by GC/MS - cont.										
Surr: 2-Fluorobiphenyl (15-110%)	*63 %*									
Surr: Terphenyl-d14 (20-115%)	*89 %*									
Surr: Phenol-d6 (10-75%)	*42 %*									
Surr: 2-Fluorophenol (10-85%)	*52 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*83 %*									
VOC Preservation Check										
pH	<2.00		units		2.00	1	01/16/07 13:00	sjn	7010605	SW
JST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	<300		ug/L		300	1	01/12/07 17:13	fmk	[CALC]	OA-2 - 8015E
Diesel	<300		ug/L		300	1	01/12/07 17:13	fmk	7010392	OA-2
Gasoline	<300		ug/L		300	1	01/12/07 17:13	fmk	7010392	OA-2
Motor Oil	<300		ug/L		300	1	01/12/07 17:13	fmk	7010392	OA-2
Surr: Octacosane (40-135%)	*79 %*									

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Project Number: 728500J - Cluster #1

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-07 (FD-1 - Ground Water)						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
Sampled By: Julie Oriano					**Phone**	**800-728-7805**				
General Chemistry Parameters										
Total Dissolved Solids	**890**		mg/L		20.0	1	01/10/07 16:00	sas	7010442	SM2540C
Dissolved Metals by SW 846 Series Methods										
Arsenic	**0.0174**		mg/L		0.00100	1	01/16/07 17:51	lbb	7010598	SW 7060A
Barium	**2.36**		mg/L		0.0100	1	01/17/07 00:35	llw	7010594	SW 6010B
Cadmium	<0.000500		mg/L		0.000500	1	01/17/07 16:26	evb	7010598	SW 7131A
Chromium	<0.0200		mg/L		0.0200	1	01/17/07 00:35	llw	7010594	SW 6010B
Lead	<0.00400		mg/L		0.00400	1	01/17/07 19:37	evb	7010598	SW 7421
Mercury	<0.000200		mg/L		0.000200	1	01/12/07 11:52	lmc	7010458	SW 7470A
Selenium	<0.00500		mg/L		0.00500	1	01/16/07 19:09	lbb	7010598	SW 7740
Silver	<0.0200		mg/L		0.0200	1	01/17/07 00:35	llw	7010594	SW 6010B
Volatile Organic Compounds										
Acetone	**10.2**		ug/L	4.62	10.0	1	01/12/07 21:56	DMD	7010579	SW 8260B
Acrylonitrile	<1.28		ug/L	1.28	10.0	1	01/12/07 21:56	DMD	7010579	SW 8260B
Benzene	**2.85**		ug/L	0.160	0.500	1	01/12/07 21:56	DMD	7010579	SW 8260B
Bromobenzene	<0.170		ug/L	0.170	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Bromochloromethane	<0.310		ug/L	0.310	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Bromodichloromethane	<0.120		ug/L	0.120	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Bromoform	<0.150		ug/L	0.150	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Bromomethane	<0.480		ug/L	0.480	4.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
2-Butanone (MEK)	<0.910		ug/L	0.910	10.0	1	01/12/07 21:56	DMD	7010579	SW 8260B
n-Butylbenzene	**81.4**		ug/L	0.0900	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
sec-Butylbenzene	**39.4**		ug/L	0.120	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
tert-Butylbenzene	**29.9**		ug/L	0.140	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Carbon disulfide	<0.140		ug/L	0.140	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Carbon Tetrachloride	<0.130		ug/L	0.130	2.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Chlorobenzene	<0.0800		ug/L	0.0800	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Chlorodibromomethane	<0.250		ug/L	0.250	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Chloroethane	<0.500		ug/L	0.500	4.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Chloroform	<0.0800		ug/L	0.0800	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Chloromethane	**0.320**	**J**	ug/L	0.200	3.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
2-Chlorotoluene	<0.200		ug/L	0.200	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
4-Chlorotoluene	<0.150		ug/L	0.150	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2-Dibromo-3-chloropropane	<0.750		ug/L	0.750	10.0	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2-Dibromoethane (EDB)	<0.130		ug/L	0.130	10.0	1	01/12/07 21:56	DMD	7010579	SW 8260B
Dibromomethane	<0.220		ug/L	0.220	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2-Dichlorobenzene	<0.150		ug/L	0.150	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,3-Dichlorobenzene	<0.130		ug/L	0.130	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,4-Dichlorobenzene	<0.120		ug/L	0.120	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Dichlorodifluoromethane	<0.170		ug/L	0.170	3.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1-Dichloroethane	<0.0900		ug/L	0.0900	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2-Dichloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1-Dichloroethene	<0.190		ug/L	0.190	2.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
cis-1,2-Dichloroethene	<0.200		ug/L	0.200	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
trans-1,2-Dichloroethene	<0.150		ug/L	0.150	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2-Dichloropropane	<0.400		ug/L	0.400	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,3-Dichloropropane	<0.190		ug/L	0.190	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
2,2-Dichloropropane	<0.240		ug/L	0.240	4.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1-Dichloropropene	<0.170		ug/L	0.170	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B

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Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-07 (FD-1 - Ground Water) - cont.						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
Volatile Organic Compounds - cont.										
cis-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
trans-1,3-Dichloropropene	<0.160		ug/L	0.160	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Ethylbenzene	**960**		ug/L	3.60	20.0	20	01/15/07 18:22	DMD	7010618	SW 8260B
Hexachlorobutadiene	<0.390		ug/L	0.390	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Hexane	**197**		ug/L	0.440	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Isopropylbenzene	**99.3**		ug/L	0.190	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
p-Isopropyltoluene	**3.13**		ug/L	0.130	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Methylene Chloride	<0.450		ug/L	0.450	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Methyl tert-Butyl Ether	<0.120		ug/L	0.120	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Naphthalene	**30.3**		ug/L	0.350	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
n-Propylbenzene	**329**		ug/L	0.140	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Styrene	<0.100		ug/L	0.100	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1,1,2-Tetrachloroethane	<0.160		ug/L	0.160	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1,2,2-Tetrachloroethane	<0.230		ug/L	0.230	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Tetrachloroethene	<0.240		ug/L	0.240	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Toluene	**3.97**		ug/L	0.100	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2,3-Trichlorobenzene	<2.15		ug/L	2.15	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2,4-Trichlorobenzene	<0.490		ug/L	0.490	5.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1,1-Trichloroethane	<0.150		ug/L	0.150	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,1,2-Trichloroethane	<0.300		ug/L	0.300	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Trichloroethene	**0.480**	J	ug/L	0.170	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Trichlorofluoromethane	<0.150		ug/L	0.150	4.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2,3-Trichloropropane	<0.180		ug/L	0.180	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
1,2,4-Trimethylbenzene	**959**		ug/L	3.20	20.0	20	01/15/07 18:22	DMD	7010618	SW 8260B
1,3,5-Trimethylbenzene	**357**		ug/L	0.140	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Vinyl chloride	<0.160		ug/L	0.160	1.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Xylenes, total	**898**		ug/L	0.170	3.00	1	01/12/07 21:56	DMD	7010579	SW 8260B
Surr: Dibromofluoromethane (80-120%)	*96 %*									
Surr: Toluene-d8 (80-110%)	*93 %*									
Surr: 4-Bromofluorobenzene (65-115%)	*95 %*									
Semivolatile Organics by GC/MS										
Acenaphthene	<0.680		ug/L	0.680	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Acenaphthylene	<0.860		ug/L	0.860	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Anthracene	<1.10		ug/L	1.10	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzidine	<33.0		ug/L	33.0	100	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzo (a) anthracene	<0.800		ug/L	0.800	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzo (b) fluoranthene	<0.980		ug/L	0.980	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzo (k) fluoranthene	<1.10		ug/L	1.10	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzo (a) pyrene	<0.920		ug/L	0.920	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzo (g,h,i) perylene	<1.00		ug/L	1.00	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Benzyl alcohol	<0.730		ug/L	0.730	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Butyl benzyl phthalate	**14.4**		ug/L	1.10	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Bis(2-chloroethyl)ether	<0.870		ug/L	0.870	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Bis(2-chloroethoxy)methane	<0.840	A-01	ug/L	0.840	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Bis(2-ethylhexyl)phthalate	<1.70		ug/L	1.70	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Bis(2-chloroisopropyl) ether	<0.990		ug/L	0.990	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
4-Bromophenyl phenyl ether	<0.720		ug/L	0.720	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Carbazole	<1.00		ug/L	1.00	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
4-Chloroaniline	<1.40		ug/L	1.40	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
2-Chloronaphthalene	<0.920		ug/L	0.920	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
ample ID: CQA0461-07 (FD-1 - Ground Water) - cont.						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
emivolatile Organics by GC/MS - cont.										
-Chlorophenyl phenyl ether	<0.750		ug/L	0.750	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
hrysene	<0.630		ug/L	0.630	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
ibenzo (a,h) anthracene	<1.30		ug/L	1.30	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
ibenzofuran	<0.830		ug/L	0.830	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
i-n-butyl phthalate	**1.96**	J	ug/L	0.750	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,2-Dichlorobenzene	<0.870		ug/L	0.870	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,3-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,4-Dichlorobenzene	<0.900		ug/L	0.900	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,3'-Dichlorobenzidine	<2.20		ug/L	2.20	50.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
iethyl phthalate	<0.760		ug/L	0.760	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
imethyl phthalate	<0.780		ug/L	0.780	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,4-Dinitrotoluene	<0.720		ug/L	0.720	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,6-Dinitrotoluene	<0.710		ug/L	0.710	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
i-n-octyl phthalate	<1.30		ug/L	1.30	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
luoranthene	<0.700		ug/L	0.700	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
luorene	<0.760		ug/L	0.760	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
exachlorobenzene	<0.670		ug/L	0.670	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
exachlorobutadiene	<0.740		ug/L	0.740	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
exachlorocyclopentadiene	<0.620		ug/L	0.620	20.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
exachloroethane	<0.620		ug/L	0.620	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
ndeno (1,2,3-cd) pyrene	<0.890		ug/L	0.890	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
sophorone	<0.740		ug/L	0.740	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Methylnaphthalene	**24.7**		ug/L	0.680	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
aphthalene	**20.5**		ug/L	0.730	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitroaniline	<0.890		ug/L	0.890	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitroaniline	<0.980		ug/L	0.980	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitroaniline	<0.690		ug/L	0.690	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
itrobenzene	<0.940		ug/L	0.940	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitrosodimethylamine	<0.640		ug/L	0.640	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitrosodiphenylamine	<0.980	A-01	ug/L	0.980	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitrosodi-n-propylamine	<0.680		ug/L	0.680	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
henanthrene	<0.730		ug/L	0.730	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
yrene	<0.880		ug/L	0.880	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
yridine	<1.10		ug/L	1.10	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,2,4-Trichlorobenzene	<0.800		ug/L	0.800	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
enzoic acid	<13.0		ug/L	13.0	20.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Chloro-3-methylphenol	<0.510		ug/L	0.510	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Chlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
resol(s)	<0.870		ug/L	0.870	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,4-Dichlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,4-Dimethylphenol	<7.90		ug/L	7.90	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,4-Dinitrophenol	<0.490	CIN	ug/L	0.490	20.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,6-Dinitro-2-methylphenol	<0.420		ug/L	0.420	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Methylphenol (o-Cresol)	<0.870		ug/L	0.870	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Methylphenol (p-Cresol)	<0.910		ug/L	0.910	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitrophenol	<0.720		ug/L	0.720	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
-Nitrophenol	<0.360		ug/L	0.360	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
entachlorophenol	<0.770		ug/L	0.770	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
henol	<0.390		ug/L	0.390	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
,4,5-Trichlorophenol	<0.670		ug/L	0.670	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	MDL	Quan Limit	Dilution Factor	Date Analyzed	Analyst	Seq/ Batch	Method
Sample ID: CQA0461-07 (FD-1 - Ground Water) - cont.						**Sampled: 01/09/07**				**Recvd: 01/10/07 08:50**
Semivolatile Organics by GC/MS - cont.										
2,4,6-Trichlorophenol	<0.690		ug/L	0.690	10.0	1	01/12/07 15:40	AKE	7010456	SW 8270C
Surr: Nitrobenzene-d5 (15-110%)	*67 %*									
Surr: 2-Fluorobiphenyl (15-110%)	*65 %*									
Surr: Terphenyl-d14 (20-115%)	*71 %*									
Surr: Phenol-d6 (10-75%)	*31 %*									
Surr: 2-Fluorophenol (10-85%)	*44 %*									
Surr: 2,4,6-Tribromophenol (35-130%)	*84 %*									
VOC Preservation Check										
pH	<2.00		units		2.00	1	01/15/07 14:54	ake	7010575	SW
JST ANALYSIS PARAMETERS										
Total Extractable Hydrocarbons	**15800**		ug/L		300	1	01/12/07 18:09	fmk	[CALC]	OA-2 - 8015B
Diesel	**3720**		ug/L		300	1	01/12/07 18:09	fmk	7010392	OA-2
Gasoline	**11300**		ug/L		300	1	01/12/07 18:09	fmk	7010392	OA-2
Motor Oil	**814**		ug/L		300	1	01/12/07 18:09	fmk	7010392	OA-2
Surr: Octacosane (40-135%)	*91 %*									

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SAMPLE EXTRACTION DATA

ameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
mivolatile Organics by GC/MS							
SW 8270C	7010456	CQA0461-01	1000	1	01/11/07 14:41	ZTB	SW 3510C_MS
SW 8270C	7010456	CQA0461-02	1000	1	01/11/07 14:41	ZTB	SW 3510C_MS
SW 8270C	7010456	CQA0461-03	1000	1	01/11/07 14:41	ZTB	SW 3510C_MS
SW 8270C	7010456	CQA0461-04	1000	1	01/11/07 14:41	ZTB	SW 3510C_MS
SW 8270C	7010456	CQA0461-06	560	1	01/11/07 14:41	ZTB	SW 3510C_MS
SW 8270C	7010456	CQA0461-07	1000	1	01/11/07 14:41	ZTB	SW 3510C_MS
ST ANALYSIS PARAMETERS							
OA-2	7010392	CQA0461-01	1000	1	01/10/07 15:10	FMK	SW 3510C GC
OA-2	7010392	CQA0461-02	1000	1	01/10/07 15:10	FMK	SW 3510C GC
OA-2	7010392	CQA0461-03	1000	1	01/10/07 15:10	FMK	SW 3510C GC
OA-2	7010392	CQA0461-04	1000	1	01/10/07 15:10	FMK	SW 3510C GC
OA-2	7010392	CQA0461-06	1000	1	01/10/07 15:10	FMK	SW 3510C GC
OA-2	7010392	CQA0461-07	1000	1	01/10/07 15:10	FMK	SW 3510C GC
OA-2 - 8015B	[CALC]	CQA0461-01	1	1	01/10/07 15:10		[CALC]
OA-2 - 8015B	[CALC]	CQA0461-02	1	1	01/10/07 15:10		[CALC]
OA-2 - 8015B	[CALC]	CQA0461-03	1	1	01/10/07 15:10		[CALC]
OA-2 - 8015B	[CALC]	CQA0461-04	1	1	01/10/07 15:10		[CALC]
OA-2 - 8015B	[CALC]	CQA0461-06	1	1	01/10/07 15:10		[CALC]
OA-2 - 8015B	[CALC]	CQA0461-07	1	1	01/10/07 15:10		[CALC]

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters														
Total Dissolved Solids	7010442			mg/L	N/A	20.0	<20.0							
Dissolved Metals by SW 846 Series Methods														
Mercury	7010458			mg/L	N/A	0.000200	<0.00020(							
Cadmium	7010583			mg/L	N/A	0.000500	<0.00050(							
Barium	7010594			mg/L	N/A	0.0100	<0.0100							
Chromium	7010594			mg/L	N/A	0.0200	<0.0200							
Silver	7010594			mg/L	N/A	0.0200	<0.0200							
Arsenic	7010598			mg/L	N/A	0.00100	<0.00100							
Cadmium	7010598			mg/L	N/A	0.000500	<0.00050(							
Lead	7010598			mg/L	N/A	0.00400	<0.00400							
Selenium	7010598			mg/L	N/A	0.00500	<0.00500							
Lead	7010604			mg/L	N/A	0.00400	<0.00400							
Arsenic	7010619			mg/L	N/A	0.00100	<0.00100							
Selenium	7010631			mg/L	N/A	0.00500	<0.00500							
Volatile Organic Compounds														
Acetone	7010565			ug/L	4.62	10.0	<4.62							
Acrylonitrile	7010565			ug/L	1.28	10.0	<1.28							
Benzene	7010565			ug/L	0.160	0.500	<0.160							
Bromobenzene	7010565			ug/L	0.170	1.00	<0.170							
Bromochloromethane	7010565			ug/L	0.310	5.00	<0.310							
Bromodichloromethane	7010565			ug/L	0.120	1.00	<0.120							
Bromoform	7010565			ug/L	0.150	5.00	<0.150							
Bromomethane	7010565			ug/L	0.480	4.00	<0.480							
2-Butanone (MEK)	7010565			ug/L	0.910	10.0	<0.910							
n-Butylbenzene	7010565			ug/L	0.0900	1.00	<0.0900							
sec-Butylbenzene	7010565			ug/L	0.120	1.00	<0.120							
tert-Butylbenzene	7010565			ug/L	0.140	1.00	<0.140							
Carbon disulfide	7010565			ug/L	0.140	1.00	<0.140							
Carbon Tetrachloride	7010565			ug/L	0.130	2.00	<0.130							
Chlorobenzene	7010565			ug/L	0.0800	1.00	<0.0800							
Chlorodibromomethane	7010565			ug/L	0.250	5.00	<0.250							
Chloroethane	7010565			ug/L	0.500	4.00	<0.500							
Chloroform	7010565			ug/L	0.0800	1.00	<0.0800							
Chloromethane	7010565			ug/L	0.200	3.00	<0.200							
2-Chlorotoluene	7010565			ug/L	0.200	1.00	<0.200							
4-Chlorotoluene	7010565			ug/L	0.150	1.00	<0.150							
1,2-Dibromo-3-chloropropane	7010565			ug/L	0.750	10.0	<0.750							
1,2-Dibromoethane (EDB)	7010565			ug/L	0.130	10.0	<0.130							
Dibromomethane	7010565			ug/L	0.220	1.00	<0.220							
1,2-Dichlorobenzene	7010565			ug/L	0.150	1.00	<0.150							

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'olatile Organic Compounds														
,3-Dichlorobenzene	7010565			ug/L	0.130	1.00	<0.130							
,4-Dichlorobenzene	7010565			ug/L	0.120	1.00	<0.120							
)ichlorodifluoromethane	7010565			ug/L	0.170	3.00	<0.170							
,1-Dichloroethane	7010565			ug/L	0.0900	1.00	<0.0900							
,2-Dichloroethane	7010565			ug/L	0.160	1.00	<0.160							
,1-Dichloroethene	7010565			ug/L	0.190	2.00	<0.190							
is-1,2-Dichloroethene	7010565			ug/L	0.200	1.00	<0.200							
:ans-1,2-Dichloroethene	7010565			ug/L	0.150	1.00	<0.150							
,2-Dichloropropane	7010565			ug/L	0.400	1.00	<0.400							
,3-Dichloropropane	7010565			ug/L	0.190	1.00	<0.190							
,2-Dichloropropane	7010565			ug/L	0.240	4.00	<0.240							
,1-Dichloropropene	7010565			ug/L	0.170	1.00	<0.170							
is-1,3-Dichloropropene	7010565			ug/L	0.160	5.00	<0.160							
rans-1,3-Dichloropropene	7010565			ug/L	0.160	5.00	<0.160							
:thylbenzene	7010565			ug/L	0.180	1.00	<0.180							
Iexachlorobutadiene	7010565			ug/L	0.390	5.00	<0.390							
Iexane	7010565			ug/L	0.440	1.00	<0.440							
sopropylbenzene	7010565			ug/L	0.190	1.00	<0.190							
)-Isopropyltoluene	7010565			ug/L	0.130	1.00	<0.130							
Methylene Chloride	7010565			ug/L	0.450	5.00	<0.450							
Methyl tert-Butyl Ether	7010565			ug/L	0.120	1.00	<0.120							
Naphthalene	7010565			ug/L	0.350	5.00	<0.350							
)-Propylbenzene	7010565			ug/L	0.140	1.00	<0.140							
Styrene	7010565			ug/L	0.100	1.00	<0.100							
,1,1,2-Tetrachloroethane	7010565			ug/L	0.160	1.00	<0.160							
,1,2,2-Tetrachloroethane	7010565			ug/L	0.230	1.00	<0.230							
Tetrachloroethene	7010565			ug/L	0.240	1.00	<0.240							
Toluene	7010565			ug/L	0.100	1.00	<0.100							
,2,3-Trichlorobenzene	7010565			ug/L	2.15	5.00	<2.15							
,2,4-Trichlorobenzene	7010565			ug/L	0.490	5.00	<0.490							
,1,1-Trichloroethane	7010565			ug/L	0.150	1.00	<0.150							
,1,2-Trichloroethane	7010565			ug/L	0.300	1.00	<0.300							
Trichloroethene	7010565			ug/L	0.170	1.00	<0.170							
Trichlorofluoromethane	7010565			ug/L	0.150	4.00	<0.150							
,2,3-Trichloropropane	7010565			ug/L	0.180	1.00	<0.180							
,2,4-Trimethylbenzene	7010565			ug/L	0.160	1.00	<0.160							
,3,5-Trimethylbenzene	7010565			ug/L	0.140	1.00	<0.140							
Vinyl chloride	7010565			ug/L	0.160	1.00	<0.160							
Xylenes, total	7010565			ug/L	0.170	3.00	<0.170							
Surrogate: Dibromofluoromethane	*7010565*			ug/L					*91*		*80-120*			
Surrogate: Toluene-d8	*7010565*			ug/L					*92*		*80-110*			
Surrogate: 4-Bromofluorobenzene	*7010565*			ug/L					*95*		*65-115*			

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
Acetone	7010579			ug/L	4.62	10.0	<4.62							
Acrylonitrile	7010579			ug/L	1.28	10.0	<1.28							
Benzene	7010579			ug/L	0.160	0.500	<0.160							
Bromobenzene	7010579			ug/L	0.170	1.00	<0.170							
Bromochloromethane	7010579			ug/L	0.310	5.00	<0.310							
Bromodichloromethane	7010579			ug/L	0.120	1.00	<0.120							
Bromoform	7010579			ug/L	0.150	5.00	<0.150							
Bromomethane	7010579			ug/L	0.480	4.00	<0.480							
2-Butanone (MEK)	7010579			ug/L	0.910	10.0	<0.910							
n-Butylbenzene	7010579			ug/L	0.0900	1.00	<0.0900							
sec-Butylbenzene	7010579			ug/L	0.120	1.00	<0.120							
tert-Butylbenzene	7010579			ug/L	0.140	1.00	<0.140							
Carbon disulfide	7010579			ug/L	0.140	1.00	<0.140							
Carbon Tetrachloride	7010579			ug/L	0.130	2.00	<0.130							
Chlorobenzene	7010579			ug/L	0.0800	1.00	<0.0800							
Chlorodibromomethane	7010579			ug/L	0.250	5.00	<0.250							
Chloroethane	7010579			ug/L	0.500	4.00	<0.500							
Chloroform	7010579			ug/L	0.0800	1.00	<0.0800							
Chloromethane	7010579			ug/L	0.200	3.00	<0.200							
2-Chlorotoluene	7010579			ug/L	0.200	1.00	<0.200							
4-Chlorotoluene	7010579			ug/L	0.150	1.00	<0.150							
1,2-Dibromo-3-chloropropane	7010579			ug/L	0.750	10.0	<0.750							
1,2-Dibromoethane (EDB)	7010579			ug/L	0.130	10.0	<0.130							
Dibromomethane	7010579			ug/L	0.220	1.00	<0.220							
1,2-Dichlorobenzene	7010579			ug/L	0.150	1.00	<0.150							
1,3-Dichlorobenzene	7010579			ug/L	0.130	1.00	<0.130							
1,4-Dichlorobenzene	7010579			ug/L	0.120	1.00	<0.120							
Dichlorodifluoromethane	7010579			ug/L	0.170	3.00	<0.170							
1,1-Dichloroethane	7010579			ug/L	0.0900	1.00	<0.0900							
1,2-Dichloroethane	7010579			ug/L	0.160	1.00	<0.160							
1,1-Dichloroethene	7010579			ug/L	0.190	2.00	<0.190							
cis-1,2-Dichloroethene	7010579			ug/L	0.200	1.00	<0.200							
trans-1,2-Dichloroethene	7010579			ug/L	0.150	1.00	<0.150							
2,2-Dichloropropane	7010579			ug/L	0.400	1.00	<0.400							
1,3-Dichloropropane	7010579			ug/L	0.190	1.00	<0.190							
2,2-Dichloropropane	7010579			ug/L	0.240	4.00	<0.240							
1,1-Dichloropropene	7010579			ug/L	0.170	1.00	<0.170							
cis-1,3-Dichloropropene	7010579			ug/L	0.160	5.00	<0.160							
trans-1,3-Dichloropropene	7010579			ug/L	0.160	5.00	<0.160							
Ethylbenzene	7010579			ug/L	0.180	1.00	<0.180							
Hexachlorobutadiene	7010579			ug/L	0.390	5.00	0.500							J
Hexane	7010579			ug/L	0.440	1.00	<0.440							
Isopropylbenzene	7010579			ug/L	0.190	1.00	<0.190							
p-Isopropyltoluene	7010579			ug/L	0.130	1.00	<0.130							
Methylene Chloride	7010579			ug/L	0.450	5.00	<0.450							

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
ethyl tert-Butyl Ether	7010579			ug/L	0.120	1.00	<0.120							
aphthalene	7010579			ug/L	0.350	5.00	<0.350							
Propylbenzene	7010579			ug/L	0.140	1.00	<0.140							
yrene	7010579			ug/L	0.100	1.00	<0.100							
1,1,2-Tetrachloroethane	7010579			ug/L	0.160	1.00	<0.160							
1,2,2-Tetrachloroethane	7010579			ug/L	0.230	1.00	<0.230							
trachloroethene	7010579			ug/L	0.240	1.00	<0.240							
oluene	7010579			ug/L	0.100	1.00	<0.100							
2,3-Trichlorobenzene	7010579			ug/L	2.15	5.00	<2.15							
2,4-Trichlorobenzene	7010579			ug/L	0.490	5.00	<0.490							
1,1-Trichloroethane	7010579			ug/L	0.150	1.00	<0.150							
1,2-Trichloroethane	7010579			ug/L	0.300	1.00	<0.300							
richloroethene	7010579			ug/L	0.170	1.00	<0.170							
richlorofluoromethane	7010579			ug/L	0.150	4.00	<0.150							
2,3-Trichloropropane	7010579			ug/L	0.180	1.00	<0.180							
2,4-Trimethylbenzene	7010579			ug/L	0.160	1.00	<0.160							
3,5-Trimethylbenzene	7010579			ug/L	0.140	1.00	<0.140							
inyl chloride	7010579			ug/L	0.160	1.00	<0.160							
ylenes, total	7010579			ug/L	0.170	3.00	<0.170							
urrogate: Dibromofluoromethane	*7010579*			ug/L					*95*		*80-120*			
urrogate: Toluene-d8	*7010579*			ug/L					*92*		*80-110*			
urrogate: 4-Bromofluorobenzene	*7010579*			ug/L					*92*		*65-115*			
cetone	7010618			ug/L	4.62	10.0	<4.62							
crylonitrile	7010618			ug/L	1.28	10.0	<1.28							
enzene	7010618			ug/L	0.160	0.500	<0.160							
romobenzene	7010618			ug/L	0.170	1.00	<0.170							
romochloromethane	7010618			ug/L	0.310	5.00	<0.310							
romodichloromethane	7010618			ug/L	0.120	1.00	<0.120							
romoform	7010618			ug/L	0.150	5.00	<0.150							
romomethane	7010618			ug/L	0.480	4.00	<0.480							
-Butanone (MEK)	7010618			ug/L	0.910	10.0	<0.910							
-Butylbenzene	7010618			ug/L	0.0900	1.00	<0.0900							
c-Butylbenzene	7010618			ug/L	0.120	1.00	<0.120							
rt-Butylbenzene	7010618			ug/L	0.140	1.00	<0.140							
arbon disulfide	7010618			ug/L	0.140	1.00	<0.140							
arbon Tetrachloride	7010618			ug/L	0.130	2.00	<0.130							
hlorobenzene	7010618			ug/L	0.0800	1.00	<0.0800							
hlorodibromomethane	7010618			ug/L	0.250	5.00	<0.250							
hloroethane	7010618			ug/L	0.500	4.00	<0.500							
hloroform	7010618			ug/L	0.0800	1.00	<0.0800							
hloromethane	7010618			ug/L	0.200	3.00	<0.200							
-Chlorotoluene	7010618			ug/L	0.200	1.00	<0.200							
-Chlorotoluene	7010618			ug/L	0.150	1.00	<0.150							
2-Dibromo-3-chloropropane	7010618			ug/L	0.750	10.0	<0.750							

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
1,2-Dibromoethane (EDB)	7010618			ug/L	0.130	10.0	<0.130							
Dibromomethane	7010618			ug/L	0.220	1.00	<0.220							
1,2-Dichlorobenzene	7010618			ug/L	0.150	1.00	<0.150							
1,3-Dichlorobenzene	7010618			ug/L	0.130	1.00	<0.130							
1,4-Dichlorobenzene	7010618			ug/L	0.120	1.00	<0.120							
Dichlorodifluoromethane	7010618			ug/L	0.170	3.00	<0.170							
1,1-Dichloroethane	7010618			ug/L	0.0900	1.00	<0.0900							
1,2-Dichloroethane	7010618			ug/L	0.160	1.00	<0.160							
1,1-Dichloroethene	7010618			ug/L	0.190	2.00	<0.190							
cis-1,2-Dichloroethene	7010618			ug/L	0.200	1.00	<0.200							
trans-1,2-Dichloroethene	7010618			ug/L	0.150	1.00	<0.150							
1,2-Dichloropropane	7010618			ug/L	0.400	1.00	<0.400							
1,3-Dichloropropane	7010618			ug/L	0.190	1.00	<0.190							
2,2-Dichloropropane	7010618			ug/L	0.240	4.00	<0.240							
1,1-Dichloropropene	7010618			ug/L	0.170	1.00	<0.170							
cis-1,3-Dichloropropene	7010618			ug/L	0.160	5.00	<0.160							
trans-1,3-Dichloropropene	7010618			ug/L	0.160	5.00	<0.160							
Ethylbenzene	7010618			ug/L	0.180	1.00	<0.180							
Hexachlorobutadiene	7010618			ug/L	0.390	5.00	<0.390							
Hexane	7010618			ug/L	0.440	1.00	<0.440							
Isopropylbenzene	7010618			ug/L	0.190	1.00	<0.190							
p-Isopropyltoluene	7010618			ug/L	0.130	1.00	<0.130							
Methylene Chloride	7010618			ug/L	0.450	5.00	<0.450							
Methyl tert-Butyl Ether	7010618			ug/L	0.120	1.00	<0.120							
Naphthalene	7010618			ug/L	0.350	5.00	<0.350							
n-Propylbenzene	7010618			ug/L	0.140	1.00	<0.140							
Styrene	7010618			ug/L	0.100	1.00	<0.100							
1,1,1,2-Tetrachloroethane	7010618			ug/L	0.160	1.00	<0.160							
1,1,2,2-Tetrachloroethane	7010618			ug/L	0.230	1.00	<0.230							
Tetrachloroethene	7010618			ug/L	0.240	1.00	<0.240							
Toluene	7010618			ug/L	0.100	1.00	<0.100							
1,2,3-Trichlorobenzene	7010618			ug/L	2.15	5.00	<2.15							
1,2,4-Trichlorobenzene	7010618			ug/L	0.490	5.00	<0.490							
1,1,1-Trichloroethane	7010618			ug/L	0.150	1.00	<0.150							
1,1,2-Trichloroethane	7010618			ug/L	0.300	1.00	<0.300							
Trichloroethene	7010618			ug/L	0.170	1.00	<0.170							
Trichlorofluoromethane	7010618			ug/L	0.150	4.00	<0.150							
1,2,3-Trichloropropane	7010618			ug/L	0.180	1.00	<0.180							
1,2,4-Trimethylbenzene	7010618			ug/L	0.160	1.00	<0.160							
1,3,5-Trimethylbenzene	7010618			ug/L	0.140	1.00	<0.140							
Vinyl chloride	7010618			ug/L	0.160	1.00	<0.160							
Xylenes, total	7010618			ug/L	0.170	3.00	<0.170							
Surrogate: Dibromofluoromethane	*7010618*			ug/L					*92*		*80-120*			
Surrogate: Toluene-d8	*7010618*			ug/L					*94*		*80-110*			
Surrogate: 4-Bromofluorobenzene	*7010618*			ug/L					*95*		*65-115*			

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
cetone	7010738			ug/L	4.62	10.0	<4.62							
crylonitrile	7010738			ug/L	1.28	10.0	1.31							J
enzene	7010738			ug/L	0.160	0.500	<0.160							
romobenzene	7010738			ug/L	0.170	1.00	<0.170							
romochloromethane	7010738			ug/L	0.310	5.00	<0.310							
romodichloromethane	7010738			ug/L	0.120	1.00	<0.120							
romoform	7010738			ug/L	0.150	5.00	<0.150							
romomethane	7010738			ug/L	0.480	4.00	<0.480							
-Butanone (MEK)	7010738			ug/L	0.910	10.0	<0.910							
-Butylbenzene	7010738			ug/L	0.0900	1.00	0.120							J
ec-Butylbenzene	7010738			ug/L	0.120	1.00	0.140							J
rt-Butylbenzene	7010738			ug/L	0.140	1.00	<0.140							
arbon disulfide	7010738			ug/L	0.140	1.00	<0.140							
arbon Tetrachloride	7010738			ug/L	0.130	2.00	<0.130							
hlorobenzene	7010738			ug/L	0.0800	1.00	<0.0800							
hlorodibromomethane	7010738			ug/L	0.250	5.00	<0.250							
hloroethane	7010738			ug/L	0.500	4.00	0.530							J
hloroform	7010738			ug/L	0.0800	1.00	<0.0800							
hloromethane	7010738			ug/L	0.200	3.00	0.230							J
-Chlorotoluene	7010738			ug/L	0.200	1.00	<0.200							
-Chlorotoluene	7010738			ug/L	0.150	1.00	<0.150							
,2-Dibromo-3-chloropropane	7010738			ug/L	0.750	10.0	1.57							J
,2-Dibromoethane (EDB)	7010738			ug/L	0.130	10.0	<0.130							
ibromomethane	7010738			ug/L	0.220	1.00	<0.220							
,2-Dichlorobenzene	7010738			ug/L	0.150	1.00	<0.150							
,3-Dichlorobenzene	7010738			ug/L	0.130	1.00	<0.130							
,4-Dichlorobenzene	7010738			ug/L	0.120	1.00	<0.120							
ichlorodifluoromethane	7010738			ug/L	0.170	3.00	<0.170							
,1-Dichloroethane	7010738			ug/L	0.0900	1.00	<0.0900							
,2-Dichloroethane	7010738			ug/L	0.160	1.00	<0.160							
,1-Dichloroethene	7010738			ug/L	0.190	2.00	<0.190							
is-1,2-Dichloroethene	7010738			ug/L	0.200	1.00	0.230							J
rans-1,2-Dichloroethene	7010738			ug/L	0.150	1.00	<0.150							
,2-Dichloropropane	7010738			ug/L	0.400	1.00	<0.400							
,3-Dichloropropane	7010738			ug/L	0.190	1.00	<0.190							
,2-Dichloropropane	7010738			ug/L	0.240	4.00	<0.240							
,1-Dichloropropene	7010738			ug/L	0.170	1.00	<0.170							
is-1,3-Dichloropropene	7010738			ug/L	0.160	5.00	<0.160							
rans-1,3-Dichloropropene	7010738			ug/L	0.160	5.00	<0.160							
thylbenzene	7010738			ug/L	0.180	1.00	<0.180							
lexachlorobutadiene	7010738			ug/L	0.390	5.00	1.59							J
lexane	7010738			ug/L	0.440	1.00	<0.440							
sopropylbenzene	7010738			ug/L	0.190	1.00	<0.190							
-Isopropyltoluene	7010738			ug/L	0.130	1.00	<0.130							

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
Methylene Chloride	7010738			ug/L	0.450	5.00	<0.450							
Methyl tert-Butyl Ether	7010738			ug/L	0.120	1.00	<0.120							
Naphthalene	7010738			ug/L	0.350	5.00	<0.350							
n-Propylbenzene	7010738			ug/L	0.140	1.00	<0.140							
Styrene	7010738			ug/L	0.100	1.00	<0.100							
1,1,1,2-Tetrachloroethane	7010738			ug/L	0.160	1.00	<0.160							
1,1,2,2-Tetrachloroethane	7010738			ug/L	0.230	1.00	<0.230							
Tetrachloroethene	7010738			ug/L	0.240	1.00	<0.240							
Toluene	7010738			ug/L	0.100	1.00	<0.100							
1,2,3-Trichlorobenzene	7010738			ug/L	2.15	5.00	<2.15							
1,2,4-Trichlorobenzene	7010738			ug/L	0.490	5.00	<0.490							
1,1,1-Trichloroethane	7010738			ug/L	0.150	1.00	<0.150							
1,1,2-Trichloroethane	7010738			ug/L	0.300	1.00	<0.300							
Trichloroethene	7010738			ug/L	0.170	1.00	0.450							J
Trichlorofluoromethane	7010738			ug/L	0.150	4.00	<0.150							
1,2,3-Trichloropropane	7010738			ug/L	0.180	1.00	<0.180							
1,2,4-Trimethylbenzene	7010738			ug/L	0.160	1.00	<0.160							
1,3,5-Trimethylbenzene	7010738			ug/L	0.140	1.00	<0.140							
Vinyl chloride	7010738			ug/L	0.160	1.00	<0.160							
Xylenes, total	7010738			ug/L	0.170	3.00	<0.170							
Surrogate: Dibromofluoromethane	*7010738*			ug/L					*93*		*80-120*			
Surrogate: Toluene-d8	*7010738*			ug/L					*90*		*80-110*			
Surrogate: 4-Bromofluorobenzene	*7010738*			ug/L					*90*		*65-115*			
Semivolatile Organics by GC/MS														
Acenaphthene	7010456			ug/L	0.680	10.0	<0.680							
Acenaphthylene	7010456			ug/L	0.860	10.0	<0.860							
Anthracene	7010456			ug/L	1.10	10.0	<1.10							
Benzidine	7010456			ug/L	33.0	100	<33.0							
Benzo (a) anthracene	7010456			ug/L	0.800	10.0	<0.800							
Benzo (b) fluoranthene	7010456			ug/L	0.980	10.0	<0.980							
Benzo (k) fluoranthene	7010456			ug/L	1.10	10.0	<1.10							
Benzo (a) pyrene	7010456			ug/L	0.920	10.0	<0.920							
Benzo (g,h,i) perylene	7010456			ug/L	1.00	10.0	<1.00							
Benzyl alcohol	7010456			ug/L	0.730	10.0	<0.730							
Butyl benzyl phthalate	7010456			ug/L	1.10	10.0	<1.10							
Bis(2-chloroethyl)ether	7010456			ug/L	0.870	10.0	<0.870							
Bis(2-chloroethoxy)methane	7010456			ug/L	0.840	10.0	<0.840							A-01
Bis(2-ethylhexyl)phthalate	7010456			ug/L	1.70	10.0	<1.70							
Bis(2-chloroisopropyl) ether	7010456			ug/L	0.990	10.0	<0.990							
4-Bromophenyl phenyl ether	7010456			ug/L	0.720	10.0	<0.720							
Carbazole	7010456			ug/L	1.00	10.0	<1.00							
4-Chloroaniline	7010456			ug/L	1.40	10.0	<1.40							
2-Chloronaphthalene	7010456			ug/L	0.920	10.0	<0.920							
4-Chlorophenyl phenyl ether	7010456			ug/L	0.750	10.0	<0.750							

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Julie Oriano

Work Order: CQA0461
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Project Number: 728500J - Cluster #1

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS														
hrysene	7010456			ug/L	0.630	10.0	<0.630							
ibenzo (a,h) anthracene	7010456			ug/L	1.30	10.0	<1.30							
ibenzofuran	7010456			ug/L	0.830	10.0	<0.830							
i-n-butyl phthalate	7010456			ug/L	0.750	10.0	1.55							J
2-Dichlorobenzene	7010456			ug/L	0.870	10.0	<0.870							
3-Dichlorobenzene	7010456			ug/L	0.900	10.0	<0.900							
4-Dichlorobenzene	7010456			ug/L	0.900	10.0	<0.900							
3'-Dichlorobenzidine	7010456			ug/L	2.20	50.0	<2.20							
iethyl phthalate	7010456			ug/L	0.760	10.0	<0.760							
imethyl phthalate	7010456			ug/L	0.780	10.0	<0.780							
4-Dinitrotoluene	7010456			ug/L	0.720	10.0	<0.720							
6-Dinitrotoluene	7010456			ug/L	0.710	10.0	<0.710							
i-n-octyl phthalate	7010456			ug/L	1.30	10.0	<1.30							
luoranthene	7010456			ug/L	0.700	10.0	<0.700							
luorene	7010456			ug/L	0.760	10.0	<0.760							
exachlorobenzene	7010456			ug/L	0.670	10.0	<0.670							
exachlorobutadiene	7010456			ug/L	0.740	10.0	<0.740							
exachlorocyclopentadiene	7010456			ug/L	0.620	20.0	<0.620							
exachloroethane	7010456			ug/L	0.620	10.0	<0.620							
ıdeno (1,2,3-cd) pyrene	7010456			ug/L	0.890	10.0	<0.890							
ophorone	7010456			ug/L	0.740	10.0	<0.740							
-Methylnaphthalene	7010456			ug/L	0.680	10.0	<0.680							
laphthalene	7010456			ug/L	0.730	10.0	<0.730							
-Nitroaniline	7010456			ug/L	0.890	10.0	<0.890							
-Nitroaniline	7010456			ug/L	0.980	10.0	<0.980							
-Nitroaniline	7010456			ug/L	0.690	10.0	<0.690							
litrobenzene	7010456			ug/L	0.940	10.0	<0.940							
I-Nitrosodimethylamine	7010456			ug/L	0.640	10.0	<0.640							
I-Nitrosodiphenylamine	7010456			ug/L	0.980	10.0	<0.980							A-01
I-Nitrosodi-n-propylamine	7010456			ug/L	0.680	10.0	<0.680							
henanthrene	7010456			ug/L	0.730	10.0	<0.730							
yrene	7010456			ug/L	0.880	10.0	<0.880							
yridine	7010456			ug/L	1.10	10.0	<1.10							
,2,4-Trichlorobenzene	7010456			ug/L	0.800	10.0	<0.800							
lenzoic acid	7010456			ug/L	13.0	20.0	<13.0							
-Chloro-3-methylphenol	7010456			ug/L	0.510	10.0	<0.510							
-Chlorophenol	7010456			ug/L	0.770	10.0	<0.770							
resol(s)	7010456			ug/L	0.870	10.0	<0.870							
,4-Dichlorophenol	7010456			ug/L	0.770	10.0	<0.770							
,4-Dimethylphenol	7010456			ug/L	7.90	10.0	<7.90							
,4-Dinitrophenol	7010456			ug/L	0.490	20.0	<0.490							CIN
,6-Dinitro-2-methylphenol	7010456			ug/L	0.420	10.0	<0.420							
-Methylphenol (o-Cresol)	7010456			ug/L	0.870	10.0	<0.870							
-Methylphenol (p-Cresol)	7010456			ug/L	0.910	10.0	<0.910							
-Nitrophenol	7010456			ug/L	0.720	10.0	<0.720							

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Project Number: 728500J - Cluster #1

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LABORATORY BLANK QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
4-Nitrophenol	7010456			ug/L	0.360	10.0	<0.360							
Pentachlorophenol	7010456			ug/L	0.770	10.0	<0.770							
Phenol	7010456			ug/L	0.390	10.0	<0.390							
2,4,5-Trichlorophenol	7010456			ug/L	0.670	10.0	<0.670							
2,4,6-Trichlorophenol	7010456			ug/L	0.690	10.0	<0.690							
Surrogate: Nitrobenzene-d5	*7010456*			ug/L					*78*		*15-110*			
Surrogate: 2-Fluorobiphenyl	*7010456*			ug/L					*81*		*15-110*			
Surrogate: Terphenyl-d14	*7010456*			ug/L					*89*		*20-115*			
Surrogate: Phenol-d6	*7010456*			ug/L					*33*		*10-75*			
Surrogate: 2-Fluorophenol	*7010456*			ug/L					*52*		*10-85*			
Surrogate: 2,4,6-Tribromophenol	*7010456*			ug/L					*90*		*35-130*			
UST ANALYSIS PARAMETERS														
Diesel	7010392			ug/L	N/A	300	<300							
Gasoline	7010392			ug/L	N/A	300	<300							
Motor Oil	7010392			ug/L	N/A	300	<300							
Surrogate: Octacosane	*7010392*			ug/L					*82*		*40-135*			

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CCV QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS														
cenaphthene	7A15001		50.0	ug/mL	N/A	N/A	49.5		99		80-120			
cenaphthene	7A15001		50.0	ug/mL	N/A	N/A	49.5		99		80-120			
cenaphthylene	7A15001		50.0	ug/mL	N/A	N/A	48.8		98		80-120			
cenaphthylene	7A15001		50.0	ug/mL	N/A	N/A	48.8		98		80-120			
nthracene	7A15001		50.0	ug/mL	N/A	N/A	49.6		99		80-120			
nthracene	7A15001		50.0	ug/mL	N/A	N/A	49.6		99		80-120			
enzidine	7A15001		50.0	ug/mL	N/A	N/A	37.2		74		50-150			
enzidine	7A15001		50.0	ug/mL	N/A	N/A	37.2		74		50-150			
enzo (a) anthracene	7A15001		50.0	ug/mL	N/A	N/A	48.9		98		80-120			
enzo (a) anthracene	7A15001		50.0	ug/mL	N/A	N/A	48.9		98		80-120			
enzo (b) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
enzo (b) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
enzo (k) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.3		97		80-120			
enzo (k) fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	48.3		97		80-120			
enzo (a) pyrene	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
enzo (a) pyrene	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
enzo (g,h,i) perylene	7A15001		50.0	ug/mL	N/A	N/A	47.5		95		80-120			
enzo (g,h,i) perylene	7A15001		50.0	ug/mL	N/A	N/A	47.5		95		80-120			
enzyl alcohol	7A15001		50.0	ug/mL	N/A	N/A	52.5		105		80-120			
enzyl alcohol	7A15001		50.0	ug/mL	N/A	N/A	52.5		105		80-120			
utyl benzyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	49.6		99		80-120			
utyl benzyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	49.6		99		80-120			
is(2-chloroethyl)ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
is(2-chloroethyl)ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
is(2-chloroethoxy)methane	7A15001		50.0	ug/mL	N/A	N/A	50.3		101		80-120			A-01
is(2-chloroethoxy)methane	7A15001		50.0	ug/mL	N/A	N/A	50.3		101		80-120			ICV
is(2-ethylhexyl)phthalate	7A15001		50.0	ug/mL	N/A	N/A	51.2		102		80-120			
is(2-ethylhexyl)phthalate	7A15001		50.0	ug/mL	N/A	N/A	51.2		102		80-120			
is(2-chloroisopropyl) ether	7A15001		50.0	ug/mL	N/A	N/A	50.5		101		80-120			
is(2-chloroisopropyl) ether	7A15001		50.0	ug/mL	N/A	N/A	50.5		101		80-120			
-Bromophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
-Bromophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	50.8		102		80-120			
arbazole	7A15001		50.0	ug/mL	N/A	N/A	50.6		101		80-120			
arbazole	7A15001		50.0	ug/mL	N/A	N/A	50.6		101		80-120			
-Chloroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.2		98		80-120			
-Chloroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.2		98		80-120			
-Chloronaphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.0		98		80-120			
-Chloronaphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.0		98		80-120			
-Chlorophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
-Chlorophenyl phenyl ether	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
hrysene	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
hrysene	7A15001		50.0	ug/mL	N/A	N/A	48.0		96		80-120			
ibenzo (a,h) anthracene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
ibenzo (a,h) anthracene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
ibenzofuran	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
ibenzofuran	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
i-n-butyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
i-n-butyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
,2-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.4		103		80-120			

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Semivolatile Organics by GC/MS														
1,2-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.4		103		80-120			
1,3-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.9		100		80-120			
1,3-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.9		100		80-120			
1,4-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
1,4-Dichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
3,3'-Dichlorobenzidine	7A15001		50.0	ug/mL	N/A	N/A	49.8		100		80-120			
3,3'-Dichlorobenzidine	7A15001		50.0	ug/mL	N/A	N/A	49.8		100		80-120			
Diethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.8		98		80-120			
Diethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.8		98		80-120			
Dimethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
Dimethyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	48.7		97		80-120			
2,4-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
2,4-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	50.7		101		80-120			
2,6-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
2,6-Dinitrotoluene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
Di-n-octyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	52.9		106		80-120			
Di-n-octyl phthalate	7A15001		50.0	ug/mL	N/A	N/A	52.9		106		80-120			
Fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	49.2		98		80-120			
Fluoranthene	7A15001		50.0	ug/mL	N/A	N/A	49.2		98		80-120			
Fluorene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
Fluorene	7A15001		50.0	ug/mL	N/A	N/A	48.4		97		80-120			
Hexachlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.3		103		80-120			
Hexachlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.3		103		80-120			
Hexachlorobutadiene	7A15001		50.0	ug/mL	N/A	N/A	47.4		95		80-120			
Hexachlorobutadiene	7A15001		50.0	ug/mL	N/A	N/A	47.4		95		80-120			
Hexachlorocyclopentadiene	7A15001		50.0	ug/mL	N/A	N/A	46.2		92		80-120			
Hexachlorocyclopentadiene	7A15001		50.0	ug/mL	N/A	N/A	46.2		92		80-120			
Hexachloroethane	7A15001		50.0	ug/mL	N/A	N/A	50.0		100		80-120			
Hexachloroethane	7A15001		50.0	ug/mL	N/A	N/A	50.0		100		80-120			
Indeno (1,2,3-cd) pyrene	7A15001		50.0	ug/mL	N/A	N/A	49.3		99		80-120			
Indeno (1,2,3-cd) pyrene	7A15001		50.0	ug/mL	N/A	N/A	49.3		99		80-120			
Isophorone	7A15001		50.0	ug/mL	N/A	N/A	50.3		101		80-120			
Isophorone	7A15001		50.0	ug/mL	N/A	N/A	50.3		101		80-120			
2-Methylnaphthalene	7A15001		50.0	ug/mL	N/A	N/A	46.5		93		80-120			
2-Methylnaphthalene	7A15001		50.0	ug/mL	N/A	N/A	46.5		93		80-120			
Naphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.7		99		80-120			
Naphthalene	7A15001		50.0	ug/mL	N/A	N/A	49.7		99		80-120			
2-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	51.1		102		80-120			
2-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	51.1		102		80-120			
3-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.3		99		80-120			
3-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.3		99		80-120			
4-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.4		99		80-120			
4-Nitroaniline	7A15001		50.0	ug/mL	N/A	N/A	49.4		99		80-120			
Nitrobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.1		102		80-120			
Nitrobenzene	7A15001		50.0	ug/mL	N/A	N/A	51.1		102		80-120			
N-Nitrosodimethylamine	7A15001		50.0	ug/mL	N/A	N/A	52.6		105		80-120			
N-Nitrosodimethylamine	7A15001		50.0	ug/mL	N/A	N/A	52.6		105		80-120			
N-Nitrosodiphenylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1		98		80-120			A-01
N-Nitrosodiphenylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1		98		80-120			ICV

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

CCV QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS														
-Nitrosodi-n-propylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1		98		80-120			
-Nitrosodi-n-propylamine	7A15001		50.0	ug/mL	N/A	N/A	49.1		98		80-120			
henanthrene	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
henanthrene	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
yrene	7A15001		50.0	ug/mL	N/A	N/A	47.9		96		80-120			
yrene	7A15001		50.0	ug/mL	N/A	N/A	47.9		96		80-120			
yridine	7A15001		50.0	ug/mL	N/A	N/A	48.9		98		80-120			
yridine	7A15001		50.0	ug/mL	N/A	N/A	48.9		98		80-120			
,2,4-Trichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.0		98		80-120			
,2,4-Trichlorobenzene	7A15001		50.0	ug/mL	N/A	N/A	49.0		98		80-120			
enzoic acid	7A15001		50.0	ug/mL	N/A	N/A	53.2		106		80-120			
-Chloro-3-methylphenol	7A15001		50.0	ug/mL	N/A	N/A	47.3		95		80-120			
-Chlorophenol	7A15001		50.0	ug/mL	N/A	N/A	51.7		103		80-120			
resol(s)	7A15001		100	ug/mL	N/A	N/A	100		100		80-120			
,4-Dichlorophenol	7A15001		50.0	ug/mL	N/A	N/A	51.1		102		80-120			
,4-Dimethylphenol	7A15001		50.0	ug/mL	N/A	N/A	49.7		99		80-120			
,4-Dinitrophenol	7A15001		50.0	ug/mL	N/A	N/A	55.1		110		80-120			CIN
,6-Dinitro-2-methylphenol	7A15001		50.0	ug/mL	N/A	N/A	51.7		103		80-120			
-Methylphenol (o-Cresol)	7A15001		50.0	ug/mL	N/A	N/A	50.2		100		80-120			
-Methylphenol (p-Cresol)	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
-Nitrophenol	7A15001		50.0	ug/mL	N/A	N/A	53.0		106		80-120			
-Nitrophenol	7A15001		50.0	ug/mL	N/A	N/A	46.7		93		80-120			
entachlorophenol	7A15001		50.0	ug/mL	N/A	N/A	54.3		109		80-120			
henol	7A15001		50.0	ug/mL	N/A	N/A	51.3		103		80-120			
,4,5-Trichlorophenol	7A15001		50.0	ug/mL	N/A	N/A	49.7		99		80-120			
,4,6-Trichlorophenol	7A15001		50.0	ug/mL	N/A	N/A	50.1		100		80-120			
urrogate: Nitrobenzene-d5	*7A15001*			ug/mL					*100*		*80-110*			
urrogate: Nitrobenzene-d5	*7A15001*			ug/mL					*100*		*80-110*			
urrogate: 2-Fluorobiphenyl	*7A15001*			ug/mL					*96*		*80-110*			
urrogate: 2-Fluorobiphenyl	*7A15001*			ug/mL					*96*		*80-110*			
urrogate: Terphenyl-d14	*7A15001*			ug/mL					*96*		*80-115*			
urrogate: Terphenyl-d14	*7A15001*			ug/mL					*96*		*80-115*			
urrogate: Phenol-d6	*7A15001*			ug/mL					*103*		*80-120*			
urrogate: 2-Fluorophenol	*7A15001*			ug/mL					*101*		*80-120*			
urrogate: 2,4,6-Tribromophenol	*7A15001*			ug/mL					*103*		*80-120*			
JST ANALYSIS PARAMETERS														
asoline	7A11009		2500	ug/mL	N/A	N/A	2410		96		80-120			
urrogate: Octacosane	*7A11009*			ug/mL					*92*		*80-120*			

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

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LABORATORY DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
General Chemistry Parameters													
QC Source Sample: CQA0423-02													
Total Dissolved Solids	7010442	960		mg/L	N/A	20.0	920				4	20	
QC Source Sample: CQA0461-07													
Total Dissolved Solids	7010442	890		mg/L	N/A	20.0	870				2	20	
Dissolved Metals by SW 846 Series Methods													
QC Source Sample: CQA0461-01													
Cadmium	7010583	<0.00050		mg/L	N/A	0.000500	0.000144					20	
QC Source Sample: CQA0649-04													
Cadmium	7010583	<0.00050		mg/L	N/A	0.000500	<0.00050(					20	
QC Source Sample: CQA0461-01													
Lead	7010604	<0.0040		mg/L	N/A	0.00400	<0.00400					20	
QC Source Sample: CQA0461-01													
Arsenic	7010619	<0.0010		mg/L	N/A	0.00100	<0.00100					15	
QC Source Sample: CQA0461-01													
Selenium	7010631	<0.0050		mg/L	N/A	0.00500	<0.00500					20	

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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
eneral Chemistry Parameters														
otal Dissolved Solids	7010442		1000	mg/L	N/A	N/A	1020		102		90-110			
issolved Metals by SW 846 Series Methods														
ercury	7010458		1.64	ug/L	N/A	N/A	1.67		102		75-130			
admium	7010583		0.0221	mg/L	N/A	0.0100	0.0203		92		80-120			
arium	7010594		1.00	mg/L	N/A	0.0100	1.02		102		85-115			
hromium	7010594		1.00	mg/L	N/A	0.0200	0.973		97		85-115			
lver	7010594		1.00	mg/L	N/A	0.0200	0.919		92		80-110			
rsenic	7010598		0.0400	mg/L	N/A	0.00200	0.0375		94		80-120			
admium	7010598		0.0200	mg/L	N/A	0.0100	0.0207		104		80-120			
ead	7010598		0.0400	mg/L	N/A	0.00400	0.0397		99		85-115			
elenium	7010598		0.0800	mg/L	N/A	0.0100	0.0769		96		80-115			
ead	7010604		0.169	mg/L	N/A	0.0200	0.171		101		85-115			
rsenic	7010619		0.0541	mg/L	N/A	0.00200	0.0495		91		80-120			
elenium	7010631		0.151	mg/L	N/A	0.0200	0.146		97		80-115			
olatile Organic Compounds														
cetone	7010565		20.0	ug/L	N/A	N/A	23.7		118		50-145			
crylonitrile	7010565		20.0	ug/L	N/A	N/A	22.6		113		50-145			
enzene	7010565		20.0	ug/L	N/A	N/A	22.0		110		75-125			
romobenzene	7010565		20.0	ug/L	N/A	N/A	21.7		108		75-120			
romochloromethane	7010565		20.0	ug/L	N/A	N/A	21.6		108		70-140			
romodichloromethane	7010565		20.0	ug/L	N/A	N/A	21.4		107		75-115			
romoform	7010565		20.0	ug/L	N/A	N/A	24.0		120		55-115			L
romomethane	7010565		20.0	ug/L	N/A	N/A	17.8		89		40-130			
-Butanone (MEK)	7010565		20.0	ug/L	N/A	N/A	23.2		116		50-140			
-Butylbenzene	7010565		20.0	ug/L	N/A	N/A	21.5		108		65-130			
ec-Butylbenzene	7010565		20.0	ug/L	N/A	N/A	22.3		112		70-125			
ert-Butylbenzene	7010565		20.0	ug/L	N/A	N/A	21.8		109		70-125			
arbon disulfide	7010565		20.0	ug/L	N/A	N/A	20.5		102		55-130			
arbon Tetrachloride	7010565		20.0	ug/L	N/A	N/A	23.0		115		65-120			
hlorobenzene	7010565		20.0	ug/L	N/A	N/A	21.8		109		75-115			
hlorodibromomethane	7010565		20.0	ug/L	N/A	N/A	21.7		108		65-110			
hloroethane	7010565		20.0	ug/L	N/A	N/A	21.3		106		60-145			
hloroform	7010565		20.0	ug/L	N/A	N/A	20.6		103		70-125			
hloromethane	7010565		20.0	ug/L	N/A	N/A	19.1		96		35-130			
-Chlorotoluene	7010565		20.0	ug/L	N/A	N/A	23.3		116		75-125			
-Chlorotoluene	7010565		20.0	ug/L	N/A	N/A	21.5		108		70-125			
,2-Dibromo-3-chloropropane	7010565		20.0	ug/L	N/A	N/A	23.3		116		35-120			
,2-Dibromoethane (EDB)	7010565		20.0	ug/L	N/A	N/A	22.9		114		75-120			
ibromomethane	7010565		20.0	ug/L	N/A	N/A	24.0		120		75-125			

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Work Order: CQA0461
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Project Number: 728500J - Cluster #1

Received: 01/10/07
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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
1,2-Dichlorobenzene	7010565		20.0	ug/L	N/A	N/A	22.3		112		70-115			
1,3-Dichlorobenzene	7010565		20.0	ug/L	N/A	N/A	21.2		106		70-120			
1,4-Dichlorobenzene	7010565		20.0	ug/L	N/A	N/A	21.7		108		70-120			
Dichlorodifluoromethane	7010565		20.0	ug/L	N/A	N/A	22.2		111		50-140			
1,1-Dichloroethane	7010565		20.0	ug/L	N/A	N/A	19.5		98		50-145			
1,2-Dichloroethane	7010565		20.0	ug/L	N/A	N/A	21.5		108		70-130			
1,1-Dichloroethene	7010565		20.0	ug/L	N/A	N/A	23.2		116		65-135			
cis-1,2-Dichloroethene	7010565		20.0	ug/L	N/A	N/A	21.2		106		75-130			
trans-1,2-Dichloroethene	7010565		20.0	ug/L	N/A	N/A	21.1		106		65-130			
1,2-Dichloropropane	7010565		20.0	ug/L	N/A	N/A	22.6		113		70-125			
1,3-Dichloropropane	7010565		20.0	ug/L	N/A	N/A	23.5		118		75-125			
2,2-Dichloropropane	7010565		20.0	ug/L	N/A	N/A	19.1		96		35-130			
1,1-Dichloropropene	7010565		20.0	ug/L	N/A	N/A	21.9		110		65-130			
cis-1,3-Dichloropropene	7010565		20.0	ug/L	N/A	N/A	20.5		102		55-115			
trans-1,3-Dichloropropene	7010565		20.0	ug/L	N/A	N/A	20.3		102		45-120			
Ethylbenzene	7010565		20.0	ug/L	N/A	N/A	21.6		108		75-125			
Hexachlorobutadiene	7010565		20.0	ug/L	N/A	N/A	22.0		110		65-110			
Hexane	7010565		20.0	ug/L	N/A	N/A	22.0		110		50-135			
Isopropylbenzene	7010565		20.0	ug/L	N/A	N/A	22.1		110		75-120			
p-Isopropyltoluene	7010565		20.0	ug/L	N/A	N/A	22.4		112		70-125			
Methylene Chloride	7010565		20.0	ug/L	N/A	N/A	20.7		104		65-135			
Methyl tert-Butyl Ether	7010565		20.0	ug/L	N/A	N/A	23.5		118		60-135			
Naphthalene	7010565		20.0	ug/L	N/A	N/A	24.0		120		25-120			
n-Propylbenzene	7010565		20.0	ug/L	N/A	N/A	21.2		106		65-125			
Styrene	7010565		20.0	ug/L	N/A	N/A	21.6		108		70-120			
1,1,1,2-Tetrachloroethane	7010565		20.0	ug/L	N/A	N/A	21.2		106		75-115			
1,1,2,2-Tetrachloroethane	7010565		20.0	ug/L	N/A	N/A	24.2		121		70-120			L
Tetrachloroethene	7010565		20.0	ug/L	N/A	N/A	22.4		112		70-120			
Toluene	7010565		20.0	ug/L	N/A	N/A	21.6		108		75-120			
1,2,3-Trichlorobenzene	7010565		20.0	ug/L	N/A	N/A	23.5		118		30-125			
1,2,4-Trichlorobenzene	7010565		20.0	ug/L	N/A	N/A	22.8		114		50-110			L
1,1,1-Trichloroethane	7010565		20.0	ug/L	N/A	N/A	22.8		114		70-120			
1,1,2-Trichloroethane	7010565		20.0	ug/L	N/A	N/A	23.0		115		75-120			
Trichloroethene	7010565		20.0	ug/L	N/A	N/A	23.2		116		75-120			
Trichlorofluoromethane	7010565		20.0	ug/L	N/A	N/A	22.5		112		65-130			
1,2,3-Trichloropropane	7010565		20.0	ug/L	N/A	N/A	22.4		112		75-120			
1,2,4-Trimethylbenzene	7010565		20.0	ug/L	N/A	N/A	21.5		108		70-120			
1,3,5-Trimethylbenzene	7010565		20.0	ug/L	N/A	N/A	22.0		110		75-125			
Vinyl chloride	7010565		20.0	ug/L	N/A	N/A	21.4		107		60-135			
Xylenes, total	7010565		60.0	ug/L	N/A	N/A	66.7		111		75-125			
Surrogate: Dibromofluoromethane	*7010565*			ug/L					*94*		*80-115*			
Surrogate: Toluene-d8	*7010565*			ug/L					*96*		*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010565*			ug/L					*101*		*80-115*			

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LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'olatile Organic Compounds														
cetone	7010579		20.0	ug/L	N/A	N/A	20.1		100		50-145			
crylonitrile	7010579		20.0	ug/L	N/A	N/A	23.0		115		50-145			
enzene	7010579		20.0	ug/L	N/A	N/A	19.5		98		75-125			
romobenzene	7010579		20.0	ug/L	N/A	N/A	19.1		96		75-120			
romochloromethane	7010579		20.0	ug/L	N/A	N/A	20.1		100		70-140			
romodichloromethane	7010579		20.0	ug/L	N/A	N/A	19.5		98		75-115			
romoform	7010579		20.0	ug/L	N/A	N/A	21.4		107		55-115			
romomethane	7010579		20.0	ug/L	N/A	N/A	16.0		80		40-130			
-Butanone (MEK)	7010579		20.0	ug/L	N/A	N/A	21.6		108		50-140			
-Butylbenzene	7010579		20.0	ug/L	N/A	N/A	20.1		100		65-130			
ec-Butylbenzene	7010579		20.0	ug/L	N/A	N/A	19.3		96		70-125			
rt-Butylbenzene	7010579		20.0	ug/L	N/A	N/A	19.3		96		70-125			
arbon disulfide	7010579		20.0	ug/L	N/A	N/A	19.0		95		55-130			
arbon Tetrachloride	7010579		20.0	ug/L	N/A	N/A	20.7		104		65-120			
hlorobenzene	7010579		20.0	ug/L	N/A	N/A	19.6		98		75-115			
hlorodibromomethane	7010579		20.0	ug/L	N/A	N/A	19.4		97		65-110			
hloroethane	7010579		20.0	ug/L	N/A	N/A	20.9		104		60-145			
hloroform	7010579		20.0	ug/L	N/A	N/A	19.1		96		70-125			
hloromethane	7010579		20.0	ug/L	N/A	N/A	16.3		82		35-130			
-Chlorotoluene	7010579		20.0	ug/L	N/A	N/A	18.8		94		75-125			
-Chlorotoluene	7010579		20.0	ug/L	N/A	N/A	20.0		100		70-125			
,2-Dibromo-3-chloropropane	7010579		20.0	ug/L	N/A	N/A	21.8		109		35-120			
,2-Dibromoethane (EDB)	7010579		20.0	ug/L	N/A	N/A	20.0		100		75-120			
ibromomethane	7010579		20.0	ug/L	N/A	N/A	22.3		112		75-125			
,2-Dichlorobenzene	7010579		20.0	ug/L	N/A	N/A	20.1		100		70-115			
,3-Dichlorobenzene	7010579		20.0	ug/L	N/A	N/A	19.5		98		70-120			
,4-Dichlorobenzene	7010579		20.0	ug/L	N/A	N/A	19.5		98		70-120			
ichlorodifluoromethane	7010579		20.0	ug/L	N/A	N/A	14.6		73		50-140			
,1-Dichloroethane	7010579		20.0	ug/L	N/A	N/A	17.8		89		50-145			
,2-Dichloroethane	7010579		20.0	ug/L	N/A	N/A	21.0		105		70-130			
,1-Dichloroethene	7010579		20.0	ug/L	N/A	N/A	21.8		109		65-135			
is-1,2-Dichloroethene	7010579		20.0	ug/L	N/A	N/A	19.9		100		75-130			
rans-1,2-Dichloroethene	7010579		20.0	ug/L	N/A	N/A	20.3		102		65-130			
,2-Dichloropropane	7010579		20.0	ug/L	N/A	N/A	20.1		100		70-125			
,3-Dichloropropane	7010579		20.0	ug/L	N/A	N/A	21.1		106		75-125			
,2-Dichloropropane	7010579		20.0	ug/L	N/A	N/A	17.6		88		35-130			
,1-Dichloropropene	7010579		20.0	ug/L	N/A	N/A	21.1		106		65-130			
is-1,3-Dichloropropene	7010579		20.0	ug/L	N/A	N/A	18.5		92		55-115			
rans-1,3-Dichloropropene	7010579		20.0	ug/L	N/A	N/A	18.5		92		45-120			
thylbenzene	7010579		20.0	ug/L	N/A	N/A	19.1		96		75-125			
lexachlorobutadiene	7010579		20.0	ug/L	N/A	N/A	19.9		100		65-110			
lexane	7010579		20.0	ug/L	N/A	N/A	19.6		98		50-135			
sopropylbenzene	7010579		20.0	ug/L	N/A	N/A	19.9		100		75-120			
-Isopropyltoluene	7010579		20.0	ug/L	N/A	N/A	20.0		100		70-125			
Methylene Chloride	7010579		20.0	ug/L	N/A	N/A	18.9		94		65-135			

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
Methyl tert-Butyl Ether	7010579		20.0	ug/L	N/A	N/A	22.4		112		60-135			
Naphthalene	7010579		20.0	ug/L	N/A	N/A	22.8		114		25-120			
n-Propylbenzene	7010579		20.0	ug/L	N/A	N/A	18.7		94		65-125			
Styrene	7010579		20.0	ug/L	N/A	N/A	19.0		95		70-120			
1,1,1,2-Tetrachloroethane	7010579		20.0	ug/L	N/A	N/A	19.0		95		75-115			
1,1,2,2-Tetrachloroethane	7010579		20.0	ug/L	N/A	N/A	22.0		110		70-120			
Tetrachloroethene	7010579		20.0	ug/L	N/A	N/A	19.5		98		70-120			
Toluene	7010579		20.0	ug/L	N/A	N/A	19.6		98		75-120			
1,2,3-Trichlorobenzene	7010579		20.0	ug/L	N/A	N/A	21.1		106		30-125			
1,2,4-Trichlorobenzene	7010579		20.0	ug/L	N/A	N/A	20.6		103		50-110			
1,1,1-Trichloroethane	7010579		20.0	ug/L	N/A	N/A	19.8		99		70-120			
1,1,2-Trichloroethane	7010579		20.0	ug/L	N/A	N/A	21.2		106		75-120			
Trichloroethene	7010579		20.0	ug/L	N/A	N/A	21.2		106		75-120			
Trichlorofluoromethane	7010579		20.0	ug/L	N/A	N/A	20.6		103		65-130			
1,2,3-Trichloropropane	7010579		20.0	ug/L	N/A	N/A	20.2		101		75-120			
1,2,4-Trimethylbenzene	7010579		20.0	ug/L	N/A	N/A	18.9		94		70-120			
1,3,5-Trimethylbenzene	7010579		20.0	ug/L	N/A	N/A	19.0		95		75-125			
Vinyl chloride	7010579		20.0	ug/L	N/A	N/A	19.0		95		60-135			
Xylenes, total	7010579		60.0	ug/L	N/A	N/A	58.2		97		75-125			
Surrogate: Dibromofluoromethane	*7010579*			ug/L					*98*		*80-115*			
Surrogate: Toluene-d8	*7010579*			ug/L					*97*		*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010579*			ug/L					*98*		*80-115*			
Acetone	7010618		20.0	ug/L	N/A	N/A	20.2		101		50-145			
Acrylonitrile	7010618		20.0	ug/L	N/A	N/A	21.0		105		50-145			
Benzene	7010618		20.0	ug/L	N/A	N/A	19.8		99		75-125			
Bromobenzene	7010618		20.0	ug/L	N/A	N/A	20.1		100		75-120			
Bromochloromethane	7010618		20.0	ug/L	N/A	N/A	17.2		86		70-140			
Bromodichloromethane	7010618		20.0	ug/L	N/A	N/A	18.6		93		75-115			
Bromoform	7010618		20.0	ug/L	N/A	N/A	20.7		104		55-115			
Bromomethane	7010618		20.0	ug/L	N/A	N/A	15.0		75		40-130			
2-Butanone (MEK)	7010618		20.0	ug/L	N/A	N/A	23.0		115		50-140			
n-Butylbenzene	7010618		20.0	ug/L	N/A	N/A	20.8		104		65-130			
sec-Butylbenzene	7010618		20.0	ug/L	N/A	N/A	20.4		102		70-125			
tert-Butylbenzene	7010618		20.0	ug/L	N/A	N/A	20.4		102		70-125			
Carbon disulfide	7010618		20.0	ug/L	N/A	N/A	18.0		90		55-130			
Carbon Tetrachloride	7010618		20.0	ug/L	N/A	N/A	20.3		102		65-120			
Chlorobenzene	7010618		20.0	ug/L	N/A	N/A	20.0		100		75-115			
Chlorodibromomethane	7010618		20.0	ug/L	N/A	N/A	17.7		88		65-110			
Chloroethane	7010618		20.0	ug/L	N/A	N/A	20.2		101		60-145			
Chloroform	7010618		20.0	ug/L	N/A	N/A	17.9		90		70-125			
Chloromethane	7010618		20.0	ug/L	N/A	N/A	17.8		89		35-130			
2-Chlorotoluene	7010618		20.0	ug/L	N/A	N/A	18.0		90		75-125			
4-Chlorotoluene	7010618		20.0	ug/L	N/A	N/A	19.8		99		70-125			
1,2-Dibromo-3-chloropropane	7010618		20.0	ug/L	N/A	N/A	22.2		111		35-120			

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8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'olatile Organic Compounds														
,2-Dibromoethane (EDB)	7010618		20.0	ug/L	N/A	N/A	20.7		104		75-120			
)ibromomethane	7010618		20.0	ug/L	N/A	N/A	20.1		100		75-125			
,2-Dichlorobenzene	7010618		20.0	ug/L	N/A	N/A	20.8		104		70-115			
,3-Dichlorobenzene	7010618		20.0	ug/L	N/A	N/A	20.1		100		70-120			
,4-Dichlorobenzene	7010618		20.0	ug/L	N/A	N/A	19.6		98		70-120			
)ichlorodifluoromethane	7010618		20.0	ug/L	N/A	N/A	19.7		98		50-140			
,1-Dichloroethane	7010618		20.0	ug/L	N/A	N/A	16.7		84		50-145			
,2-Dichloroethane	7010618		20.0	ug/L	N/A	N/A	19.0		95		70-130			
,1-Dichloroethene	7010618		20.0	ug/L	N/A	N/A	20.3		102		65-135			
is-1,2-Dichloroethene	7010618		20.0	ug/L	N/A	N/A	18.9		94		75-130			
rans-1,2-Dichloroethene	7010618		20.0	ug/L	N/A	N/A	18.3		92		65-130			
,2-Dichloropropane	7010618		20.0	ug/L	N/A	N/A	19.8		99		70-125			
,3-Dichloropropane	7010618		20.0	ug/L	N/A	N/A	21.0		105		75-125			
,2-Dichloropropane	7010618		20.0	ug/L	N/A	N/A	17.0		85		35-130			
,1-Dichloropropene	7010618		20.0	ug/L	N/A	N/A	19.7		98		65-130			
is-1,3-Dichloropropene	7010618		20.0	ug/L	N/A	N/A	18.8		94		55-115			
rans-1,3-Dichloropropene	7010618		20.0	ug/L	N/A	N/A	18.6		93		45-120			
:thylbenzene	7010618		20.0	ug/L	N/A	N/A	20.0		100		75-125			
Iexachlorobutadiene	7010618		20.0	ug/L	N/A	N/A	21.2		106		65-110			
Iexane	7010618		20.0	ug/L	N/A	N/A	21.0		105		50-135			
sopropylbenzene	7010618		20.0	ug/L	N/A	N/A	20.7		104		75-120			
-Isopropyltoluene	7010618		20.0	ug/L	N/A	N/A	20.3		102		70-125			
Aethylene Chloride	7010618		20.0	ug/L	N/A	N/A	19.1		96		65-135			
Aethyl tert-Butyl Ether	7010618		20.0	ug/L	N/A	N/A	21.4		107		60-135			
Japhthalene	7010618		20.0	ug/L	N/A	N/A	23.8		119		25-120			
-Propylbenzene	7010618		20.0	ug/L	N/A	N/A	23.4		117		65-125			
:tyrene	7010618		20.0	ug/L	N/A	N/A	19.8		99		70-120			
,1,1,2-Tetrachloroethane	7010618		20.0	ug/L	N/A	N/A	18.8		94		75-115			
,1,2,2-Tetrachloroethane	7010618		20.0	ug/L	N/A	N/A	21.6		108		70-120			
'etrachloroethene	7010618		20.0	ug/L	N/A	N/A	20.5		102		70-120			
'oluene	7010618		20.0	ug/L	N/A	N/A	20.1		100		75-120			
,2,3-Trichlorobenzene	7010618		20.0	ug/L	N/A	N/A	22.6		113		30-125			
,2,4-Trichlorobenzene	7010618		20.0	ug/L	N/A	N/A	21.0		105		50-110			
,1,1-Trichloroethane	7010618		20.0	ug/L	N/A	N/A	20.3		102		70-120			
,1,2-Trichloroethane	7010618		20.0	ug/L	N/A	N/A	21.5		108		75-120			
'richloroethene	7010618		20.0	ug/L	N/A	N/A	21.0		105		75-120			
'richlorofluoromethane	7010618		20.0	ug/L	N/A	N/A	20.0		100		65-130			
,2,3-Trichloropropane	7010618		20.0	ug/L	N/A	N/A	20.9		104		75-120			
,2,4-Trimethylbenzene	7010618		20.0	ug/L	N/A	N/A	19.8		99		70-120			
,3,5-Trimethylbenzene	7010618		20.0	ug/L	N/A	N/A	20.3		102		75-125			
/inyl chloride	7010618		20.0	ug/L	N/A	N/A	19.4		97		60-135			
Xylenes, total	7010618		60.0	ug/L	N/A	N/A	59.3		99		75-125			
Surrogate: Dibromofluoromethane	*7010618*			ug/L					*92*		*80-115*			
Surrogate: Toluene-d8	*7010618*			ug/L					*100*		*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010618*			ug/L					*97*		*80-115*			

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Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
Acetone	7010738		20.0	ug/L	N/A	N/A	20.2		101		50-145			
Acrylonitrile	7010738		20.0	ug/L	N/A	N/A	18.4		92		50-145			
Benzene	7010738		20.0	ug/L	N/A	N/A	19.9		100		75-125			
Bromobenzene	7010738		20.0	ug/L	N/A	N/A	17.8		89		75-120			
Bromochloromethane	7010738		20.0	ug/L	N/A	N/A	18.8		94		70-140			
Bromodichloromethane	7010738		20.0	ug/L	N/A	N/A	18.8		94		75-115			
Bromoform	7010738		20.0	ug/L	N/A	N/A	17.5		88		55-115			
Bromomethane	7010738		20.0	ug/L	N/A	N/A	12.2		61		40-130			
2-Butanone (MEK)	7010738		20.0	ug/L	N/A	N/A	14.8		74		50-140			
n-Butylbenzene	7010738		20.0	ug/L	N/A	N/A	18.3		92		65-130			
sec-Butylbenzene	7010738		20.0	ug/L	N/A	N/A	19.5		98		70-125			
tert-Butylbenzene	7010738		20.0	ug/L	N/A	N/A	18.3		92		70-125			
Carbon disulfide	7010738		20.0	ug/L	N/A	N/A	17.5		88		55-130			
Carbon Tetrachloride	7010738		20.0	ug/L	N/A	N/A	19.6		98		65-120			
Chlorobenzene	7010738		20.0	ug/L	N/A	N/A	18.0		90		75-115			
Chlorodibromomethane	7010738		20.0	ug/L	N/A	N/A	17.4		87		65-110			
Chloroethane	7010738		20.0	ug/L	N/A	N/A	16.8		84		60-145			
Chloroform	7010738		20.0	ug/L	N/A	N/A	19.2		96		70-125			
Chloromethane	7010738		20.0	ug/L	N/A	N/A	10.2		51		35-130			
2-Chlorotoluene	7010738		20.0	ug/L	N/A	N/A	18.2		91		75-125			
4-Chlorotoluene	7010738		20.0	ug/L	N/A	N/A	18.2		91		70-125			
1,2-Dibromo-3-chloropropane	7010738		20.0	ug/L	N/A	N/A	14.3		72		35-120			
1,2-Dibromoethane (EDB)	7010738		20.0	ug/L	N/A	N/A	17.1		86		75-120			
Dibromomethane	7010738		20.0	ug/L	N/A	N/A	22.0		110		75-125			
1,2-Dichlorobenzene	7010738		20.0	ug/L	N/A	N/A	18.1		90		70-115			
1,3-Dichlorobenzene	7010738		20.0	ug/L	N/A	N/A	17.3		86		70-120			
1,4-Dichlorobenzene	7010738		20.0	ug/L	N/A	N/A	18.1		90		70-120			
Dichlorodifluoromethane	7010738		20.0	ug/L	N/A	N/A	20.8		104		50-140			
1,1-Dichloroethane	7010738		20.0	ug/L	N/A	N/A	17.2		86		50-145			
1,2-Dichloroethane	7010738		20.0	ug/L	N/A	N/A	18.9		94		70-130			
1,1-Dichloroethene	7010738		20.0	ug/L	N/A	N/A	23.4		117		65-135			
cis-1,2-Dichloroethene	7010738		20.0	ug/L	N/A	N/A	20.1		100		75-130			
trans-1,2-Dichloroethene	7010738		20.0	ug/L	N/A	N/A	20.2		101		65-130			
1,2-Dichloropropane	7010738		20.0	ug/L	N/A	N/A	19.1		96		70-125			
1,3-Dichloropropane	7010738		20.0	ug/L	N/A	N/A	18.8		94		75-125			
2,2-Dichloropropane	7010738		20.0	ug/L	N/A	N/A	7.16		36		35-130			
1,1-Dichloropropene	7010738		20.0	ug/L	N/A	N/A	20.3		102		65-130			
cis-1,3-Dichloropropene	7010738		20.0	ug/L	N/A	N/A	13.0		65		55-115			
trans-1,3-Dichloropropene	7010738		20.0	ug/L	N/A	N/A	9.47		47		45-120			
Ethylbenzene	7010738		20.0	ug/L	N/A	N/A	17.5		88		75-125			
Hexachlorobutadiene	7010738		20.0	ug/L	N/A	N/A	18.8		94		65-110			
Hexane	7010738		20.0	ug/L	N/A	N/A	19.8		99		50-135			
Isopropylbenzene	7010738		20.0	ug/L	N/A	N/A	18.4		92		75-120			
p-Isopropyltoluene	7010738		20.0	ug/L	N/A	N/A	19.2		96		70-125			

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Julie Oriano

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Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
'olatile Organic Compounds														
lethylene Chloride	7010738		20.0	ug/L	N/A	N/A	21.8		109		65-135			
lethyl tert-Butyl Ether	7010738		20.0	ug/L	N/A	N/A	20.2		101		60-135			
'aphthalene	7010738		20.0	ug/L	N/A	N/A	10.6		53		25-120			
-Propylbenzene	7010738		20.0	ug/L	N/A	N/A	17.4		87		65-125			
tyrene	7010738		20.0	ug/L	N/A	N/A	17.4		87		70-120			
,1,1,2-Tetrachloroethane	7010738		20.0	ug/L	N/A	N/A	17.4		87		75-115			
,1,2,2-Tetrachloroethane	7010738		20.0	ug/L	N/A	N/A	17.6		88		70-120			
etrachloroethene	7010738		20.0	ug/L	N/A	N/A	18.4		92		70-120			
oluene	7010738		20.0	ug/L	N/A	N/A	18.1		90		75-120			
,2,3-Trichlorobenzene	7010738		20.0	ug/L	N/A	N/A	16.4		82		30-125			
,2,4-Trichlorobenzene	7010738		20.0	ug/L	N/A	N/A	15.3		76		50-110			
,1,1-Trichloroethane	7010738		20.0	ug/L	N/A	N/A	18.8		94		70-120			
,1,2-Trichloroethane	7010738		20.0	ug/L	N/A	N/A	19.5		98		75-120			
richloroethene	7010738		20.0	ug/L	N/A	N/A	20.3		102		75-120			
richlorofluoromethane	7010738		20.0	ug/L	N/A	N/A	21.8		109		65-130			
,2,3-Trichloropropane	7010738		20.0	ug/L	N/A	N/A	17.1		86		75-120			
,2,4-Trimethylbenzene	7010738		20.0	ug/L	N/A	N/A	17.2		86		70-120			
,3,5-Trimethylbenzene	7010738		20.0	ug/L	N/A	N/A	17.7		88		75-125			
inyl chloride	7010738		20.0	ug/L	N/A	N/A	21.2		106		60-135			
ylenes, total	7010738		60.0	ug/L	N/A	N/A	55.4		92		75-125			
urrogate: Dibromofluoromethane	*7010738*			ug/L					*98*		*80-115*			
urrogate: Toluene-d8	*7010738*			ug/L					*93*		*85-110*			
urrogate: 4-Bromofluorobenzene	*7010738*			ug/L					*95*		*80-115*			
emivolatile Organics by GC/MS														
cenaphthene	7010456		100	ug/L	0.680	10.0	102	70.4	102	70	45-120	37	35	R
cenaphthylene	7010456		100	ug/L	0.860	10.0	96.1	67.6	96	68	45-115	35	35	
nthracene	7010456		100	ug/L	1.10	10.0	106	75.6	106	76	50-125	33	35	
enzidine	7010456		100	ug/L	33.0	100	50.4	35.9	50	36	5-95	34	35	J
enzo (a) anthracene	7010456		100	ug/L	0.800	10.0	109	76.8	109	77	50-130	35	35	
enzo (b) fluoranthene	7010456		100	ug/L	0.980	10.0	107	77.1	107	77	50-130	32	35	
enzo (k) fluoranthene	7010456		100	ug/L	1.10	10.0	102	76.6	102	77	50-130	28	35	
enzo (a) pyrene	7010456		100	ug/L	0.920	10.0	105	78.0	105	78	45-125	30	35	
enzo (g,h,i) perylene	7010456		100	ug/L	1.00	10.0	107	78.4	107	78	55-125	31	35	
enzyl alcohol	7010456		100	ug/L	0.730	10.0	92.9	71.6	93	72	35-100	26	35	
utyl benzyl phthalate	7010456		100	ug/L	1.10	10.0	128	93.4	128	93	45-140	31	35	E
is(2-chloroethyl)ether	7010456		100	ug/L	0.870	10.0	101	78.4	101	78	40-110	25	30	
is(2-chloroethoxy)methane	7010456		100	ug/L	0.840	10.0	105	75.7	105	76	40-110	32	30	A-01,R
is(2-ethylhexyl)phthalate	7010456		100	ug/L	1.70	10.0	133	94.0	133	94	45-140	34	35	E
is(2-chloroisopropyl) ether	7010456		100	ug/L	0.990	10.0	103	77.8	103	78	40-110	28	30	
-Bromophenyl phenyl ether	7010456		100	ug/L	0.720	10.0	124	87.6	124	88	55-130	34	35	E
arbazole	7010456		100	ug/L	1.00	10.0	118	83.9	118	84	40-135	34	35	
-Chloroaniline	7010456		100	ug/L	1.40	10.0	97.3	72.2	97	72	15-110	30	35	
-Chloronaphthalene	7010456		100	ug/L	0.920	10.0	110	78.8	110	79	40-120	33	35	
-Chlorophenyl phenyl ether	7010456		100	ug/L	0.750	10.0	114	82.0	114	82	50-125	33	35	

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Semivolatile Organics by GC/MS														
Chrysene	7010456		100	ug/L	0.630	10.0	109	74.8	109	75	50-130	37	35	R
Dibenzo (a,h) anthracene	7010456		100	ug/L	1.30	10.0	112	82.1	112	82	55-130	31	30	R
Dibenzofuran	7010456		100	ug/L	0.830	10.0	113	81.7	113	82	45-130	32	30	R
Di-n-butyl phthalate	7010456		100	ug/L	0.750	10.0	126	90.9	126	91	50-135	32	35	E
1,2-Dichlorobenzene	7010456		100	ug/L	0.870	10.0	90.6	71.8	91	72	35-105	23	30	
1,3-Dichlorobenzene	7010456		100	ug/L	0.900	10.0	87.7	69.8	88	70	35-105	23	35	
1,4-Dichlorobenzene	7010456		100	ug/L	0.900	10.0	89.4	69.3	89	69	35-105	25	35	
3,3'-Dichlorobenzidine	7010456		100	ug/L	2.20	50.0	108	75.6	108	76	25-120	35	35	
Diethyl phthalate	7010456		100	ug/L	0.760	10.0	118	84.2	118	84	45-135	33	35	
Dimethyl phthalate	7010456		100	ug/L	0.780	10.0	120	85.0	120	85	50-130	34	35	
2,4-Dinitrotoluene	7010456		100	ug/L	0.720	10.0	122	87.8	122	88	55-135	33	35	E
2,6-Dinitrotoluene	7010456		100	ug/L	0.710	10.0	118	85.0	118	85	55-135	33	35	
Di-n-octyl phthalate	7010456		100	ug/L	1.30	10.0	132	99.4	132	99	45-140	28	35	E
Fluoranthene	7010456		100	ug/L	0.700	10.0	105	73.5	105	74	50-130	35	35	
Fluorene	7010456		100	ug/L	0.760	10.0	100	73.5	100	74	50-125	31	35	
Hexachlorobenzene	7010456		100	ug/L	0.670	10.0	124	88.5	124	88	55-135	33	35	E
Hexachlorobutadiene	7010456		100	ug/L	0.740	10.0	93.0	68.8	93	69	35-100	30	35	
Hexachlorocyclopentadiene	7010456		100	ug/L	0.620	20.0	87.2	61.0	87	61	25-110	35	35	
Hexachloroethane	7010456		100	ug/L	0.620	10.0	88.7	70.8	89	71	30-110	22	35	
Indeno (1,2,3-cd) pyrene	7010456		100	ug/L	0.890	10.0	112	82.4	112	82	50-130	30	30	
Isophorone	7010456		100	ug/L	0.740	10.0	109	76.2	109	76	40-115	35	30	R
2-Methylnaphthalene	7010456		100	ug/L	0.680	10.0	97.0	70.6	97	71	40-110	32	35	
Naphthalene	7010456		100	ug/L	0.730	10.0	89.3	62.9	89	63	40-105	35	35	
2-Nitroaniline	7010456		100	ug/L	0.890	10.0	120	85.4	120	85	45-135	34	30	E,L1
3-Nitroaniline	7010456		100	ug/L	0.980	10.0	118	84.5	118	84	40-135	33	35	
4-Nitroaniline	7010456		100	ug/L	0.690	10.0	110	80.2	110	80	40-135	31	35	
Nitrobenzene	7010456		100	ug/L	0.940	10.0	104	73.4	104	73	40-110	34	30	R
N-Nitrosodimethylamine	7010456		100	ug/L	0.640	10.0	68.4	52.5	68	52	25-75	26	35	
N-Nitrosodiphenylamine	7010456		100	ug/L	0.980	10.0	122	86.4	122	86	35-130	34	35	A-01,E
N-Nitrosodi-n-propylamine	7010456		100	ug/L	0.680	10.0	102	77.3	102	77	40-115	28	30	
Phenanthrene	7010456		100	ug/L	0.730	10.0	108	75.9	108	76	50-125	35	35	
Pyrene	7010456		100	ug/L	0.880	10.0	106	77.8	106	78	50-130	31	35	
Pyridine	7010456		100	ug/L	1.10	10.0	57.9	44.3	58	44	20-70	27	35	
1,2,4-Trichlorobenzene	7010456		100	ug/L	0.800	10.0	99.7	72.2	100	72	35-110	32	35	
Benzoic acid	7010456		100	ug/L	13.0	20.0	25.7	<13.0	26		10-50		35	L1
4-Chloro-3-methylphenol	7010456		100	ug/L	0.510	10.0	91.1	69.9	91	70	40-115	26	35	
2-Chlorophenol	7010456		100	ug/L	0.770	10.0	89.4	68.6	89	69	40-105	26	35	
Cresol(s)	7010456		200	ug/L	0.870	10.0	149	114	74	57	30-85	27	35	
2,4-Dichlorophenol	7010456		100	ug/L	0.770	10.0	97.7	70.5	98	70	40-110	32	35	
2,4-Dimethylphenol	7010456		100	ug/L	7.90	10.0	74.8	57.5	75	58	20-95	26	35	
2,4-Dinitrophenol	7010456		100	ug/L	0.490	20.0	85.5	57.9	86	58	25-120	38	35	CIN,R
4,6-Dinitro-2-methylphenol	7010456		100	ug/L	0.420	10.0	93.3	66.4	93	66	40-135	34	35	
2-Methylphenol (o-Cresol)	7010456		100	ug/L	0.870	10.0	77.7	59.5	78	60	30-95	27	35	
4-Methylphenol (p-Cresol)	7010456		100	ug/L	0.910	10.0	70.8	54.5	71	54	30-90	26	35	
2-Nitrophenol	7010456		100	ug/L	0.720	10.0	97.4	69.0	97	69	45-110	34	35	

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Julie Oriano

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Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

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Reported: 01/22/07 11:40

LCS/LCS DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
emivolatile Organics by GC/MS														
Nitrophenol	7010456		100	ug/L	0.360	10.0	46.1	30.7	46	31	15-65	40	35	R
ntachlorophenol	7010456		100	ug/L	0.770	10.0	127	88.9	127	89	35-130	35	35	E
ienol	7010456		100	ug/L	0.390	10.0	37.7	29.1	38	29	15-50	26	35	
4,5-Trichlorophenol	7010456		100	ug/L	0.670	10.0	107	76.2	107	76	50-125	34	35	
4,6-Trichlorophenol	7010456		100	ug/L	0.690	10.0	107	76.6	107	77	45-125	33	35	
urrogate: Nitrobenzene-d5	*7010456*			ug/L					*89*	*62*	*40-110*			
urrogate: 2-Fluorobiphenyl	*7010456*			ug/L					*94*	*64*	*40-110*			
urrogate: Terphenyl-d14	*7010456*			ug/L					*99*	*73*	*45-115*			
urrogate: Phenol-d6	*7010456*			ug/L					*35*	*27*	*10-75*			
urrogate: 2-Fluorophenol	*7010456*			ug/L					*50*	*38*	*20-65*			
urrogate: 2,4,6-Tribromophenol	*7010456*			ug/L					*108*	*74*	*45-130*			
ST ANALYSIS PARAMETERS														
lotor Oil	7010392		2000	ug/L	N/A	300	1060	1030	53	52	25-90	3	35	
urrogate: Octacosane	*7010392*			ug/L					*100*	*99*	*55-135*			

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MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Dissolved Metals by SW 846 Series Methods														
QC Source Sample: CQA0134-01														
Mercury	7010458	0.0197	1.64	ug/L	N/A	N/A	1.74	1.67	105	101	75-130	4	10	
QC Source Sample: CQA0461-01														
Barium	7010594	0.0850	1.00	mg/L	N/A	0.0100	1.09	1.08	100	100	75-120	1	10	
Chromium	7010594	<0.020	1.00	mg/L	N/A	0.0200	0.980	0.967	98	97	85-115	1	10	
Silver	7010594	<0.020	1.00	mg/L	N/A	0.0200	0.917	0.906	92	91	80-110	1	10	
QC Source Sample: CQA0423-02														
Arsenic	7010598	<0.0010	0.0400	mg/L	N/A	0.00200	0.0339	0.0332	85	83	75-125	2	20	
Cadmium	7010598	0.000344	0.0200	mg/L	N/A	0.0100	0.0201	0.0198	99	97	75-125	2	20	
Lead	7010598	<0.0040	0.0400	mg/L	N/A	0.00400	0.0132	0.00922	33	23	75-125	36	20	M1
Selenium	7010598	<0.0050	0.0800	mg/L	N/A	0.0100	0.0649	0.0640	81	80	75-125	1	20	
Volatile Organic Compounds														
QC Source Sample: CQA0527-05														
Acetone	7010565	<4.62	20.0	ug/L	N/A	N/A	24.4	16.0	122	80	50-145	42	35	R
Acrylonitrile	7010565	<1.28	20.0	ug/L	N/A	N/A	22.8	24.2	114	121	50-145	6	35	
Benzene	7010565	13.7	20.0	ug/L	N/A	N/A	31.4	30.3	88	83	70-125	4	15	
Bromobenzene	7010565	<0.17	20.0	ug/L	N/A	N/A	18.5	19.1	92	96	75-120	3	15	
Bromochloromethane	7010565	<0.31	20.0	ug/L	N/A	N/A	19.6	18.7	98	94	70-140	5	20	
Bromodichloromethane	7010565	<0.12	20.0	ug/L	N/A	N/A	19.2	18.3	96	92	70-120	5	20	
Bromoform	7010565	<0.15	20.0	ug/L	N/A	N/A	21.6	20.6	108	103	50-120	5	20	
Bromomethane	7010565	<0.48	20.0	ug/L	N/A	N/A	16.2	15.1	81	76	40-135	7	30	
2-Butanone (MEK)	7010565	<0.91	20.0	ug/L	N/A	N/A	23.2	23.5	116	118	50-145	1	35	
n-Butylbenzene	7010565	0.660	20.0	ug/L	N/A	N/A	16.4	16.1	79	77	55-130	2	20	
sec-Butylbenzene	7010565	0.370	20.0	ug/L	N/A	N/A	17.0	15.8	83	77	65-125	7	20	
tert-Butylbenzene	7010565	0.340	20.0	ug/L	N/A	N/A	17.0	16.7	83	82	55-135	2	20	
Carbon disulfide	7010565	<0.14	20.0	ug/L	N/A	N/A	17.1	15.8	86	79	45-125	8	25	
Carbon Tetrachloride	7010565	<0.13	20.0	ug/L	N/A	N/A	18.8	17.8	94	89	60-115	5	20	
Chlorobenzene	7010565	<0.080	20.0	ug/L	N/A	N/A	18.2	18.2	91	91	70-115	0	15	
Chlorodibromomethane	7010565	<0.25	20.0	ug/L	N/A	N/A	18.5	18.2	92	91	55-125	2	20	
Chloroethane	7010565	<0.50	20.0	ug/L	N/A	N/A	19.1	17.9	96	90	60-140	6	20	
Chloroform	7010565	<0.080	20.0	ug/L	N/A	N/A	18.5	17.6	92	88	65-125	5	20	
Chloromethane	7010565	<0.20	20.0	ug/L	N/A	N/A	17.1	15.7	86	78	30-125	9	35	
2-Chlorotoluene	7010565	<0.20	20.0	ug/L	N/A	N/A	21.1	22.5	106	112	65-125	6	25	
4-Chlorotoluene	7010565	<0.15	20.0	ug/L	N/A	N/A	17.0	18.2	85	91	65-130	7	20	
1,2-Dibromo-3-chloropropane	7010565	<0.75	20.0	ug/L	N/A	N/A	22.7	21.6	114	108	45-140	5	35	
1,2-Dibromoethane (EDB)	7010565	<0.13	20.0	ug/L	N/A	N/A	19.7	20.4	98	102	70-130	3	15	
Dibromomethane	7010565	<0.22	20.0	ug/L	N/A	N/A	22.4	20.6	112	103	75-130	8	25	
1,2-Dichlorobenzene	7010565	<0.15	20.0	ug/L	N/A	N/A	18.7	18.6	94	93	75-120	1	20	
1,3-Dichlorobenzene	7010565	<0.13	20.0	ug/L	N/A	N/A	17.3	17.6	86	88	70-120	2	20	
1,4-Dichlorobenzene	7010565	<0.12	20.0	ug/L	N/A	N/A	18.4	17.6	92	88	65-125	4	20	
Dichlorodifluoromethane	7010565	<0.17	20.0	ug/L	N/A	N/A	16.8	15.8	84	79	40-130	6	20	
1,1-Dichloroethane	7010565	<0.090	20.0	ug/L	N/A	N/A	16.8	16.3	84	82	55-135	3	20	
1,2-Dichloroethane	7010565	0.240	20.0	ug/L	N/A	N/A	21.0	19.4	104	96	60-140	8	30	
1,1-Dichloroethene	7010565	<0.19	20.0	ug/L	N/A	N/A	18.8	18.4	94	92	55-130	2	20	
cis-1,2-Dichloroethene	7010565	<0.20	20.0	ug/L	N/A	N/A	19.5	18.1	98	90	65-135	7	20	
trans-1,2-Dichloroethene	7010565	<0.15	20.0	ug/L	N/A	N/A	17.7	17.0	88	85	60-125	4	20	
1,2-Dichloropropane	7010565	<0.40	20.0	ug/L	N/A	N/A	19.1	19.0	96	95	65-125	1	20	
1,3-Dichloropropane	7010565	<0.19	20.0	ug/L	N/A	N/A	21.3	20.6	106	103	70-125	3	15	
2,2-Dichloropropane	7010565	<0.24	20.0	ug/L	N/A	N/A	15.7	14.5	78	72	30-125	8	35	

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MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
C Source Sample: CQA0527-05														
1-Dichloropropene	7010565	<0.17	20.0	ug/L	N/A	N/A	17.9	16.7	90	84	55-130	7	20	
s-1,3-Dichloropropene	7010565	<0.16	20.0	ug/L	N/A	N/A	18.4	17.4	92	87	55-115	6	20	
ans-1,3-Dichloropropene	7010565	<0.16	20.0	ug/L	N/A	N/A	18.2	17.8	91	89	40-120	2	20	
thylbenzene	7010565	7.40	20.0	ug/L	N/A	N/A	25.1	25.3	88	89	65-125	1	15	
exachlorobutadiene	7010565	<0.39	20.0	ug/L	N/A	N/A	15.6	16.0	78	80	50-130	3	25	
exane	7010565	<0.44	20.0	ug/L	N/A	N/A	14.6	14.0	73	70	35-125	4	20	
opropylbenzene	7010565	1.79	20.0	ug/L	N/A	N/A	18.8	19.3	85	88	60-130	3	20	
-Isopropyltoluene	7010565	<0.13	20.0	ug/L	N/A	N/A	18.6	18.3	93	92	65-125	2	20	
lethylene Chloride	7010565	<0.45	20.0	ug/L	N/A	N/A	18.8	18.4	94	92	60-135	2	20	
lethyl tert-Butyl Ether	7010565	<0.12	20.0	ug/L	N/A	N/A	22.1	20.9	110	104	50-145	6	25	
aphthalene	7010565	3.57	20.0	ug/L	N/A	N/A	26.7	26.5	116	115	55-150	1	35	
-Propylbenzene	7010565	4.37	20.0	ug/L	N/A	N/A	22.0	35.5	88	156	50-130	47	30	M1,R
tyrene	7010565	<0.10	20.0	ug/L	N/A	N/A	17.1	17.8	86	89	30-125	4	30	
,1,1,2-Tetrachloroethane	7010565	<0.16	20.0	ug/L	N/A	N/A	18.1	18.6	90	93	70-120	3	15	
,1,2,2-Tetrachloroethane	7010565	<0.23	20.0	ug/L	N/A	N/A	20.9	21.6	104	108	65-135	3	20	
etrachloroethene	7010565	<0.24	20.0	ug/L	N/A	N/A	16.6	17.3	83	86	60-125	4	20	
oluene	7010565	<0.10	20.0	ug/L	N/A	N/A	17.9	17.7	90	88	60-130	1	15	
,2,3-Trichlorobenzene	7010565	<2.15	20.0	ug/L	N/A	N/A	19.7	20.6	98	103	55-150	4	35	
,2,4-Trichlorobenzene	7010565	<0.49	20.0	ug/L	N/A	N/A	18.3	19.0	92	95	60-130	4	30	
,1,1-Trichloroethane	7010565	<0.15	20.0	ug/L	N/A	N/A	18.5	17.9	92	90	60-120	3	20	
,1,2-Trichloroethane	7010565	<0.30	20.0	ug/L	N/A	N/A	21.0	19.9	105	100	70-125	5	20	
richloroethene	7010565	<0.17	20.0	ug/L	N/A	N/A	19.4	17.9	97	90	60-120	8	30	
richlorofluoromethane	7010565	<0.15	20.0	ug/L	N/A	N/A	18.1	17.1	90	86	60-125	6	20	
,2,3-Trichloropropane	7010565	<0.18	20.0	ug/L	N/A	N/A	18.8	19.6	94	98	70-125	4	20	
,2,4-Trimethylbenzene	7010565	7.51	20.0	ug/L	N/A	N/A	24.3	24.9	84	87	35-130	2	35	
,3,5-Trimethylbenzene	7010565	2.56	20.0	ug/L	N/A	N/A	22.2	22.7	98	101	40-135	2	30	
'inyl chloride	7010565	<0.16	20.0	ug/L	N/A	N/A	18.2	17.1	91	86	55-130	6	20	
ylenes, total	7010565	5.17	60.0	ug/L	N/A	N/A	56.9	58.3	86	89	50-135	2	35	
urrogate: Dibromofluoromethane	*7010565*			ug/L					*98*	*93*	*85-120*			
urrogate: Toluene-d8	*7010565*			ug/L					*92*	*97*	*85-110*			
urrogate: 4-Bromofluorobenzene	*7010565*			ug/L					*98*	*100*	*75-115*			
)C Source Sample: CQA0479-08														
cetone	7010579	<4.62	20.0	ug/L	N/A	N/A	21.7	18.6	108	93	50-145	15	35	
crylonitrile	7010579	<1.28	20.0	ug/L	N/A	N/A	21.2	20.8	106	104	50-145	2	35	
enzene	7010579	<0.16	20.0	ug/L	N/A	N/A	17.7	17.8	88	89	70-125	1	15	
romobenzene	7010579	<0.17	20.0	ug/L	N/A	N/A	18.3	17.1	92	86	75-120	7	15	
romochloromethane	7010579	<0.31	20.0	ug/L	N/A	N/A	19.6	18.6	98	93	70-140	5	20	
romodichloromethane	7010579	0.170	20.0	ug/L	N/A	N/A	18.1	18.6	90	92	70-120	3	20	
romoform	7010579	<0.15	20.0	ug/L	N/A	N/A	20.6	20.9	103	104	50-120	1	20	
romomethane	7010579	<0.48	20.0	ug/L	N/A	N/A	14.6	14.0	73	70	40-135	4	30	
-Butanone (MEK)	7010579	<0.91	20.0	ug/L	N/A	N/A	20.7	19.2	104	96	50-145	8	35	
-Butylbenzene	7010579	<0.090	20.0	ug/L	N/A	N/A	16.4	15.9	82	80	55-130	3	20	
ec-Butylbenzene	7010579	<0.12	20.0	ug/L	N/A	N/A	17.1	16.0	86	80	65-125	7	20	
rt-Butylbenzene	7010579	<0.14	20.0	ug/L	N/A	N/A	16.9	16.6	84	83	55-135	2	20	
arbon disulfide	7010579	<0.14	20.0	ug/L	N/A	N/A	15.6	15.4	78	77	45-125	1	25	

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
QC Source Sample: CQA0479-08														
Carbon Tetrachloride	7010579	0.430	20.0	ug/L	N/A	N/A	16.6	15.4	81	75	60-115	8	20	
Chlorobenzene	7010579	<0.080	20.0	ug/L	N/A	N/A	17.8	17.4	89	87	70-115	2	15	
Chlorodibromomethane	7010579	<0.25	20.0	ug/L	N/A	N/A	18.0	18.1	90	90	55-125	1	20	
Chloroethane	7010579	<0.50	20.0	ug/L	N/A	N/A	17.6	17.8	88	89	60-140	1	20	
Chloroform	7010579	1.54	20.0	ug/L	N/A	N/A	19.3	19.2	89	88	65-125	1	20	
Chloromethane	7010579	<0.20	20.0	ug/L	N/A	N/A	15.3	14.6	76	73	30-125	5	35	
2-Chlorotoluene	7010579	<0.20	20.0	ug/L	N/A	N/A	18.0	21.8	90	109	65-125	19	25	
4-Chlorotoluene	7010579	<0.15	20.0	ug/L	N/A	N/A	16.3	17.8	82	89	65-130	9	20	
1,2-Dibromo-3-chloropropane	7010579	<0.75	20.0	ug/L	N/A	N/A	23.8	20.2	119	101	45-140	16	35	
1,2-Dibromoethane (EDB)	7010579	<0.13	20.0	ug/L	N/A	N/A	19.1	18.7	96	94	70-130	2	15	
Dibromomethane	7010579	<0.22	20.0	ug/L	N/A	N/A	21.2	20.3	106	102	75-130	4	25	
1,2-Dichlorobenzene	7010579	<0.15	20.0	ug/L	N/A	N/A	19.1	17.4	96	87	75-120	9	20	
1,3-Dichlorobenzene	7010579	<0.13	20.0	ug/L	N/A	N/A	17.5	17.3	88	86	70-120	1	20	
1,4-Dichlorobenzene	7010579	<0.12	20.0	ug/L	N/A	N/A	18.7	17.8	94	89	65-125	5	20	
Dichlorodifluoromethane	7010579	<0.17	20.0	ug/L	N/A	N/A	10.8	10.5	54	52	40-130	3	20	
1,1-Dichloroethane	7010579	1.78	20.0	ug/L	N/A	N/A	23.4	20.7	108	95	55-135	12	20	
1,2-Dichloroethane	7010579	<0.16	20.0	ug/L	N/A	N/A	18.9	19.3	94	96	60-140	2	30	
1,1-Dichloroethene	7010579	11.3	20.0	ug/L	N/A	N/A	24.2	25.4	64	70	55-130	5	20	
cis-1,2-Dichloroethene	7010579	34.4	20.0	ug/L	N/A	N/A	49.4	48.2	75	69	65-135	2	20	
trans-1,2-Dichloroethene	7010579	0.200	20.0	ug/L	N/A	N/A	17.4	17.6	86	87	60-125	1	20	
1,2-Dichloropropane	7010579	<0.40	20.0	ug/L	N/A	N/A	18.1	18.1	90	90	65-125	0	20	
1,3-Dichloropropane	7010579	<0.19	20.0	ug/L	N/A	N/A	19.9	20.0	100	100	70-125	1	15	
2,2-Dichloropropane	7010579	<0.24	20.0	ug/L	N/A	N/A	14.6	6.39	73	32	30-125	78	35	R
1,1-Dichloropropene	7010579	<0.17	20.0	ug/L	N/A	N/A	15.8	16.6	79	83	55-130	5	20	
cis-1,3-Dichloropropene	7010579	<0.16	20.0	ug/L	N/A	N/A	17.5	17.2	88	86	55-115	2	20	
trans-1,3-Dichloropropene	7010579	<0.16	20.0	ug/L	N/A	N/A	17.9	17.2	90	86	40-120	4	20	
Ethylbenzene	7010579	<0.18	20.0	ug/L	N/A	N/A	17.3	16.9	86	84	65-125	2	15	
Hexachlorobutadiene	7010579	<0.39	20.0	ug/L	N/A	N/A	15.8	16.2	79	81	50-130	3	25	
Hexane	7010579	<0.44	20.0	ug/L	N/A	N/A	12.7	12.0	64	60	35-125	6	20	
Isopropylbenzene	7010579	<0.19	20.0	ug/L	N/A	N/A	16.8	16.6	84	83	60-130	1	20	
p-Isopropyltoluene	7010579	<0.13	20.0	ug/L	N/A	N/A	17.6	16.8	88	84	65-125	5	20	
Methylene Chloride	7010579	<0.45	20.0	ug/L	N/A	N/A	18.0	18.4	90	92	60-135	2	20	
Methyl tert-Butyl Ether	7010579	<0.12	20.0	ug/L	N/A	N/A	20.7	17.4	104	87	50-145	17	25	
Naphthalene	7010579	<0.35	20.0	ug/L	N/A	N/A	25.2	23.7	126	118	55-150	6	35	
n-Propylbenzene	7010579	<0.14	20.0	ug/L	N/A	N/A	16.2	17.8	81	89	50-130	9	30	
Styrene	7010579	<0.10	20.0	ug/L	N/A	N/A	16.9	16.3	84	82	30-125	4	30	
1,1,1,2-Tetrachloroethane	7010579	<0.16	20.0	ug/L	N/A	N/A	18.1	17.5	90	88	70-120	3	15	
1,1,2,2-Tetrachloroethane	7010579	<0.23	20.0	ug/L	N/A	N/A	22.2	20.8	111	104	65-135	7	20	
Tetrachloroethene	7010579	13.4	20.0	ug/L	N/A	N/A	27.4	26.5	70	66	60-125	3	20	
Toluene	7010579	<0.10	20.0	ug/L	N/A	N/A	17.4	16.8	87	84	60-130	4	15	
1,2,3-Trichlorobenzene	7010579	<2.15	20.0	ug/L	N/A	N/A	21.7	20.8	108	104	55-150	4	35	
1,2,4-Trichlorobenzene	7010579	<0.49	20.0	ug/L	N/A	N/A	19.9	18.9	100	94	60-130	5	30	
1,1,1-Trichloroethane	7010579	15.9	20.0	ug/L	N/A	N/A	33.7	31.5	89	78	60-120	7	20	
1,1,2-Trichloroethane	7010579	4.12	20.0	ug/L	N/A	N/A	23.8	23.8	98	98	70-125	0	20	
Trichloroethene	7010579	1.00E9	20.0	ug/L	N/A	N/A	1.00E9	1.00E9	0	0	60-120	0	30	

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
C Source Sample: CQA0479-08														
richlorofluoromethane	7010579	<0.15	20.0	ug/L	N/A	N/A	14.8	15.0	74	75	60-125	1	20	
2,3-Trichloropropane	7010579	<0.18	20.0	ug/L	N/A	N/A	19.1	18.6	96	93	70-125	3	20	
2,4-Trimethylbenzene	7010579	<0.16	20.0	ug/L	N/A	N/A	16.3	16.4	82	82	35-130	1	35	
3,5-Trimethylbenzene	7010579	<0.14	20.0	ug/L	N/A	N/A	16.4	16.3	82	82	40-135	1	30	
inyl chloride	7010579	0.620	20.0	ug/L	N/A	N/A	15.1	15.8	72	76	55-130	5	20	
ylenes, total	7010579	<0.17	60.0	ug/L	N/A	N/A	51.5	49.3	86	82	50-135	4	35	
urrogate: Dibromofluoromethane	*7010579*			ug/L					*97*	*98*	*85-120*			
urrogate: Toluene-d8	*7010579*			ug/L					*97*	*94*	*85-110*			
urrogate: 4-Bromofluorobenzene	*7010579*			ug/L					*95*	*94*	*75-115*			
C Source Sample: CQA0599-01														
cetone	7010618	<4.62	20.0	ug/L	N/A	N/A	22.6	21.7	113	108	50-145	4	35	
crylonitrile	7010618	<1.28	20.0	ug/L	N/A	N/A	23.2	23.6	116	118	50-145	2	35	
enzene	7010618	<0.16	20.0	ug/L	N/A	N/A	18.8	19.3	94	96	70-125	3	15	
romobenzene	7010618	<0.17	20.0	ug/L	N/A	N/A	19.7	19.2	98	96	75-120	3	15	
romochloromethane	7010618	<0.31	20.0	ug/L	N/A	N/A	18.4	18.3	92	92	70-140	1	20	
romodichloromethane	7010618	<0.12	20.0	ug/L	N/A	N/A	17.9	18.3	90	92	70-120	2	20	
romoform	7010618	<0.15	20.0	ug/L	N/A	N/A	20.6	20.9	103	104	50-120	1	20	
romomethane	7010618	<0.48	20.0	ug/L	N/A	N/A	16.1	15.7	80	78	40-135	3	30	
-Butanone (MEK)	7010618	<0.91	20.0	ug/L	N/A	N/A	22.8	22.0	114	110	50-145	4	35	
-Butylbenzene	7010618	<0.090	20.0	ug/L	N/A	N/A	19.3	19.0	96	95	55-130	2	20	
ec-Butylbenzene	7010618	<0.12	20.0	ug/L	N/A	N/A	19.4	18.9	97	94	65-125	3	20	
ert-Butylbenzene	7010618	<0.14	20.0	ug/L	N/A	N/A	19.2	18.8	96	94	55-135	2	20	
arbon disulfide	7010618	<0.14	20.0	ug/L	N/A	N/A	16.5	16.7	82	84	45-125	1	25	
arbon Tetrachloride	7010618	<0.13	20.0	ug/L	N/A	N/A	18.4	18.6	92	93	60-115	1	20	
hlorobenzene	7010618	<0.080	20.0	ug/L	N/A	N/A	20.0	19.4	100	97	70-115	3	15	
hlorodibromomethane	7010618	<0.25	20.0	ug/L	N/A	N/A	17.9	18.1	90	90	55-125	1	20	
hloroethane	7010618	<0.50	20.0	ug/L	N/A	N/A	18.5	19.8	92	99	60-140	7	20	
hloroform	7010618	0.220	20.0	ug/L	N/A	N/A	18.0	17.8	89	88	65-125	1	20	
hloromethane	7010618	<0.20	20.0	ug/L	N/A	N/A	16.2	15.9	81	80	30-125	2	35	
-Chlorotoluene	7010618	<0.20	20.0	ug/L	N/A	N/A	21.0	17.6	105	88	65-125	18	25	
-Chlorotoluene	7010618	<0.15	20.0	ug/L	N/A	N/A	19.1	19.0	96	95	65-130	1	20	
,2-Dibromo-3-chloropropane	7010618	<0.75	20.0	ug/L	N/A	N/A	22.8	24.3	114	122	45-140	6	35	
,2-Dibromoethane (EDB)	7010618	<0.13	20.0	ug/L	N/A	N/A	21.3	20.5	106	102	70-130	4	15	
ibromomethane	7010618	<0.22	20.0	ug/L	N/A	N/A	23.1	22.1	116	110	75-130	4	25	
,2-Dichlorobenzene	7010618	<0.15	20.0	ug/L	N/A	N/A	20.2	20.7	101	104	75-120	2	20	
,3-Dichlorobenzene	7010618	<0.13	20.0	ug/L	N/A	N/A	19.8	19.2	99	96	70-120	3	20	
,4-Dichlorobenzene	7010618	<0.12	20.0	ug/L	N/A	N/A	19.2	19.6	96	98	65-125	2	20	
ichlorodifluoromethane	7010618	<0.17	20.0	ug/L	N/A	N/A	17.0	17.0	85	85	40-130	0	20	
,1-Dichloroethane	7010618	<0.090	20.0	ug/L	N/A	N/A	16.8	17.0	84	85	55-135	1	20	
,2-Dichloroethane	7010618	<0.16	20.0	ug/L	N/A	N/A	19.3	18.8	96	94	60-140	3	30	
,1-Dichloroethene	7010618	<0.19	20.0	ug/L	N/A	N/A	18.6	19.1	93	96	55-130	3	20	
is-1,2-Dichloroethene	7010618	2.44	20.0	ug/L	N/A	N/A	20.9	21.6	92	96	65-135	3	20	
rans-1,2-Dichloroethene	7010618	0.420	20.0	ug/L	N/A	N/A	17.7	17.8	86	87	60-125	1	20	
,2-Dichloropropane	7010618	<0.40	20.0	ug/L	N/A	N/A	19.0	19.3	95	96	65-125	2	20	
,3-Dichloropropane	7010618	<0.19	20.0	ug/L	N/A	N/A	20.9	20.9	104	104	70-125	0	15	

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Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
QC Source Sample: CQA0599-01														
2,2-Dichloropropane	7010618	<0.24	20.0	ug/L	N/A	N/A	18.6	20.4	93	102	30-125	9	35	
1,1-Dichloropropene	7010618	<0.17	20.0	ug/L	N/A	N/A	18.2	17.8	91	89	55-130	2	20	
cis-1,3-Dichloropropene	7010618	<0.16	20.0	ug/L	N/A	N/A	18.5	18.9	92	94	55-115	2	20	
trans-1,3-Dichloropropene	7010618	<0.16	20.0	ug/L	N/A	N/A	18.7	18.6	94	93	40-120	1	20	
Ethylbenzene	7010618	<0.18	20.0	ug/L	N/A	N/A	19.3	18.6	96	93	65-125	4	15	
Hexachlorobutadiene	7010618	<0.39	20.0	ug/L	N/A	N/A	18.8	18.8	94	94	50-130	0	25	
Hexane	7010618	<0.44	20.0	ug/L	N/A	N/A	17.7	17.3	88	86	35-125	2	20	
Isopropylbenzene	7010618	<0.19	20.0	ug/L	N/A	N/A	19.6	18.5	98	92	60-130	6	20	
p-Isopropyltoluene	7010618	<0.13	20.0	ug/L	N/A	N/A	19.5	19.4	98	97	65-125	1	20	
Methylene Chloride	7010618	<0.45	20.0	ug/L	N/A	N/A	19.4	18.8	97	94	60-135	3	20	
Methyl tert-Butyl Ether	7010618	<0.12	20.0	ug/L	N/A	N/A	21.7	21.7	108	108	50-145	0	25	
Naphthalene	7010618	<0.35	20.0	ug/L	N/A	N/A	25.1	25.6	126	128	55-150	2	35	
n-Propylbenzene	7010618	<0.14	20.0	ug/L	N/A	N/A	19.0	19.5	95	98	50-130	3	30	
Styrene	7010618	<0.10	20.0	ug/L	N/A	N/A	19.1	18.3	96	92	30-125	4	30	
1,1,1,2-Tetrachloroethane	7010618	<0.16	20.0	ug/L	N/A	N/A	18.9	18.6	94	93	70-120	2	15	
1,1,2,2-Tetrachloroethane	7010618	<0.23	20.0	ug/L	N/A	N/A	22.8	21.8	114	109	65-135	4	20	
Tetrachloroethene	7010618	133	20.0	ug/L	N/A	N/A	136	131	15	-10	60-125	4	20	M1
Toluene	7010618	0.200	20.0	ug/L	N/A	N/A	19.4	18.4	96	91	60-130	5	15	
1,2,3-Trichlorobenzene	7010618	<2.15	20.0	ug/L	N/A	N/A	22.4	22.9	112	114	55-150	2	35	
1,2,4-Trichlorobenzene	7010618	<0.49	20.0	ug/L	N/A	N/A	20.6	21.4	103	107	60-130	4	30	
1,1,1-Trichloroethane	7010618	<0.15	20.0	ug/L	N/A	N/A	18.0	18.6	90	93	60-120	3	20	
1,1,2-Trichloroethane	7010618	<0.30	20.0	ug/L	N/A	N/A	20.4	21.0	102	105	70-125	3	20	
Trichloroethene	7010618	19.2	20.0	ug/L	N/A	N/A	36.4	36.1	86	84	60-120	1	30	
Trichlorofluoromethane	7010618	<0.15	20.0	ug/L	N/A	N/A	17.2	17.6	86	88	60-125	2	20	
1,2,3-Trichloropropane	7010618	<0.18	20.0	ug/L	N/A	N/A	21.0	20.3	105	102	70-125	3	20	
1,2,4-Trimethylbenzene	7010618	<0.16	20.0	ug/L	N/A	N/A	19.3	18.9	96	94	35-130	2	35	
1,3,5-Trimethylbenzene	7010618	<0.14	20.0	ug/L	N/A	N/A	19.2	18.3	96	92	40-135	5	30	
Vinyl chloride	7010618	<0.16	20.0	ug/L	N/A	N/A	18.3	17.4	92	87	55-130	5	20	
Xylenes, total	7010618	<0.17	60.0	ug/L	N/A	N/A	56.8	55.0	95	92	50-135	3	35	
Surrogate: Dibromofluoromethane	*7010618*			ug/L					*92*	*92*	*85-120*			
Surrogate: Toluene-d8	*7010618*			ug/L					*99*	*95*	*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010618*			ug/L					*99*	*95*	*75-115*			
QC Source Sample: CQA0649-01														
Acetone	7010738	<4.62	20.0	ug/L	N/A	N/A	20.8	23.2	104	116	50-145	11	35	
Acrylonitrile	7010738	<1.28	20.0	ug/L	N/A	N/A	20.7	21.7	104	108	50-145	5	35	
Benzene	7010738	<0.16	20.0	ug/L	N/A	N/A	18.9	18.6	94	93	70-125	2	15	
Bromobenzene	7010738	<0.17	20.0	ug/L	N/A	N/A	19.6	18.6	98	93	75-120	5	15	
Bromochloromethane	7010738	<0.31	20.0	ug/L	N/A	N/A	20.0	19.3	100	96	70-140	4	20	
Bromodichloromethane	7010738	<0.12	20.0	ug/L	N/A	N/A	19.0	18.8	95	94	70-120	1	20	
Bromoform	7010738	<0.15	20.0	ug/L	N/A	N/A	17.2	17.5	86	88	50-120	2	20	
Bromomethane	7010738	<0.48	20.0	ug/L	N/A	N/A	13.9	13.0	70	65	40-135	7	30	
2-Butanone (MEK)	7010738	<0.91	20.0	ug/L	N/A	N/A	23.7	19.2	118	96	50-145	21	35	
n-Butylbenzene	7010738	<0.090	20.0	ug/L	N/A	N/A	17.3	16.2	86	81	55-130	7	20	
sec-Butylbenzene	7010738	<0.12	20.0	ug/L	N/A	N/A	18.1	17.0	90	85	65-125	6	20	
tert-Butylbenzene	7010738	<0.14	20.0	ug/L	N/A	N/A	15.8	15.1	79	76	55-135	5	20	

TestAmerica
ANALYTICAL TESTING CORPORATION
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
olatile Organic Compounds														
C Source Sample: CQA0649-01														
arbon disulfide	7010738	<0.14	20.0	ug/L	N/A	N/A	16.4	16.6	82	83	45-125	1	25	
arbon Tetrachloride	7010738	<0.13	20.0	ug/L	N/A	N/A	16.1	15.9	80	80	60-115	1	20	
hlorobenzene	7010738	<0.080	20.0	ug/L	N/A	N/A	19.5	18.2	98	91	70-115	7	15	
hlorodibromomethane	7010738	<0.25	20.0	ug/L	N/A	N/A	17.6	17.0	88	85	55-125	3	20	
hloroethane	7010738	<0.50	20.0	ug/L	N/A	N/A	17.7	15.0	88	75	60-140	17	20	
hloroform	7010738	<0.080	20.0	ug/L	N/A	N/A	19.6	19.0	98	95	65-125	3	20	
hloromethane	7010738	<0.20	20.0	ug/L	N/A	N/A	11.7	10.2	58	51	30-125	14	35	
-Chlorotoluene	7010738	<0.20	20.0	ug/L	N/A	N/A	18.5	15.1	92	76	65-125	20	25	
-Chlorotoluene	7010738	<0.15	20.0	ug/L	N/A	N/A	18.3	16.3	92	82	65-130	12	20	
,2-Dibromo-3-chloropropane	7010738	0.860	20.0	ug/L	N/A	N/A	20.3	20.7	97	99	45-140	2	35	
,2-Dibromoethane (EDB)	7010738	<0.13	20.0	ug/L	N/A	N/A	20.7	19.6	104	98	70-130	5	15	
ibromomethane	7010738	<0.22	20.0	ug/L	N/A	N/A	19.5	22.3	98	112	75-130	13	25	
,2-Dichlorobenzene	7010738	<0.15	20.0	ug/L	N/A	N/A	20.8	18.6	104	93	75-120	11	20	
,3-Dichlorobenzene	7010738	<0.13	20.0	ug/L	N/A	N/A	19.0	17.7	95	88	70-120	7	20	
,4-Dichlorobenzene	7010738	<0.12	20.0	ug/L	N/A	N/A	19.3	18.9	96	94	65-125	2	20	
ichlorodifluoromethane	7010738	<0.17	20.0	ug/L	N/A	N/A	18.0	17.6	90	88	40-130	2	20	
,1-Dichloroethane	7010738	<0.090	20.0	ug/L	N/A	N/A	19.2	16.7	96	84	55-135	14	20	
,2-Dichloroethane	7010738	<0.16	20.0	ug/L	N/A	N/A	20.3	20.0	102	100	60-140	1	30	
,1-Dichloroethene	7010738	<0.19	20.0	ug/L	N/A	N/A	18.8	18.9	94	94	55-130	1	20	
is-1,2-Dichloroethene	7010738	0.270	20.0	ug/L	N/A	N/A	22.4	21.0	111	104	65-135	6	20	
ans-1,2-Dichloroethene	7010738	<0.15	20.0	ug/L	N/A	N/A	19.0	19.3	95	96	60-125	2	20	
,2-Dichloropropane	7010738	<0.40	20.0	ug/L	N/A	N/A	18.8	18.6	94	93	65-125	1	20	
,3-Dichloropropane	7010738	<0.19	20.0	ug/L	N/A	N/A	19.7	19.0	98	95	70-125	4	15	
,2-Dichloropropane	7010738	<0.24	20.0	ug/L	N/A	N/A	9.15	6.58	46	33	30-125	33	35	
,1-Dichloropropene	7010738	<0.17	20.0	ug/L	N/A	N/A	16.6	16.2	83	81	55-130	2	20	
is-1,3-Dichloropropene	7010738	<0.16	20.0	ug/L	N/A	N/A	13.7	13.4	68	67	55-115	2	20	
ans-1,3-Dichloropropene	7010738	<0.16	20.0	ug/L	N/A	N/A	10.6	10.2	53	51	40-120	4	20	
thylbenzene	7010738	<0.18	20.0	ug/L	N/A	N/A	16.7	16.4	84	82	65-125	2	15	
lexachlorobutadiene	7010738	0.420	20.0	ug/L	N/A	N/A	18.1	16.9	88	82	50-130	7	25	
lexane	7010738	<0.44	20.0	ug/L	N/A	N/A	18.4	16.7	92	84	35-125	10	20	
sopropylbenzene	7010738	<0.19	20.0	ug/L	N/A	N/A	17.9	16.8	90	84	60-130	6	20	
-Isopropyltoluene	7010738	<0.13	20.0	ug/L	N/A	N/A	17.9	17.1	90	86	65-125	5	20	
lethylene Chloride	7010738	<0.45	20.0	ug/L	N/A	N/A	24.4	23.1	122	116	60-135	5	20	
lethyl tert-Butyl Ether	7010738	<0.12	20.0	ug/L	N/A	N/A	23.0	22.0	115	110	50-145	4	25	
laphthalene	7010738	<0.35	20.0	ug/L	N/A	N/A	14.6	13.5	73	68	55-150	8	35	
-Propylbenzene	7010738	<0.14	20.0	ug/L	N/A	N/A	17.9	18.1	90	90	50-130	1	30	
tyrene	7010738	<0.10	20.0	ug/L	N/A	N/A	6.01	4.85	30	24	30-125	21	30	M1
,1,1,2-Tetrachloroethane	7010738	<0.16	20.0	ug/L	N/A	N/A	19.8	19.1	99	96	70-120	4	15	
,1,2,2-Tetrachloroethane	7010738	<0.23	20.0	ug/L	N/A	N/A	20.8	20.0	104	100	65-135	4	20	
etrachloroethene	7010738	<0.24	20.0	ug/L	N/A	N/A	18.0	17.3	90	86	60-125	4	20	
oluene	7010738	0.170	20.0	ug/L	N/A	N/A	18.1	17.1	90	85	60-130	6	15	
,2,3-Trichlorobenzene	7010738	<2.15	20.0	ug/L	N/A	N/A	21.3	20.7	106	104	55-150	3	35	
,2,4-Trichlorobenzene	7010738	<0.49	20.0	ug/L	N/A	N/A	19.7	18.2	98	91	60-130	8	30	
,1,1-Trichloroethane	7010738	<0.15	20.0	ug/L	N/A	N/A	16.2	15.5	81	78	60-120	4	20	
,1,2-Trichloroethane	7010738	<0.30	20.0	ug/L	N/A	N/A	19.6	19.3	98	96	70-125	2	20	

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds														
QC Source Sample: CQA0649-01														
Trichloroethene	7010738	0.420	20.0	ug/L	N/A	N/A	17.7	17.8	86	87	60-120	1	30	
Trichlorofluoromethane	7010738	<0.15	20.0	ug/L	N/A	N/A	18.0	17.5	90	88	60-125	3	20	
1,2,3-Trichloropropane	7010738	<0.18	20.0	ug/L	N/A	N/A	21.2	18.1	106	90	70-125	16	20	
1,2,4-Trimethylbenzene	7010738	<0.16	20.0	ug/L	N/A	N/A	9.23	8.17	46	41	35-130	12	35	
1,3,5-Trimethylbenzene	7010738	<0.14	20.0	ug/L	N/A	N/A	11.2	9.60	56	48	40-135	15	30	
Vinyl chloride	7010738	<0.16	20.0	ug/L	N/A	N/A	18.6	18.2	93	91	55-130	2	20	
Xylenes, total	7010738	<0.17	60.0	ug/L	N/A	N/A	47.3	43.4	79	72	50-135	9	35	
Surrogate: Dibromofluoromethane	*7010738*			ug/L					*103*	*101*	*85-120*			
Surrogate: Toluene-d8	*7010738*			ug/L					*99*	*98*	*85-110*			
Surrogate: 4-Bromofluorobenzene	*7010738*			ug/L					*101*	*96*	*75-115*			

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

OTHER

Analyte	Seq/ Batch	Source Result	Spike Level	Units	MDL	MRL	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Dissolved Metals by SW 846 Series Methods													
QC Source Sample: CQA0461-04													
Cadmium	7010583	0.000011C	0.0011 9	ug/mL	N/A	N/A	0.00102	85		75-120			
QC Source Sample: CQA0649-07													
Cadmium	7010583	1.90E-6	0.0011 9	ug/mL	N/A	N/A	0.00123	103		75-120			
QC Source Sample: CQA0461-01													
Lead	7010604	<0.0040	0.0250	mg/L	N/A	0.00400	0.0210	84		75-125			
QC Source Sample: CQA0461-04													
Arsenic	7010619	0.000807	0.0250	mg/L	N/A	0.00100	0.0242	94		75-125			
QC Source Sample: CQA0461-04													
Selenium	7010631	-0.000647	0.0227	ug/mL	N/A	N/A	0.0184	84		75-125			

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Julie Oriano

Work Order: CQA0461
Project: South Main Brownfields - Council Bluffs, IA
Project Number: 728500J - Cluster #1

Received: 01/10/07
Reported: 01/22/07 11:40

CERTIFICATION SUMMARY

TestAmerica - Cedar Falls, IA

Method	Matrix	Nelac	Iowa
OA-2 - 8015B	Water - NonPotable		
OA-2	Water - NonPotable		X
SM2540C	Water - NonPotable	X	X
SW 6010B	Water - NonPotable	X	X
SW 7060A	Water - NonPotable	X	X
SW 7131A	Water - NonPotable	X	X
SW 7421	Water - NonPotable	X	X
SW 7470A	Water - NonPotable	X	X
SW 7740	Water - NonPotable	X	X
SW 8260B	Water - NonPotable	X	X
SW 8270C	Water - NonPotable	X	X
SW	Water - NonPotable		

Any abnormalities or departures from sample acceptance policy shall be documented on the 'Sample Receipt and Termperature Log Form' and 'Sample Non-conformance Form' (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

DATA QUALIFIERS AND DEFINITIONS

A-01	ICV recovery was below laboratory control limits
CIN	The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria specified in EPA methods 8260B/8270C.
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
FM	Elevated detection limits due to sample foaming
ICV	ICV recovery was above control limits. Analyte not detected, data not impacted.
J	Analyte detected at a level less than the Reporting Limit(RL) and greater than or equal to the Method Detection Limit(MDL). Concentrations within this range are estimated
L	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the control limits. Analyte not detected, data not impacted.
L1	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was outside control limits
M1	The MS and/or MSD were outside control limits.
R	Sample duplicate RPD exceeded the laboratory control limit
ZX	Due to sample matrix effects, the surrogate recovery was outside the control limits

ADDITIONAL COMMENTS

TestAmerica ANALYTICAL TESTING CORPORATION

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone 319-277-2401 or 800-750-2401
Fax 319-277-2425

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?
Compliance Monitoring _____

Client Name: HOWARD R. GREEN CO. Client #: _____
Address: 9710 EARHART LANE SW
City/State/Zip Code: CEDAR RAPIDS IA 52409
Project Manager: C. QUAST
Telephone Number: 319 841 4000 Fax: _____
Sampler Name: (Print Name) JULIE ORIANO
Sampler Signature: J Oriano
Email Address: JORIANO@HRGREEN.COM

Project Name: CLUSTER #1 - SOUTH MAIN BROWNFIELD
Project #: 128500.J
Site/Location ID: COUNCIL BLUFFS State: IA
Report To: J. ORIANO
Invoice To: J. ORIANO
Quote #: _____ PO#: _____

TAT
___ Standard
___ Rush (surcharges may apply)
Date Needed: _____
Fax Results: Y N
Email Results: Y N

QC Deliverables
___ None
___ Level 2 (Batch QC)
___ Level 3
___ Level 4
Other: _____

SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix: SL - Sludge, DW - Drinking Water, GW - Groundwater, S - Soil/Solid, WW - Wastewater, Specify Other	Preservation & # of Containers: HNO_3 - Filtered	HCl	NaOH	H_2SO_4	Methanol	None - Amber	Other (Specify) none-plastic	Analyze For: VOCs - 8260B	SVOCs - 8270C	RCRA Metals - Diss	T.E.H. - GRO	TDS - 160.1	REMARKS
MW1	1/9/07	[illegible]		Y	GW	1	3				2	1	X	X	X	X	X	
MW2	1/9/07	7:30		Y	GW		3				2	1	X	X		X	X	
MW3	1/9/07	1500		Y	GW	1	3				2	1	X	X	X	X	X	
MW4	1/9/07	15:30		Y	GW	1	3				2	1	X	X	X	X	X	
TB	-	-		-	-		3						X					
EQUIPMENT BLANK	1/9/07	1245		Y	DW	1	3				2		X	X	X	X		
FD-1	-	-		Y	GW	1	3				2	1	X	X	X	X	X	

Special Instructions:

LABORATORY COMMENTS:

Relinquished By:	Date: 1/9/07	Time: 5:00 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 1/10/07	Time: [illegible]

Page _____ of _____

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ANALYTICAL TESTING CORPORATION 704 ENTERPRISE DRIVE • CEDAR FALLS, IA 50613 • 800-750-2401 • 319-277-2425 FAX

Sample Receipt and Temperature Log Form

Client: Howard R Green Project: Cluster #1

City: _____

Date: 1/10/07 Receiver's Initials: MR Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable) NKA 24

8 °C / On Ice

☐ Temp Blank

☐ Temperature out of compliance

Thermometer:

☐ IR - 905085 "A"
☑ IR - 809065 "B"
☐ IR - 61854108
☐ 22126775

Courier:

☑ UPS ☐ TA Courier
☐ FedEx ☐ TA Field Services
☐ DHL ☐ Client
☐ US Postal Service ☐ Other
☐ Spee-Dee

Custody seals present?
☑ Yes

Custody seals intact?
☑ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.
☐ Samples(s) received same day of sampling.
☐ Evidence of a chilling process
☐ Temperature not taken:

_____

*Refer to SOP CF01-01 for Temperature Criteria

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Sample Receipt and Temperature Log Form

Client: Howard R Green Project: Cluster #1

City: _____

Date: 1/10/10 Receiver's Initials: MR Time (Delivered): 8:50

Temperature Record:

Cooler ID# (If Applicable) BOF-31

1 °C / On Ice

☐ Temp Blank

☐ Temperature out of compliance

Thermometer:

☐ IR - 905085 "A"

☑ IR - 809065 "B"

☐ IR - 61854108

☐ 22126775

Courier:

☑ UPS ☐ TA Courier

☐ FedEx ☐ TA Field Service

☐ DHL ☐ Client

☐ US Postal Service ☐ Other

☐ Spee-Dee _____

Custody seals present?

☑ Yes

Custody seals intact?

☑ Yes ☐ No

☐ Non-Conformance report started

Exceptions Noted

☐ Sample(s) not received in a cooler.

☐ Samples(s) received same day of sampling.

☐ Evidence of a chilling process

☐ Temperature not taken:

_____

*Refer to SOP CF01-01 for Temperature Criteria

APPENDIX D

Soil Boring Logs/
Monitor Well Construction Details

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number:	Facility:	Facility Street Address:
BH1/MW1	Council Bluffs Cluster #1	Council Bluffs South Main Brownfields
Boring Depth (ft) X Diameter (in): 19' x 8.25"		Drilling Method: HSA
Well contractor Name: Robinson Contracting		Logged By:
Registration Number: # 4782		J. Oriano

Ground Surface Elevation (ASL): 984.67	Top of Casing Elevation (ASL): 983.95	
Date: 1/8/2007 Start Time: 12:45pm / Date: 1/8/2007 End Time: 2:45pm	UST Number: NA	LUST Number: NA

Depth (feet)	Well Construction Details	Blow Count	Sample No.	Sample Type	PID/FID Reading	USCS Class.	Soil Classification
0	Well casing-2" Dia. Sched 40 PVC	N/A					Overlay Material - Grass
1						ML	Silt, clayey, brown, moist, soft
2			*	SS	0.5		
3	bentonite						
4					0.3		
5							
6					0.8		
7	riser						
8					1.2	ML	Silt, clayey, brown, wet at 8', soft
9						CL	Clay, dark brown to black, very tight, hard
10					1		
11							
12					1.6		
13					1.3		
14	sand V						
15					0		
16					0		
17	screen						
18					0		Soft, wet
19					0		
20							T.D. = 19'
21							10' Screen, 9' Riser
22							
23							
24							
25							

* SS (Split Spoon) HSA (Hollow Stem Auger)

Observations	Date:	1/9/07				
Water Levels (ASL)	Level:	969.84				
Static Water Level v	Time:	1:00 pm				

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number: BH2/MW2	Facility: Council Bluffs Cluster #1	Facility Street Address: Council Bluffs South Main Brownfields
Boring Depth (ft) X Diameter (in): 19' x 8.25"		Drilling Method: HSA
Well contractor Name: Robinson Contracting		Logged By: J. Oriano
Registration Number: # 4782		
Ground Surface Elevation (ASL): 984.12		Top of Casing Elevation (ASL): 983.40
Date: 1/8/2007 Start Time: 2:45pm	Date: 1/8/2007 End Time: 5:00pm	UST Number: NA / LUST Number: NA

Depth (feet)	Well Construction Details	Blow Count	Sample No.	Sample Type	PID/FID Reading	USCS Class.	Soil Classification
0	Well casing-2" Dia. Sched 40 PVC	N/A					Overlay Material - Grass
1					1.3	CL	Silty clay, brown, rubble
2			*	SS	15.4	ML	Clayey silt, black, odor, dry, rubble
3	bentonite				18.7		Fill material, sand, black and brown clay, bricks, metal,
4					20.3	CL	Silty clay, light brown to blakc, moist, soft
5					6.4		
6						CL	Clay, dark gray, tight, very hard
7	riser				8.8		
8							
9					8.1		
10							
11					12.9		
12							
13					14.6		iron staining
14	sand V						
15			*	SS	35.3	ML	Silt, gray, wet, iron staining
16					20.4		
17	screen						
18					16.1		
19					17.2		
20							T.D. = 19'
21							10' Screen, 9' Riser
22							
23							
24							
25							

* SS (Split Spoon) HSA (Hollow Stem Auger)

Observations	Date:	1/9/07				
Water Levels (ASL)	Level:	968.70				
Static Water Level v	Time:	1:30 pm				

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number:	Facility:	Facility Street Address:
BH3/MW3	Council Bluffs Cluster #1	Council Bluffs South Main Brownfields
Boring Depth (ft) X Diameter (in):	19' x 8.25"	Drilling Method: HSA
Well contractor Name: Robinson Contracting		Logged By:
Registration Number: # 4782		J. Oriano

Ground Surface Elevation (ASL): 984.03		Top of Casing Elevation (ASL): 983.34	
Date: 1/10/2007	Date: 1/10/2007	UST	LUST
Start Time: 9:10am	End Time: 11:15am	Number: NA	Number: NA

Depth (feet)	Well Construction Details	Blow Count	Sample No.	Sample Type	PID/FID Reading	USCS Class.	Soil Classification
0	Well casing-2" Dia. Sched 40 PVC	N/A					Overlay Material - Grass
1					0		Clay fill
2					0	SW	Sand, brown, fine grained, dry, well sorted,
3	bentonite						poor recovery
4					0		
5							
6					0		
7	riser						
8					0		
9							
10					0.6	CL	Clay, dark gray, hard, tight, dry
11							
12					0.8		
13							
14	sand V				37.3		Iron staining
15			*	SS	45.1	ML	Silt, clayey, soft, gray, wet, fat, odor
16					42.8		
17	screen						
18					36		
19					36.1		
20							T.D. = 19'
21							10' Screen, 9' Riser
22							
23							
24							
25							

* SS (Split Spoon) HSA (Hollow Stem Auger)

Observations	Date:	1/10/07				
Water Levels (ASL)	Level:	968.43				
Static Water Level v	Time:	3:00 pm				

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number: BH4/MW4	Facility: Council Bluffs Cluster #1	Facility Street Address: Council Bluffs South Main Brownfields
Boring Depth (ft) X Diameter (in): 19' x 8.25"		Drilling Method: HSA
Well contractor Name: Robinson Contracting		Logged By: J. Oriano
Registration Number: # 4782		
Ground Surface Elevation (ASL): 984.19	Top of Casing Elevation (ASL): 983.44	
Date: 1/10/2007 Start Time: 11:15am	Date: 1/10/2007 End Time: 12:45pm	UST Number: NA / LUST Number: NA

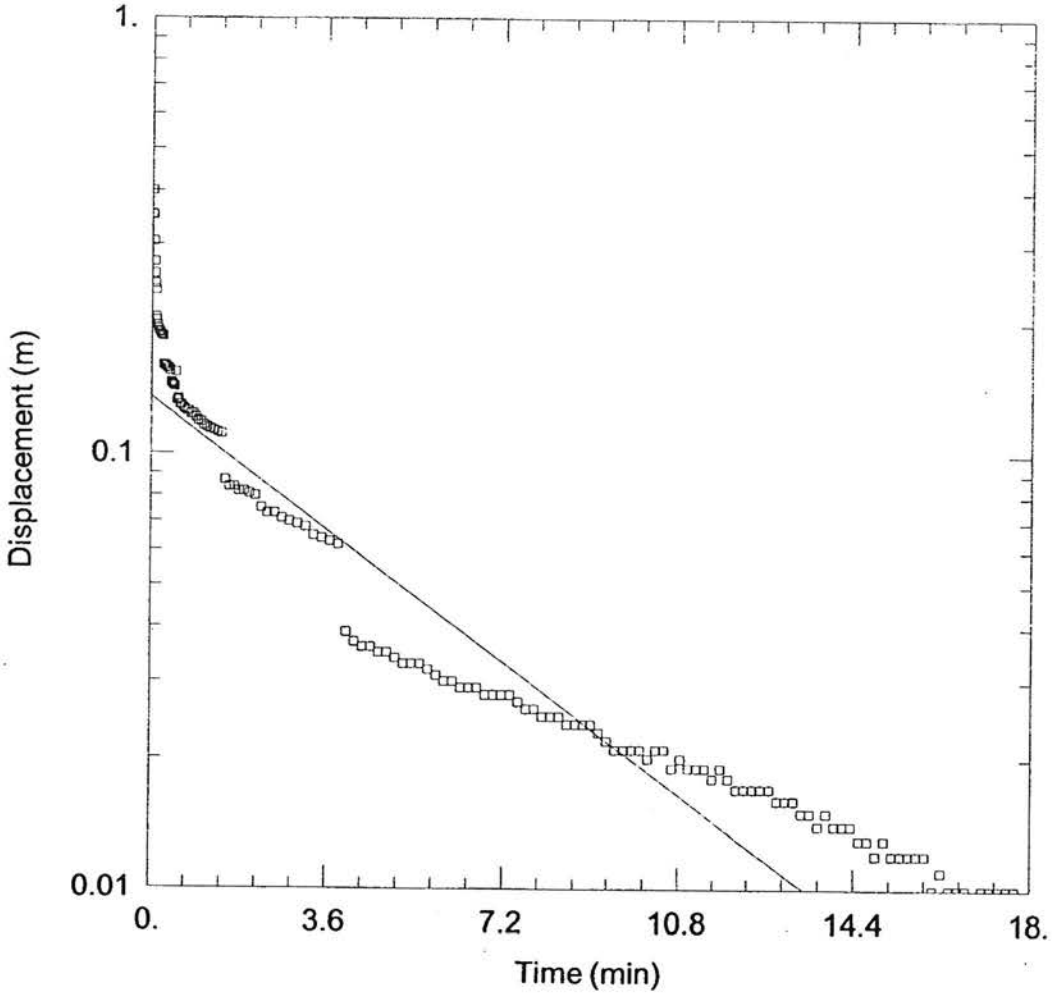
Depth (feet)	Well Construction Details	Blow Count	Sample No.	Sample Type	PID/FID Reading	USCS Class.	Soil Classification
0	Well casing-2" Dia. Sched 40 PVC	N/A					Overlay Material - Grass/gravel
1					0	CL	Clay, gravel, brick, wet
2			*	SS	0		
3	bentonite						
4					0	ML	Silt, medium brown, wet, soft
5							
6					0		
7	riser					CL	Clay, dark brownt black, dry, hard,
8					0		
9							
10					0		
11							
12	V				0		
13							
14	sand		*	SS	0		
15						ML	wet
16					0		
17	screen						
18					0		
19							
20							T.D. = 19'
21							10' Screen, 9' Riser
22							
23							
24							
25							

* SS (Split Spoon) HSA (Hollow Stem Auger)

Observations	Date:	1/10/07				
Water Levels (ASL)	Level:	970.39				
Static Water Level v	Time:	3:20 pm				

APPENDIX E

Hydraulic Conductivity



CLUSTER 1 MW1

Data Set: C:\...\councilbluffscluster1mw1.aqt
Date: 01/25/07 Time: 15:18:35

PROJECT INFORMATION

Company: Howard R. Green
Client: Council Blufs
Project: Cluster #1
Location: Council Bluffs
Test Well: MW1
Test Date: 1/9/07

AQUIFER DATA

Saturated Thickness: 2.981 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW1)

Initial Displacement: 0.4 m
Total Well Penetration Depth: 1.49 m
Casing Radius: 0.025 m
Static Water Column Height: 1.49 m
Screen Length: 1.49 m
Wellbore Radius: 0.104 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.09643 m/day y0 = 0.1345 m

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\councilbluffscluster1mw1.aqt
Title: Cluster 1 MW1
Date: 01/25/07
Time: 15:18:28

PROJECT INFORMATION

Company: Howard R. Green
Client: Council Blufs
Project: Cluster #1
Location: Council Bluffs
Test Date: 1/9/07
Test Well: MW1

AQUIFER DATA

Saturated Thickness: 2.981 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: : MW1

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.4 m
Static Water Column Height: 1.49 m
Casing Radius: 0.025 m
Wellbore Radius: 0.104 m
Well Skin Radius: 0.104 m
Screen Length: 1.49 m
Total Well Penetration Depth: 1.49 m

No. of Observations: 187

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.	0.	7.346	0.028
0.011	0.352	7.513	0.027
0.022	0.4	7.679	0.026
0.033	0.35	7.846	0.026
0.044	0.305	8.013	0.025
0.055	0.274	8.179	0.025
0.066	0.257	8.346	0.025
0.077	0.244	8.513	0.024
0.088	0.236	8.679	0.024
0.099	0.204	8.846	0.024
0.11	0.201	9.013	0.024
0.121	0.195	9.179	0.023
0.132	0.193	9.346	0.022
0.143	0.192	9.513	0.021
0.154	0.19	9.679	0.021
0.165	0.19	9.846	0.021
0.176	0.189	10.01	0.021
0.187	0.188	10.18	0.02
0.198	0.187	10.35	0.021
0.209	0.186	10.51	0.021
0.22	0.186	10.68	0.019
0.231	0.186	10.85	0.02
0.2427	0.185	11.01	0.019
0.2552	0.159	11.18	0.019
0.2683	0.159	11.35	0.019
0.2823	0.158	11.51	0.018

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.2972	0.158	11.68	0.019
0.3128	0.157	11.85	0.018
0.3295	0.156	12.01	0.017
0.3472	0.156	12.18	0.017
0.3658	0.156	12.35	0.017
0.3857	0.154	12.51	0.017
0.4067	0.145	12.68	0.017
0.4288	0.144	12.85	0.016
0.4523	0.143	13.01	0.016
0.4772	0.142	13.18	0.016
0.5035	0.153	13.35	0.015
0.5315	0.132	13.51	0.015
0.5612	0.133	13.68	0.014
0.5925	0.129	13.85	0.015
0.6257	0.129	14.01	0.014
0.6608	0.127	14.18	0.014
0.6982	0.126	14.35	0.014
0.7377	0.125	14.51	0.013
0.7795	0.125	14.68	0.013
0.8238	0.123	14.85	0.012
0.8708	0.123	15.01	0.013
0.9207	0.121	15.18	0.012
0.9733	0.119	15.35	0.012
1.029	0.118	15.51	0.012
1.088	0.116	15.68	0.012
1.151	0.115	15.85	0.012
1.217	0.114	16.01	0.01
1.288	0.113	16.18	0.011
1.362	0.112	16.35	0.01
1.441	0.111	16.51	0.01
1.525	0.087	16.68	0.01
1.613	0.084	16.85	0.009
1.707	0.084	17.01	0.01
1.807	0.082	17.18	0.01
1.912	0.082	17.35	0.01
2.023	0.081	17.51	0.01
2.142	0.08	17.68	0.01
2.267	0.075	17.85	0.008
2.399	0.073	18.01	0.009
2.54	0.073	18.18	0.009
2.688	0.071	18.35	0.007
2.846	0.07	18.51	0.008
3.013	0.069	18.68	0.007
3.179	0.068	18.85	0.007
3.346	0.065	19.01	0.007
3.513	0.064	19.18	0.006
3.679	0.063	19.35	0.006
3.846	0.062	19.51	0.006
4.013	0.039	19.68	0.005
4.179	0.037	19.85	0.005
4.346	0.036	20.01	0.004
4.513	0.036	20.18	0.003
4.679	0.035	20.35	0.004
4.846	0.035	20.51	0.004
5.013	0.034	20.68	0.005
5.179	0.033	20.85	0.004
5.346	0.033	21.01	0.003
5.513	0.033	21.18	0.003
5.679	0.032	21.35	0.003
5.846	0.031	21.51	0.003
6.013	0.03	21.68	0.003
6.179	0.03	21.85	0.002
6.346	0.029	22.01	0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
6.513	0.029	22.18	0.003
6.679	0.029	22.35	0.003
6.846	0.028	22.51	0.002
7.013	0.028	22.68	0.002
7.179	0.028		

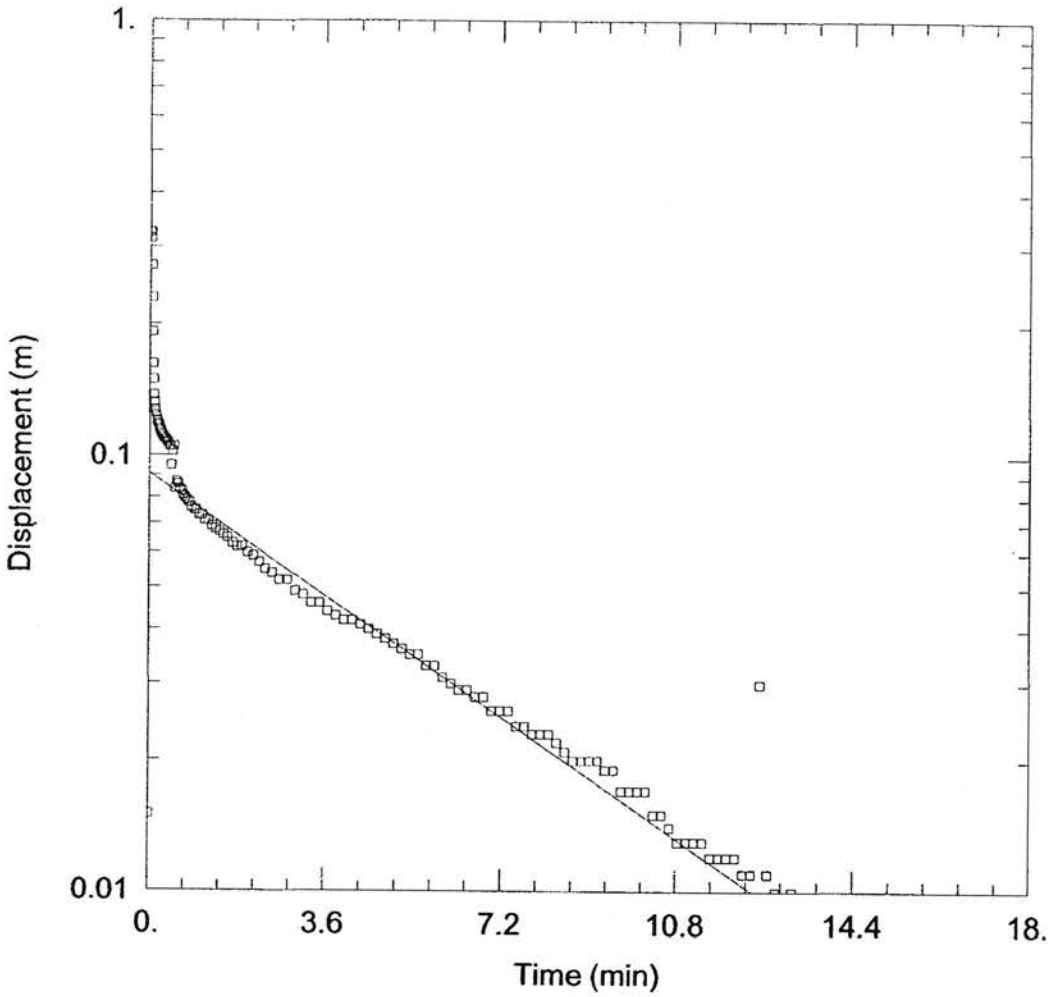
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
Shape Factor: 1.644

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.09643	m/day
y0	0.1345	m



CLUSTER 1 MW2

Data Set: C:\...\councilbluffscluster1mw2.aqt
Date: 01/25/07 Time: 15:17:03

PROJECT INFORMATION

Company: Howard R. Green
Client: Council Blufs
Project: Cluster #1
Location: Council Bluffs
Test Well: MW2
Test Date: 1/9/07

AQUIFER DATA

Saturated Thickness: 2.62 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW2)

Initial Displacement: 0.324 m
Total Well Penetration Depth: 1.31 m
Casing Radius: 0.025 m
Static Water Column Height: 1.31 m
Screen Length: 1.31 m
Wellbore Radius: 0.104 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.09476 m/day y0 = 0.09091 m

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\councilbluffscluster1mw2.aqt
Title: Cluster 1 MW2
Date: 01/25/07
Time: 15:17:12

PROJECT INFORMATION

Company: Howard R. Green
Client: Council Blufs
Project: Cluster #1
Location: Council Bluffs
Test Date: 1/9/07
Test Well: MW2

AQUIFER DATA

Saturated Thickness: 2.62 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: : MW2

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.324 m
Static Water Column Height: 1.31 m
Casing Radius: 0.025 m
Wellbore Radius: 0.104 m
Well Skin Radius: 0.104 m
Screen Length: 1.31 m
Total Well Penetration Depth: 1.31 m

No. of Observations: 168

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.	0.	5.679	0.033
0.011	0.015	5.846	0.033
0.022	0.314	6.013	0.031
0.033	0.324	6.179	0.03
0.044	0.272	6.346	0.029
0.055	0.23	6.513	0.029
0.066	0.192	6.679	0.028
0.077	0.162	6.846	0.028
0.088	0.149	7.013	0.026
0.099	0.137	7.179	0.026
0.11	0.132	7.346	0.026
0.121	0.127	7.513	0.024
0.132	0.125	7.679	0.024
0.143	0.123	7.846	0.023
0.154	0.12	8.013	0.023
0.165	0.119	8.179	0.023
0.176	0.118	8.346	0.022
0.187	0.117	8.513	0.021
0.198	0.116	8.679	0.02
0.209	0.115	8.846	0.02
0.22	0.114	9.013	0.02
0.231	0.113	9.179	0.02
0.2427	0.112	9.346	0.019
0.2552	0.111	9.513	0.019
0.2683	0.111	9.679	0.017
0.2823	0.11	9.846	0.017

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.2972	0.11	10.01	0.017
0.3128	0.109	10.18	0.017
0.3295	0.109	10.35	0.015
0.3472	0.108	10.51	0.015
0.3658	0.107	10.68	0.014
0.3857	0.107	10.85	0.013
0.4067	0.105	11.01	0.013
0.4288	0.105	11.18	0.013
0.4523	0.095	11.35	0.013
0.4772	0.102	11.51	0.012
0.5035	0.105	11.68	0.012
0.5315	0.084	11.85	0.012
0.5612	0.087	12.01	0.012
0.5925	0.086	12.18	0.011
0.6257	0.084	12.35	0.011
0.6608	0.083	12.51	0.03
0.6982	0.081	12.68	0.011
0.7377	0.08	12.85	0.01
0.7795	0.079	13.01	0.009
0.8238	0.078	13.18	0.01
0.8708	0.076	13.35	0.009
0.9207	0.075	13.51	0.009
0.9733	0.075	13.68	0.009
1.029	0.073	13.85	0.008
1.088	0.073	14.01	0.007
1.151	0.071	14.18	0.008
1.217	0.071	14.35	0.008
1.288	0.069	14.51	0.007
1.362	0.068	14.68	0.006
1.441	0.067	14.85	0.006
1.525	0.066	15.01	0.006
1.613	0.065	15.18	0.006
1.707	0.063	15.35	0.006
1.807	0.062	15.51	0.006
1.912	0.062	15.68	0.006
2.023	0.06	15.85	0.006
2.142	0.059	16.01	0.004
2.267	0.057	16.18	0.004
2.399	0.055	16.35	0.005
2.54	0.054	16.51	0.003
2.688	0.052	16.68	0.003
2.846	0.052	16.85	0.003
3.013	0.049	17.01	0.002
3.179	0.048	17.18	0.003
3.346	0.046	17.35	0.002
3.513	0.046	17.51	0.002
3.679	0.044	17.68	0.003
3.846	0.043	17.85	0.002
4.013	0.042	18.01	0.003
4.179	0.042	18.18	0.002
4.346	0.041	18.35	0.001
4.513	0.04	18.51	0.001
4.679	0.039	18.68	0.002
4.846	0.038	18.85	0.001
5.013	0.037	19.01	0.
5.179	0.036	19.18	0.
5.346	0.035	19.35	0.
5.513	0.035	19.51	0.

SOLUTION

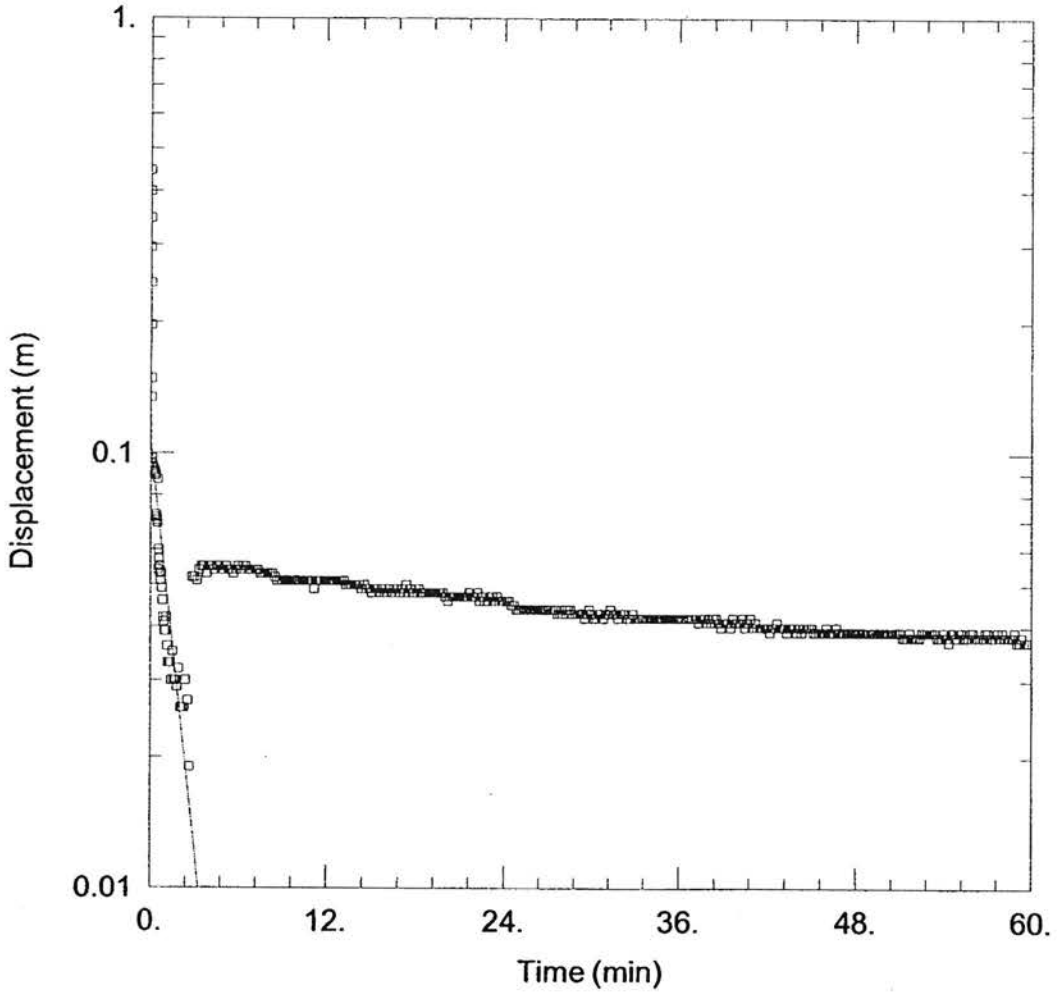
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

Shape Factor: 1.546

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.09476	m/day
y0	0.09091	m



CLUSTER 1 MW3

Data Set: C:\...\councilbluffscluster1mw3.aqt
Date: 01/25/07 Time: 15:22:27

PROJECT INFORMATION

Company: Howard R. Green
Client: Council Blufs
Project: Cluster #1
Location: Council Bluffs
Test Well: MW3
Test Date: 1/9/07

AQUIFER DATA

Saturated Thickness: 2.49 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW3)

Initial Displacement: 0.446 m
Total Well Penetration Depth: 1.246 m
Casing Radius: 0.025 m
Static Water Column Height: 1.246 m
Screen Length: 1.246 m
Wellbore Radius: 0.104 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K_z = 0.3882 m/day $y0$ = 0.1064 m

Data Set: C:\Program Files\HydroSOLVE\AQTESOLV for Windows Pro 3.5\councilbluffscluster1mw3.aqt
Title: Cluster 1 MW3
Date: 01/25/07
Time: 15:23:24

PROJECT INFORMATION

Company: Howard R. Green
Client: Council Blufs
Project: Cluster #1
Location: Council Bluffs
Test Date: 1/9/07
Test Well: MW3

AQUIFER DATA

Saturated Thickness: 2.49 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: : MW3

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.446 m
Static Water Column Height: 1.246 m
Casing Radius: 0.025 m
Wellbore Radius: 0.104 m
Well Skin Radius: 0.104 m
Screen Length: 1.246 m
Total Well Penetration Depth: 1.246 m

No. of Observations: 667

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.	0.	47.35	0.039
0.011	0.446	47.51	0.039
0.022	0.399	47.68	0.039
0.033	0.346	47.85	0.039
0.044	0.296	48.01	0.039
0.055	0.246	48.18	0.039
0.066	0.197	48.35	0.039
0.077	0.148	48.51	0.039
0.088	0.134	48.68	0.039
0.099	0.097	48.85	0.039
0.11	0.095	49.01	0.039
0.121	0.094	49.18	0.039
0.132	0.094	49.35	0.039
0.143	0.093	49.51	0.039
0.154	0.093	49.68	0.039
0.165	0.093	49.85	0.039
0.176	0.093	50.01	0.039
0.187	0.092	50.18	0.039
0.198	0.092	50.35	0.039
0.209	0.092	50.51	0.039
0.22	0.091	50.68	0.039
0.231	0.091	50.85	0.039
0.2427	0.091	51.01	0.039
0.2552	0.091	51.18	0.038
0.2683	0.091	51.35	0.038
0.2823	0.091	51.51	0.038

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.2972	0.091	51.68	0.039
0.3128	0.089	51.85	0.038
0.3295	0.09	52.01	0.038
0.3472	0.089	52.18	0.038
0.3658	0.089	52.35	0.038
0.3857	0.072	52.51	0.039
0.4067	0.071	52.68	0.039
0.4288	0.071	52.85	0.039
0.4523	0.07	53.01	0.039
0.4772	0.069	53.18	0.039
0.5035	0.087	53.35	0.039
0.5315	0.054	53.51	0.038
0.5612	0.06	53.68	0.038
0.5925	0.057	53.85	0.038
0.6257	0.055	54.01	0.039
0.6608	0.053	54.18	0.038
0.6982	0.051	54.35	0.037
0.7377	0.053	54.51	0.039
0.7795	0.049	54.68	0.039
0.8238	0.046	54.85	0.038
0.8708	0.042	55.01	0.039
0.9207	0.041	55.18	0.039
0.9733	0.039	55.35	0.038
1.029	0.039	55.51	0.038
1.088	0.042	55.68	0.038
1.151	0.036	55.85	0.039
1.217	0.033	56.01	0.039
1.288	0.033	56.18	0.038
1.362	0.033	56.35	0.038
1.441	0.03	56.51	0.038
1.525	0.035	56.68	0.038
1.613	0.03	56.85	0.039
1.707	0.03	57.01	0.039
1.807	0.029	57.18	0.038
1.912	0.032	57.35	0.038
2.023	0.026	57.51	0.038
2.142	0.026	57.68	0.039
2.267	0.026	57.85	0.038
2.399	0.03	58.01	0.039
2.54	0.027	58.18	0.038
2.688	0.019	58.35	0.038
2.846	0.052	58.51	0.038
3.013	0.052	58.68	0.038
3.179	0.051	58.85	0.039
3.346	0.054	59.01	0.037
3.513	0.055	59.18	0.037
3.679	0.055	59.35	0.038
3.846	0.053	59.51	0.037
4.013	0.055	59.68	0.037
4.179	0.055	59.85	0.037
4.346	0.054	60.01	0.037
4.513	0.055	60.18	0.037
4.679	0.055	60.35	0.037
4.846	0.054	60.51	0.038
5.013	0.054	60.68	0.038
5.179	0.055	60.85	0.038
5.346	0.054	61.01	0.038
5.513	0.054	61.18	0.037
5.679	0.053	61.35	0.037
5.846	0.054	61.51	0.037
6.013	0.055	61.68	0.037
6.179	0.054	61.85	0.038
6.346	0.055	62.01	0.037

Time (min)	Displacement (m)	Time (min)	Displacement (m)
6.513	0.055	62.18	0.037
6.679	0.054	62.35	0.037
6.846	0.054	62.51	0.038
7.013	0.054	62.68	0.037
7.179	0.054	62.85	0.037
7.346	0.054	63.01	0.037
7.513	0.053	63.18	0.038
7.679	0.053	63.35	0.037
7.846	0.053	63.51	0.037
8.013	0.053	63.68	0.037
8.179	0.053	63.85	0.037
8.346	0.053	64.01	0.038
8.513	0.052	64.18	0.038
8.679	0.051	64.35	0.037
8.846	0.051	64.51	0.038
9.013	0.051	64.68	0.037
9.179	0.051	64.85	0.037
9.346	0.051	65.01	0.037
9.513	0.051	65.18	0.037
9.679	0.051	65.35	0.037
9.846	0.051	65.51	0.038
10.01	0.051	65.68	0.038
10.18	0.051	65.85	0.038
10.35	0.051	66.01	0.037
10.51	0.051	66.18	0.037
10.68	0.051	66.35	0.037
10.85	0.051	66.51	0.037
11.01	0.051	66.68	0.037
11.18	0.049	66.85	0.037
11.35	0.051	67.01	0.037
11.51	0.051	67.18	0.037
11.68	0.051	67.35	0.037
11.85	0.051	67.51	0.037
12.01	0.051	67.68	0.037
12.18	0.051	67.85	0.037
12.35	0.051	68.01	0.037
12.51	0.051	68.18	0.037
12.68	0.051	68.35	0.037
12.85	0.051	68.51	0.037
13.01	0.051	68.68	0.037
13.18	0.051	68.85	0.037
13.35	0.05	69.01	0.037
13.51	0.05	69.18	0.037
13.68	0.05	69.35	0.037
13.85	0.05	69.51	0.037
14.01	0.05	69.68	0.037
14.18	0.05	69.85	0.037
14.35	0.049	70.01	0.037
14.51	0.05	70.18	0.036
14.68	0.049	70.35	0.037
14.85	0.049	70.51	0.037
15.01	0.048	70.68	0.037
15.18	0.049	70.85	0.037
15.35	0.049	71.01	0.037
15.51	0.048	71.18	0.037
15.68	0.049	71.35	0.037
15.85	0.048	71.51	0.037
16.01	0.048	71.68	0.037
16.18	0.049	71.85	0.037
16.35	0.048	72.01	0.037
16.51	0.049	72.18	0.037
16.68	0.049	72.35	0.037
16.85	0.048	72.51	0.037

Time (min)	Displacement (m)	Time (min)	Displacement (m)
17.01	0.049	72.68	0.037
17.18	0.048	72.85	0.037
17.35	0.05	73.01	0.037
17.51	0.048	73.18	0.037
17.68	0.049	73.35	0.037
17.85	0.048	73.51	0.037
18.01	0.049	73.68	0.037
18.18	0.049	73.85	0.036
18.35	0.048	74.01	0.036
18.51	0.048	74.18	0.037
18.68	0.048	74.35	0.036
18.85	0.048	74.51	0.037
19.01	0.048	74.68	0.036
19.18	0.048	74.85	0.036
19.35	0.048	75.01	0.036
19.51	0.048	75.18	0.037
19.68	0.048	75.35	0.036
19.85	0.048	75.51	0.036
20.01	0.047	75.68	0.037
20.18	0.046	75.85	0.037
20.35	0.047	76.01	0.037
20.51	0.047	76.18	0.037
20.68	0.047	76.35	0.037
20.85	0.047	76.51	0.037
21.01	0.047	76.68	0.036
21.18	0.047	76.85	0.037
21.35	0.047	77.01	0.037
21.51	0.047	77.18	0.036
21.68	0.048	77.35	0.036
21.85	0.047	77.51	0.037
22.01	0.047	77.68	0.037
22.18	0.048	77.85	0.037
22.35	0.046	78.01	0.037
22.51	0.047	78.18	0.036
22.68	0.046	78.35	0.037
22.85	0.046	78.51	0.036
23.01	0.047	78.68	0.037
23.18	0.047	78.85	0.037
23.35	0.046	79.01	0.037
23.51	0.047	79.18	0.036
23.68	0.046	79.35	0.036
23.85	0.046	79.51	0.036
24.01	0.046	79.68	0.036
24.18	0.046	79.85	0.036
24.35	0.046	80.01	0.036
24.51	0.045	80.18	0.035
24.68	0.045	80.35	0.036
24.85	0.044	80.51	0.036
25.01	0.044	80.68	0.035
25.18	0.044	80.85	0.036
25.35	0.044	81.01	0.036
25.51	0.044	81.18	0.036
25.68	0.044	81.35	0.037
25.85	0.044	81.51	0.036
26.01	0.044	81.68	0.037
26.18	0.044	81.85	0.036
26.35	0.044	82.01	0.036
26.51	0.044	82.18	0.037
26.68	0.044	82.35	0.037
26.85	0.044	82.51	0.036
27.01	0.044	82.68	0.036
27.18	0.044	82.85	0.037
27.35	0.044	83.01	0.036

Time (min)	Displacement (m)	Time (min)	Displacement (m)
27.51	0.044	83.18	0.036
27.68	0.043	83.35	0.037
27.85	0.043	83.51	0.036
28.01	0.043	83.68	0.035
28.18	0.044	83.85	0.036
28.35	0.044	84.01	0.036
28.51	0.044	84.18	0.035
28.68	0.043	84.35	0.035
28.85	0.043	84.51	0.035
29.01	0.043	84.68	0.036
29.18	0.043	84.85	0.035
29.35	0.043	85.01	0.035
29.51	0.042	85.18	0.035
29.68	0.043	85.35	0.035
29.85	0.044	85.51	0.035
30.01	0.043	85.68	0.035
30.18	0.042	85.85	0.035
30.35	0.042	86.01	0.036
30.51	0.043	86.18	0.035
30.68	0.043	86.35	0.035
30.85	0.042	86.51	0.035
31.01	0.043	86.68	0.036
31.18	0.043	86.85	0.036
31.35	0.044	87.01	0.036
31.51	0.043	87.18	0.035
31.68	0.043	87.35	0.036
31.85	0.042	87.51	0.036
32.01	0.043	87.68	0.035
32.18	0.043	87.85	0.037
32.35	0.043	88.01	0.036
32.51	0.042	88.18	0.035
32.68	0.042	88.35	0.035
32.85	0.043	88.51	0.036
33.01	0.042	88.68	0.036
33.18	0.042	88.85	0.036
33.35	0.042	89.01	0.035
33.51	0.042	89.18	0.035
33.68	0.042	89.35	0.036
33.85	0.042	89.51	0.035
34.01	0.042	89.68	0.035
34.18	0.042	89.85	0.035
34.35	0.042	90.01	0.035
34.51	0.042	90.18	0.036
34.68	0.042	90.35	0.035
34.85	0.042	90.51	0.035
35.01	0.042	90.68	0.035
35.18	0.042	90.85	0.035
35.35	0.042	91.01	0.035
35.51	0.042	91.18	0.035
35.68	0.042	91.35	0.036
35.85	0.042	91.51	0.035
36.01	0.042	91.68	0.035
36.18	0.042	91.85	0.035
36.35	0.042	92.01	0.035
36.51	0.042	92.18	0.035
36.68	0.042	92.35	0.035
36.85	0.042	92.51	0.035
37.01	0.042	92.68	0.035
37.18	0.042	92.85	0.035
37.35	0.041	93.01	0.035
37.51	0.042	93.18	0.036
37.68	0.042	93.35	0.036
37.85	0.041	93.51	0.036

Time (min)	Displacement (m)	Time (min)	Displacement (m)
38.01	0.042	93.68	0.036
38.18	0.041	93.85	0.035
38.35	0.042	94.01	0.035
38.51	0.042	94.18	0.035
38.68	0.041	94.35	0.035
38.85	0.04	94.51	0.035
39.01	0.041	94.68	0.035
39.18	0.041	94.85	0.035
39.35	0.041	95.01	0.035
39.51	0.04	95.18	0.035
39.68	0.042	95.35	0.035
39.85	0.041	95.51	0.035
40.01	0.041	95.68	0.035
40.18	0.041	95.85	0.034
40.35	0.042	96.01	0.035
40.51	0.04	96.18	0.035
40.68	0.041	96.35	0.035
40.85	0.042	96.51	0.035
41.01	0.04	96.68	0.035
41.18	0.041	96.85	0.035
41.35	0.04	97.01	0.035
41.51	0.04	97.18	0.035
41.68	0.04	97.35	0.035
41.85	0.04	97.51	0.035
42.01	0.04	97.68	0.035
42.18	0.039	97.85	0.035
42.35	0.04	98.01	0.036
42.51	0.04	98.18	0.035
42.68	0.041	98.35	0.035
42.85	0.04	98.51	0.036
43.01	0.04	98.68	0.035
43.18	0.04	98.85	0.035
43.35	0.039	99.01	0.035
43.51	0.04	99.18	0.035
43.68	0.04	99.35	0.035
43.85	0.04	99.51	0.035
44.01	0.039	99.68	0.035
44.18	0.04	99.85	0.034
44.35	0.039	100.	0.035
44.51	0.04	100.2	0.034
44.68	0.04	100.3	0.035
44.85	0.04	100.5	0.035
45.01	0.04	100.7	0.035
45.18	0.039	100.8	0.035
45.35	0.039	101.	0.035
45.51	0.039	101.2	0.035
45.68	0.039	101.3	0.035
45.85	0.039	101.5	0.035
46.01	0.04	101.7	0.035
46.18	0.039	101.8	0.035
46.35	0.039	102.	0.035
46.51	0.039	102.2	0.035
46.68	0.04	102.3	0.035
46.85	0.039	102.5	0.035
47.01	0.039	102.7	0.035
47.18	0.039		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
Shape Factor: 1.508

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.3882	m/day
y0	0.1064	m

APPENDIX F

Risk Calculations

For: Quast
CB--Cluster #1
Council Bluffs IA REC1-Range 1 Soil--Residential

Date: 2/1/2007

Cancer Risk Output

Chemical Name	CASRN	Resident Soil
Arsenic, Inorganic	007440-38-2	0
Lead and Compounds	007439-92-1	NQ
Chrysene	000218-01-9	0
TOTALS:		**0**

Cummulative Cancer Risk Site Resident: 0 (All cancer risk values are x 10^{-4})

Site Resident-Non Cancer Risk Output by target organ

Chemical Name	CASRN	Media	Heart	Liver	Blood	Kidney	Skin	Endoc	Eye	Immu	Nervo	GenUr	Respi	Other	Devel	Gastro
Arsenic, Inorganic	**007440-38-2**															
		Soil	0		0		0									0
Barium	**007440-39-3**															
		Soil	0.01			0.01										
Chromium VI (soil)	**018540-29-9**															
		Soil	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Lead and Compounds	**007439-92-1**															
		Soil	0.03		0.03	0.03					0.03	0.03				
Selenium	**007782-49-2**															
		Soil	0.03				0.03							0.03		
Acenaphthene	**000083-32-9**															
		Soil		0												

Chrysene	000218-01-9														
		Soil													
Pyrene	000129-00-0														
		Soil			0.01										
	Sum:	0.14	0.07	0.1	0.12	0.1	0.07	0.07	0.07	0.1	0.1	0.07	0.1	0.07	0.07

Interpretation of Results Summary[?]

Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.

NQ means not quantifiable due to lack of a cancer slope factor.

For: Quast
CB--Cluster #1
Council Bluffs IA REC1-Range 2 Soil--Residential

Date: 2/1/2007

Cancer Risk Output

Chemical Name	CASRN	Resident Soil
Arsenic, Inorganic	007440-38-2	0
Lead and Compounds	007439-92-1	NQ
Naphthalene	000091-20-3	NQ
TOTALS:		**0**

Cummulative Cancer Risk Site Resident: 0 (All cancer risk values are x 10^{-4})

Site Resident-Non Cancer Risk Output by target organ

Chemical Name	CASRN	Media	Heart	Liver	Blood	Kidney	Skin	Endoc	Eye	Immu	Nerve	GenUr	Resp	Other	Devel	Gastro
Arsenic, Inorganic	**007440-38-2**															
		Soil	0		0		0									0
Barium	**007440-39-3**															
		Soil	0.02			0.02										
Chromium VI (soil)	**018540-29-9**															
		Soil	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Lead and Compounds	**007439-92-1**															
		Soil	0.03		0.03	0.03					0.03	0.03				
Selenium	**007782-49-2**															
		Soil	0.04				0.04							0.04		
Methylnaphthalene, 2	**000091-57-6**															
		Soil	0										0			

Naphthalene	000091-20-3													
	Soil			0					0			0		
Ethylbenzene	000100-41-4													
	Soil		0		0									
Hexane, N-	000110-54-3													
	Soil								0	0				
Trimethylbenzene, 1,2,4-	000095-63-6													
	Soil											0.01		
Trimethylbenzene, 1,3,5-	000108-67-8													
	Soil											0		
Xylene, Mixture	001330-20-7													
	Soil								0			0		
	Sum:	0.17	0.08	0.11	0.13	0.12	0.08	0.08	0.08	0.11	0.11	0.08	0.13	0.08	0.08

Interpretation of Results Summary[7]

Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.

NQ means not quantifiable due to lack of a cancer slope factor.

For: Quast
CB--Cluster #1
Council Bluffs IA REC2-Range 2 Soil-Residential

Date: 2/1/2007

Cancer Risk Output

Chemical Name	CASRN	Resident Soil
TOTALS:		0

Cummulative Cancer Risk Site Resident: 0 (All cancer risk values are x 10^{-4})

Site Resident-Non Cancer Risk Output by target organ

Chemical Name	CASRN	Media	Heart	Liver	Blood	Kidney	Skin	Endoc	Eye	Immu	Nerve	GenUr	Respt	Other	Devel	Gastro
Toluene	000108-88-3															
		Soil		0		0				0	0	0			0	
Trimethylbenzene, 1,2,4-	000095-63-6															
		Soil												0		
Xylene, Mixture	001330-20-7															
		Soil									0			0		
		Sum:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Interpretation of Results Summary[?]

Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.

NQ means not quantifiable due to lack of a cancer slope factor.

For: Quast
CB--Cluster #1
Council Bluffs IA REC3-Range 2 Soil--Residential

Date: 2/1/2007

Cancer Risk Output

Chemical Name	CASRN	Resident Soil
Arsenic, Inorganic	007440-38-2	0
Lead and Compounds	007439-92-1	NQ
Naphthalene	000091-20-3	NQ
TOTALS:		**0**

Cummulative Cancer Risk Site Resident: 0 (All cancer risk values are x 10^{-4})

Site Resident-Non Cancer Risk Output by target organ

Chemical Name	CASRN	Media	Heart	Liver	Blood	Kidney	Skin	Endocr	Eye	Immu	Nervo	Genit	Respi	Other	Develo	Gastro
Arsenic, Inorganic	**007440-38-2**															
		Soil	0		0		0									0
Barium	**007440-39-3**															
		Soil	0.02			0.02										
Chromium VI (soil)	**018540-29-9**															
		Soil	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Lead and Compounds	**007439-92-1**															
		Soil	0.03		0.03	0.03					0.03	0.03				
Selenium	**007782-49-2**															
		Soil	0.04				0.04							0.04		
Methylnaphthalene, 2	**000091-57-6**															
		Soil	0										0			

Naphthalene	000091-20-3														
	Soil			0					0			0			
Ethylbenzene	000100-41-4														
	Soil		0		0										
Hexane, N-	000110-54-3														
	Soil								0	0					
Trimethylbenzene, 1,2,4-	000095-63-6														
	Soil											0.01			
Trimethylbenzene, 1,3,5-	000108-67-8														
	Soil											0			
Xylene, Mixture	001330-20-7														
	Soil								0			0			
	Sum:	0.17	0.08	0.11	0.13	0.12	0.08	0.08	0.08	0.11	0.11	0.08	0.13	0.08	0.08

Interpretation of Results Summary[?]

Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.

NQ means not quantifiable due to lack of a cancer slope factor.

Quast
CB--Cluster #1
Council Bluffs IA REC4--Range 1 Soil--Residential

Date: 2/1/2007

Cancer Risk Output

Chemical Name	CASRN	Resident soil
Arsenic, Inorganic	007440-38-2	0
Lead and Compounds	007439-92-1	NQ
Indeno[1,2,3-cd]pyrene	000193-39-5	0
TOTALS:		**0**

Cummulative Cancer Risk Site Resident: 0 (All cancer risk values are x 10^{-4})

Site Resident-Non Cancer Risk Output by target organ

Chemical Name	CASRN	Media	Heart	Liver	Blood	Kidney	Skin	Endocr	Eye	Immu	Nerv	Genit	Resp	Ortho	Devel	Gastro
Arsenic, Inorganic	**007440-38-2**															
		Soil	0		0		0									0
Barium	**007440-39-3**															
		Soil	0.02			0.02										
Chromium VI (soil)	**018540-29-9**															
		Soil	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Lead and Compounds	**007439-92-1**															
		Soil	0.3		0.3	0.3					0.3	0.3				
Mercury	**007439-97-6**															
		Soil				0					0			0		
Selenium	**007782-49-2**															
		Soil	0.03				0.03							0.03		

Fluoranthene	000206-44-0	Soil 0 0 0
Indeno[1,2,3-cd]pyrene	000193-39-5	Soil
Pyrene	000129-00-0	Soil 0
		Sum: 0.43 0.08 0.38 0.4 0.11 0.08 0.08 0.08 0.38 0.38 0.08 0.11 0.08 0.08

Interpretation of Results Summary[?]

Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.

NQ means not quantifiable due to lack of a cancer slope factor.