SPECIAL PROVISIONS
FOR
ASBESTOS ABATEMENT

Johnson County
HDP-3715(652)--71-52

Effective Date
April 19, 2016

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

156041.01 DESCRIPTION

Removal, transport, and disposal of asbestos containing materials for structures scheduled for demolition. Work shall be completed in accordance with Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) 61 Subparts A and M, National Emissions Standards for Hazardous Air Pollutants (NESHAP); applicable Office of Safety and Health Administration (OSHA) regulations under 29 CFR 1910 (general industry) and 1926 (construction); and all federal, state and local regulations as applicable. The work will be detailed in the contract documents.

156041.02 QUALIFICATIONS AND IDENTIFICATION OF WORK

A. Qualifications

1. The Abatement Contractor shall have an adequate number of qualified personnel available for the project. The work shall be performed by qualified, trained and Iowa-licensed asbestos abatement workers and and/or Iowa-licensed abatement contractor/supervisors, in accordance with Iowa 875, Chapter 155. One Iowa-licensed abatement contractor/supervisor shall be dedicated for the duration of the project.

2. The Contractor shall carry liability insurance for asbestos abatement work.

3. Contractors shall not have been cited or been a defending party of any legal action for violation of asbestos regulations during the last 3 years.

B. Identification of Work

1. The Contracting Authority will have inspected structures for the presence of asbestos. Accessible, suspect materials will have been sampled and tested. Terracon's Asbestos and Hazardous Materials Survey Report – Revised dated December 8, 2015 (72 pages) is included to this Special Provisions for Asbestos Abatement.

2. Access to the structures by prospective bidders will be allowed. Arrangements for access will be made by the Contracting Authority, on request.

3. The Contracting Authority assumes no responsibility for the condition of the existing buildings and structures.

4. Inspect the site(s) identified in the contract documents from which asbestos is to be removed prior to submittal of a bid.

5. The Contractor will furnish all labor, supervision, materials, services, insurance, equipment, lighting/power, necessary for the removal of asbestos-containing materials (ACM) and the other regulated/hazardous materials listed in the documents herein.

6 The Contractor acknowledges that they have investigated and satisfied themselves as to:

- The conditions affecting the work, including, but not limited to, physical conditions of the site which may bear upon site access, handling and storage of tools and materials, access to water, electric or other utilities or otherwise affect performance of required activities.

- The character and quantity of all surfaces and subsurface materials or obstacles to be encountered in so far as this information is reasonably ascertainable from an inspection of the site, exploratory work done by the Contracting Authority, or designated consultants and information presented herein.

- The environmental condition, including the presence, location, and condition of asbestos-containing materials (ACM) and other regulated/hazardous materials at the site. Any failure by the Contractor to acquaint themselves with available information will not relieve them from the responsibility for estimating properly the difficulty or cost of successfully performing the work.

7. Under no circumstances shall the Contractor rely on the material quantities indicated in this contract documents as the total basis for the bid price. All quantities indicated are approximate and intended to alert the Contractor to the general scope of the project. Scheduled quantities refer only to materials the Contractor may expect to encounter and are used to generate a lump-sum price from the Contractors. The Contractor is required to perform abatement from the areas indicated on the Survey Report Exhibits. No increase in contract cost will be considered due to the Contractor's failure to physically verify all quantities of the ACM specified for removal.

8. The Contracting Authority is not responsible for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Contracting Authority or their representatives.

9. Furnish, install, and maintain critical barriers, where required, during the contract period.

156041.03 SUBMITTALS AND CONTRACTOR DOCUMENTATION

A. Submittals

1. Prior to commencement of the work, the Contractor shall present, in writing, to the Engineer, the following:

- Copies of the Contractor's required permits, licenses, and insurance.
- Copies of abatement worker licenses, certificates, medical determination, and respirator fit testing documentation for each employee assigned to the project.
- A plan for preparation of the work site.
- Description of protective clothing and approved respirators to be used.
- Delineation of responsibility of work site supervision including a listing of emergency home telephone numbers.
- Explanation of regulated area containment and isolation techniques
- Brief description of removal methods to be used and equipment to be utilized.
- Description of the final clean-up procedures to be used.
- Explanation of the handling of ACM and asbestos-contaminated waste, and hazardous waste and the disposal site(s) to be utilized.
- Written negative exposure assessment for a similar project, if available.

2. In-progress abatement submittals:

- Laboratory results as indicated in Article 156041.05.

3. Submittals at completion of abatement:

- The Contractor shall submit a project report consisting (at a minimum) of the daily logbook and the documentation of events during abatement including Contractor's Request for Final Visual Inspection Forms, personal air monitoring data, and the disposal manifests signed by the operator of the licensed landfill or disposal facility.

B. Contractor Documentation

1. The Contractor shall have the following items available for review on the site:

- A copy of the Health and Safety Plan
- A copy of the Respiratory Protection Plan
- A copy of the Hazard Communication Program
- Standard Operating Procedures
- Glove-bag Instructions, if Glove-bags are to be utilized on the project.

156041.04 ABATEMENT

A. Notification

1. The Contractor shall send written notification, as required by EPA NESHAP asbestos regulations (40 CFR 61 Subpart M) and the IAC, to the Iowa Department of Natural Resources (IDNR) and the Iowa Division of Labor Services (IDLS) at least 10 working days prior to beginning work on abatement of asbestos-containing materials. In addition, obtain all necessary authorizations for the work. Provide copies of all notification and authorization information to the Engineer prior to starting work.

2. Specific reporting, authorization, and notification requirements may be specified in the contract documents.

B. Removal

1. Remove, transport, and dispose of all asbestos specified in the contract documents. Perform this work in compliance with current applicable local laws, rules, regulations, and ordinances and requirements of the U.S. EPA, OSHA, the Iowa DNR, and the Iowa Workforce Development.

2. Comply with current EPA, State, and Federal regulations. At all times, take necessary precautions and provide necessary equipment to all persons employed on the project. The Contractor is expected to be fully knowledgeable of these requirements.

3. Provide workers licensed and trained in asbestos abatement according to Iowa 875, Chapter 155. All Class I and II Work (as defined by OSHA), including installation and operation shall be supervised by a competent person as defined in 29 CFR 1926.1101.

4. The Contractor shall establish and demarcate regulated areas where Class I, Class II, and Class III asbestos work occur. In addition, this may include any other adjoining area where debris and waste from such asbestos work may accumulate. The Contractor shall provide warning signs at each approach to the regulated areas per OSHA requirements.

5. The Contractor shall be responsible for preparing the entire work area for asbestos removal. This includes preliminary work area preparation, work area isolation, and worker decontamination systems.

6. Use amended water for wetting of asbestos-containing materials (ACM) prior to removal.

7. The Contractor is responsible for providing all materials and equipment for worker decontamination. Although not required on Class II outdoor work, a personal decontamination facility (shower) outside the work area where persons will enter or exit the work area is recommended.

8. Salvage will not be permitted.

9. To the extent feasible, the asbestos material shall be removed in an intact state. Some of the asbestos may not be friable. It may be possible to remove and dispose of this material in a manner to maintain its non-friable condition.

C. Safety Rules

1. The Contractor is solely responsible for enforcement of the safety rules for employees and any person the Contractor authorizes for entry into the work area. The Engineer will have a right of entry to the work area, and they will comply with the Contractor's safety rules.

156041.05 MONITORING

A. General

1. Throughout abatement work, the Contractor shall perform monitoring, inspection, and testing inside the work area in accordance with OSHA requirements. The competent person shall periodically inspect and oversee the performance of the Contractor's workers. The competent person shall continuously inspect and monitor conditions inside the work area to ensure compliance with applicable regulations. In addition, the competent person shall personally manage air sample collection, analysis, and evaluation of personnel samples to satisfy OSHA requirements. The competent person is responsible for managing all personnel monitoring, inspecting, and testing required by these specifications, the OSHA regulation 29 CFR 1926.1101, and for continuous monitoring of all sub-systems and procedures affecting the safety of the Contractor's employees. Safety of the Contractor's employees and providing safe conditions inside and outside the work area shall be the primary concern of the competent person.

- Personal air samples shall be collected from the breathing zone of a minimum of 20% of the workers performing asbestos removal. Full shift, 8-hour time-weighted average (TWA) and 30-minute excursion samples shall be collected, daily.

- The sampling volume shall be 240 to 1,200 liters, with a flow rate of 0.5 to 2.5 liters per minute.

- Results of the OSHA personal air samples must be posted at the jobsite (typically, inside the clean room, if present) within 24 hours of sample collection.

B. Analytical Results

1. Analysis shall be completed in accordance with the NIOSH Manual of Analytical Methods, Method 7400 Asbestos Fibers by PCM, A counting rules

2. The analytical laboratory used by the Contractor to analyze the samples shall participate in the NIOSH asbestos proficiency analytical testing (PAT) rounds as administered by the AIHA® Laboratory Accreditation Programs, LLC under the Industrial Hygiene Laboratory Accreditation Program (IHLAP), at a minimum.

3. Keep a daily log of personal samples taken and analyzed and make such log available to the Engineer. The daily log for personnel shall contain:

- information on the person sampled,
- the date of sample collection,
- the time of sample start and finish,
- flow rate,
- sample volume,
- and results in f/cc.

4. Provide the Engineer with test results including the chain-of-custody for all air monitoring events within 24 hours after the sampling has been completed.

156041.06 CLEARANCE

A. General

1. Contractor shall notify Engineer in advance for the performance of the final visual clearance inspection. The final visual inspection will be performed by the Contracting Authority's representatives at the conclusion of the first cleaning.

2. Final inspection will include the entire work area, platforms, barges, or other equipment utilized during the removal process, the personnel decontamination facilities, if utilized, and all plastic sheeting. If any debris, residue on surfaces, dust, or other matter is detected, cleaning shall be repeated. Bulk/dust sampling or air sampling in accordance with NIOSH 7400 may be completed and analyzed to confirm visual findings. If significant quantities, as determined by the Contracting Authorities' Representative, are found, then the entire area affected shall be decontaminated as specified previously.

156041.07 DISPOSAL

A. Waste Removal

1. The Contractor is responsible for all waste removal and decontamination systems. In addition, the Contractor is responsible for keeping the material adequately wet during the entire operation from initial bagging through waste disposal.

2. All asbestos waste shall be stored, transported, and disposed of as per, but not limited to, the following regulations:

- All applicable federal, state, and local statutes.
- EPA Asbestos NESHAP 40 CFR 61.
- EPA Asbestos Waste Management Guidance EPA-530-SW-85-007.
- US DOT 49 CFR 171-180.
- Transporters or Haulers

3. The following general procedures apply:

- The Contractor shall place caution labels on the containers in accordance with OSHA regulation 29 CFR 1926.1101.

    - These caution labels shall be clearly visible and shall contain the following statements:

      DANGER
      CONTAINS ASBESTOS FIBERS
      MAY CAUSE CANCER
      CAUSES DAMAGE TO LUNGS
      DO NOT BREATHE DUST
      AVOID CREATING DUST

4. As required by US DOT, warning labels on bags or waste containers shall contain the following statements:

Asbestos NA2212
Generator's Name and Location,
and a Class 9 Label,

5. As required by EPA 40 CFR 61 NESHAP, each individual waste container shall be tagged with the name or EPA identification number of the waste generator and the location at which the waste was generated.

6. The Contractor's transporter and disposal site shall be approved by the Contracting Authority. It is requested that the Contractor utilize the Iowa City Landfill, when feasible.

B. Waste Containers and Transporters

1. Containers shall be placed at locations designated by the Contracting Authority or Engineer.

2. The asbestos waste hauling containers shall be plasticized and sealed with a minimum of one layer of 6-mil polyethylene on the sides and two layers of 6-mil polyethylene on the floors.

3. The Contractor shall have the transporter give the dates and times of arrival at the disposal site.

4. The transporter shall inspect all the transport containers with the Contractor prior to taking possession and signing the asbestos waste manifest. The transporter shall not have any off-site transfers or combine this asbestos waste with any other site's asbestos materials.

5. The waste transport container (truck, dumpster) must have the Class 9 placard with the asbestos ID number NA2212.

C. Waste Disposal Manifest

1. An asbestos waste manifest as provided for under NESHAP and/or individual states shall be provided by the Contractor and is the only manifest to be utilized.

2. The Contractor shall complete the manifest and verify that all information and amounts are accurate and that the proper signatures are in place.

3. The manifest shall have the signatures of the Contractor and the transporter prior to any waste being removed from the work site.

4. The manifest shall be signed by the disposal facility or operator to certify receipt of the asbestos-containing materials covered by the manifest.

5. An original copy of the completed manifest shall be returned to the Contracting Authority and their representatives by the Contractor within 30 days of removal from the site.

156041.08 METHOD OF MEASUREMENT

A. Measurement for the removal of asbestos will be on a Lump Sum basis.

156041.09 BASIS OF PAYMENT

A. Payment for Removal of Asbestos identified in the contract documents will be the lump sum contract price.

B. Payment is full compensation for:

- Removal of asbestos, transporting asbestos, and disposal of asbestos at an approved disposal site, and
- The cost of all labor, monitoring, materials, equipment, permits, disposal fees, and preparation of and filing reports, notifications, and records.

C. Adjustment of contract price for Removal of Asbestos which is identified in the contract documents will not be allowed should any buildings or structures from which asbestos is to be removed be altered or damaged by others during the period of time between inspection by bidders and asbestos removal.

D. Partial payments may be paid as the work progresses, as authorized by the Engineer.

E. Should asbestos be discovered, in addition to that identified in the contract documents, removal of the additional asbestos will be paid for as extra work according to Article 1109.03, B of the Standard Specifications.

Asbestos and Hazardous Materials Survey Report - Revised

Iowa City Gateway Project
North Dubuque Street, Park Road, and Park Road Bridge
Iowa City, Iowa

December 8, 2015
Terracon Project No.06157085

Prepared for:
The City of Iowa City
Engineering Division
Iowa City, Iowa

Prepared by:
Terracon Consultants, Inc.
Cedar Rapids, Iowa

50 YEARS FORWARD
1965 | 2015

December 8, 2015

Terracon

City of Iowa City
Engineering Division
410 East Washington Street
Iowa City, Iowa 52240

Attn: Ms. Melissa Clow, Special Projects Administrator
P: (319) 356-5413
E: Melissa-clow@iowa-city.org

Re: Asbestos and Hazardous Materials Survey Report - Revised
Iowa City Gateway Project
North Dubuque Street, Park Road, and Park Road Bridge
Iowa City, Iowa 52240
Terracon Project No.06157085

Dear Ms. Clow:

Terracon Consultants, Inc. (Terracon) is pleased to submit the attached revised survey report to the City of Iowa City, Iowa (the City) for the above referenced Iowa City Gateway Project. The purpose of this survey report is to present the results of an asbestos, painted surface coating, and hazardous/special materials survey performed on November 24, 2015. This survey was conducted in general accordance with the City's Consultant Agreement dated November 18, 2015 and Terracon's Proposal to Provide Environmental Consulting Services dated October 20, 2015. We understand that the project includes elevating North Dubuque Street between Foster Road at the north and Brown Street at the south. In addition, Park Road Bridge will be elevated and Park Road will be improved to North Riverside Drive.

Terracon appreciates the opportunity to provide this service to the City. If you have questions regarding this report, please contact Eric at 319-221-7321.

Sincerely,
Terracon Consultants, Inc.

Eric W. Harris
Project Manager

Cindy A. Baldwin, CIH, FAIHA
Senior Industrial Hygienist

EWH/CAB n:\projects\2015\06157085\project documents (reports-letters-drafts to clients)\survey report\revised 12.8.15\06157085.12815.coic.gateway project.asbestos.hazardous materials survey report.docx
Copies to: Addressee (2)

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Gateway Project
North Dubuque Street, Park Road, and Park Road Bridge
Iowa City, Iowa

Terracon Project No.06157085
December 8, 2015

1.0 INTRODUCTION

On November 24, 2015, Terracon Consultants, Inc. (Terracon) conducted an asbestos, painted surface coatings, and hazardous/special material survey (the survey) of the Gateway project. The Gateway project includes elevating North Dubuque Street between Foster Road at the north and Brown Street at the south. In addition, Park Road Bridge will be elevated and Park Road will be improved to North Riverside Drive. The survey was conducted by state of Iowa licensed asbestos inspectors in general accordance with Terracon's Proposal to Provide Environmental Consulting Services dated October 20, 2015 and the City of Iowa City's (City) Consultant Agreement dated November 18, 2015.

As part of the survey activities, accessible bridge and infrastructure components (including but not limited to vaults, manholes, access hatches, culverts, fencing, etc.) were inspected. Homogeneous areas of suspect asbestos-containing materials (ACM) were visually identified and documented. A painted surface coating survey was also completed on accessible painted materials that may be impacted as part of the project. The painted surface coating survey included the collection of paint chips from painted surfaces and submittal to an accredited laboratory for analysis of cadmium, chromium, and lead. A hazardous/special materials survey included an inspection of the project alignment, noting components and equipment that may contain regulated materials.

At the time of survey activities, the roadways along the alignment and Park Road Bridge were open and conveying traffic normally. Discharge at the Iowa River below Coralville Lake was 2,500 cubic feet per second at 08:00 central standard time on November 24, 2015[1]; the underside of Park Road Bridge was not accessible on the east side. Additionally, Terracon estimated approximately 13-feet to the water level from the underside of the girders. Access to infrastructure below the ground surface was not provided at the time of the survey activities; although, Terracon made visual observations in accessible manholes, utility vaults, etc., we typically could not identify suspect ACMs. Due to the aforementioned factors, our survey services were limited.

[1] Posted at: http://waterdata.usgs.gov/usa/nwis/uv?site_no=05453520, accessed December 2, 2015

Although reasonable effort was made to survey accessible suspect materials, additional suspect but unsampled materials could be located in the subsurface, in walls, in voids, or in other concealed areas or areas where investigation was not feasible without significant damage and/or excavation. Suspect ACM samples were collected in general accordance with the sampling protocols outlined in United States Environmental Protection Agency (USEPA) 40 Code of Federal Regulations (CFR) Part 763-Asbestos, Subpart E-Asbestos-Containing Materials in Schools. Samples were delivered to an accredited laboratory for analysis by polarized light microscopy (PLM).

1.1 Documentation Review

On November 16, 2015, the City provided Terracon Plans and Specifications for Water System Improvements dated June 2, 1966 (the 1966 Plans) for the Dubuque Street Main project. Prior to field activities, Terracon reviewed the 1966 Plans to identify suspect ACMs both on the surface and subsurface. Based on review of the 1966 Plans, asbestos cement piping under Park Road Bridge was indicated on drawing 11614-9. Additionally, it appears that the asbestos cement piping extends beyond the abutments. In addition, Terracon identified the following information in the 1966 Plans:

- Page NH-1 indicated that 7,050 linear feet (LF) of cast iron or asbestos cement water main were specified; furthermore,
  - Part 3 – Water Mains and Appurtenances, Section 3 – Pipe materials (page 3-2) indicate that either cast pipe or asbestos cement pipe could have been used.
  - Additionally, the Plans are labeled “As Constructed” and only indicate that the side streets are cast iron (notes for auguring or pushing X feet of “C.I.” pipe). The main along Dubuque does not appear to have a unique marking (either C.I, - cast iron or A.C. – asbestos cement, per the legend).
- Page 3-2 also specifies that a bituminous seal coat was to be applied on the surface lining of the cast.

On November 30, 2015 and following field activities, the City provided Terracon a compact disk with several other reports, plans/specifications, and studies related to the Gateway project alignment.

1.2 Project Objective

Asbestos survey services were conducted at the Gateway project to satisfy requirements of the USEPA regulations under 40 CFR Part 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP), which apply when structures are renovated or demolished.

A painted surface coatings survey was completed to identify cadmium, chromium, and lead containing paints on painted components so that proper worker protection and environmental protection and proper disposal can be completed.

Disposal of PCB-containing fluorescent light ballasts, caulks, transformers, and oils is regulated by the USEPA under 40 CFR 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions. Disposal of mercury-containing fluorescent light tubes as universal waste is regulated under 40 CFR 273 Standards for Universal Waste Management. Disposal of mercury from other sources is regulated under 40 CFR 260-262 Hazardous Waste standards.

Although regulations requiring pre-demolition surveys do not exist for mercury-containing light tubes and equipment or PCB-containing equipment, contractors should be notified of the presence of these materials in areas where demolition activities might result in potential employee exposure to mercury, PCBs, or other hazardous materials, so that they can take the necessary actions to comply with Occupational Safety and Health Administration (OSHA) requirements and USEPA disposal requirements.

1.3 Reliance

This report is for the exclusive use of the City of Iowa City. Reliance by any other party is prohibited without written authorization of Terracon and the City of Iowa City. Reliance on this report by the City of Iowa City and all authorized parties is subject to the terms, conditions, and limitations stated in the Contract Agreement and this report.

2.0 FIELD ACTIVITIES

2.1 Asbestos Survey

The asbestos survey was conducted by Mr. Eric W. Harris, and Mr. Jake Stahl, state of Iowa licensed asbestos inspectors (license #s 15-4989 and 15-5108, respectively). Copies of their asbestos inspector licenses are attached as Appendix A. The asbestos survey was conducted in general accordance with the sample collection protocols established in USEPA 40 CFR 763.86, Sampling. A summary of survey activities is provided below.

2.1.1 Asbestos Visual Assessment

Survey activities were initiated with visual observation of the Park Road Bridge and accessible areas along the Gateway project alignment to identify homogeneous areas of suspect ACM. A

homogeneous area (HA) consists of materials that appear similar throughout in terms of color and texture with consideration given to the date of application.

Terracon removed infrastructure components (including, but not limited to, vaults, manholes, access hatches, culverts, fencing, etc.) to inspect for suspect ACMs and to identify HAs. Please note that limited observations were made and Terracon did not enter these spaces, as there was limited to no access and they are considered confined spaces. Other subsurface suspect materials as described in Section 1.1 were not readily observed in the select access points. It should be noted that power along the alignment and to the light poles and traffic controls was considered active during the assessment; consequently, Terracon did not sample electrical related items. Wiring did not appear to be suspect based on our limited visual observations. Electrical equipment such as paper backers, wire jackets, and fuse housings has been known to contain asbestos insulation materials.

As noted in Section 1.0, access to materials under the bridge and associated abutments was generally limited to the west side of the bridge. The description of the cement piping in the 1966 plans is generally accurate; however, observations past the abutments could not be made; therefore, the extent of the cement piping is unknown. These restrictions were limiting factors in completion of the survey.

2.1.2 Asbestos Physical Assessment

A physical assessment of each HA of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

2.1.3 Asbestos Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were collected in general accordance with USEPA sampling protocols. Samples of suspect materials were collected from randomly selected locations in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

The selection of sample locations and frequency of sampling were based on Terracon's observations and the assumption that like materials in the same area are homogeneous in content. Terracon collected 30 bulk samples from 10 homogeneous areas of suspect ACM. A summary of suspect ACM samples collected during the survey is included as part of the chain of custody (COC) and is provided in Table 2 in Appendix B. The lab report and the COC are provided in Appendix C.

2.1.4 Asbestos Sample Analysis

Bulk samples were submitted under COC to EMSL Analytical, Inc. (EMSL) in Cinnaminson, New Jersey for analysis by PLM with dispersion staining techniques per USEPA's *Method for the Determination of Asbestos in Bulk Building Materials* (600/R-93-116). EMSL is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP Accreditation No. 101048-0). The percentage of asbestos, if present, was determined by microscopic visual estimation. As a result of laboratory analysis, EMSL further separated out individual layers from the materials submitted; consequently, 33 samples were analyzed.

Based on the initial laboratory results, Terracon contacted the analytical laboratory to have a 400-point count analysis performed on select positive results. Three samples were analyzed on a 24-hour turnaround time (TAT) utilizing the 400-point count procedure.

2.2 Painted Surface Coating Assessment

In addition to the collection of bulk asbestos samples, Terracon collected paint chip samples from painted components utilizing a wood chisel and sample bags. Terracon collected paint chips samples from line striping, light/traffic control poles, and a vault lid. The paint chip samples were submitted under COC to TestAmerica Laboratories, Inc. (TestAmerica) in Cedar Falls, Iowa for analysis of cadmium, chromium (total), and lead by USEPA method SW846-6010C on a 3-day TAT. TestAmerica is accredited by the AIHA® Laboratory Accreditation Programs, LLC under the Industrial Hygiene Laboratory Accreditation Program (IHLAP) – certification number 101044 and under the State of Iowa, state program – certification ID 007.

2.3 Mercury Survey

The mercury portion of the survey (the mercury survey) consisted of a visual survey for potential mercury-containing lamps and fluorescent light tubes.

2.4 Polychlorinated Biphenyls Survey

The PCB portion of the survey (the PCB survey) was conducted concurrently with the mercury survey. Terracon estimated the number of potential ballasts for contractor verification and proper disposal.

3.0 REGULATORY OVERVIEW

3.1 Asbestos

In Iowa, asbestos activities are regulated by the Iowa Department of Natural Resources (IDNR) and Iowa Workforce Development (IWD), Division of Labor. IDNR regulates asbestos fiber emissions under Iowa Administrative Code 567 Chapter 23 (IAC 567–23) and asbestos-containing waste disposal under IAC 567–109. IWD regulates occupational exposure to asbestos under IAC 875–10 and asbestos removal and encapsulation activities under IAC 875–155.

IAC 567–23.1(3) adopts USEPA's asbestos NESHAP (40 CFR Part 61, Subpart M) by reference. Subpart M regulates asbestos fiber emissions and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing building materials are classified as friable, Category I nonfriable, or Category II nonfriable ACM. Friable materials are those that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. Category I nonfriable ACM includes packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than 1% asbestos. Category II nonfriable ACM are any materials other than Category I materials that contain more than 1% asbestos.

Regulated ACM (RACM) must be removed before renovation or demolition activities that will disturb the materials. RACM includes:

- Friable ACM;
- Category I nonfriable ACM that has become friable or will be subjected to drilling, sanding, grinding, cutting, or abrading; and
- Category II nonfriable ACM that could be crumbled, pulverized, or reduced to powder during renovation or demolition activities.

The owner or operator must provide the IDNR and IWD with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities. Removal of RACM must be conducted by an Iowa-permitted asbestos abatement contractor.

IAC 875–155 Asbestos Removal and Encapsulation requires that any asbestos-related activity conducted in a public building be performed by personnel licensed or permitted by the IWD. Inspections for ACM must be conducted by IWD-licensed inspectors. Asbestos abatement must be performed by IWD-permitted asbestos abatement contractors. Management plans developed for the in-place management of asbestos-containing materials must be developed by an IWD-licensed management planner. When an abatement project design is prepared, it must be prepared by an IWD-licensed project designer.

IAC 875–10 adopts the Occupational Safety and Health Administration (OSHA) Asbestos standard for construction (29 CFR 1926.1101) by reference. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below the permissible exposure limits (PEL) of 0.1 asbestos fiber per cubic centimeter of air (0.1 f/cc) as an 8-hour time-weighted average and 1.0 f/cc as a 30-minute excursion. The OSHA standard classifies construction and maintenance activities that could disturb ACM and specifies work practices and precautions that employers must follow when engaging in each class of regulated work.

3.2 Cadmium

Cadmium waste from renovation or demolition activities, such as debris, paint chips, dust, and sludges, that exhibit the toxicity characteristic must be managed and disposed as a hazardous waste under the Resource Conservation and Recovery Act (RCRA). A composite, representative sample of the demolition debris must be tested to determine if it is regulated as hazardous waste under 40 CFR 261 Identification and Listing of Hazardous Waste.

The OSHA cadmium standard 29 CFR 1910.1027 establishes an action level (AL) of 2.5 micrograms per cubic meter (µg/m^3) and a PEL of 5.0 µg/m^3, both as 8-hour time-weighted averages (8-hr TWA). The standard requires exposure monitoring to evaluate employee exposures. If results are below the AL or PEL, no further action is required.

3.3 Chromium

Chromium waste from renovation or demolition activities, such as debris, paint chips, dust, and sludges, that exhibit the toxicity characteristic must be managed and disposed as a hazardous waste under RCRA. A composite, representative sample of the demolition debris must be tested to determine if it is regulated as hazardous waste under 40 CFR 261 Identification and Listing of Hazardous Waste.

OSHA regulates occupational exposure to chromium metal and inorganic Cr(III) and Cr(VI) compounds under 29 CFR 1910.1000 Air Contaminants Tables Z–1 and Z–2. The PEL for chromium are as follows:

■ chromium metal	1.0 mg/m^3	8-hr TWA[2]
■ inorganic chromium (III) compounds (as chromium)	0.5 mg/m^3	8-hr TWA
■ inorganic chromium (VI) compounds (as chromate)	0.1 mg/m^3	ceiling limit

OSHA regulates occupational exposure to hexavalent chromium [Cr(VI)] under 29 CFR 1910.1026 (general industry) and 1926.1126 (construction). The Cr(VI) standards establish an

[2] 8-hr TWA = 8-hour time-weighted average

AL of 2.5 micrograms of Cr(VI) per cubic meter of air (µg/m^3, equivalent to 0.0025 mg/m^3) as an 8-hr TWA. The PEL for Cr(VI) is 5.0 µg/m^3 (equivalent to 0.005 mg/m^3) as an 8-hr TWA.

3.4 LBP

USEPA has defined LBP as containing 1.0 mg/cm^2 or 0.5 % by weight. LBP waste from renovation or demolition activities, such as debris, paint chips, dust, and sludges, that exhibit the toxicity characteristic must be managed and disposed as a hazardous waste under RCRA, with the exception of whole-building demolition debris. Whole-building demolition debris is considered a non-hazardous waste with regard to lead. Therefore, no sampling/analysis of painted components for lead is required for disposal as non-hazardous waste. If it is not a whole-building demolition debris, a composite, representative sample of the demolition debris must be tested to determine if it is regulated as hazardous waste under 40 CFR 261 Identification and Listing of Hazardous Waste.

IAC 875-10 adopts the OSHA Lead standard for construction (29 CFR 1926.62) by reference. For the purpose of the standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. The OSHA standard does not define the amount of lead in paint that constitutes LBP and it applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration or repair (including painting and decorating) is included. The standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead
- Installation of products containing lead
- Lead contamination/emergency clean-up
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed
- Maintenance operations associated with construction activities described above

Employers must assure that no employee will be exposed to lead at concentrations greater than the permissible exposure limit of 50 µg/m^3 averaged over an eight-hour period without adequate protection. The OSHA standard also establishes an action level of 30 µg/m^3, which if exceeded, triggers certain requirements, including periodic exposure monitoring and medical monitoring.

3.5 Mercury

Metallic mercury is a silver-white liquid at room temperature. Elemental and inorganic mercury compounds are used in the manufacture of scientific instruments, electric equipment, and mercury vapor and fluorescent electric lamps. Mercury-containing equipment, such as fluorescent light tubes, must be sent to an approved recycling facility that recovers mercury. The USEPA considers mercury a hazardous waste.

USEPA regulates disposal of mercury-containing fluorescent light tubes as universal waste under 40 CFR 273. Disposal of mercury from other sources is regulated under 40 CFR 260-262.

OSHA regulates occupational exposure to mercury under 29 CFR 1910.1000 Air Contaminants, Table Z-1 – Limits for Air Contaminants. The PEL for mercury is 0.1 milligrams per cubic meter (mg/m^3) as an 8-hr TWA.

3.6 Polychlorinated Biphenyls

PCBs are clear, oily liquids to white or yellowish waxy solids, depending on the degree of chlorination. They are stable, thermoplastic, and nonflammable materials that were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, caulks, plastics, and rubber products; in pigments, dyes, and carbonless copy paper and many other applications. USEPA regulates transportation, disposal, and spill cleanup of PCB-containing ballasts under the Toxic Substances Control Act (TSCA), which can be found in 40 CFR 761. Fluorescent light ballasts are assumed to contain PCBs unless clearly marked as containing “NO PCB.”

OSHA regulates occupational exposure to PCBs under 29 CFR 1910.1000 Air Contaminants, Table Z-1 – Limits for Air Contaminants. The PEL for chlorodiphenyl (42% chlorine) is 1.0 mg/m^3 and for chlorodiphenyl (54% chlorine) is 0.5 mg/m^3, both as 8-hr TWAs.

4.0 FINDINGS

4.1 Asbestos Survey Findings

Laboratory analysis of bulk samples confirmed the presence of asbestos in samples collected from cement piping under the Park Road Bridge. Drawings showing the approximate asbestos sample locations are provided as Exhibits 1-2 in Appendix D; the confirmed asbestos piping is indicated in Exhibits 1 and 3. Table 1 included in Appendix B identifies the confirmed ACM, its general area, sample locations, and approximate quantity. The lab results and COC are provided

in Appendix C. Photographs of the confirmed asbestos materials, and general photos are presented in Appendix E.

Asbestos was reported by the analytical laboratory in samples collected of the following materials:

- Asbestos cement pipe containing 20-30% chrysotile and 8-10% crocidolite asbestos– approximately 380 LF according to the 1966 Park Bridge Detail Drawing; see Exhibit 3 in Appendix D.

All nonfriable ACMS that may become friable when removed must be removed by a permitted asbestos abatement contractor prior to demolition activities and disposed at an approved landfill.

Based on review of the 1966 Plans and as discussed in Section 1.1, it is unclear if the asbestos piping was utilized in other areas of the 1966 Dubuque Water Main Project. We do understand that the asbestos cement piping extends beyond the Park Road Bridge abutments. Once excavation begins, this should be confirmed; see below for additional details regarding coatings on cast pipe.

Based on the 400-point count procedure conducted by EMSL, the lab reported asbestos concentrations less than 1% in gray caulking under the guardrail newel posts on the Park Road Bridge. These materials are not considered asbestos-containing according to the USEPA definition; however, portions of OSHA's asbestos standards will be applicable regardless. Contractors should be notified of the presence of asbestos in such materials. It should be noted that general contractors typically have an asbestos exclusion clause under their insurance policy; therefore, they typically are barred from working with materials that contain asbestos, regardless of content. Those materials are identified in Table 2 in Appendix B. Terracon recommends that contract documents clearly define these materials.

As stated above, suspect ACMs may be present in inaccessible areas, primarily below the roadway/right-of-way surface. Additionally, ACMs may be discovered during earthwork and demolition activities. Unsampled suspect materials are assumed to contain asbestos (assumed ACM) and should be sampled after exposing the materials and prior to disturbance. Based on review of City provided plans for historic projects along the Gateway project alignment, suspect ACMs include but are not limited to the following:

- Bituminous coatings on subsurface infrastructure – indicated on several different City provided plans on cast piping, concrete manholes, etc.
- Seals/gaskets on subsurface infrastructure – indicated on several different City provided plans on cast piping, hydrants, concrete manholes, etc.

Per our contract, Terracon will develop an asbestos abatement specification and will perform abatement observation in order to confirm that ACMs are removed and disposed properly prior to

demolition activities. Terracon can also assist with preparing abatement bid documents and can assist the City with securing a qualified abatement firm through a bidding process.

4.2 Painted Surface Coating Findings

The analytical laboratory reported the following:

- Chromium concentrations in all of the paint chip samples submitted;
- Lead concentrations in six of the paint chip samples submitted; and
- Cadmium in one paint chip sample submitted.

Please refer to Table 3 in Appendix B for further details.

Terracon recommends that the contractor(s) involved in the demolition be notified of the presence of lead, cadmium, and chromium-containing coatings on painted components. OSHA's lead and hexavalent chromium[3] [Cr(VI)] standards for construction (29 CFR 1926.62 and 1926.1126, respectively) apply regardless of the concentrations and contractor(s) will need to provide appropriate personal protective equipment and conduct personal exposure monitoring, at a minimum. Terracon recommends the contractor(s) review the specified work tasks and methods involved in the demolition process and prepare a detailed lead/chromium management plan. The management plan should identify the work procedures and health and safety measures to be used in the lead/chromium material removal.

OSHA's lead regulation for construction (29 CFR 1926.62) covers metallic lead, all inorganic lead compounds (lead oxides and lead salts), and a class of organic compounds called soaps; all other lead compounds are excluded. The lead standard establishes an AL of 30 $\mu g/m^3$ as an 8-hr TWA. The PEL for lead is 50 $\mu g/m^3$ as an 8-hr TWA. The standard requires initial monitoring to evaluate employee exposures. If results are below the AL, no further action is required. If results exceed the AL, exposure monitoring must be repeated every six months, a medical surveillance program must be instituted, and employees must be provided with training about lead. If results exceed the PEL, additional requirements are triggered.

OSHA regulates occupational exposure to Cr(VI) in construction under 29 1926.1126. The AL is 2.5 $\mu g/m^3$ as an 8-hr TWA. The PEL is 5.0 $\mu g/m^3$ as an 8-hr TWA. The standard requires initial monitoring to evaluate employee exposures. If results are below the AL, no further action is required. If results exceed the AL, exposure monitoring must be repeated every six months, a medical surveillance program must be instituted, and Cr(VI) hazards must be communicated to employees. If results exceed the PEL, additional requirements are triggered.

[3] Although the samples were analyzed for total chromium, the hexavalent form is often found in paint or may be generated by torch cutting.

If waste materials containing lead or chromium are generated, they may be regulated as hazardous waste. Waste from demolition activities, such as debris, paint chips, dust, and sludges, that exhibit the toxicity characteristic must be managed and disposed of as a hazardous waste under the Resource Conservation and Recovery Act (RCRA). Waste from demolition activities, that exhibit the toxicity characteristic must be managed and disposed as a hazardous waste under the RCRA. A composite, representative sample of the demolition debris/waste must be tested by the Toxicity Characteristic Leaching Procedure (TCLP) to determine if it is regulated as hazardous waste under 40 CFR 261 Identification and Listing of Hazardous Waste. Per Section 10.54 of the Iowa Department of Transportation Construction Manual, revised January 31, 2014, all waste generated during removal operations shall be sampled and analyzed by the contractor. The waste sample shall be submitted to a laboratory for a TCLP heavy metals analysis, including, arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver.

Recycling of painted components may not require TCLP testing. Terracon recommends contacting the recycling recipient to confirm that they will accept the material. Certain painted materials may have to be abated by a qualified contractor prior to torch cutting or other means of dismantling. Waste generated from abated areas would likely require TCLP testing as indicated above.

4.3 Mercury Survey Findings

During the mercury survey visual inspection, Terracon identified street lamp and traffic control lights suspected of containing mercury. A summary of mercury-containing devices is included as Table 4 in Appendix B.

Terracon recommends that a qualified contractor remove and dispose of the mercury devices in accordance with local, state, and federal regulations. Written evidence should be provided by the disposal company certifying that the hazardous waste treatment, storage, or disposal facility is approved for mercury disposal by the USEPA and state or local regulatory agencies. Disposal of mercury-containing fluorescent light tubes as universal waste is regulated under 40 CFR 273. Disposal of mercury from other sources is regulated under 40 CFR 260-262.

4.4 Polychlorinated Biphenyls Survey Findings

Terracon was not able to physically assess for PCB containing ballasts in light poles along the right-of-way. We estimated one ballast per light pole/traffic signal light; for the purposes of this survey, the reported number of ballasts should be treated as if all were PCB containing. Pole mounted transformers were identified along the roadway/right-of-way. Subsurface transformer vaults were not readily observed. Typically, the power company is responsible for the removal and disposal of PCB waste generated from transformers.

A summary of potential PCB devices is included in Table 4 in Appendix B.

5.0 LIMITATIONS/GENERAL COMMENTS

Terracon did not perform sampling which required dismantling of equipment or removal of protective coverings. Reasonable efforts to access suspect materials within known areas of restricted access (e.g., manholes, vaults, subsurface infrastructure, electrical equipment) were made; however, as explained in the text, certain materials were not sampled.

This survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions, and recommendations expressed in this report are based on conditions observed during our survey of the building. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by the City of Iowa City for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied is made.

APPENDIX A

ASBESTOS INSPECTOR LICENSES

ERIC HARRIS

DOB: 07/02/1986

Issued: 07/27/2015

This person is licensed to perform asbestos work in the State of Iowa. ID card is intended for official use only and must be present on jobsite.

License type	Number	Expires
SUPERVISOR	15-4988	05-04-2016
INSPECTOR	15-4989	07-20-2016

ASBESTOS

Michael A. Mauro
Labor Commissioner

JACOB STAHL

DOB: 11/12/1987

Issued: 08/20/2015

This person is licensed to perform asbestos work in the State of Iowa. ID card is intended for official use only and must be present on jobsite.

License type	Number	Expires
INSPECTOR	15-5108	07-20-2016

ASBESTOS

Michael A. Mauro

Michael A. Mauro
Labor Commissioner

APPENDIX B

TABLES

TABLE 1 – IDENTIFIED ASBESTOS-CONTAINING MATERIALS BY HOMOGENEOUS AREA (HA)

TABLE 2 – ASBESTOS SAMPLE SUMMARY

TABLE 3 – PAINTED SURFACE COATING SAMPLE SUMMARY

TABLE 4 – MERCURY, PCBS, AND OTHER POTENTIALLY REGULATED MATERIALS SURVEY SUMMARY

Table 1 - IDENTIFIED ASBESTOS-CONTAINING MATERIALS BY HOMOGENEOUS AREA (HA)

The materials listed in this table have been sampled and determined to contain asbestos in concentrations greater than 1%. When disturbed, various federal, state, and local regulations will apply. See Appendix C for detailed analytical results and the sample sheets.

HA #	SAMPLE #	MATERIAL DESCRIPTION	GENERAL AREA PRESENT	SAMPLE LOCATIONS	LAB RESULTS	ESTIMATED QUANTITY[1]
05	05-CP2-013	Cement pipe and associated collars (1966 plans indicate 12-inch inside diameter)	Under Park Road Bridge, 3rd girder span from the south	On collar under Park Road Bridge at west abutment	25% Chrysotile, 8% Crocidolite	380 LF[2]
	05-CP2-014			Far west pipe run of pipe under Park Road Bridge, as it enters the west abutment	30% Chrysotile, 10% Crocidolite	
	05-CP2-015			East of the pipe collar on the west side of the Park Road Bridge abutment	30% Chrysotile, 10% Crocidolite	

[1] Estimated quantities are based on a cursory field evaluation, and actual quantities may vary significantly, especially if asbestos-containing materials are present in hidden and/or inaccessible areas not evaluated as part of this survey.
[2] LF – indicates linear-feet; quantity based on that listed in the 1966 Plans

TABLE 2 - ASBESTOS SURVEY SAMPLE LOCATION SUMMARY

HA #	SAMPLE #	MATERIAL DESCRIPTION	GENERAL AREA PRESENT	SAMPLE LOCATION	LAB RESULTS
01	*01-CA5-001*	*Gray sealant*	*Park Road bridge, under guardrail newel posts (only on bridge)[1]*	*Park Road bridge, north side, 2nd guardrail post from the west, base*	*0.5% Chrysotile[2]*
	01-CA5-002			*North side of Park Road bridge, right newel post of the 3rd concrete pillar on guardrail from the west*	*<0.25% Chrysotile*
	01-CA5-003			*South side of Park Road bridge, 15th guard rail post from the east*	*0.5% Chrysotile*
02	02-MS5-004	Foam pad, off white	Park Road bridge abutments - expansion joints	Park Road bridge west side abutment, north side	None detected
		Mastic, brown			None detected
	02-MS5-005	Foam pad, off white		Park Road bridge east side abutment, north face 4' above the ground surface	None detected
		Mastic, brown			None detected
	02-MS5-006	Foam pad, off white		Park Road bridge east abutment, south face above PVC pipe	None detected
		Mastic, brown			None detected
03	03-SG5-007	Black rocker pad	Park Road bridge rocker pads/girder plates	Park Road bridge west side abutment, 5th girder from south	None detected
	03-SG5-008			Park Road bridge west side abutment, 5th girder from south, south side	None detected
	03-SG5-009			West side abutment center below bridge, on girder	None detected
04	04-RF2-010	Tar paper	Asbestos cement pipe hangars under HA #05	Park Road bridge west abutment hanger under bridge furthest south	None detected
	04-RF2-011			Hanger east of sample #10	None detected
	04-RF2-012			3rd hanger east of west abutment	None detected

[1] The east side "wing" guardrails were replaced circa 2004 based on review of provided project plans; the trace asbestos material was not observed in these areas.
[2] Italics indicate asbestos concentrations less than 1% (based on 400-point count – PLM) and do not meet USEPA definitions of asbestos-containing materials; however, OSHA asbestos provisions under 29 CFR 1926.1101 apply to the contractors. These materials should be brought to their attention.

HA #	SAMPLE #	MATERIAL DESCRIPTION	GENERAL AREA PRESENT	SAMPLE LOCATION	LAB RESULTS
05	05-CP2-013	Cement pipe and associated collars (1966 plans indicate 12-inch inside diameter)	Under park road bridge, 3rd girder span from the south	On collar under park road bridge at west abutment	25% Chrysotile, 8% Crocidolite
	05-CP2-014			Far west pipe run of pipe under park road bridge, as it enters the west abutment	30% Chrysotile, 10% Crocidolite
	05-CP2-015			East of the pipe collar on the west side of the park road bridge abutment	30% Chrysotile, 10% Crocidolite
06	06-SC2-016	Black bituminous coating	Gas main under park road bridge, girder south of HA #05	Park Road bridge south side of west abutment on hanging gas main	None detected
	06-SC2-017			At the sticker under the west abutment	None detected
	06-SC2-018			10' east of sample #17	None detected
07	07-CA5-019	Cream/rose colored caulk	PVC pipe elbow on the park road bridge east abutment	Bottom side of 45 degree elbow, east side of bridge on PVC	None detected
	07-CA5-020			Left of sample #019	None detected
	07-CA5-021			On top of 45 degree PVC elbow near sample #019	None detected
08	08-PI5-022	Black tarry pipe coating	Park Road Bridge, east side median, sub surface conduit	West pipe at eastern most light pole access vault	None detected
	08-PI5-023			East pipe at eastern most light pole access vault	None detected
	08-PI5-024			Inner pipe of sample #23	None detected
09	09-SC5-025	Black expansion joint	Road way expansion joints	Park Road western cross walk, south side, just west of Park Road Bridge	None detected
	09-SC5-026			Park Road, north side of road across from sample #25	None detected
	09-SC5-027			Dubuque Street, east of sample #30	None detected
10	10-SC5-028	Off-white/cream glue	Box culvert chain-link fence posts bases west of Kimball and fencing along the west side of Dubuque Street, south of the Iowa City sign	Southeast post for chain link fence, north side at box culvert	None detected
	10-SC5-029			Southeast post for chain link fence, south side at box culvert	None detected
	10-SC5-030			Chain-link fence west of Dubuque Street, 10th post south of the north edge (Iowa City sign)	None detected

TABLE 3 – PAINTED SURFACE COATING SAMPLE SUMMARY

Sample #	Location	Substrate	Color	Cadmium Concentration (% by weight)	Chromium Concentration (% by weight)	Lead Concentration (% by weight)
Chip 1[3]	Park Road, 1st light stanchion west of bridge on the north side of the road	Metal	Silver over red	BLQ[4]	0.118	21.3
Chip 2	Vault lid on the Park Road Bridge east side abutment, south side of the road, underside of lid	Metal	Red	BLQ	0.0111	BLQ
Chip 3	East side of Park Road Bridge, median line striping, by light pole	Concrete	Yellow	BLQ	0.251	1.15
Chip 4	East side of Park Road Bridge, line paint at cross walk of Dubuque	Concrete	White	BLQ	0.000677	0.00306
Chip 5	Traffic control pole at Dubuque Street and Park Road, west side of the pole and west side of Dubuque Street	Metal	Hunter green over yellow	BLQ	2.78	4.14
Chip 6	Fire hydrant on the east side of Dubuque Street at the intersection of Park Road	Metal	Red	BLQ	0.00301	0.0171
Chip 7	Traffic control box west side of Dubuque Street, north of Park Road intersection	Metal	Brown	0.00189	0.855	0.803

Note: Paint on similar infrastructure (hydrants, lampposts, traffic control posts) is considered homogenous

[3] The analytical laboratory indicated two qualifiers (F1 and F2) for this sample and indicated that the MS and/or MSD Recover is outside acceptable limits, and MS/MSD RPD exceeds control limits.
[4] BLQ – indicates below the laboratory level of quantitation. For example, the laboratory quantitation level for cadmium is 0.001 % by weight. BLQ means that less than 0.001 % of cadmium was collected in the sample; it does not mean that cadmium was not present.

Table 4 – MERCURY, PCBs, AND OTHER POTENTIALLY REGULATED MATERIALS SURVEY SUMMARY

Product Name, Equipment or Chemical Name	Estimated Quantity	Unit of Measure
Street lights: lamps (unknown if metal halide, high pressure sodium or other) and assumed a single ballast (PCB or non-PCB)	50	Each
Traffic control lamps	20	Each
Pole mounted transformers (potential PCBs)	Not quantified, assumed responsibility of power company	

Note: The traffic control and lighting items are likely to be removed by the general contractor or the City for reuse.

APPENDIX C

LABORATORY ANALYTICAL REPORTS AND COCS

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 041535095
Customer ID: ACON77
Customer PO:
Project ID:

Attn: Eric Harris
Terracon Consultants, Inc.
2640 12th Street Southwest
Cedar Rapids, IA 52404

Phone: (319) 366-8321
Fax: (319) 366-0032
Collected: 11/24/2015
Received: 11/25/2015
Analyzed: 12/02/2015

Proj: 06157085 / Iowa City Gateway / Dubuque Street/Park Road / Iowa City, Iowa

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 01-CA5-001 ***Lab Sample ID:*** **041535095-0001**

Sample Description: Park Rd Bridge N.Side/2nd Guard Rail Post from W/Gray Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray	0%	100%	**<1% Chrysotile**	System_ID:
400 PLM Pt Ct	12/02/2015	Gray	0%	99.50%	**0.50% Chrysotile**	System_ID:

Client Sample ID: 01-CA5-002 ***Lab Sample ID:*** **041535095-0002**

Sample Description: N Side of Bridge/R Newell Post of 3rd Con. Pillar/Gray Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray	0%	98%	**2% Chrysotile**	System_ID:
400 PLM Pt Ct	12/02/2015	Gray	0%	100%	**<0.25% Chrysotile**	System_ID:

Client Sample ID: 01-CA5-003 ***Lab Sample ID:*** **041535095-0003**

Sample Description: S Side of Bridge/15th Guard Rail Post from E/Gray Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray/Silver	0%	98%	**2% Chrysotile**	System_ID:
400 PLM Pt Ct	12/02/2015	Gray/Silver	0%	99.50%	**0.50% Chrysotile**	System_ID:

Client Sample ID: 02-MS5-004-Foam Pad ***Lab Sample ID:*** **041535095-0004**

Sample Description: Park Rd Bridge W Side Abutment/N Side/Off White Foam Pad

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

Client Sample ID: 02-MS5-004-Mastic ***Lab Sample ID:*** **041535095-0004A**

Sample Description: Park Rd Bridge W Side Abutment/N Side/Brown Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Brown	0%	100%	None Detected	System_ID:

Client Sample ID: 02-MS5-005-Foam Pad ***Lab Sample ID:*** **041535095-0005**

Sample Description: Park Rd Bridge Rail Side Abutment/N Face 4' AGS/Off White Foam Pad

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 041535095
Customer ID: ACON77
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 02-MS5-005-Mastic ***Lab Sample ID:*** **041535095-0005A**
Sample Description: Park Rd Bridge Rail Side Abutment/N Face 4' AGS/Brown Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Brown	0%	100%	None Detected	System_ID:

Client Sample ID: 02-MS5-006-Foam Pad ***Lab Sample ID:*** **041535095-0006**
Sample Description: Park Rd Bridge E Abutment/ S Face above PVC/Off White Foam Pad

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray	0%	100%	None Detected	System_ID:

Client Sample ID: 02-MS5-006-Mastic ***Lab Sample ID:*** **041535095-0006A**
Sample Description: Park Rd Bridge E Abutment/ S Face above PVC/Brown Mastic

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Yellow	0%	100%	None Detected	System_ID:

Client Sample ID: 03-SG5-007 ***Lab Sample ID:*** **041535095-0007**
Sample Description: Park Rd Bridge/W Side Abutment 5/5th Guard from S/Black Rake Pad

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	10%	90%	None Detected	System_ID:

Client Sample ID: 03-SG5-008 ***Lab Sample ID:*** **041535095-0008**
Sample Description: Park Rd Bridge/W Side Abutment 5/5th Guard S Side/Black Rake Pad

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	10%	90%	None Detected	System_ID:

Client Sample ID: 03-SG5-009 ***Lab Sample ID:*** **041535095-0009**
Sample Description: West Side Abutment/Center/Black Rake Pad

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	10%	90%	None Detected	System_ID:

Client Sample ID: 04-RF2-010 ***Lab Sample ID:*** **041535095-0010**
Sample Description: Park Rd Bridge W Abutment Hangor uner Bridge W.Sid/Tar Paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	15%	85%	None Detected	System_ID:

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 041535095
Customer ID: ACON77
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 04-RF2-011 ***Lab Sample ID:*** **041535095-0011**
Sample Description: Hanger East of Sample #10/Tar Paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	15%	85%	None Detected	System_ID:

Client Sample ID: 04-RF2-012 ***Lab Sample ID:*** **041535095-0012**
Sample Description: 3rd Hanger East of West Abutment/Tar Paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	40%	60%	None Detected	System_ID:

Client Sample ID: 05-CP2-013 ***Lab Sample ID:*** **041535095-0013**
Sample Description: Under Park Rd Bridge at W Abutment & S. Side/Cement Pipe

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray	0%	67%	**25% Chrysotile**	System_ID:
					8% Crocidolite	System_ID:

Client Sample ID: 05-CP2-014 ***Lab Sample ID:*** **041535095-0014**
Sample Description: Far West Run of Pipe Under Bridge/Cement Pipe

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray	0%	60%	**30% Chrysotile**	System_ID:
					10% Crocidolite	System_ID:

Client Sample ID: 05-CP2-015 ***Lab Sample ID:*** **041535095-0015**
Sample Description: E Pipe/E of Collar on Pipe on W Abutment/Cement Pipe

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Gray	0%	70%	**20% Chrysotile**	System_ID:
					10% Crocidolite	System_ID:

Client Sample ID: 06-SC2-016 ***Lab Sample ID:*** **041535095-0016**
Sample Description: Park Rd Brige S Side/W Abutment/Black Bituminous Coating

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	0%	100%	None Detected	System_ID:

Client Sample ID: 06-SC2-017 ***Lab Sample ID:*** **041535095-0017**
Sample Description: On West Side/Black Bituminous Coating

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	10%	90%	None Detected	System_ID:

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 041535095
Customer ID: ACON77
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 06-SC2-018 ***Lab Sample ID:*** **041535095-0018**
Sample Description: 10' East of #17/Black Bituminous Coating

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	15%	85%	None Detected	System_ID:

Client Sample ID: 07-CA5-019 ***Lab Sample ID:*** **041535095-0019**
Sample Description: Bottom Side of 45 elbow/E side of Bridge on PVC/Cream/Rose Colored Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

Client Sample ID: 07-CA5-020 ***Lab Sample ID:*** **041535095-0020**
Sample Description: Left of Sample #019/Cream/Rose Colored Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

Client Sample ID: 07-CA5-021 ***Lab Sample ID:*** **041535095-0021**
Sample Description: On top of 45 PVC elbow Near #019/Cream/Rose Colored Caulk

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

Client Sample ID: 08-PI5-022 ***Lab Sample ID:*** **041535095-0022**
Sample Description: W Pipe at Eastern Mast Light Station Access/Black Tarry Pipe Coating

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	15%	85%	None Detected	System_ID:

Client Sample ID: 08-PI5-023 ***Lab Sample ID:*** **041535095-0023**
Sample Description: E Pipe at Eastern Mast Light Pole Access/Black Tarry Pipe Coating

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	10%	90%	None Detected	System_ID:

Client Sample ID: 08-PI5-024 ***Lab Sample ID:*** **041535095-0024**
Sample Description: Main Pipe of Sample #23/Black Tarry Pipe Coating

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	10%	90%	None Detected	System_ID:

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 041535095
Customer ID: ACON77
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 09-SC5-025 ***Lab Sample ID:*** **041535095-0025**
Sample Description: Park Rd/Western Cross Walk/S Side/just W of Bridge/Black Expansion Joint

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	0%	100%	None Detected	System_ID:

Client Sample ID: 09-SC5-026 ***Lab Sample ID:*** **041535095-0026**
Sample Description: Park Rd/Opposite Side of Sample #025/Black Expansion Joint

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	0%	100%	None Detected	System_ID:

Client Sample ID: 09-SC5-027 ***Lab Sample ID:*** **041535095-0027**
Sample Description: Dubuque Rd/East of Sample #30/Black Expansion Joint

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Black	0%	100%	None Detected	System_ID:

Client Sample ID: 10-SC5-028 ***Lab Sample ID:*** **041535095-0028**
Sample Description: Southeast Post for Chain Link Fence/N Side/Off-White/Cream Glue

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

Client Sample ID: 10-SC5-029 ***Lab Sample ID:*** **041535095-0029**
Sample Description: Southeast Post for Chain Link Fence/S Side/Off-White/Cream Glue

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

Client Sample ID: 10-SC5-030 ***Lab Sample ID:*** **041535095-0030**
Sample Description: Chain Link Fence/W of Dubuque St/10th Post S of N/Off-White/Cream Glue

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/01/2015	Tan	0%	100%	None Detected	System_ID:

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	041535095
Customer ID:	ACON77
Customer PO:	
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Analyst(s):

Andrew Coward	PLM (22)
Samantha Rundstorm-Cruz	PLM (11)
William Nguyen	400 PLM Pt Ct (3)

Reviewed and approved by:

Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

Report amended: 12/02/201516:15:10 Replaces initial report from: 12/02/201507:04:29 Reason Code: Client-Additional Analysis

Terracon

Cedar Rapids: 2640 12th St., SW, Cedar Rapids, IA 52404 (319) 366 8321

Asbestos Bulk Sample and Chain of Custody Form

Lab Order ID: 041535095
Select a Laboratory:
Lab Location: HQ - Cinnaminson, NJ 101048-0
Page 1 of 2

Project Name:	Iowa City Gateway	**Project Number:**	06157085	**Project Manager:**	Eric Harris
Project Address:	Dubuque St./Park Rd	**City/State / Zip:**	Iowa City, Iowa	**Email Results To:**	eric.harris@terracon.com
Site/Building:	Dubuque St./Park Rd				

Sample Identification (HA - BS Code - Sample #)	Sample Location Description	HA General Location	Material Description (Type; Color/Texture)	Quantity (SF, LF, Cubic Ft, Units)	NESHAP Classification[1]	Notes/Physical Condition[2]
01 - CAS - 001	Park Rd. Bridge N. side; 2nd newell guard rail post from west; at the base	Park Rd. Bridge under rails N. rail posts (on steel or concrete	gray sealant	10" X 8" ea.	F C1 (C2)	G (D) SD — Not on E. wing guardrails
01 - CAS - 002	North side of Bridge right newell post at the 3rd concrete pillar or guard rail over...					
01 - CAS - 003	South side of bridge, 15th guard rail post from East			104 total		
02 - MSS - 004	Park Rd. Bridge west side abutment, N. side	Park Road Bridge abutment; foam pad	off white foam pad w/ brown mesh	unknown	F C1 (C2)	G (D) SD
02 - MSS - 005	Park Road Bridge east side abutment N. Face 4' AGS					
02 - MSS - 006	Park Rd Bridge east abutment, south face above PVC					
03 - SGS - 007	Park Road bridge, west side abutment, 5th girder from south	Park Road Bridge Rocker Pads/ girder plates	Black Rocker Pad	unknown	F C1 (C2)	G (D) SD
03 - SGS - 008	" " South side					
03 - SGS - 009	West side abutment, center					
04 - RF2 - 010	Park Road bridge west abutment hanger under bridge furthest south	Asbestos cement pipe hanger support	Tar paper	4 SF/hanger	F C1 (C2)	(G) D SD
04 - RF2 - 011	hanger east of Sample #10					
04 - RF2 - 012	3rd hanger east of west abutment					
05 - CP2 - 013	Under Park Rd. bridge at west abutment S. side on collar	South side pipe under Park Rd. Bridge	cement pipe	Plan sheet says 12" - 380 LF	F C1 (C2)	(G) D SD
05 - CP2 - 014	far west run of pipe under bridge					
05 - CP2 - 015	east pipe/east of collar on pipe on west abutment					

15 NOV AM 10:44
CINNAMINSON, NJ

Sampling Date: 11/24/15 **Collected by (print):** Eric Harris & Jake Stahl **Inspector's Signature:** [signature]

Relinquished by: [signature] **Date/Time:** 11/24/15 1450 **Received by:** VC EMSL [illegible] **Date/Time:** 11/25/15 9:30

Analysis: PLM EPA 600/R-93/116 ☒ PLM 400 Point Count ☐ TEM ☐ Other ____

Instructions: Terracon ARMS: ☒ Stop Positive: ☐ Number of samples: 30

Turnaround Time: 6 Hrs ☐ 24 Hrs ☐ 2 Days ☐ 3 Days ☐ 5 Days ☒ Other ____

[1] F = Friable; C1 = Category I: packings, gaskets, asphaltic roofing products, resilient flooring; C2 = Category II Non-Friable: any materials other than Cat. I containing >1% asbestos
[2] G = Good (<1%); D = Damaged (<10% distributed or >25% localized); or SD = Significantly Damaged (>10% distributed or >25% localized)

Terracon

Asbestos Bulk Sample and Chain of Custody Form

Cedar Rapids: 2640 12th St., SW, Cedar Rapids, IA 52404 (319) 366 8321

Lab Order ID: 041535095

Select a Laboratory:

Lab Location: HQ - Cinnaminson, NJ 101048-0

Sample Identification HA - BS Code - Sample #	Sample Location Description	HA General Location	Material Description (Type; Color/Texture)	Quantity (SF, LF, Cubic Ft, Units)	NESHAP[1] Classification	Notes/Physical Condition[2]
04 - SL2 - 016	Park Rd Bridge S. side, west abutment on heavy gas main	Gas main under Park Rd. Bridge	Black Bituminous Coating	380 LF	F C1 (C2)	(G) D SD
06 - SL2 - 017	at shrine on west side					
06 - SL2 - 018	10' east of # 17					
07 - CAS - 019	bottom side of 45° elbow east side of bridge on PVC	PVC pipe elbow Bridge East abutment	Cream/tan Colored caulk	8 SF	F C1 (C2)	G (D) SD
07 - CAS - 020	left of sample # 019					
07 - CAS - 021	on top of 45° PVC elbow near # 019					
08 - PIS - 022	West pipe at eastern most light station access	Park Rd bridge median; east side	Black tarry pipe conduit for electric	unknown	F C1 (C2)	(G) D SD
08 - PIS - 023	East pipe at eastern most light pole access					
08 - PIS - 024	inner pipe of sample # 23					
09 - SLS - 025	Park Road, western conc. wall, south side, just west of bridge	PVC expansion joints	black expansion joint	unknown	F C1 (C2)	G (D) SD
09 - SLS - 026	Park Road, opposite side of sample # 025					
09 - SLS - 027	Dubuque Road, east of sample #30					
10 - SLS - 028	South east post for Chainlink fence, N. side	Bridge culvert chainlink fence posts west of Kimball & Dubuque	off-white/ Cream glue	along Dbq S. of I.C. sign	F C1 (C2)	G D SD
10 - SLS - 029	" " S. side					
10 - SLS - 030	Chain link fence, west of Dubuque Street, 10th post S. of North edge (south of I.C. sign)					
- -					F C1 C2	G D SD
- -						
- -						

RECEIVED 15 NOV 25 AM 10:44 PSL CINNAMINSON, NJ

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Tel: (319)277-2401

TestAmerica Job ID: 310-70018-1
Client Project/Site: Gateway Project

For:
Terracon Consulting Eng & Scientists
2640 12th Street SW
Cedar Rapids, Iowa 52404

Attn: Eric Harris

Angela Muehling

Authorized for release by:
12/4/2015 10:32:04 AM
Angela Muehling, Project Manager I
angela.muehling@testamericainc.com

Designee for

Shawn Hayes, Project Manager II
(319)277-2401
shawn.hayes@testamericainc.com

Table of Contents

Case Narrative

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Job ID: 310-70018-1

Laboratory: TestAmerica Cedar Falls

Narrative

Job Narrative
310-70018-1

Comments
No additional comments.

Receipt
The samples were received on 12/1/2015 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Metals
Method(s) 6010C: The following sample was diluted due to the presence of an interferent: Chip 2 (310-70018-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-70018-1	Chip 1	Paint Chips	11/24/15 00:00	12/01/15 10:15
310-70018-2	Chip 2	Paint Chips	11/24/15 00:00	12/01/15 10:15
310-70018-3	Chip 3	Paint Chips	11/24/15 00:00	12/01/15 10:15
310-70018-4	Chip 4	Paint Chips	11/24/15 00:00	12/01/15 10:15
310-70018-5	Chip 5	Paint Chips	11/24/15 00:00	12/01/15 10:15
310-70018-6	Chip 6	Paint Chips	11/24/15 00:00	12/01/15 10:15
310-70018-7	Chip 7	Paint Chips	11/24/15 00:00	12/01/15 10:15

Detection Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 1 — Lab Sample ID: 310-70018-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.118	F1 F2	0.00100		% by Wt	1		6010C	Total/NA
Lead	21.3		0.00500		% by Wt	1		6010C	Total/NA

Client Sample ID: Chip 2 — Lab Sample ID: 310-70018-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0111		0.00288		% by Wt	4		6010C	Total/NA

Client Sample ID: Chip 3 — Lab Sample ID: 310-70018-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.251		0.000980		% by Wt	1		6010C	Total/NA
Lead	1.15		0.00490		% by Wt	1		6010C	Total/NA

Client Sample ID: Chip 4 — Lab Sample ID: 310-70018-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.000677		0.000588		% by Wt	1		6010C	Total/NA
Lead	0.00306		0.00294		% by Wt	1		6010C	Total/NA

Client Sample ID: Chip 5 — Lab Sample ID: 310-70018-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	2.78		0.000654		% by Wt	1		6010C	Total/NA
Lead	4.14		0.00327		% by Wt	1		6010C	Total/NA

Client Sample ID: Chip 6 — Lab Sample ID: 310-70018-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.00301		0.000826		% by Wt	1		6010C	Total/NA
Lead	0.0171		0.00413		% by Wt	1		6010C	Total/NA

Client Sample ID: Chip 7 — Lab Sample ID: 310-70018-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00189		0.000952		% by Wt	1		6010C	Total/NA
Chromium	0.855		0.000952		% by Wt	1		6010C	Total/NA
Lead	0.803		0.00476		% by Wt	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 1
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-1
Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00100		0.00100		% by Wt		12/02/15 08:48	12/02/15 23:37	1
Chromium	**0.118**	**F1 F2**	0.00100		% by Wt		12/02/15 08:48	12/02/15 23:37	1
Lead	**21.3**		0.00500		% by Wt		12/02/15 08:48	12/02/15 23:37	1

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 2

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-2

Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00288		0.00288		% by Wt		12/02/15 08:48	12/03/15 17:09	4
Chromium	**0.0111**		0.00288		% by Wt		12/02/15 08:48	12/03/15 17:09	4
Lead	<0.0144		0.0144		% by Wt		12/02/15 08:48	12/03/15 17:09	4

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 3

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-3

Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.000980		0.000980		% by Wt		12/02/15 08:48	12/03/15 00:07	1
Chromium	**0.251**		0.000980		% by Wt		12/02/15 08:48	12/03/15 00:07	1
Lead	**1.15**		0.00490		% by Wt		12/02/15 08:48	12/03/15 00:07	1

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 4

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-4

Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.000588		0.000588		% by Wt		12/02/15 08:48	12/03/15 00:11	1
Chromium	**0.000677**		0.000588		% by Wt		12/02/15 08:48	12/03/15 00:11	1
Lead	**0.00306**		0.00294		% by Wt		12/02/15 08:48	12/03/15 00:11	1

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 5

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-5

Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.000654		0.000654		% by Wt		12/02/15 08:48	12/03/15 00:16	1
Chromium	**2.78**		0.000654		% by Wt		12/02/15 08:48	12/03/15 00:16	1
Lead	**4.14**		0.00327		% by Wt		12/02/15 08:48	12/03/15 00:16	1

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 6

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-6

Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.000826		0.000826		% by Wt		12/02/15 08:48	12/03/15 00:20	1
Chromium	**0.00301**		0.000826		% by Wt		12/02/15 08:48	12/03/15 00:20	1
Lead	**0.0171**		0.00413		% by Wt		12/02/15 08:48	12/03/15 00:20	1

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 7

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-7

Matrix: Paint Chips

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00189		0.000952		% by Wt		12/02/15 08:48	12/03/15 00:25	1
Chromium	0.855		0.000952		% by Wt		12/02/15 08:48	12/03/15 00:25	1
Lead	0.803		0.00476		% by Wt		12/02/15 08:48	12/03/15 00:25	1

Definitions/Glossary

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-110863/1-A
Matrix: Solid
Analysis Batch: 111025

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110863

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.0000861		0.0000861		% by Wt		12/02/15 08:48	12/02/15 23:24	1
Chromium	<0.0000861		0.0000861		% by Wt		12/02/15 08:48	12/02/15 23:24	1
Lead	<0.000431		0.000431		% by Wt		12/02/15 08:48	12/02/15 23:24	1

Lab Sample ID: LCS 310-110863/2-A
Matrix: Solid
Analysis Batch: 111025

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110863

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.00943	0.008997		% by Wt		95	80 - 120
Chromium	0.00943	0.009498		% by Wt		101	80 - 120
Lead	0.0189	0.01790		% by Wt		95	80 - 120

Lab Sample ID: 310-70018-1 MS
Matrix: Paint Chips
Analysis Batch: 111025

Client Sample ID: Chip 1
Prep Type: Total/NA
Prep Batch: 110863

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	<0.00100		0.0870	0.08057		% by Wt		92	75 - 125
Chromium	0.118	F1 F2	0.0870	0.2857	F1	% by Wt		193	75 - 125
Lead	21.3		0.174	19.52	4	% by Wt		-1035	75 - 125

Lab Sample ID: 310-70018-1 MSD
Matrix: Paint Chips
Analysis Batch: 111025

Client Sample ID: Chip 1
Prep Type: Total/NA
Prep Batch: 110863

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	<0.00100		0.0971	0.09295		% by Wt		95	75 - 125	14	20
Chromium	0.118	F1 F2	0.0971	0.2016	F2	% by Wt		86	75 - 125	34	20
Lead	21.3		0.194	21.65	4	% by Wt		171	75 - 125	10	20

QC Association Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Metals

Prep Batch: 110863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-70018-1	Chip 1	Total/NA	Paint Chips	3050B	
310-70018-1 MS	Chip 1	Total/NA	Paint Chips	3050B	
310-70018-1 MSD	Chip 1	Total/NA	Paint Chips	3050B	
310-70018-2	Chip 2	Total/NA	Paint Chips	3050B	
310-70018-3	Chip 3	Total/NA	Paint Chips	3050B	
310-70018-4	Chip 4	Total/NA	Paint Chips	3050B	
310-70018-5	Chip 5	Total/NA	Paint Chips	3050B	
310-70018-6	Chip 6	Total/NA	Paint Chips	3050B	
310-70018-7	Chip 7	Total/NA	Paint Chips	3050B	
LCS 310-110863/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 310-110863/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 111025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-70018-1	Chip 1	Total/NA	Paint Chips	6010C	110863
310-70018-1 MS	Chip 1	Total/NA	Paint Chips	6010C	110863
310-70018-1 MSD	Chip 1	Total/NA	Paint Chips	6010C	110863
310-70018-3	Chip 3	Total/NA	Paint Chips	6010C	110863
310-70018-4	Chip 4	Total/NA	Paint Chips	6010C	110863
310-70018-5	Chip 5	Total/NA	Paint Chips	6010C	110863
310-70018-6	Chip 6	Total/NA	Paint Chips	6010C	110863
310-70018-7	Chip 7	Total/NA	Paint Chips	6010C	110863
LCS 310-110863/2-A	Lab Control Sample	Total/NA	Solid	6010C	110863
MB 310-110863/1-A	Method Blank	Total/NA	Solid	6010C	110863

Analysis Batch: 111180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-70018-2	Chip 2	Total/NA	Paint Chips	6010C	110863

Lab Chronicle

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 1
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-1
Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		1	111025	12/02/15 23:37	OAD	TAL CF

Client Sample ID: Chip 2
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-2
Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		4	111180	12/03/15 17:09	OAD	TAL CF

Client Sample ID: Chip 3
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-3
Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		1	111025	12/03/15 00:07	OAD	TAL CF

Client Sample ID: Chip 4
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-4
Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		1	111025	12/03/15 00:11	OAD	TAL CF

Client Sample ID: Chip 5
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-5
Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		1	111025	12/03/15 00:16	OAD	TAL CF

Client Sample ID: Chip 6
Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-6
Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		1	111025	12/03/15 00:20	OAD	TAL CF

Lab Chronicle

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Client Sample ID: Chip 7

Date Collected: 11/24/15 00:00
Date Received: 12/01/15 10:15

Lab Sample ID: 310-70018-7

Matrix: Paint Chips

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110863	12/02/15 08:48	JNR	TAL CF
Total/NA	Analysis	6010C		1	111025	12/03/15 00:25	OAD	TAL CF

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL (319)277-2401

Certification Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Laboratory: TestAmerica Cedar Falls

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
AIHA-LAP, LLC	IHLAP		101044	11-01-16
Georgia	State Program	4	N/A	09-29-16
Illinois	NELAP	5	200024	11-29-16
Iowa	State Program	7	007	12-01-15 *
Kansas	NELAP	7	E-10341	01-31-15 *
Minnesota	NELAP	5	019-999-319	12-31-15
Minnesota (Petrofund)	State Program	1	3349	08-22-16
North Dakota	State Program	8	R-186	09-29-16
Oregon	NELAP	10	IA100001	09-29-16
Wisconsin	State Program	5	999917270	08-31-16

* Certification renewal pending - certification considered valid.

Method Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Gateway Project

TestAmerica Job ID: 310-70018-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL (319)277-2401

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

310-70018 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Terracon

City/State: CR | Project:

Receipt Information

Date/Time Received: 12-1-15 10:15 | Received By: CH

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ TA Courier ☐ TA Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☐ Yes	☒ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # ____ of ____
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☒ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☒ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☐ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☒ NONE

Temperature Blank? ☐ Yes ☒ No ID & Bottle Type:

NOTE: If yes, use temp blank for measurement. If no, specify sample ID(s) and bottle type used to take measurement.

Thermometer ID:	Correction Factor (°C):
Uncorrected Temp (°C):	Corrected Temp (°C):

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Temp not taken
paint chips

Document: CF-LG-WI-002
Revision: 21
Date: 7/28/2015

TestAmerica Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Chain of Custody Record

TestAmerica Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613-6907
phone 319.277.2401 fax 319.277.2425

TestAmerica — THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Eric Harris	Site Contact:	Date: 11/30/15	COC No:
Terracon Consultants, Inc.	Tel/Fax: 319-221-7315	Lab Contact:	Carrier:	1 of 1 COCs
2640 12th St. SW	**Analysis Turnaround Time**			Sampler:
Cedar Rapids, Iowa 52404	☐ CALENDAR DAYS ☑ WORKING DAYS			**For Lab Use Only:**
319-366-8321 Phone	TAT if different from Below 3 days			Walk-in Client:
319-366-0032 FAX	☐ 2 weeks			Lab Sampling:
Project Name: Iowa City Gateway	☐ 1 week			
Site: Gateway project	☐ 2 days			Job / SDG No.:
P O # 06157085	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	Color of Paint	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cd, Cr and Pb by ICP 6- FAA	Sample Location:
Chip 1	11/24/2015	N/A	G	Solid	silver over red			x	Park road; 1st light stantion west of bridge on the north side of the road
Chip 2	11/24/2015	N/A	G	Solid	red			x	Vault lid on bridge east abutment, south side of the road
Chip 3	11/24/2015	N/A	G	Solid	yellow			x	East side of Park Road Bridge, median line striping, by
Chip 4	11/24/2015	N/A	G	Solid	white			x	East side of Park Road Bridge white line paint, at cross walk
Chip 5	11/24/2015	N/A	G	Solid	hunter green over yellow			x	Traffic control pole at Dubuque Street and Park Road, west side of
Chip 6	11/24/2015	N/A	G	Solid	red			x	Fire Hydrant on the east side of Dubuque Street at intersection of
Chip 7	11/24/2015	N/A	G	Solid	brown			x	Traffic control box west side of Dubuque, north of Park Road

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:
Report Paint Chips in % by weight for Cd, Cr (total) and Pb

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Terracon	11/30/15 1558			
			Received in Laboratory by: [signature]	TA CF	12-1-15 10:15

Form No. CA-C-WI-002, Rev. 4.8, dated 11/04/2015

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 310-70018-1

Login Number: 70018
List Number: 1
Creator: Worthy, Ashley L

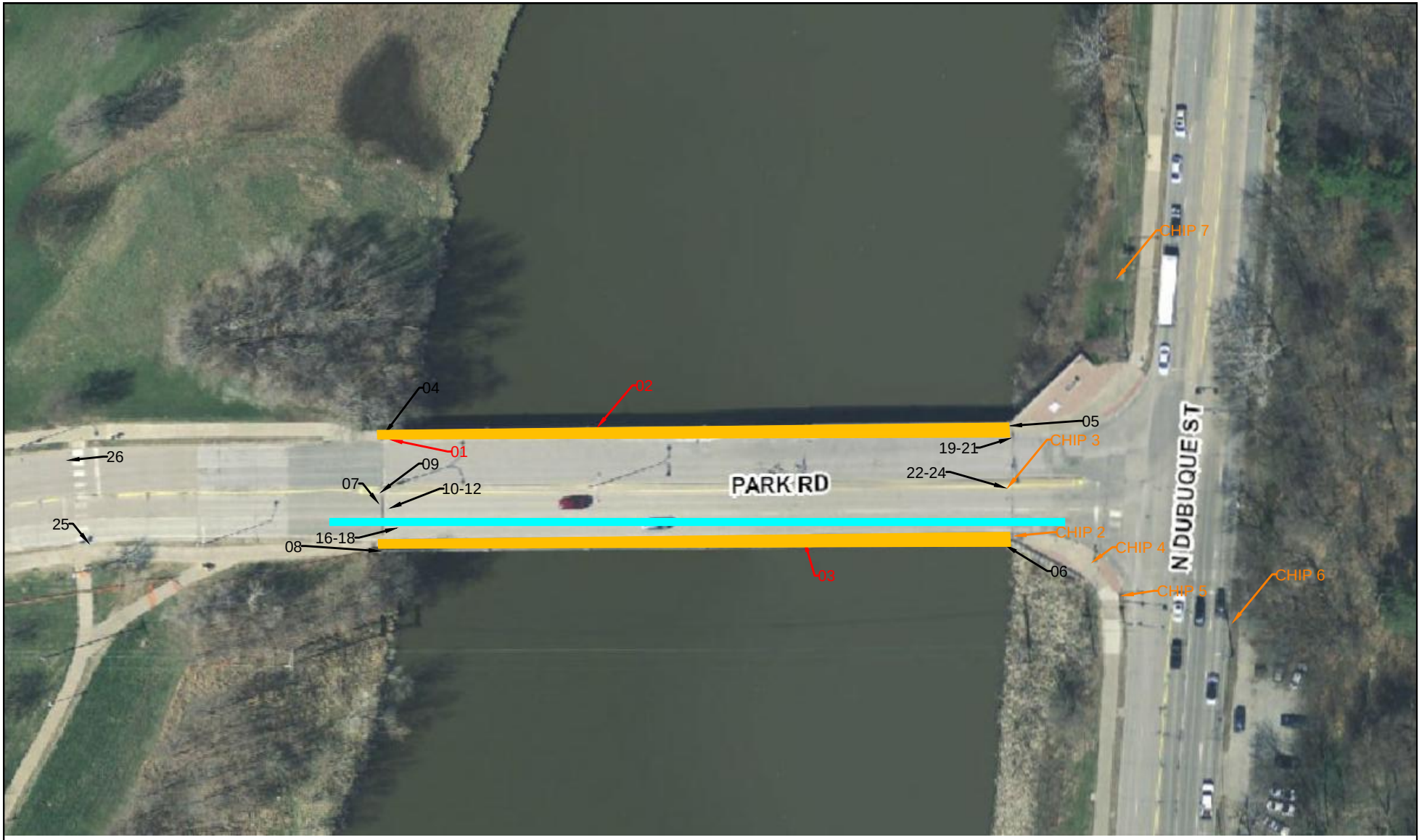
List Source: TestAmerica Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	True	Thermal preservation not required.
Cooler Temperature is recorded.	False	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

EXHIBITS

EXHIBIT 1 – PARK ROAD/BRIDGE SAMPLE LOCATION DIAGRAM
EXHIBIT 2 – DUBUQUE/KIMBALL SAMPLE LOCATION DIAGRAM
EXHIBIT 3 – 1966 PARK BRIDGE PLAN



LEGEND

00X - APPROXIMATE ASBESTOS BULK SAMPLE LOCATION (NON-ACM)
00X - APPROXIMATE ASBESTOS BULK SAMPLE LOCATION (CONFIRMED ACM)
00X - APPROXIMATE LOCATION TRACE ASBESTOS SAMPLE LOCATION (<1%)
- APPROXIMATE LOCATION OF ASBESTOS CEMENT PIPE
- APPROXIMATE LOCATION OF TRACE ASBESTOS CONTAINING CAULKING ON NEWEL POSTS
CHIP X - APPROXIMATE LOCATION OF PAINT CHIP SAMPLE

THIS DRAWING IS INTENDED FOR GENERAL LOCATION PURPOSES ONLY. BASE DRAWING OBTAINED FROM THE JOHNSON COUNTY PIV WEBSITE.

NORTH

0 NTS

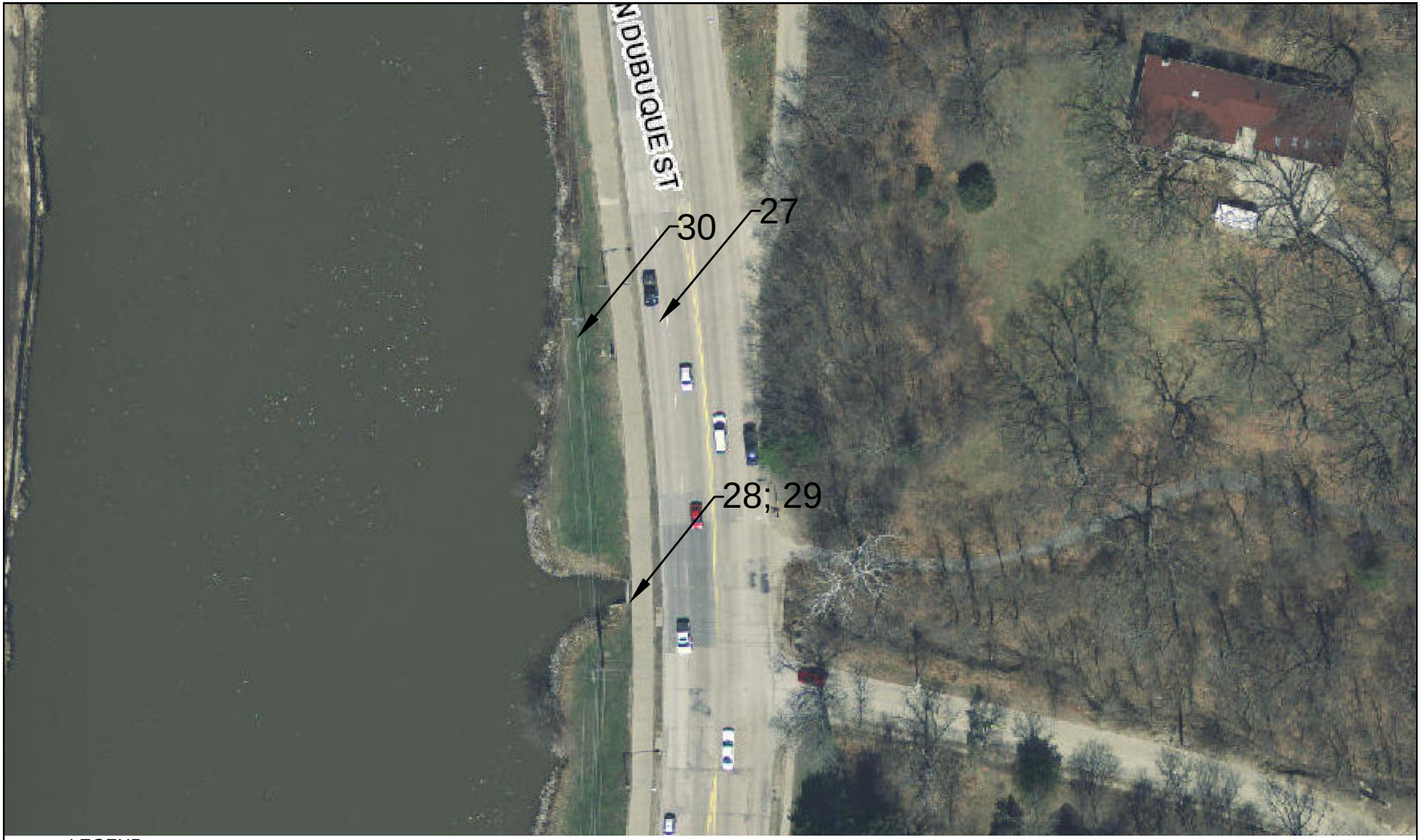
APPROXIMATE DRAWING SCALE

Project No.	06157085
Date:	12-2015
Project Mngr:	EWH
Drawn By:	EWH
File Name:	06157085.SURVEY REP.dwg
Layout Name:	SAMPLE LOCATION DIAGRAM

Terracon
Consulting Engineers and Scientists
2640 12TH STREET SW CEDAR RAPIDS, IOWA 52404
PH. (319) 366-8321 FAX. (319) 366-0032

PARK ROAD/BRIDGE SAMPLE LOCATION DIAGRAM
SURVEY REPORT
CITY OF IOWA CITY
GATEWAY PROJECT
IOWA CITY, IOWA

EXHIBIT #
01



LEGEND

00X - APPROXIMATE ASBESTOS BULK SAMPLE LOCATION (NON-ACM)

THIS DRAWING IS INTENDED FOR GENERAL LOCATION PURPOSES ONLY. BASE DRAWING OBTAINED FROM THE JOHNSON COUNTY PIV WEBSITE.

NORTH

0 NTS

APPROXIMATE DRAWING SCALE

Project No.	06157085
Date:	12-2015
Project Mngr:	EWH
Drawn By:	EWH
File Name:	06157085.SURVEY REP.dwg
Layout Name:	SAMPLE LOCATION

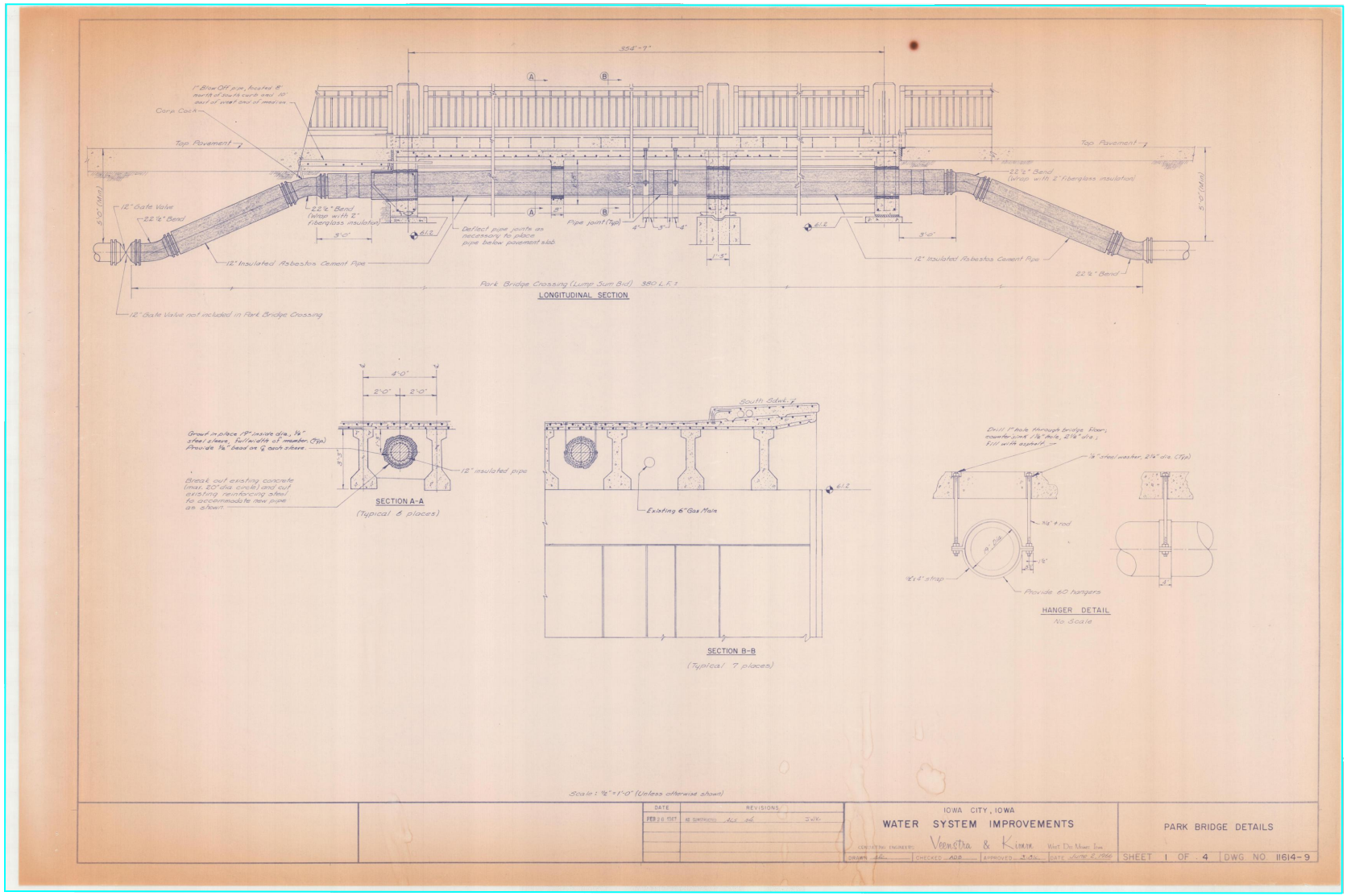
Terracon
Consulting Engineers and Scientists
2640 12TH STREET SW CEDAR RAPIDS, IOWA 52404
PH. (319) 366-8321 FAX. (319) 366-0032

DUBUQUE/KIMBALL SAMPLE LOCATION DIAGRAM

SURVEY REPORT
CITY OF IOWA CITY
GATEWAY PROJECT
IOWA CITY, IOWA

EXHIBIT #

02



THIS DRAWING IS INTENDED FOR GENERAL LOCATION PURPOSES ONLY. DRAWING PROVIDED BY CITY OF IOWA CITY. COMPLETED BY VEENSTRA AND KIMM "PARK BRIDGE DETAILS" WATER SYSTEM IMPROVEMENTS, SHEET 1 OF 4 DWG NO. 11614-9. DATED JUNE 2, 1966

NORTH

0 NTS

APPROXIMATE DRAWING SCALE

Project No.	06157085
Date:	12-2015
Project Mngr:	EWH
Drawn By:	EWH
File Name:	06157085.SURVEY REP.dwg
Layout Name:	1966 BRIDGE PLAN

Terracon
Consulting Engineers and Scientists
2640 12TH STREET SW CEDAR RAPIDS, IOWA 52404
PH. (319) 366-8321 FAX. (319) 366-0032

1966 PARK BRIDGE PLAN

SURVEY REPORT
CITY OF IOWA CITY
GATEWAY PROJECT
IOWA CITY, IOWA

EXHIBIT #

03

APPENDIX E

PHOTOGRAPHIC DOCUMENTATION

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 1: View of Park Road Bridge looking west.

Photo 2: View of asbestos cement pipe under Park Road Bridge, looking east.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 3: View of asbestos cement pipe as it enters the west abutment.

Photo 4: View of asbestos cement pipe hanger.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 5: Photo showing trace asbestos under the guardrail post on Park Road Bridge.

Photo 6: View of the girder layout under the east side of the Park Road Bridge.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 7: Photo showing chip location #1, and wiring inside of light post.

Photo 8: Photo of paint chip sample #2, under vault lid, south side of Park Road Bridge.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 9: View of chip sample #3, median of Park Road Bridge and asbestos samples 22-24, in vault access.

Photo 10: Vie of intersection of Park Road and Dubuque Street, with chip sample on cross walk markings (chip sample 4).

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 11: View of chip sample #5 on the traffic control pole, at the intersection of Dubuque Street and Park Road.

Photo 12: View of paint chip sample #6 on fire hydrant along Dubuque Street.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 13: View of traffic control box north of Park Road, along Dubuque Street, chip sample #7.

Photo 14: View looking south along Dubuque Street, south of Park Road.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 15: View looking west down Park Road, west of the bridge.

Photo 16: View of intersection of Kimball Road and Dubuque Street, looking northwest.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 17: View of pole mounted transformer along Kimball Road.

Photo 18: View of culvert east of Kimball Road; asbestos samples 28 and 29.

PHOTOGRAPHIC DOCUMENTATION
Gateway Project
Iowa City, Iowa

Photo 19: View along Dubuque Street, looking north from Mayflower Residence Hall parking area.

Photo 20: View of intersection at Dubuque Street and Taft Speedway St.