UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 RENNER BOULEVARD
LENEXA, KANSAS 66219

IN THE MATTER OF:	)	
	)	
BNSF Railway Company	)	**CONSENT AGREEMENT AND FINAL ORDER**
	)	
Respondent.	)	
	)	**Docket No.** RCRA-07-2020-0137
Proceeding under Sections 3008(a) of the Resource Conservation and Recovery Act as amended, 42 U.S.C. § 6928(a)	)	
	)	
	)	
	)	
	)	

I. PRELIMINARY STATEMENT

The U.S. Environmental Protection Agency ("EPA"), Region 7 and BNSF Railway Company have agreed to a settlement of this action before the filing of a complaint, and thus this action is simultaneously commenced and concluded pursuant to Rules 22.13(b) and 22.18(b)(2) of the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation/Termination or Suspension of Permits ("Consolidated Rules of Practice"), 40 Code of Federal Regulations ("C.F.R.") §§ 22.13(b) and 22.18(b)(2).

II. ALLEGATIONS

Jurisdiction

1. This administrative action is being conducted pursuant to Sections 3008(a) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), and the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6928(a), and in accordance with the Consolidated Rules of Practice.

2. This Consent Agreement and Final Order serves as notice that the EPA has reason to believe that Respondent violated Section 3005 of RCRA, 42 U.S.C § 6925.

Parties

3. The Chief of the Chemical Branch, Enforcement and Compliance Assurance Division of EPA, Region 7, as duly delegated from the Administrator of the EPA, is the Complainant ("Complainant").

4. BNSF Railway Company, a railroad and corporation authorized to operate under federal and state laws, including the laws of Iowa is the Respondent ("Respondent").

Statutory and Regulatory Framework

5. When EPA determines that any person has violated or is in violation of any RCRA requirement, EPA may issue an order assessing a civil penalty for any past or current violation and/or require immediate compliance or compliance within a specified time period pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928.

6. Section 3005 of RCRA, 42 U.S.C. § 6925, requires the Administrator of EPA to promulgate regulations requiring each person owning or operating an existing facility or planning to construct a new facility for the treatment, storage, or disposal of hazardous waste identified or listed under this subchapter to have a permit.

7. The term "owner" means the person who owns a facility or part of a facility. 40 C.F.R. § 260.10.

8. Section 1004(15) of RCRA, 7 U.S.C. § 6903(15), defines "person" as an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body and shall include each department, agency, and instrumentality of the United States.

9. The term "facility" means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste, or for managing hazardous secondary materials prior to reclamation. 40 C.F.R. § 260.10.

10. The term "storage" means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere. 40 C.F.R. § 260.10.

11. The term "disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters. 40 C.F.R. § 260.10.

12. Pursuant to 40 C.F.R. § 261.2, a "solid waste" is any discarded material that is not excluded under 40 C.F.R. § 261.4(a).

13. Pursuant to 40 C.F.R. § 261.3, a "hazardous waste" is a solid waste, as defined in § 261.2, if it exhibits any of the characteristics of hazardous waste identified in subpart C of Part 261.

14. The term "cathode ray tube" or "CRT" is defined as a vacuum tube, composed

primarily of glass which is the visual or video display component of an electronic device. A used, intact CRT means a CRT whose vacuum has not been released. A used, broken CRT means glass removed from its housing or casing whose vacuum has been released. 40 C.F.R. § 260.10.

15. The regulation at 40 C.F.R. § 261.4(a), identifies materials that are not solid wastes for purposes of Part 261, Identification and Listing of Hazardous Waste. Specifically, 40 C.F.R. § 261.4(a)(22) sets forth the following provisions:

a. Used, intact CRTs as defined in § 260.10 of this chapter are not solid wastes within the United States unless they are disposed, or unless they are speculatively accumulated as defined in § 261.1(c)(8) by CRT collectors or glass processors.
b. Used, broken CRTs as defined in § 260.10 of this chapter are not solid wastes provided that they meet the requirements of § 261.39.
c. Glass removed from CRTs is not a solid waste provided that it meets the requirements of § 261.39(c).

16. The conditional exclusion for used, broken CRTs and processed CRT glass undergoing recycling is found at 40 C.F.R. § 261.39. This regulation states that used, broken CRTs are not solid wastes if they meet certain conditions. The regulation sets forth conditions: a) prior to processing, b) requirements for used CRT processing, c) processed CRT glass sent to CRT glass making or lead smelting; and d) use constituting disposal.

17. Glass from used CRTs that is used in a manner constituting disposal must comply with the requirements of 40 C.F.R. Part 266, subpart C instead of the requirements of this section. 40 C.F.R. § 261.39(d).

18. The regulation at 40 C.F.R. § 266.22 states that owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of subparts A through L of parts 264, 265 and 267, and parts 270 and 124 of this chapter and the notification requirement under Section 3010 of RCRA.

19. According to the preamble to CRT rule, televisions and color computer monitors contain an average of four pounds of lead and studies show that CRTs leach lead at levels considerably above the toxicity characteristic regulatory level used to classify lead-containing wastes as hazardous (40 C.F.R. § 261.24(b)). In addition, CRTs often contain mercury, cadmium, and arsenic. *See* 71 Fed. Reg. 42930 – 42931 (July 28, 2006).

20. The Toxicity Characteristic Leaching Test (TCLP) regulatory limit for lead is 5 mg/L, as found in subpart C of Part 261, 40 C.F.R. § 261.24.

21. Section 3005(a) of RCRA, 42 U.S.C. § 6925(a), requires the Administrator to promulgate regulations requiring each person owning or operating an existing facility for the treatment, storage, or disposal of hazardous waste identified or listed under this subchapter to

have a permit issued pursuant to this subpart. Section 3005(a) states that after such regulations take effect the treatment, storage, or disposal of any such hazardous waste is prohibited except in accordance with such a permit.

General Factual Background

22. Respondent operates within the state of Iowa. Respondent is considered a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

23. Aaron Rochester processed electronic equipment for recycling through his business Siouxland PC and Electronics Recycling LLC (hereinafter "Mr. Rochester" or "Recycletronics"). As part of the recycling process, cathode ray tubes were processed as described at 40 C.F.R. § 260.10. Other equipment received by Recycletronics was sold to brokers for reuse or recycling.

24. A building and property located at 3035 Highway 75 North, Sioux City, Iowa (hereinafter "Feed Mill Facility") was rented to Mr. Rochester in 2012-2013 by the owner at that time, the Farmers Cooperative Elevator of Kingsley ("Kingsley Elevator").

25. During 2012-2013, Mr. Rochester and Recycletronics began storing processed CRT glass at the Feed Mill Facility.

26. Mr. Rochester and Recycletronics did not have a permit to store processed CRT glass at the Feed Mill Facility.

27. For purposes of this proceeding, Respondent is the current owner of the Feed Mill Facility.

28. Respondent purchased the Feed Mill Facility in June of 2014. According to Respondent, at the time it purchased the Feed Mill Facility, it did not know and was unaware that CRT glass was present at the Feed Mill Facility.

29. On or about April 4-5, 2017, representatives of EPA conducted inspections at multiple locations where Mr. Rochester and Recycletronics stored processed CRT glass, and specifically at the Feed Mill Facility. During this inspection, an X-ray fluorescence (XRF) machine was utilized to screen lead levels in the glass and physical confirmation samples were collected.

30. The physical sample of leaded glass collected from the Feed Mill Facility exceeded the regulatory limit for lead. The analytical results for the leaded glass revealed lead concentrations up to 8.54 mg/L.

31. Based on information collected during the April 2017 inspection, EPA estimates that approximately 2,199,600 pounds of broken leaded glass is stored at the Feed Mill Facility.

32. On November 29, 2017, EPA entered a Consent Agreement and Final Order with Mr. Rochester and Recycletronics which requires cleanup of six illegal storage facilities created by those entities, including the Feed Mill Facility. Mr. Rochester and Recycletronics have not had the financial ability to conduct the cleanup. On February 23, 2018, Mr. Rochester filed for protection under Chapter 7 of the federal bankruptcy law.

Violation

33. Complainant hereby states and alleges that Respondent has violated RCRA and the federal regulations promulgated thereunder, as follows:

Count 1
Owning a Treatment, Storage or Disposal Facility Without a RCRA Permit or RCRA Interim Status

34. Complainant hereby incorporates the allegations contained in Paragraphs 22 through 32, above, as if fully set forth herein.

35. Section 3005 of RCRA, 42 U.S.C. § 6925, requires each person owning or operating a facility for the treatment, storage, or disposal of hazardous waste identified or listed under Subchapter C of RCRA to have a permit for such activities.

36. Beginning in 2012, Mr. Rochester and Recycletronics failed to comply with the exemption to the definition of solid waste for CRT glass at the Feed Mill Facility.

37. Sampling revealed the CRT glass contains lead exceeding the regulatory limit.

38. CRT glass was speculatively accumulated by Mr. Rochester and Recycletronics at the Feed Mill Facility, rendering it a hazardous waste storage facility.

39. At no time has EPA issued a RCRA permit to Mr. Rochester, Recycletronics, the prior owner of the Feed Mill Facility, or Respondent to own or operate a hazardous waste storage facility at the Feed Mill Facility.

40. Respondent is the current owner of the Feed Mill Facility.

41. Respondent is not authorized to own a hazardous waste storage facility at the Feed Mill Facility, and therefore is an owner of a hazardous waste treatment, storage or disposal facility without a permit in violation of Section 3005 of RCRA, 42 U.S.C. § 6925.

CONSENT AGREEMENT

42. Respondent and EPA agree to the terms of this Consent Agreement and Final Order and Respondent agrees to comply with the terms of the Final Order portion of this Consent Agreement and Final Order.

43. Respondent admits the jurisdictional allegations of this Consent Agreement and Final Order and agrees not to contest EPA's jurisdiction in this proceeding or any subsequent proceeding to enforce the terms of the Final Order portion of this Consent Agreement and Final Order set forth below.

44. Respondent neither admits nor denies the factual allegations set forth in this Consent Agreement and Final Order.

45. Respondent waives any right to contest the allegations set forth herein in any proceeding to enforce, and its right to appeal the Final Order accompanying this Consent Agreement.

46. Respondent and Complainant agree to resolve the matters set forth in this Consent Agreement and Final Order without the necessity of a formal hearing and to each bear its respective costs and attorney's fees.

47. Nothing contained in the Final Order portion of this Consent Agreement and Final Order shall alter or otherwise affect Respondent's obligation to comply with all applicable federal, state, and local environmental statutes and regulations and applicable permits.

48. This Consent Agreement and Final Order shall resolve Respondent's liability for all allegations of fact and law and violations alleged in this Consent Agreement and Final Order, upon performance and documentation of the injunctive relief required in this Consent Agreement and Final Order.

49. The undersigned representative certifies that he or she is fully authorized to enter the terms and conditions of this Consent Agreement and Final Order and to execute and legally bind Respondent to it.

50. Respondent consents to the issuance of this Consent Agreement and Final Order, and consents to receiving the filed Consent Agreement and Final Order electronically at the following e-mail addresses: Brooke.Gaede@bnsf.com, Gregory.Jeffries@bnsf.com, and pstrassner@thompsoncoburn.com.

Effective Date

51. This Consent Agreement and Final Order shall be effective upon filing of the Final Order by the Regional Hearing Clerk for EPA, Region 7. Notice of such filing shall be given promptly by Complainant in accordance with the Certificate of Service which is attached and incorporated herein. Unless otherwise stated, all time periods stated herein shall be calculated in calendar days from such date.

Reservation of Rights

52. This Consent Agreement and Final Order shall not in any case affect the right of the Agency or the United States to pursue appropriate injunctive or other equitable relief or criminal sanctions for any violations of law except those resolved in Paragraph 48. Except as provided herein, this Consent Agreement and Final Order does not waive, extinguish or otherwise affect Respondent's obligation to comply with all applicable provisions of RCRA and regulations promulgated thereunder.

53. If Respondent fails to perform the work as set forth in the Final Order of this Consent Agreement and Final Order, and further described in the attached work plan, EPA reserves the right to enforce the terms of the Final Order portion of this Consent Agreement and Final Order by initiating a judicial or administrative action under Section 3008 of RCRA, 42 U.S.C. § 6928, and to seek penalties against Respondent in an amount not to exceed Sixty-One Thousand Ninety-Eight Dollars ($61,098) per day, per violation, pursuant to Section 3008(c) of RCRA, for each day of non-compliance with the terms of the Final Order, or to seek any other remedy allowed by law.

54. Complainant reserves the right to take enforcement action against Respondent for any future violations of RCRA and its implementing regulations that are not addressed herein and to enforce the terms and conditions of this Consent Agreement and Final Order.

55. Except as expressly provided herein, nothing in this Consent Agreement and Final Order shall constitute or be construed as a release from any claim (civil or criminal), cause of action, or demand in law or equity by or against any person, firm, partnership, entity, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Feed Mill Facility.

56. Respondent specifically reserves and does not waive and this Consent Agreement and Final Order shall not prejudice any and all rights and remedies Respondent has or may have against prior owners and operators of the Feed Mill Facility and all other third parties including but not limited to cost recovery and contribution rights under CERCLA (42 U.S.C. § 9601, et seq.) and any and all other rights and/or remedies under any other federal, state, local statute regulation or ordinance and/or common law.

57. Notwithstanding any other provisions of the Consent Agreement and Final Order, an enforcement action may be brought pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973, or other statutory authority, should EPA find that the future handling, storage, treatment, transportation, or disposal of solid waste or hazardous waste at Respondent's facility may present an imminent and substantial endangerment to human health and the environment.

58. The headings in this Consent Agreement and Final Order are for convenience of reference only and shall not affect interpretation of this Consent Agreement and Final Order.

59. The provisions of this Consent Agreement and Final Order shall be deemed satisfied upon a written determination by Complainant that Respondent has fully implemented the actions required in the Final Order.

FINAL ORDER

A. Work To Be Performed

1. Due to the potential for harm to human health and the environment, Complainant is requiring Respondent, and Respondent agrees to clean up the Feed Mill Facility.

2. **Contractor Selection**. Respondent has notified EPA of the name and qualifications of its selected Contractor to carry out all activities set forth herein. All work performed under this Final Order shall be under the direction and supervision of a professional engineer licensed in the state of Iowa or other Iowa licensed environmental professional with expertise in environmental investigations and remediation. Complainant approves of TRC Environmental Corporation (TRC) as Respondent's Contractor. Complainant also approves Clean Harbors Environmental Services, Inc. as a contractor for the project.

3. **Project Manager Selection**. Respondent has notified EPA of the name and qualifications of its selected Project Manager. To the greatest extent possible, Respondent's Project Manager shall be readily available during all work to be performed hereunder. Respondent's Project Manager shall have the authority to act on behalf of Respondent. Complainant approves of Tyler Wickesberg of TRC as Respondent's Project Manager.

4. Respondent shall notify EPA of the name and qualifications of any other Contractors or Subcontractors retained to perform work under this Consent Agreement and Final Order at least seven (7) days prior to commencement of such work. Contractors or Subcontractors include, but are not limited to, hourly workers, the names and EPA identification Numbers of the transporter(s), recycling facilities and/or TSD facility(ies) that will be used for the transportation, disposal or disposal facility and/or recycling of intact, used, broken, and/or crushed CRT glass and other electronic materials.

5. EPA retains the right to approve or disapprove the selected Contractors, Subcontractors, or Project Manager retained by the Respondent. If EPA disapproves of any Contractors, Subcontractors, or Project Manager, Respondent shall retain a different Contractor, Subcontractor, or Project Manager, and notify EPA of the new Contractor, Subcontractor, or Project Manager's name and qualifications within thirty (30) calendar days following receipt of EPA's disapproval. If EPA still disapproves of the selected Contractor, Subcontractor, or Project Manager, Respondent shall propose a different Contractor, Subcontractor and/or Project Manager until all are approved by EPA's representative identified in Paragraph 12 below.

6. Respondent shall apply for an EPA Identification Number for the Feed Mill Facility pursuant to 40 C.F.R. § 262.12 and notify the EPA within fourteen (14) days of the effective date of the Final Order.

7. Respondent agrees to allow EPA and IDNR and/or their contractors access to the Feed Mill Facility to observe work performed pursuant to this Consent Agreement and Final Order.

8. **Work Plan.** EPA has approved of the Work Plan attached hereto as Exhibit A. Respondent shall perform the Work described in the Work Plan in accordance with the schedule provided herein. The Work Plan, including the schedule, may be modified by the written agreement of Complainant and Respondent.

9. Respondent shall submit a monthly summary report by the 5th day of each month (to cover the preceding calendar month or partial calendar month) to EPA that includes all of the following information:

a. A description of work performed in the preceding thirty (30) day period;
b. The date of each shipment;
c. The names and EPA Identification Numbers of the transporter(s) and disposal and/or recycling facilities utilized for each shipment;
d. The total amount of hazardous waste disposed or CRT glass recycled in each shipment;
e. A legible copy of the hazardous waste manifest or bills of lading for each shipment; and
f. A certification from Respondent, or a representative of Respondent, as to the accuracy of the monthly summary report. The certification shall read:

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

10. Within thirty (30) calendar days of the final shipment, Respondent shall submit to EPA a Completion Report that includes all of the following:

a. A list of the date and manifest number and/or bill of lading for each shipment;
b. A legible copy of all hazardous waste manifests or bills of lading for each shipment;
c. A summary of the total amount of hazardous waste disposed or CRT glass recycled;
d. A detailed summary of the actual cost of Respondent's performance of the actions described in the Completion Report. These costs should be supported by legible copies of all invoices, bills, and receipts along with documentation that all costs have been paid by Respondent.
e. A certification from Respondent, or a representative of Respondent, as to the accuracy of the Completion Report. The certification shall be identical

to the certification in Paragraph 9(f) above.

11. EPA will conduct an inspection of the Feed Mill Facility to verify that all hazardous waste has been removed. EPA will also review the Completion Report. If EPA finds that the work has not been completed satisfactorily, Respondent shall submit a supplemental Work Plan in accordance with Paragraphs 1-10 above for the remaining work as described by EPA. If EPA finds that the work has been completed satisfactorily, EPA will approve the Completion Report.

12. Respondent shall submit all documentation generated to comply with the requirements as set forth in Paragraphs 1 - 11 above to the following address and e-mail address:

Rebecca Wenner, RCRA Section/ECAD
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219
Wenner.Rebecca@epa.gov

B. Parties Bound

13. The Final Order portion of this Consent Agreement and Final Order shall apply to and be binding upon Respondent and Respondent's agents, successors and/or assigns. Respondent shall ensure that all contractors, employees, consultants, firms, or other persons or entities acting for Respondent with respect to matters included herein comply with the terms of this Consent Agreement and Final Order.

COMPLAINANT:

U.S. ENVIRONMENTAL PROTECTION AGENCY

CANDACE BEDNAR Digitally signed by CANDACE BEDNAR Date: 2020 05.20 16:09:10 -05'00'

Date

Candace Bednar
Chemical Branch Chief
Enforcement and Compliance Assurance Division

KELLEY CATLIN Digitally signed by KELLEY CATLIN Date: 2020 05.19 07:29:54 -05'00'

Date

Kelley Catlin
Office of Regional Counsel

RESPONDENT:

BNSF Railway Company

May 14, 2020
Date

John D. Lovenburg
Signature

John D. Lovenburg
Printed Name

Vice President Environmental
Title

IT IS SO ORDERED. This Final Order shall become effective upon filing.

KARINA BORROMEO

Digitally signed by KARINA BORROMEO
Date: 2020.05.21 14:06:53 -05'00'

Date

Karina Borromeo
Regional Judicial Officer

EXHIBIT A

Removal Action Work Plan

FORMER FEED MILL FACILITY
SIOUX CITY, WOODBURY COUNTY, IOWA

April 2020

Prepared for:

BNSF RAILWAY

BNSF Railway Company

Prepared by:

TRC

Eagan, Minnesota

Removal Action Work Plan

FORMER FEED MILL FACILITY
SIOUX CITY, WOODBURY COUNTY, IOWA

Prepared for:

BNSF Railway Company
Minneapolis, Minnesota

Prepared by:

TRC Environmental Corporation
1301 Corporate Center Drive, Suite 177
Eagan, Minnesota 55121

TRC Project No. 364413

April 2020

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LIST OF ATTACHMENTS

LIST OF ACRONYMS

bgs	below ground surface
BNSF	BNSF Railway Company
CAFO	Consent Agreement and Final Order
CFR	Code of Federal Regulations
CRT	Cathode Ray Tube
HASP	Health and Safety Plan
LDR	Land disposal restrictions
LQG	Large quantity generator
mg/kg	milligrams per kilogram
mg/m^3	milligrams per meter cubed
mg/L	milligrams per liter
NAAQS	National Ambient Air Quality Standards
OSHA	Occupational Safety and Health Administration
PPE	Personal protective equipment
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
TRC	TRC Environmental Corporation
USEPA	United States Environmental Protection Agency
RAWP	Removal Action Work Plan

1.0 INTRODUCTION

On behalf of BNSF Railway Company (BNSF), TRC Environmental Corporation (TRC) prepared this Removal Action Work Plan (the RAWP) for the property located at 3035 Highway 75 North in Sioux City, Iowa (the Site). The removal action will be conducted to address electronics waste (E-waste) materials consisting of cathode ray tubes (CRTs) containing leaded glass from television and computer screens stored at the Site.

This RAWP outlines the scope of work to address requirements set forth by the Consent Agreement and Final Order (CAFO) agreed upon by BNSF and USEPA Region 7 to remove the hazardous E-waste from the Site.

1.1 Site Description

The Site is located in Section 14, Township 89N, Range 47W in Sioux City, Woodbury County, Iowa. Surrounding properties consist of mixed industrial and commercial operations, including the BNSF Sioux City railyard to the west and south, an auto storage/impound lot to the west, a bobcat equipment facility to the north, and mixed commercial/industrial facilities to the east (Figure 1).

1.2 Background

The Site was initially developed and operated as a feed mill cooperative. Starting in about 2012, the cooperative leased the facility to Recycletronics for the storage of E-waste consisting of leaded CRT glass. Neither the cooperative nor Recycletronics obtained a RCRA permit for the storage of the E-waste at this Site. Based on facility inspection, Recycletronics received the CRT glass and stored it within the warehouse portion of the feed mill building in cardboard gaylord boxes. CRT glass stored inside the gaylord boxes varies from intact monitors to crushed glass cutlet. BNSF purchased the property at 3035 Highway 75 North in June of 2014, unaware of the E-waste stored within the Site building. In April of 2017, USEPA representatives inspected multiple former Recycletronics locations, including the Site. Based on information collected during the April 2017 inspection, the USEPA estimated approximately 2,199,600 pounds of broken leaded glass stored in gaylord boxes without a RCRA permit or receiving RCRA interim status for the former Feed Mill Facility. Subsequent reconnaissance of the Site by TRC and BNSF representatives during the waste contractor bid process estimates the actual quantity of CRT glass to be lower than the USEPA estimate based on a survey of visually accessible gaylord box weight tickets inside the warehouse building (bid package estimate of 1,250,000 pounds). However, the exact quantity of CRT glass is difficult to determine based on present storage within the Site building and limited documentation BNSF and USEPA have from Recycletronics.

2.0 SITE PREPARATION FOR FIELD WORK

2.1 Health and Safety

A site-specific *Health and Safety Plan* (HASP) has been prepared to establish general Site operating procedures, safety guidelines and contingency plans for all proposed work to be performed on the Site. A copy of the HASP is included as Attachment A. The HASP is dynamic in nature and may be revised if Site conditions change during removal action activities. The HASP and any subsequent addenda, which includes a HASP prepared by the waste removal contractor, will apply to all personnel who are involved with removal activities at the Site. All work will be conducted in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, including 29 Code of Federal Regulations (CFR) 1910 (General Industry Standards), and 29 CFR 1926 (Construction Industry Standards). The OSHA Lead Standard, 1910.1025, will govern protective and preventative measures implemented for personnel and community exposure mitigation during Site removal action activities. These measures will include conducting pre and post blood lead level monitoring for on-Site personnel, work zone and perimeter dust monitoring, personnel exposure sampling, and personal protective equipment (PPE) selection.

The HASP also provides information pertaining to the following RCRA Contingency Plan Requirements for Large Quantity Generators (LQGs) of hazardous waste, governed by 40 CFR 264.52: Responses to fire, explosions, unplanned hazardous waste releases; Emergency services response planning with local fire & police, hospitals, and response contractors; Emergency coordinator contact information; Emergency equipment list; and, Site evacuation procedures in the event of an emergency.

Additionally, all personnel who will be directly involved in the removal action work conducted on Site property will have received the appropriate hazardous waste site worker and e-RAILSAFE training. All field personnel will be trained in general and Site-specific health and safety procedures, as well as quality assurance (QA) and quality control (QC) procedures. Finally, all on-Site TRC and waste removal subcontractor personnel will have completed the BNSF Railway Company Contractor Orientation course prior to beginning field activities on Site property.

2.2 Pre-Removal Site Assessment

Prior to beginning on-Site activities, a Site-wide assessment of existing conditions will be conducted by TRC and the waste removal contractor to document existing conditions via photography and/or video. This assessment will be utilized to determine necessary Site restoration activities following E-waste removal to satisfy project completion requirements detailed within the CAFO.

2.3 Hazardous Waste Profiling

All CRT glass E-waste to be removed from the Site will be profiled as characteristically hazardous waste for lead (D008). Hazardous E-waste profiling will be completed with the waste contractor's designated landfill prior to initiating waste removal activities. In addition, BNSF has obtained a USEPA-assigned hazardous waste generator identification number for the Site (#IAR000522367).

2.4 Nonhazardous Waste Profiling

Once the removal action work is underway, if additional waste materials are encountered that are not identified as CRT glass, they will be segregated from the E-waste being managed as part of this removal action and profiled separately.

2.5 Site Preparation

Prior to beginning the removal activities, the Site will be prepared for on-Site activities by TRC and the removal contractor. A Site-wide survey of existing conditions will be conducted using photography and/or video to document conditions prior to any on-Site activities. Work zones, including an exclusion zone, contamination reduction zone, and support zone, will be identified and defined. Staging areas for vehicles and other equipment will be also be identified. Decontamination stations for equipment and personnel will be established outside the work zone as necessary. The waste contractor will create a larger access at the south garage door of the Site warehouse for safer equipment operation during waste loading work. The opening will allow for increased vertical and horizontal clearances for forklift and skid steer equipment shuttling the waste from the warehouse building out to trucks staged at the Site concrete loading dock at the south side of the building. Once the expanded opening is completed, a larger garage door will be constructed and installed to provide security during and after waste removal activities.

Railings will be installed where necessary and equipment bumpers will be installed along the edge of the exterior loading dock on the south side of the building in order to prevent equipment from driving off the raised dock. A secondary containment berm will be installed below the raised loading dock in order to contain materials that may fall during loading.

Appropriate traffic patterns for field personal and equipment will be identified and marked with signage in the field prior to beginning removal efforts as appropriate.

2.6 Air Monitoring

Air monitoring will be performed and documented throughout Site field activities due to the potential of lead from crushed CRT glass mixing with dust generated during E-waste handling and removal work. Specifics are provided in the *Ambient Air Quality*

Monitoring Plan (AAQMP) included as Attachment B. Work zone and surrounding perimeter air quality will be monitored during active waste removal work using a dust monitor to evaluate potential worker and community exposures to airborne particulate concentrations. The work zone monitoring locations will be situated near the Site warehouse garage door where equipment traffic will be most frequent, and immediately downwind from the exterior truck waste loading area. Perimeter monitoring locations will include upwind and downwind areas near the Site property limits. Air quality readings will be collected at a minimum of once every 15 minutes from both work zone and perimeter monitoring locations during active waste removal work. Monitoring location, total particulate concentration, date, time, and wind direction will be recorded on air monitoring logs or continuously by the dust monitoring equipment. The work zone dust action level will be set to 3.14 milligrams per cubic meter (mg/m^3). This action level is a derived 8-hour permissible exposure limit (PEL) for dust containing lead from CRT glass with the highest observed lead concentration from sampling conducted at the Site. The perimeter dust action level will be set to 0.15 mg/m3, which is based on the 24-hr National Ambient Air Quality Standard (NAAQS) for particulate matter 10 micrometers or less in diameter (PM-10). Refer to the AAQMP in Appendix B of this RAWP for more information. Air monitoring results will be documented using a log book/forms and/or electronically recorded, and will be provided as an attachment to the Removal Action Completion Report for the Site.

2.7 Dust Suppression

During waste removal activities, measures will be implemented to mitigate dust that has the potential to contain lead from crushed CRT glass. During E-waste removal from the Site building, gaylord boxes will be sprayed with a dish soap solution using a Hudson sprayer to suppress dust as necessary. A dust curtain wall will be installed at the south garage door to further control dust emissions exiting the Site building during removal action work.

2.8 USEPA Notification of Work

As requested by the USEPA, five days before any on-Site work is scheduled to begin TRC will notify the USEPA to allow its representatives sufficient time to make arrangements for observes work being performed. The notification correspondence will be directed to the following USEPA contact:

Rebecca Wenner, RCRA Section/ECAD
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219
Wenner.Rebecca@epa.gov

The notification will describe the work expected to be performed and will include the anticipated dates, times, and location of the work.

3.0 WASTE REMOVAL PLAN

The following sections outline the removal actions for hazardous and nonhazardous E-waste from the Site. BNSF selected Clean Harbors Environmental Services to serve as the waste removal contractor for this removal action.

3.1 Hazardous Waste Removal, Transport and Disposal

TRC and the waste removal contractor will visually inspect contents of gaylord boxes as they are removed from the Site building. Containers found to contain leaded glass E-waste, including broken and intact CRTs, will be directly loaded into semi end dump trailers for disposal. Both a forklift and skid loader will be used by the removal contractor to facilitate loading of the gaylord boxes into the trailers. Each trailer will be filled with approximately 20 tons of E-waste, at which point it will be closed, covered, and secured for shipment. As noted previously, gaylord boxes and waste will be sprayed with a dish soap solution for dust control. A secondary containment pad will be constructed around the truck loading area to collect CRT glass potentially spilled onto the exterior ground surface.

The removal contractor will subcontract licensed waste haulers that will provide semi trucks equipped with end-dump trailers for E-waste transport. The removal subcontractor will coordinate with their waste transportation subcontractors for transportation. Each load will contain approximately 20 tons of E-waste, which will be transported under manifest directly to the following Clean Harbors landfill:

Clean Harbors Lone Mountain Landfill Facility
USEPA ID: OKD065438376
Main Phone Number: 580-697-3500
Address: 40355 S. County Road 236
Waynoka, OK 73860

The Lone Mountain Landfill Facility is a RCRA-permitted hazardous waste landfill. Hazardous E-waste will be disposed of by microencapsulation. The facility handles direct landfill disposal for solids (bulk and containerized) and solidification of waste liquid or waste containing free liquids prior to landfill disposal, as well as stabilization of metal constituents to meet applicable Federal Land Disposal Restrictions (LDR) treatment standards.

3.2 Nonhazardous Waste Disposal

Should any nonhazardous material that differs from the CRT-glass E-waste be identified during removal action work, it will be characterized and profiled for transporting to the following nonhazardous landfill facility:

Waste Management – Pheasant Point Landfill Facility (Subtitle-D)
Permit: NE0204
Main Phone Number: 866-909-4458
Address: 13505 N 216th St.
Bennington, NE 68007

3.3 Decontamination

Established work zones will be utilized in conjunction with specific procedures determined by the removal contractor for the decontamination of equipment and personnel. Decontamination procedures will be included in the removal contractor HASP, provided before the project start, and will include steps for proper PPE removal and decontamination as well as equipment decontamination locations. Equipment and personnel are to be decontaminated in combination with the sequential doffing of PPE and using specific stationing within an established contamination reduction zone. Stationing will begin with the cleaning and removal of the most heavily contaminated items, progressing to the final station where least contaminated items are cleaned and removed. All personnel and equipment will be thoroughly decontaminated before leaving the contamination reduction zone and entering the support zone.

Most PPE and loading area containment materials used during Site removal action work will be transported to the project landfill for disposal with the E-waste.

3.4 Site Restoration

Following removal of the E-waste from the Site, the warehouse building interior will be restored to a broom-clean condition to ensure no CRT glass remains inside the building. The loading area containment materials will be hauled away for disposal with the E-waste, and assessment of exterior surfaces will be completed to ensure no CRT glass was spilled onto outdoor portions of the Site during truck loading and transport activities. Should removal activities impact surficial soil at the exterior of the Site building, the top 6-inches of soil from the affected area will be excavated and transported to the Lone Mountain landfill for disposal. The final excavation limits of impacted soil removal will then be measured by a licensed surveying contractor prior to placement of clean stone to restore the area to existing grade. Documentation of all Site restoration activities will be provided within a Removal Action Completion Report.

4.0 REPORTING

TRC will oversee and document all waste removal activities completed as part of this project. Within thirty calendar days of the final shipment of E-waste for off-Site disposal, BNSF will submit a Removal Action Completion Report to the USEPA that includes the following information:

- A summary of the removal action and restoration activities conducted at the Site
- A list of the date and manifest number and/or bill of lading for each waste shipment;
- A legible copy of all hazardous waste manifests or bills of lading for each waste shipment;
- A summary of the total amount of hazardous waste disposed or CRT glass recycled;
- Collection of daily and weekly correspondence and progress reporting submitted to USEPA during the course of the project;
- A detailed summary of the actual cost to BNSF to complete the actions described in the Removal Action Completion Report; and
- A certification from Respondent, or a representative of Respondent, as to the accuracy of the Completion Report.

Site activities will be recorded in a field book and on appropriate log forms, as needed. Photographic documentation of the E-waste removal action work and air monitoring results will also be documented by TRC and provided as an attachment to the Removal Action Completion Report.

5.0 SCHEDULE

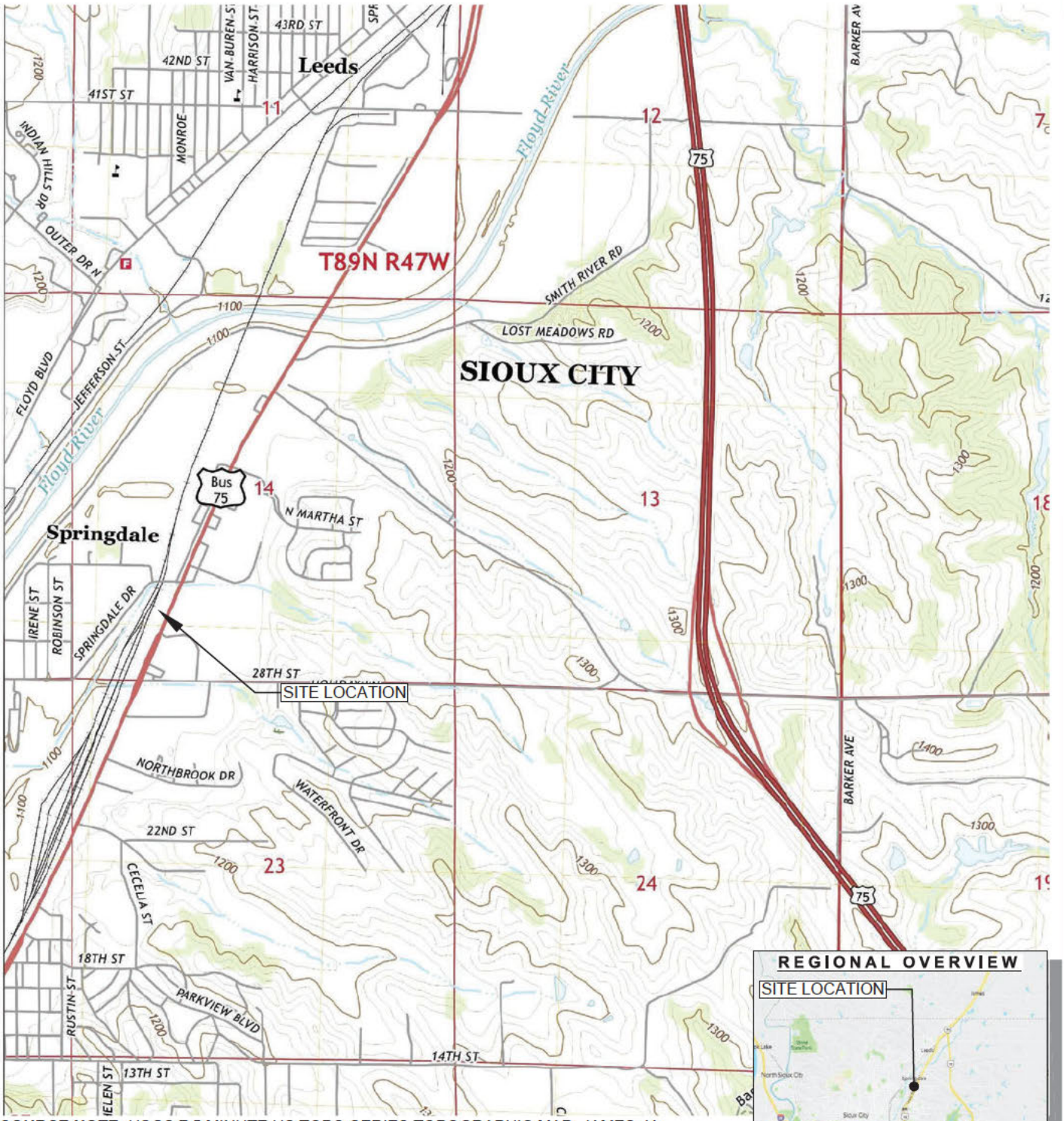
A schedule of major milestones and projected timeframes is provided below. Weekly meetings will be held to go over the completed and projected tasks, and changes to the schedule. Work on-Site may be impacted by removal contractor schedule and weather. Additionally, this schedule has been prepared under the assumption current travel and work restrictions imposed by federal and/or state units of government as part of the Covid-19 outbreak will not impact travel and work at the Site. Should current work and travel restrictions imposed due to the Covid-19 outbreak extend beyond May 2020, a revised removal action schedule will be provided to USEPA as an addendum to this RAWP.

Event	Estimated Schedule Start or Due	Estimated Time to Complete (Working Days)	Responsible Party
Bid walk of the Site	January 2020	Completed	Contractor/TRC
Issue Invitation to Bid / Request for Proposals (RFP)	January 2020	Completed	BNSF / TRC
Contractor Bid Submittals	February 2020	Completed	Contractor
Contractor Notice of Award	March 2020	Completed	BNSF
Waste Profiling / Project Planning	March-April 2020	30 days	BNSF/Contractor/TRC
Mobilization for Work to Begin at Site	May 2020	2 days	Contractor
Site Preparation	May 2020	3 days	Contractor with TRC oversight
E-Waste Removal from Site Building	May 2020	9 days	Contractor with TRC oversight
E-Waste Transport	May-June 2020	10 days	Contractor with TRC oversight
E-Waste Disposal	May-June 2020	9 days	Contractor/Landfill
Site Restoration	June 2020	2 days	Contractor with TRC oversight
Demobilization	June 2020	1 day	Contractor with TRC oversight
Reporting	June-July 2020	30 days	BNSF/TRC

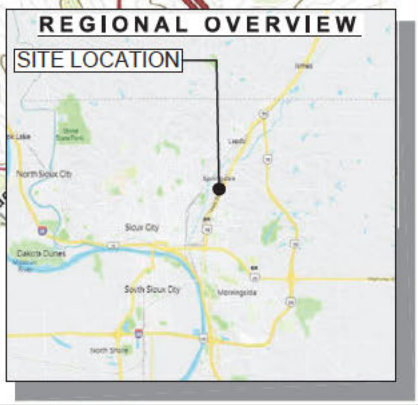
6.0 REFERENCES

USEPA Region 7. April, 2020. Draft Consent Agreement and Final Order Between BNSF and USEPA Region 7.

FIGURE 1 – Site Location Map



SOURCE NOTE: USGS 7.5 MINUTE US TOPO SERIES TOPOGRAPHIC MAP, JAMES, IA QUADRANGLE, 2019.



N

0 2000 4000

SCALE IN FEET

TRC
230 West Monroe St.
Suite 630
Chicago, IL 60606
Phone: 312.578.0870

PROJECT:

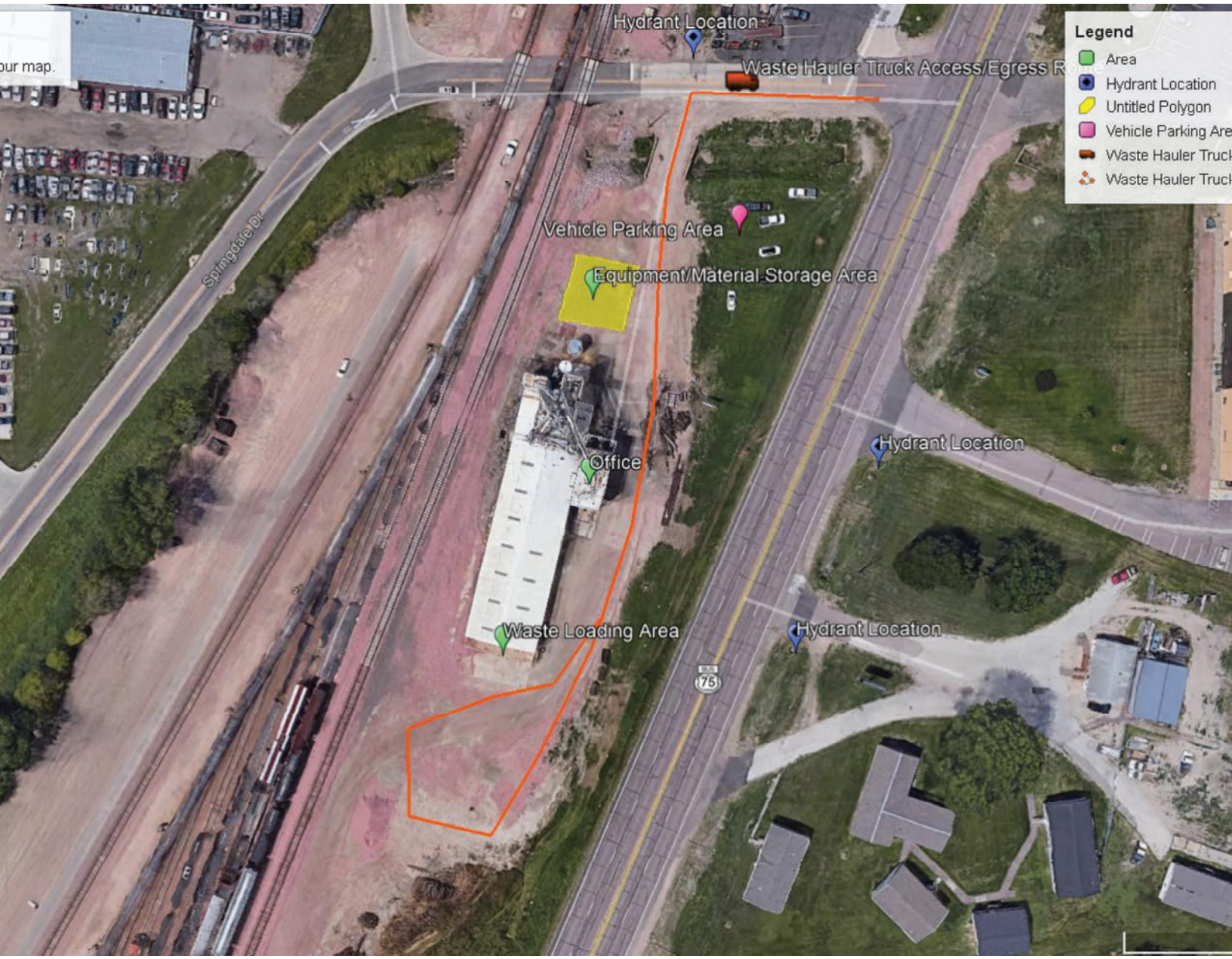
BNSF
FORMER FEED MILL FACILITY
SIOUX CITY, IOWA

TITLE:

SITE LOCATION MAP

DRAWN BY:	S.ALBERTS
CHECKED BY:	T.WICKESBURG
APPROVED BY:	C.HARVEY
DATE:	APRIL 2020
PROJ. NO.:	364413
FILE:	364413-01(topo).dwg

FIGURE 1


Hydrant Location
Waste Hauler Truck Access/Egress Route
Legend
Area
Hydrant Location
Untitled Polygon
Vehicle Parking Area
Waste Hauler Truck
Waste Hauler Truck
Springdale Dr
Vehicle Parking Area
Equipment/Material Storage Area
Office
Hydrant Location
Waste Loading Area
Hydrant Location
75

ATTACHMENT A

Site-Specific Health and Safety Plan

Site-Specific Health and Safety Risk Assessment (RA)

1. General Information

Business Unit: ☒ Environmental ECR

Client Name:	BNSF Railway	Project #:	364413.0002	Phase #: 2
Project Name:	Sioux City Railyard E-Waste Removal and Disposal	Project Manager:	Tyler Wickesberg	
Street Address:	3035 Highway 75 North	City, State, ZIP	Sioux City, IA 51105	
Prepared By:	Ben Wachholz	Date:	4/10/2020	
Approved By:	(PM) Tyler Wickesberg	Approved By:	(OSC) Tyler Gomoll	
Date:		Date:		

Proposed Date(s) of Work: May - June 2020

Proposed Scope of Work On Site (provide specific details, i.e., number of borings/wells, samples, etc.):

- Observe and document the removal, containment, and hauling of electronics waste (e-waste) consisting of leaded cathode ray tube (CRT) glass
- Monitor ambient air conditions during removal and communicate air quality with contractor
    - Perimeter Dust Action Level = 150 µg/m^3 of PM_{10} sustained for 1 minute
    - Derived Work Zone Dust Action Level for Lead = 3.14 mg/m^3 of PM_{10} sustained for 1 minute
- Potential soil sampling and e-waste material identification

TRC Role(s) On Site:

☐ TRC Staff Will Not Be On Site (RA is for subcontractor information only)

☐ Resident Project Representative (*e.g.*, RPR, "Observe and Document")

☐ Construction Manager (*e.g.*, CM, Managing/General Contractor)

☒ Representative for Client (*e.g.*, "Agent for Owner")

☒ General On-Site Consulting/Engineering Services

☒ Other

☒ Soil Sampling	☐ Solid Waste Sampling	☐ Liquid Waste Sampling
☐ Groundwater Sampling	☐ Surface Water Sampling	☐ Wastewater Sampling
☐ Sediment Sampling	☐ Surveying	☒ Oversight and Air Monitoring

Site-Specific Health and Safety Risk Assessment (RA)

Major Project Tasks		TRC Task	Subcontractor Task	Minimum PPE Level Required see HSP for details (suggested levels for Subcontractor work)
1.	Document e-waste management	☒	☐	☐ N/A ☒ D ☐ C ☐ B ☐ A
2.	Air monitoring and possible soil/material sample collection	☒	☐	☐ N/A ☒ D ☐ C ☐ B ☐ A

2. Contingency Planning

LOCAL EMERGENCY RESOURCES:	
Ambulance: 911	Emergency Room: 911
Police: 911	Fire Department: 911 or Sioux City Fire Department 712-279-6314
USEPA Contact: ☐ N/A ☒ Specify: Rebecca Wenner USEPA Region 7 Site Manager – 913-551-7644	Poison Control Center: 1-800-222-1222 ☐ Specify:
WorkCare (Early Incident Intervention): 888-449-7787	
Other (client services offered, etc.): BNSF Emergency = 1-800-832-5452	

SITE RESOURCES:			
Drinking Water Supply	☒ TRC	☒ Subcontractor	☐ Client
Wash Water Supply	☐ TRC	☒ Subcontractor	☐ Client
Telephone – Land Line		☐ Subcontractor	☐ Client
Telephone - Cellular	☒ TRC	☒ Subcontractor	
First Aid Kit	☒ TRC	☒ Subcontractor	
Fire Extinguisher	☒ TRC	☒ Subcontractor	☐ Client
Emergency Shower	☐ TRC	☐ Subcontractor	☐ Client
Eye Wash	☐ TRC	☒ Subcontractor	☐ Client
Other:	☐ TRC	☐ Subcontractor	☐ Client

Site-Specific Health and Safety Risk Assessment (RA)

EMERGENCY CONTACTS:	
TRC Technical Contact:	Tyler Wickesberg [redacted]
TRC Project Manager (PM):	Tyler Wickesberg [redacted]
TRC National Safety Director (Mike Glenn): – Confined Space Permits – Air Monitoring Plans – Scaffolding Permits – Hot Work Permits – Lockout/Tagout Permits – Demolition Plan Approval	Mike Glenn [redacted]
Radiation Safety Officer (RSO):	George Shereda [redacted]
TRC Office Safety Coordinator (OSC):	Tyler Gomoll [redacted]
TRC Field Contact / Emergency Coordinator:	Tom Perkins [redacted] Ben Wachholz [redacted]
Contractor Contact:	Todd Prescott, Clean Harbors Environmental Services, Inc. [redacted]
Client Contact:	Greg Jeffries, BNSF Railway [redacted]

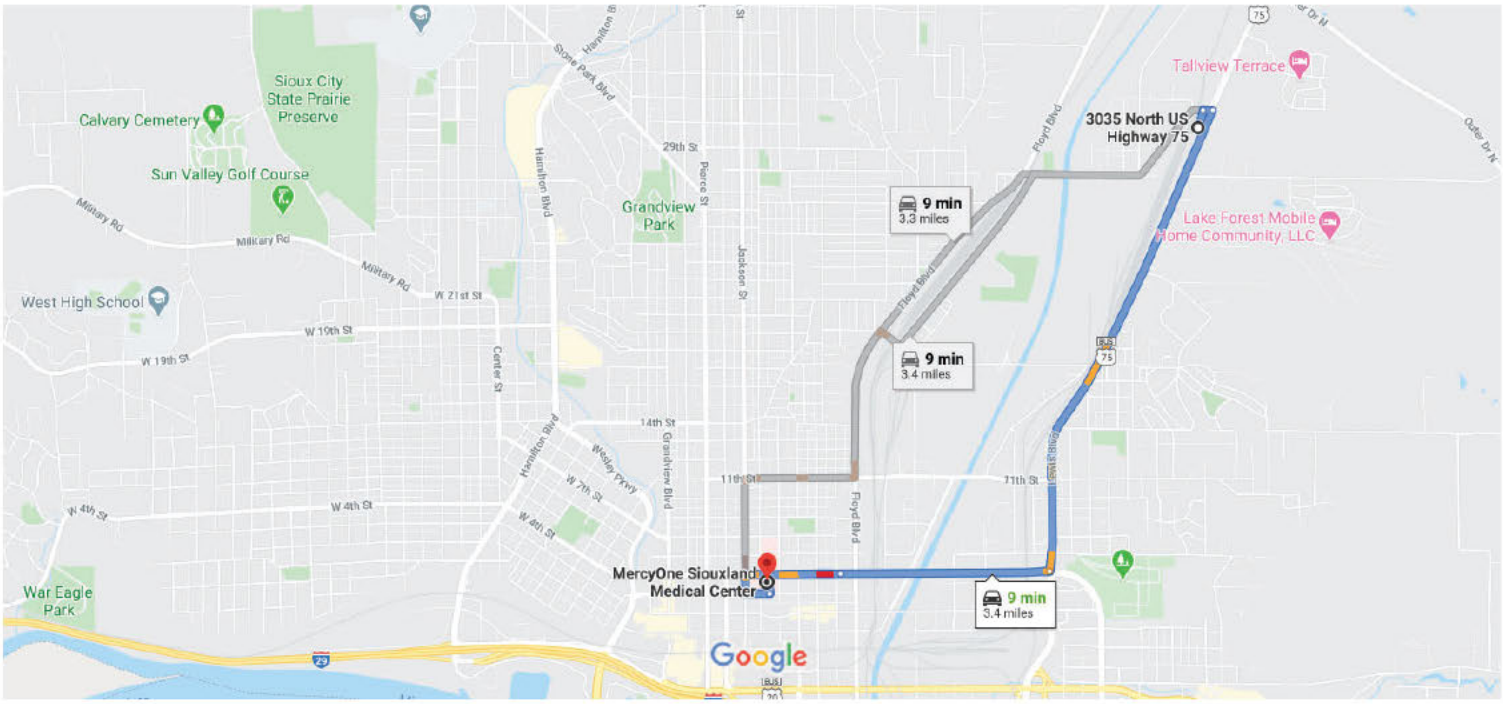
Emergency Hospital Route (provide detailed directions and/or attach a map):

The emergency route should be driven at least once before fieldwork begins, to verify that the planned route is feasible. Hospitals or clinics identified for emergency medical care should also be contacted, to verify that emergency care is provided at that location. Verify the exact location of the medical facility during this call.

Hospital: MercyOne Siouxland Medical Center Other:
801 5th Street, Sioux City, IA 51101

Phone No.: 712-279-2010

Google Maps 3035 North US Highway 75, Sioux City, IA to MercyOne Siouxland Medical Center Drive 3.4 miles, 9 min



3035 N US Hwy 75

Sioux City, IA 51105

Continue to US-75 BUS S

30 s (456 ft)

1. Head north toward 31st St

262 ft

2. Turn right onto 31st St

194 ft

Follow US-75 BUS S and 6th St to 5th St

7 min (3.2 mi)

3. Turn right onto US-75 BUS S

2.0 mi

4. Turn right after McDonald's (on the right)

0.8 mi

5. Continue straight to stay on 6th St

0.4 mi

6. Turn left onto Jackson St

400 ft

Continue on 5th St to your destination

47 s (0.1 mi)

7. Turn left at the 1st cross street onto 5th St

0.1 mi

8. Turn left

Destination will be on the right

144 ft

MercyOne Siouxland Medical Center

801 5th St, Sioux City, IA 51101

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Site-Specific Health and Safety Risk Assessment (RA)

Emergency Procedures:

If an emergency develops at the Site, the first responder should take the following course of action:

- Notify the proper emergency services for assistance.
- Notify other personnel at the Site.
- As soon as possible, contact the TRC Safety Manager to inform them of the incident.
- Prepare a summary report of the incident for the client representative as required.
- In the event of a fire, immediately evacuate the Site to the predetermined upwind rally point outside the building and notify the Sioux City Fire Department. A hydrant immediately north of the Site property will serve as the primary fire water source for the fire department. The northern extent of the Former Feed Mill building construction consists of a subbasement structure, and the truck scale located east of the building is set within a concrete vault structure. These subgrade features will be capable of capturing Site fire water. Due to the lead content of CRT glass inside the building, recovered fire water will require special handling and waste management actions.
- In the event of a tornado, on-Site personnel should seek shelter in the Site building bathroom located in the office, or one of several below grade vegetated drainage ditches running along roadways or rail lines to the east and west of the Site building.

Non-Emergency Incident Procedures:

If a non-emergency incident occurs at the Site, the employee(s) should take the following course of action:

- Stop all work.
- Notify other personnel at the Site.
- As soon as possible, contact the TRC Safety and Project Manager to inform them of the incident.
- Call WorkCare (888-449-7787)
- Prepare a summary report of the incident for the client representative as required.

Site-Specific Health and Safety Risk Assessment (RA)

Emergency Equipment Required On Site:

- ☒ First Aid Kit
- ☒ Emergency Eye Wash
- ☐ Emergency Shower
- ☒ Fire Extinguisher
- ☐ Spill Control Media
- ☒ Other: Brooms, Dustpans, Covered Trash Bin

Investigation of Near Miss Incident and Initial Report of Incident/Exposure:

TRC employees are required to report any incident, near miss, or injury, as soon as possible, by contacting the following:

☒ Office Safety Coordinator or TRC National Safety Director – Mike Glenn [redacted]

☒ Notify supervisor

☒ Notify project manager

☒ Notify client
(name): Greg Jeffries
(phone number) [redacted]

☐ Complete client report:

The incident report submittal operator will obtain the necessary information from the employee and enter the information into the H&S incident database. All appropriate H&S, HR, and legal staff will be notified and will follow up as necessary.

Note: Pursuant to TRC's "Drug and Alcohol-Free Workplace" policy (#TRC Academy Course #900013753), TRC may require employees or subcontractors to be tested upon reasonable suspicion, following accidents or incidents during work activities, or during travel to or from a project Site. Client policies may be more stringent in regard to procedures following an accident. Project managers must be aware of these and inform employees and subcontractors of any additional requirements.

Site-Specific Health and Safety Risk Assessment (RA)

3. Site Classification

	Identification of Potential Hazards	YES	NO	SITE TYPE[1]
1.	Is the work a Phase I ESA (i.e., supervised plant walk-through, etc.)	☐	☒	1
2.	Is the work being performed solely by a subcontractor (i.e., TRC not on Site)	☐	☒	1
3.	Is the work just a supervised inspection for process evaluation, other inspections, meetings, records review, or a tour?	☐	☒	1
4.*	Is the work completely absent any chemical, physical, biological, or radiological hazards which would require a Site specific health and safety plan?	☐	☒	1
5.	Does the work include any mandatory client H&S requirements?	☒	☐	1, 2, or 3
6.	Does the project include on-Site work other than office type areas?	☒	☐	2 or 3
7.	Does the proposed work scope involve any of the following:			
	Known and controlled chemical or biological hazards	☒	☐	2
	Unprotected work at elevation (fall protection required)	☐	☒	2
	Invasive activities (*i.e.,* Phase II ESA, UST Removal, sampling, etc.)	☒	☐	2 or 3
	Exposure to ionizing radiation (i.e., using nuclear gauges, etc.)	☐	☒	2 or 3
	Open excavations/trenches (competent person may be required on Site)	☐	☒	2 or 3
	Confined space entry (permit may be required)	☐	☒	2 or 3
	The use of scaffolding (qualified inspections are required)	☐	☒	2 or 3
	Heavy equipment	☒	☐	2 or 3
	Facility maintenance (O&M, piping, electrical, lockout/tagout, etc.)	☐	☒	2 or 3
	Underground utilities may be encountered	☐	☒	2 or 3
	Overhead utilities may be encountered	☒	☐	2 or 3
	Stack testing	☐	☒	2 or 3
	Geotechnical drilling	☐	☒	2 or 3
	Demolition Activities with known or suspected contamination	☐	☒	2 or 3
	Unknown or uncontrolled chemical or biological hazards	☒	☐	3
	Known and uncontrolled chemical or biological hazards	☐	☒	3
	Waste sampling	☐	☒	3
	Construction activities with known or suspected contamination	☒	☐	3
	Remedial activities (RCRA, CERCLA, EnviroBlend®, Oxigent, etc.)	☐	☒	3
8.	Is the work regulated by 29 CFR 1910.120 (OSHA) or 30 CFR (MSHA)?	☒	☐	3
9.	Is the work regulated by NPL, CERCLA, RCRA, TSD, or SARA?	☒	☐	3

[1] Denotes typical Site level (based on activities).

Site Type Designation:

☐ **Type 1** Known and controlled hazards associated with consulting/engineering services

☐ **Type 2** Known and controlled hazards, but with invasive, hazardous activities and/or civil/mechanical construction related services, or sampling

☒ **Type 3** Unknown and/or uncontrolled hazards associated with corrective action clean-up, and/or remediation of hazardous substances

Site-Specific Health and Safety Risk Assessment (RA)

4. Site Characterization

Client Requirement(s)[1]:	☐ None	☐ Site Orientation	☒ H&S Orientation
	☐ Permits or Other Requirements (specify and attach, if available):		
Site Information:	☒ Map/Diagram (attach)	☐ Map/Diagram Unavailable	
	☐ Inactive Site	☐ Active Site (specify below)	
General Environmental Concerns:	☐ Contaminated Water	☐ Wastewater	☐ Dust
	☐ Contaminated Soil	☒ Solid Waste	☐ Noise
	☐ Contaminated Air	☐ Waterways	☒ Contaminated E-Waste
Site Security/Access Control:	☐ None	☐ On Site	
	☒ Other (explain): Building doors and windows secured and locked when activities are not occurring at the Site. During Site waste removal activities, TRC will notify police department of scheduled work and request increased patrols past the property as added security measu		
Amenities Available for Work:	☐ None	☐ Waste Storage	☒ Restrooms
	☐ Tools/Equipment Storage	☐ Office/Trailer Space	☐ Supplies Storage
Utilities Available For Work:	☐ None	☒ As Listed: Hydrants for fire water available north and east of the Site. No electrical, gas, or telephone utilities active on Site.	
Medical Services Available:	☒ None On Site	☐ As Listed:	
Facility Alarms/Signals:	☒ None	☐ As Listed:	
Traffic/Parking/Railway Issues:	☐ None	☒ As Listed (On-Site/Off-Site): Near BNSF track and US HWY 75	
☐ Permits Required (specify)[2]:	☐ TRC:	☐ Local:	☐ State:
	☐ Federal:	☐ Other:	☒ N/A
☒ Utility Locate Service(s):	☐ On Site	☒ Client	☐ Private Locate
	☐ Off Site	☒ Diggers Hotline	☐ One Call
		☐ Julie, Inc.	☐ N/A

[1] If relying on the client for any specific hazard identification and control, implemented control and effectiveness should be documented prior to beginning any work activities. This is recommended for all field projects.

[2] Permit examples: Utilities (electrical, water, gas, etc.); Excavations; Explosives; Cranes; Burning; Fuel storage; Traffic control; Hoists; Cutting; Welding; Demolition; Confined space; Restricted access areas; etc.

Site-Specific Health and Safety Risk Assessment (RA)

Detailed Physical Description of Site/Facility: ☒ Map/Diagram Attached

Site Activities/Current Operations: ☐ None ☒ As Specified: This Site is currently inactive, however it has been identified by the United States Environmental Protection Agency as an unpermitted short term LQG of hazardous waste from former operations as an electronics waste accumulation center for Recycletronics. These activities occurred at this Former Feed Mill facility prior to BNSF purchasing the property. The hazardous waste removal event will take place over the course of 3-4 weeks, which will consist of loading and transporting approximately 650 tons of accumulated leaded glass and crushed cathode ray tubes currently stored in cardboard boxes inside the former feed mill building on the property. Once all waste is removed from the Site, no additional electronics waste will be accumulated at the property.

Other Concurrent Site Activities, Work, and/or Other Adjacent Hazards or Concerns:

☒ None As Specified:

☐ Schools ☐ Daycare ☐ Hospital ☐ Airport

☐ Residential ☐ Offices ☐ Shopping ☐ Other

Site-Specific Health and Safety Risk Assessment (RA)

5. Hazard Evaluation

Potential Chemical, Biological, or Radiological Hazards

Complete [1] Substance Name (be specific)	Specific Applicable OSHA Standard (if any)	Physical State [2] (S, L, G, Aq, Vap, F, P)	Max. [3] Conc. Level Per Physical State	Potential Routes of Exposure [4] (Inh, Ing, Abs, Con, Ext)	Warning Properties (G, P, N)	General [5] Control Measures (Eng., Admin., PPE)	IP [6] (eV)	VP[6] (mm HG)	LEL[6] (%)	UEL[6] (%)	IDLH [7]	ACGIH TLV (C, ST, TWA) [8] (R) or (T) [9]	OSHA PEL (C, ST, TWA) [8] (R) or (T) [9]
Lead	1910.1025	S	≥ 100 mg/kg	Inh, Ing, Abs, Con	None	Eng, Admin, PPE	NA	0	NA	NA	100 mg/m3	0.05 mg/m3	0.03 mg/m3

(1) Use OSHA regulated name, not elemental forms. If available, attach MSDS. Identify any sample preservative or O&M chemicals or subcontractor chemicals in this table also.
(2) S = Solids, L = Liquid, G = Gas, Aq = Aqueous, Vap = Vapor, F = Fume, P = Airborne Particulate
(3) If available, attach laboratory results or summary tables.
(4) Inh = Inhalation Hazard, Ing = Ingestion Hazard, Abs = Absorption Hazard, Con = Contact Hazard, Ext = External Exposure Hazard
(5) See the following sections for detailed control measures: personal protection equipment (PPE), Air Monitoring (Admin), or Site Control (Admin and Eng.).
(6) IP = Ionization Potential, VP = Vapor Pressure, LEL = Lower Explosive Limit, UEL = Upper Explosive Limit, N/A = Not Applicable, N.D. = Not Determined
(7) IDLH = Immediately Dangerous to Life and Health. NEVER enter IDLH conditions on Site without proper respiratory protection.
(8) C = Ceiling Value, ST = Short-Term Exposure Limit, TWA = Time-Weighted Average, None Est. = None Established
(9) R = Respirable Limit, T = Total Limit
(10) Warning Properties: Good (G), Poor (P), None (N)

Site-Specific Health and Safety Risk Assessment (RA)

5. Hazard Evaluation (continued)

Site Specific Physical Hazards

HAZARD	SPECIFIC CONTROL MEASURE
Vehicular Traffic	TRC personnel shall follow all applicable state and federal traffic laws while traveling to and from the Site, and while working on the Site. In particular the following laws should be followed: — speed limits, — parking restrictions, — use of wipers and lights during precipitation events, — no cell phone use, etc. Be aware of traffic patterns associated with local businesses near the work Site. Vehicle access to the Site will be limited to TRC, removal contractor, and waste hauler truck traffic during waste removal activities. BNSF vehicles and other off-track railroad equipment associated with the adjacent Sioux City railyard will be restricted from traveling south or east of the Site building to control traffic in the remediation area. In addition, on-Site personnel will direct waste hauler trucks arriving from 31st Street to the loading area. Practice defensive driving while in route to and from the Site.
Utilities – underground	Subcontractors are responsible for having all underground utilities located and marked. Verify that locate has been completed prior to initiating excavations.
Dust Control	To minimize dust emissions and maintain ambient air quality, the Site's air will be monitored continuously. Work may be stopped or other control measures such as spraying materials with water will be implemented to improve ambient air quality. During waste removal work, the removal contractor may utilize a Hudson sprayer to mist a dish soap solution on the CRT glass to limit dust generation inside the building.
Soil Sampling	Wear proper hand protection and safety glasses when handling potentially contaminated soil and sample bottle glassware.
Field Vehicle	TRC personnel shall follow all applicable state and federal traffic laws while traveling to and from the Site, and while working on the Site. In particular the following laws should be followed: speed limits, parking restrictions, use of wipers and lights during precipitation events, no cell phone use, etc. It is the responsibility of the driver to verify that all safety equipment on the vehicle is working properly before they drive the vehicle. In particular the following items should be checked: tire pressure, tire tread, windshield wipers, windshield washer, headlights, tail lights, brake lights, spare tire, fire extinguisher, first aid kit, etc.

Site-Specific Health and Safety Risk Assessment (RA)

Site Specific Physical Hazards

HAZARD	SPECIFIC CONTROL MEASURE
Heavy Equipment	Contractor is responsible for safe operation of equipment. All mobile heavy equipment must have a functioning backup alarm, and operators must comply with equipment manufacturer's instructions. Maintain proper distance and remain in line of sight of operator and out of reach of equipment. Isolate equipment swings, if possible. Make eye contact with the equipment operator before approaching the equipment. Understand and review hand signals, and wear safety vest, if necessary.
Pedestrian Traffic (public, client, workers)	Be aware of pedestrian traffic patterns and, route traffic around the exclusion zone(s), as necessary, to avoid distractions and the potential for exposures or accidents. Use appropriate barricades and caution tape to mark work areas.

Site-Specific Health and Safety Risk Assessment (RA)

Other Common Physical Hazards

(modify as needed, but include with all project hazard assessments)

☒	PHYSICAL HAZARD	GENERAL CONTROL MEASURE
☒	Business Traffic	Be aware of traffic patterns associated with local businesses near the work Site. Allow traffic to enter and exit the businesses in such a manner to avoid creating traffic hazards, back-ups, delays, or potential accident situations.
☒	Falling Objects	Be aware of any potential falling objects or materials on Site. Stay clear of any areas identified as potential falling object areas.
☒	Field Equipment	If field equipment is heavy or awkward to carry, get assistance or use carts to help move around the Site.
☒	Field Vehicle	TRC personnel shall follow all applicable state and federal traffic laws while traveling to and from the Site, and while working on the Site. In particular the following laws should be followed: speed limits, parking restrictions, use of wipers and lights during precipitation events, no cell phone use, etc. It is the responsibility of the driver to verify that all safety equipment on the vehicle is working properly before they drive the vehicle. In particular the following items should be checked: tire pressure, tire tread, windshield wipers, windshield washer, headlights, tail lights, brake lights, spare tire, fire extinguisher, first aid kit, etc.
☒	Flying Debris/Eye Injuries	Be aware of any flying debris on Site and wear protective eyewear when necessary.
☒	Heat Stress	The work schedule may be modified if the ambient temperature is more than 80° F. Take breaks as necessary, and drink plenty of fluids. If necessary, wear sunscreen and sunglasses on bright days. Monitor Site personnel for signs of heat stress symptoms (heat rash, heat cramps, heat exhaustion, or heat stroke).
☒	Drums	If drums are used on-Site, they should be clearly labeled with the name of the contents. Drums should only be handled with the appropriate equipment. Drums discovered during excavations, etc., shall not be opened or moved until appropriate identification can be performed. At a minimum, Level B protection is required for sampling any unlabeled drums discovered during remediation procedures.
☒	Dust/Particulates (PNOR)(Particulates Not Otherwise Regulated) (OSHA PEL = 15 mg/m^3, total) (OSHA PEL = 5 mg/m^3, respirable)	For general dust, work should be performed up-wind if possible. Monitoring should occur at least 3 times per day, and every time re-entering the Site. Readings should be taken downwind from the work area or inside the equipment as indicated by the conditions on Site. If the OSHA PEL is exceeded, or is likely to be exceeded, engineering or administrative controls should be used, or a dust respirator must be worn. For hazardous dusts, a detailed ambient air quality monitoring plan should be developed for the Site activities.
☒	Equipment Exhaust	Equipment exhaust should be ventilated away from the work area while drilling inside structures. Industrial fans can be used to move exhaust out of the area.
☒	Facility Piping - above ground	Stay clear of above ground pipes. Unless otherwise noted, client is responsible to identify all applicable aboveground facility pipes prior to any work activities in the area. Pipes can be overhead hazards, or trip hazards. Pipes can be hazardous because of the material flowing through them, such as steam, natural gas, toxic chemicals, etc. Some pipes are also coated with hazardous material such as asbestos.
☒	Facility Piping - below ground	Unless otherwise noted, client is responsible to identify all applicable underground facility pipe locations prior to any subsurface activities.

Site-Specific Health and Safety Risk Assessment (RA)

Other Common Physical Hazards

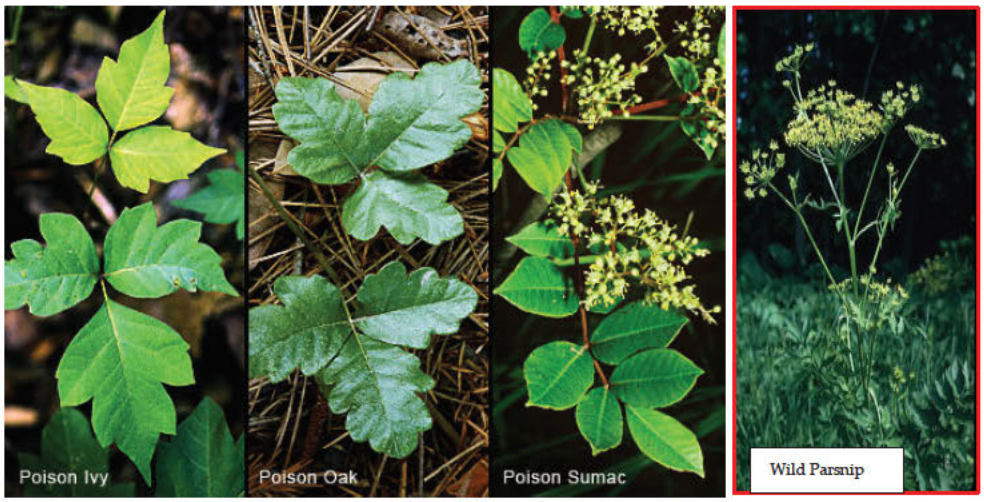
(modify as needed, but include with all project hazard assessments)

☒	PHYSICAL HAZARD	GENERAL CONTROL MEASURE
☒	Hand Tools	Use only the appropriate hand protection and tool for the task at hand. Use the tool(s) as designed, described, and intended by the manufacturer.
☒	Heavy Equipment	Contractor is responsible for safe operation of equipment. All mobile heavy equipment must have a functioning backup alarm, and operators must comply with equipment manufacturer's instructions. Maintain proper distance and remain in line of sight of operator and out of reach of equipment. Isolate equipment swings, if possible. Make eye contact with the equipment operator before approaching the equipment. Understand and review hand signals, and wear safety vest, if necessary.
☒	Heavy Lifting	Use proper lifting procedures and equipment when handling heavy objects such as drums, manhole covers, tank covers, etc.
☒	Housekeeping	All field vehicles, job trailers, and field offices will be properly cleaned and organized to prevent cluttered work and storage areas.
☒	Lead	Wear gloves when in contact with lead contaminated soil, broken cathode ray tube glass, etc. Thoroughly wash hands and arms when daily work is completed.
☒	Long Hours/Fatigue	Long work hours can lead to fatigue, and fatigue can lead to the physical inability to perform the work in a safe manner, or travel to, or from, a work Site in a safe manner. If long work hours are scheduled, or if the scheduled work takes longer than planned, field staff should determine if fatigue is, or will be, an issue. Field staff should evaluate whether they are able to complete the work in a safe manner, or whether they are able to travel in a safe manner. If fatigue is an issue, appropriate breaks should be planned or taken, including overnight stays when necessary.
☒	Material Handling	Move containers and heavy material only with the proper equipment, and secure them to prevent dropping, falling, or loss of control during transport. Stay clear of material handling operations, especially near slopes. Do not stand down the slope from equipment, supplies or materials being moved above on the slope, or being deployed onto the slope.
☒	Mindfulness	Repeated routine tasks and experiences without incident can lead to a lack of focus or subconscious response patterns that cause preventable incidents, including property damage and physical injury. Personnel should exercise a level of mindfulness that includes analyzing what could go wrong, maintaining focus, and identifying potential subconscious behaviors (fatigue, complacency, rushing, distraction, etc.) to resolve to mitigate routine task hazards.
☒	Noise	Hearing protection must be worn when noise levels exceed 85 dBA in the work area. If you need to raise your voice to be heard at the work Site, then hearing protection should be worn. Hearing protection will be worn near drill rigs.
☒	Overhead Hazards	Pay attention to overhead equipment, piping, and structures. A hard hat must be worn at all times when overhead hazards are present on Site.
☒	Pedestrian Traffic (public, client, workers)	Be aware of pedestrian traffic patterns and, route traffic around the exclusion zone(s), as necessary, to avoid distractions and the potential for exposures or accidents. Use appropriate barricades and caution tape to mark work areas.

Site-Specific Health and Safety Risk Assessment (RA)

Other Common Physical Hazards

(modify as needed, but include with all project hazard assessments)

☒	PHYSICAL HAZARD	GENERAL CONTROL MEASURE
☒	Poisonous Plants	Be able to identify any local poisonous plants and avoid them if possible, or wear protective clothing, including long pants, long-sleeved shirts, hats and gloves. When removing potentially exposed clothing or PPE, the clothing or PPE should be carefully and thoroughly washed or decontaminated. If exposed to plants, immediately cleanse the area with soap and water. If sign or symptoms appear use Zanfel or other treatments. 
☒	Sample Preservative Chemicals	Wear safety glasses and nitrile gloves when adding preservative chemicals to sample bottles or vials. Have clean wash water nearby.
☒	Severe Weather	Work may be suspended if dangerous weather conditions (lightening, tornadoes, high winds, heavy rain, freezing rain, etc.) occur. If lightning is noted by onSite personnel (and thunder is heard less than 30 seconds later), outdoor work will cease until the storm passes (at least 30 minutes after the last thunder clap). Be aware of changing weather conditions, and be prepared to take shelter as necessary. Potential shelters should be identified prior to beginning work.
☒	Sharp Objects	Wear appropriate cut resistant gloves when handling sharp objects, and use appropriate equipment to move objects.
☒	Slips, Trips, and Falls:	Maintain clear walkways for work areas.
☒	Sunburn	For extended periods of time outdoors on sunny days, sunglasses, long-sleeved shirts and long pants should be worn to help prevent sunburn and eye problems. Wear sunscreen as appropriate for the project.
☐	Surface Water	Working next to or on, bodies of water shall be done using the buddy system. Staff shall wear USCG-approved personal floatation devices when on or adjacent to bodies of water.
☒	Traffic (client, contractors, public, semi-trucks, forklifts, etc.)	Obey all posted speed limits. Park in designated areas only. Be aware of traffic patterns on Site, and during access to the Site. Use orange traffic cones and barrier warning tape, as needed, or if within 25 feet of the right-of-way. TRC personnel must wear safety vests when working in or near traffic areas.

Site-Specific Health and Safety Risk Assessment (RA)

Other Common Physical Hazards

(modify as needed, but include with all project hazard assessments)

☒	PHYSICAL HAZARD	GENERAL CONTROL MEASURE
☒	Trip Hazards (wires, cords, hoses, debris, corn stubble, uneven surfaces, etc.)	Temporary wires, cords, hoses, etc., should be properly located, marked, and protected to help prevent tripping and disruption to work activities. Trip hazards are particularly a problem early in the morning, late in the day, or under other poor lighting conditions.
☒	Uneven Surfaces	Be aware of uneven walking or driving surfaces and exercise caution when moving around the Site.
☒	Utilities – Overhead (electrical, telephone, cable TV, etc.)	A subcontractor will locate and identify all overhead utilities. Unless otherwise noted, the owner or client will be responsible for identifying all applicable overhead utilities, product lines, pipes, and aboveground tanks. A minimum clearance of 20 feet must be maintained between equipment and overhead utility lines.
☒	Utilities – Underground (electric, gas, telephone, water, storm sewer, sanitary sewer, cable TV, etc.).	A subcontractor will call Digger's Hotline to locate all underground utilities. Unless otherwise noted, the owner or client will be responsible for marking all applicable on-Site underground utilities, product lines, pipes, and tanks.

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

1. General Information

Client Name:	BNSF Railway	Project #:	364413.0002	Phase #:	1
Project Name:	Sioux City Railyard E-Waste Removal and Disposal	Project Manager:	Tyler Wickesberg		
Prepared By:	Ben Wachholz	Date:	3/20/2020		
Approved By:		Approved By:			
	(PM)		Tyler Gomoll (OSC)		
	Tyler Wickesberg		Tyler Gomoll		
Date:		Date:	3/25/2020		

Proposed Date(s) of TRC Work: May – June 2020

ON-SITE PROJECT TEAM MEMBER	ON-SITE PROJECT RESPONSIBILITIES
Tyler Gomoll	TRC On-Site Health and Safety Officer (OHSO)(1)
Tyler Wickesberg	TRC Project Manager
Tom Perkins/Ben Wachholz	TRC Project Health and Safety Representative and Emergency Coordinator
Tom Perkins/Ben Wachholz	Project Engineer
Tom Perkins/Ben Wachholz	Air Monitoring and Soil Sampling

(1) TRC OHSO must have current OSHA 40-hr training and supervisor certification.

Any required construction/demolition activities: ☐ No ☒ Yes If Yes, complete Section 2

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

2. Construction Tasks: [work tasks to be performed by TRC staff or TRC subcontractors]

Civil

- ☐ Sewer (utility)
- ☐ Water (utility)
- ☐ Electric (utility)
- ☐ Communications (utility)
- ☐ Siding
- ☐ Roofing
- ☐ Drywall
- ☐ Flooring
- ☐ Ceilings
- ☐ Casework
- ☐ Masonry
- ☐ Escalator
- ☐ Steel (erection)
- ☐ Pre-cast (erection)
- ☐ Concrete (erection)
- ☐ Re-bar
- ☐ Elevator
- ☐ Fireproofing
- ☐ Windows
- ☐ Landscaping
- ☐ Painting
- ☐ Insulation
- ☒ Doors
- ☐ Finish Concrete

Mechanical

- ☐ Insulation
- ☐ Millwright
- ☐ Fire Protection
- ☐ Boiler
- ☐ Industrial Ventilation
- ☐ Steel Fabrication/Erection

Other

- ☐ Electrical
- ☐ Demolition (attach a detailed "**Demolition Plan**")

- ☐ Others
- ☐ Others
- ☐ Others

Estimated Direct-Hire TRC Employees:

Home Office: ☒ Not Applicable ☐ Specify:

Craft Labor: ☒ Not Applicable ☐ Specify:

Craft	Quantity
Craft	Quantity

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

3. Applicable Safety Standards or Regulations:

☒ Federal OSHA ☒ State OSHA ☒ Owner/Client

Specific Standards:	29 CFR 1910 (OSHA)	29 CFR 1926 (Other Regulations)
☒ Medical Services and First Aid	1910.151	1926.50
☒ Hazard Communication (HAZCOM)	1910.1200	1926.59
☒ Lead Exposure	1910.1025	1926.62
☒ HAZWOPER	1910.120	1926.65
☒ Personal Protective Equipment (PPE)	1910.132-138	1926.95-107
☒ Respiratory Protection	1910.134	1926.103
☐ Ventilation	1910.94	1926.57
☒ Noise Exposure	1910.95	1926.52
☐ Illumination	N/A	1926.56
☐ Fire Protection	1910.157	1926.24 and 150-155
☐ Sanitation	1910.141	1926.51
☐ Materials Handling (rigging, etc.)	1910.176	1926.250-251
☐ Welding/Cutting	1910.251-255	1926.350-354
☐ Lockout/Tagout	1910.147	1926.417
☐ Electrical (flexible cords, etc.)	1910.305	1926.400-449
☐ Scaffolding	1910.28-29	1926.450-454
☐ Fall Protection (elevated work)	1910.23-29, 1910.66-68	1926.104-107; 500-503
☐ Ladders/Stairways	1910.25-27	1926.1050 and 1060
☐ Cranes, Derricks, Hoists, Elevators, etc.	1910.179-181	1926.550-555
☐ Aerial Lifts	1910.66-68	1926.556
☒ Earth Moving Equipment	N/A	1926.602
☐ Powered Industrial Trucks (forklifts)	1910.178	1926.602
☐ Excavations and Trenching	N/A	1926.650-652
☐ Concrete and Masonry	N/A	1926.700-706
☐ Steel Erection	N/A	1926.750-761
☐ Demolition	N/A	1926.850-860
☐ Asbestos	1910.1001	1926.1101
☐ Confined Space Entry	1910.146	1926.21
☐ Commercial Diving	1910.401-441	1926.1071-1092
☐ Compressed Gases	1910.101-105	N/A
☐ Ionizing Radiation	1910.1096	1926.53
☐ Benzene	1910.1028	1926.1128
☐ Cadmium	1910.1027	1926.1127
☒ Tools - Hand and Power	N/A	1926.300-307
☐ Blasting and Using Explosives	N/A	1926.900-914

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

4. Training Required

(* required for all "Type 3" Sites; but minimum recommended)

Check "A" if training required for everyone, and check "T" if training required for specific task.

A	T	SUBJECT	REFERENCE	
			29 CFR 1910	**29 CFR 1926 or Other**
☒	☐	HAZWOPER 40 hour*	1910.120	1926.65
☐	☒	3-Day HAZWOPER Supervised On-Site*	1910.120	1926.65
☐	☒	8-Hour HAZWOPER Refresher*	1910.120	1926.65
☐	☒	8-Hour Supervisor HAZWOPER*	1910.120	1926.65
☐	☒	First Aid, CPR*	1910.151	1926.23,.50
☐	☒	Respiratory Protection	1910.134	1926.103
☐	☐	Confined Space ☐ Permit attached	1910.146	1926.21
☐	☐	Mine Safety (MSHA)	N/A	30 CFR 48.8
☐	☐	Lockout/Tagout ☐ Permit attached	1910.147	1926.417
☐	☐	Bloodborne Pathogens	1910.1030	N/A
☒	☐	Noise Exposure	1910.95	1926.52
☐	☐	Competent Person	N/A	1926.32,.450,.650
☐	☐	Construction Health and Safety OSHA 10-Hour	N/A	1926.21
☐	☐	Demolition	N/A	1926.850
☐	☐	Excavations ☐ Permit attached	N/A	1926.650-652
☐	☐	Electrical Work	1910.332	1926.400-.449
☐	☐	Ladders/Stairways	N/A	1926.1050-1060
☐	☐	Scaffolding	1910.28	1926.450-454
☐	☐	Fall Protection	1910.23-29; 1910.66-68	1926.104,.501
☐	☐	Commercial Diving	1910.410	1926.1071-1092
☐	☐	Hot Work ☐ Permit attached	1910.251-255	1926.350
☐	☒	Lead Awareness	1910.1025	1926.62
☐	☐	Asbestos Awareness	1910.1001	1926.1101
☐	☐	Cadmium	1910.1027	1926.1127
☐	☐	Benzene	1910.1028	1926.1128
☐	☐	Ionizing Radiation	1910.1096	1926.53; 10 CFR 19.12
☐	☐	Troxler or NITON Gauge User	1910.1096	10 CFR 19.12
☐	☐	Radiation Safety Program	1910.1096	10 CFR 20.1101
☒	☐	Hazard Communication (HAZCOM)	1910.1200	1926.59
☐	☐	DOT Hazardous Materials Shipping	1910.1201	49 CFR 172.704
☒	☐	TRC Hand Protection		
☒	☐	TRC Defensive Driving		
☒	☐	TRC Work Zone Safety		

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

Client-specific training: ☐ Not Applicable ☒ BNSF Contractor Safety Packet

Site-specific orientation: ☒ Not Applicable ☐ Specify

Competent person: Thomas Perkins / Ben Wacholz ☒ Not Applicable ☒ Specify TRC Emergency Coordinator

Direct-hire employee training/certification: ☒ Not Applicable ☐ Specify

5. Medical Surveillance

Surveillance Required: * required for all "Type 3" Sites; baseline is minimum recommended
** Specify frequency below

	29 CFR 1910	29 CFR 1926 or Other
☒ HAZWOPER Physical - Baseline*	1910.120	1926.65
☒ HAZWOPER Physical – Annual	1910.120	1926.65
☒ HAZWOPER Physical - Biennial*	1910.120	1926.65
☐ OSHA Respiratory Protection Questionnaire	1910.134	1926.103
☐ Respiratory Certification Exam	1910.134	1926.103
☐ Arsenic (urine) **	1910.1018	N/A
☐ Asbestos **	1910.1001	1926.1101
☐ Cadmium (blood) **	1910.1027	1926.1127
☒ Lead/ZPP (blood) **	1910.1025	1926.62
☐ Mercury (blood) **	N/A	N/A
☐ PCB **	N/A	N/A
☐ Vinyl Chloride **	1910.1017	1926.117
☐ Hepatitis B Vaccine (series) **	1910.1030	N/A
☐ Tetanus/Diphtheria	N/A	Stay Current
☐ Stress Test	N/A	Only as requested
☐ Visual Acuity Test	N/A	Only as requested
☒ Hearing Test (Audiometry)	N/A	Only as requested
☐ Pulmonary Function	N/A	Only as requested

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

Client-specific drug testing[1]: ☒ Not Applicable ☐ Specify

Client-specific medical monitoring[1]: ☒ Not Applicable ☐ Specify

Site-specific medical monitoring: ☒ Not Applicable ☐ Specify

**Frequency of medical monitoring: ☒ Not Applicable ☐ Specify

[1] Client required drug testing or medical monitoring should be coordinated through the CHSM.

Note: TRC has a "Drug and Alcohol-Free Workplace" policy (#TRC Academy Course #900013753). TRC may require employees or subcontractors to be tested upon reasonable suspicion, following accidents or incidents during work activities, or during travel to or from a project Site. Client policies may be more stringent in regard to procedures following an accident. Project managers must be aware of these and inform employees and subcontractors of any additional requirements.

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

6. Personal Protective Equipment (PPE)

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work tasks:

Specific TRC Job Task or Function	Minimum Level of Protection			
TRC Site Visitors—Must be escorted	☒ D			
Observing and documenting e-waste removal and hauling	☒ D	☐ C	☐ B	☐ A
Air monitoring and soil sampling	☒ D	☐ C	☐ B	☐ A

Criteria for changing protection levels are as follows:

EVACUATION[2] or PROTECTION LEVEL CHANGE[3] CRITERIA	APPROVALS REQUIRED [1]		
	OHSO	OSC	DIR H&S
Site Evacuation Plan: ☒ Not Applicable ☐ Specify or Attach Plan:			
Change to Level D when: ☒ Not Applicable ☐ Specify	☒		
Change to Level C when: ☒ Not Applicable ☐ Specify	☒	☒	☒
Change to Level B when: ☒ Not Applicable ☐ Specify	☒	☒	☒
Change to Level A when: ☒ Not Applicable ☐ Specify	☒	☒	☒

(1) OHSO: On-Site Health and Safety Officer
OSC: Office Safety Coordinator or TRC Safety Manager
Dir H&S: TRC Health and Safety Director

(2) General Recommendations: Evacuate the area when LEL readings are >10% LEL in the atmosphere, or when PID readings are greater than the PEL in the breathing zone.

(3) General Recommendation: To Level C when PID readings are greater than the PEL in the breathing zone. To Level B or A only after detailed evaluation and planning.

Note: Changes to the level of protection shall be made only after the required approvals are obtained. All changes shall be recorded in the field log and reported to the Project Manager as soon as possible. TRC's H&S goal is to avoid using respiratory protection unless it is absolutely necessary or required. Administrative controls or engineering controls should always be considered as a means to reduce potential exposures, before PPE is required or considered.

PPE REQUIRED BY ALL PERSONNEL AT ALL TIMES ON THE WORK SITE			
☒ Hard Hat	☒ Safety Shoes / Boots	☒ Eye Protection	☒ Safety Vest ☐ Safety Pants
PPE WHICH SHOULD BE AVAILABLE FOR PERSONNEL AT ALL TIMES ON THE WORK SITE			
☒ Hand Protection ☐ Kevlar ☒ Nitrile	☒ Protective Clothing ☒ Tyvex ☐ Coveralls	☒ Respiratory Protection ☒ APR Particulate ☐ APR Chemical Cartridge	☒ Hearing Protection ☒ Hard Hat ☒ Eye Protection

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

7. Air Monitoring[(1)]

The following monitoring instruments shall be used on Site to measure airborne contaminant concentrations in Either the breathing zone, or as part of the overall Site **Ambient Air Quality Monitoring Plan** (attach detailed plan):

MONITORING EQUIPMENT	LOCATION OF MONITORING	FREQUENCY OF MONITORING	ACTION LEVELS
☒ Particulate Matter (PM) and leaded dust Monitor / DataRam	☒ Working area perimeter ☒ Building Interior	☒ Approximately 15-minute intervals throughout the work day	☒ Work Zone Reading > 3.14 mg/m3 sustained for 1 minute (Site-specific dust exposure limit derived from lead sampling data) ☒ Perimeter Reading > 0.15 mg/m3 sustained for 1 minute

(1) Whenever air monitoring is required to be performed, a detailed **Air-Monitoring Plan** should be developed and attached to the HSP. The plan should include **Monitoring Locations, Frequency of Readings**, and any **Action Levels** being used to control the work Site**.**

The particulate matter monitor (DataRam) will measure the concentration of particulate matter 10 micrometers or less in diameter (PM_{10}), and will be calibrated daily, at a minimum, using a zero bag. A Site-specific dust action level of 3.14 mg/m^3 was derived to mitigate lead exposures exceeding its OSHA PEL of 0.030 mg/m^3 based on the maximum lead concentration identified in the CRT glass during Site sampling activities. However, since the perimeter dust monitoring action limit is lower than the Site-specific dust limit derived for lead, 0.15 mg/m^3 will serve as the primary threshold to initiate Stop Work Authority (SWA) before undertaking corrective actions to mitigate work zone and perimeter exposures. When the air monitoring action level of 0.15 mg/m^3 is sustained for 1 minute, the following actions should be taken on-Site:

- PPE will be upgraded to Level C with half-face air-purifying respirator.
- TRC Project Manager will be notified of action level exceedance.
- Work will be suspended, and immediate area vacated for a minimum of 15 minutes, or until PM concentrations drop below the action level.
- Dust control measures will be applied such as spraying water on materials being handled.

Material handling and disposal will likely be completed by forklift, loader, or other large equipment. Use of roll-off boxes will necessitate the presence of trucks. Large equipment and trucks will likely be the primary source of dust generation; therefore, in the event of an exceedance, TRC personnel must have an established stop work communication plan in place with the operators of these pieces of equipment prior to the start of work. TRC personnel should make eye contact with operators of heavy equipment prior to approaching the operator and should not stand in the blind spot of equipment or within the maximum swing radius of articulated arms and booms of heavy equipment.

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

8. Site Controls and Work Zones (describe in detail)

Facility Alarms or Signals: ☐ Not Applicable ☒ Specify During waste removal action activities, TRC and waste removal contractors will utilize the buddy system for any work conducted inside the Site building. In addition, employees will have cell phones and/or two way radios to communicate with one another during waste loading work and to notify emergency services in the event of an incident requiring rapid response.

Work Permits Required: ☒ Not Applicable ☐ Specify

Work Traffic Issues: ☒ Not Applicable ☐ Specify

Parking Issues: ☒ Not Applicable ☐ Specify

Railway Traffic Issues: ☐ Not Applicable ☒ Contractors must complete all BNSF safety requirements

Support Zone(s):

☒ TRC field vehicle ☐ Job Trailer On Site ☐ Other:

Contamination Reduction Zone(s):

☒ Field vehicle ☐ Facility restroom/utility room ☐ Other:

Exclusion Zone(s):

☒ Area immediately surrounding work area. Utilize cones, barricades, or other means to delineation work areas to prevent unnecessary entry by others.

☐ Other:

Site Entry Procedures:

☒ **Notify Site H&S Representative.**

☒ **Read H&S Plan and sign Acknowledgment Statement**

☐ Check in with the facility contact person ☐ Specify

☐ Check in with facility security guard. ☐ Specify

☒ **Wear proper personal protective equipment.**

☐ Attend facility orientation ☐ Specify

☒ **Conduct daily safety meeting (document).**

☐ Other: ☐ Specify

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

Decontamination Procedures:

Personnel:

Disposable PPE will be removed, contained within a low-density polyethylene trash bag, and disposed of appropriately. Site workers will plan and stage for wash water and soap at the Site, prior to beginning the work. Site workers will wash hands and any exposed skin extremely well with soap and water prior to eating, drinking, driving, or leaving the Site. Any soiled or contaminated clothing will be removed, contained, and cleaned. Contaminated washwater from any outdoor/portable bathroom facilities at the Site will be collected and processed offsite through a wastewater treatment facility.

Equipment:

Any contaminated single-use disposable equipment or PPE will be appropriately containerized and disposed of. Contaminated equipment or PPE that will be reused should be handled and cleaned while wearing the appropriate PPE. Contaminated sampling equipment will be decontaminated on-Site using a bucket of soapy water (Alconox and potable or de-ionized water). Larger equipment will be containerized properly and taken back to the office for decontamination.

Disposal of Investigation-derived Material:

☐ Leave on Site for disposal.

☒ Other: Disposable PPE and IDW will be bagged and disposed of appropriately.

Work Limitations (time of day, buddy system, etc.):

☒ Buddy system required for some tasks

☒ Work will be performed during daylight hours only

☐ Work will be performed using artificial light.

Describe or attach a lighting plan:

☒ No eating, drinking, or smoking in contamination reduction zone(s) or exclusion zone(s)

☒ When temperatures are either above 80°F or below 20°F, work schedules may be modified

☒ Other Site-specific limitations: The primary TRC field oversight engineer will also serve as the Emergency Coordinator for the Site.

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

Radiation Safety:

- ☒ Radiation information is not applicable to this project.
- ☐ Notify RSO.
- ☐ Wear dosimeter badge when handling gauge.
- ☐ Post applicable radiation signs and documents.
- ☐ Post emergency numbers.
- ☐ Provide at least two lock systems for overnight storage.
- ☐ Maintain storage at least 15 feet from full-time workstations.
- ☐ Block, brace, and securely lock the gauge during "all" transportation.
- ☐ Limit "public" exposure to gauge while in use.
- ☐ Provide sketch of gauge storage to RSO.

Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

Acknowledgment Statement:

As an employee of TRC, I have reviewed the Hazard Assessment (HA)/Health & Safety Plan (HSP). I hereby acknowledge that I have received the **required level of training and medical surveillance**, that I am knowledgeable about the contents of this Site-specific RA/HSP, and that I will use personal protective equipment (PPE) and follow procedures specified in the HSP.

Signatures of TRC Site Personnel:

	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	
	Date:	

Health and Safety Observation Documentation:

If this project has been selected as a field observation candidate, the observer will review a copy of this RA/HSP. The Observation Form will then be completed and forwarded to the office OSC for review. After review, the OSC will then forward a copy to the Project Manager for review and filing.

_____ (observer) Date: _____

Daily Safety Meeting Sign-in

Daily Hazard Review Topic:

☐ _____ (select an applicable topic)

Acknowledgment Statement:

As an affected employee of TRC, Inc., I hereby acknowledge that I have reviewed the contents of this Site-specific HSP and the **daily safety meeting topic**, and that I will use the applicable personal protective equipment (PPE) and follow the procedures specified in the HSP.

Signatures of all onSite TRC Personnel, including Direct-Hires (Required):

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

MY SAFETY ↔ MY LIFE ↔ MY RESPONSIBILITY

ENVIRONMENTAL DEPARTMENT / JOB SAFETY BRIEFING

(DATE/LOCATION/MANAGER):_____

WORK PLANNED FOR TODAY (NEW BRIEFING REQUIRED DAILY – REBRIEFING REQUIRED WHEN RISKS/CONDITIONS CHANGE):_____

_____

☐ **Stop Work Authority**: You have obligation and authority to report an unsafe situation to the Safety Officer / Project Manager

Weather:

Temperature (F):	**Wind Speed / Gusts:**	**Wind Direction:**
Conditions (current/predicted):		**Humidity:**

IS THERE AN APPLICABLE JSA TO BE REVIEWED: ***YES*** ***NO***

EXPOSURES: Which of the five EXPOSURES are present for the work to be performed? How do we control/mitigate the RISKS to the EXPOSURES?

1. LIFE SAVING PROCESSES – Confirm location of life-saving resources and key assignments on the table below. Identify the greatest risk(s) to life in planned work and method of mitigating risk(s) in lines below. Capture additional notes on back of form.

Closest Hospital Name/Address/Phone:		**Work Site Address:**	
Emergency Meeting Location/Evacuation Route:			
Location of Emergency Equipment:	**First Aid Kit:**	**Fire Extinguisher:**	**Eye Wash:**
Assignments:	**CPR:**	**First Aid:**	**Call 911:**

RISKS/MITIGATION:_____

_____

2. WALKING/PATH OF TRAVEL – Review primary path(s) of travel for planned work. Identify any risks along the path(s) of travel (e.g. rail, ties, loose gravel, steep slopes, and heavy veg.) and method to avoid or mitigate risk(s) noted in lines below. Capture additional notes on back of form.

RISKS/MITIGATION:_____

_____

3. Line of Fire/Release of Energy – Review work area for potential Line(s) of Fire/Release of Energy. Identify position(s) or location(s) to avoid being hit, cut/struck, or sprayed if something shifts, moves, releases, or travels unexpectedly. Capture additional notes on back of form.

RISKS/MITIGATION: _____

_____

4. PINCH POINTS – Review work area for potential pinch point(s). Identify methods of mitigating risk(s) in lines below. Capture additional notes on back of form.

RISKS/MITIGATION: _____

_____

5. ASCENDING/DESCENDING – Review work area for potential areas of ascending or descending, paying particular attention to ladders, steps, and steep slopes. Identify methods of mitigating risk(s) in lines below. Capture additional notes on back of form.

RISKS/MITIGATION: _____

_____

REBRIEFING REQUIRED – Identify circumstances requiring a rebriefing:

CIRCUMSTANCES: _____

_____

ADDITIONAL REFERENCES/POTENTIALLY REQUIRED BRIEFINGS

☐ Permit Programs (Confined Space, Hot Work)	☐ Clearance Zones (overhead lines, water bodies, utility clearance, overhead work)
☐ On track safety & expecting locomotive/car movement at any time (see below)**	☐ Hazardous Energy Control Program
☐ Fall Protection / Elevated Work	☐ Vehicle Safety / Traffic Patterns
☐ Chemical Handling/Transfer	☐ Spill Response
☐ Chemical / Other Exposure Safety	☐ Task Specific PPE
☐ Adjacent work activity	☐ Walking & Working Surfaces / Slips,Trips, Falls
☐ Unsafe behaviors	☐ Approaching Others / Behavior Based Safety
☐ Tools / Equipment	☐ Other

****IF "ON TRACK SAFETY" WAS CHECKED ABOVE PLEASE COMPLETE BELOW:**

Type of track:	☐ **Controlled**	☐ **Non-Controlled**	**Track Speed:**	**Confirm Type of Protection (BLUE or RED) with Roadmaster:**
Working Limits:	**Track Number(s):**		**Track Limits: _____ to _____**	**Time Limits: _____ to _____**
Adjacent Track Protection:	☐ **YES**	☐ **NO**	**Track Limits: _____ to _____**	**Time Limits: _____ to _____**
Employee In Charge (EIC):	**Name:**			**Cell Phone:**

MY SAFETY ↔ MY LIFE ↔ MY RESPONSIBILITY

FLAGMEN OR LOOKOUT (*MUST SERVE NO OTHER WORK ROLE*):_____

TRAIN APPROACH WARNING:_____

CLEARING TIME/SIGHT DISTANCE:_____

EVACUATION AREA:_____

Additional Personal Protective Equipment (PPE)

PPE required for job:	☐ Level A	☐ Level B	☐ Level C	☐ Level D
☐SCBA	☐Supplied Air Respirator	☐Air Purifying Respirator FF (Cartridge type):		
☐Fully-Encapsulated Suit	☐Coverall (type):	☐Air Purifying Respirator HF (Cartridge type):		
☐Boots:	☐Ear Plugs	☐Glove (Inner):	☐Safety Glasses	
☐Boot Covers	☐Ear Muffs	☐Glove (Outer):	☐Chemical Goggles	
☐FRC/Bunker Gear	☐PFD	☐Hard Hat	☐Face Shield	
☐Com. Device:	☐Traffic Cones/Signs	☐Reflective Vest	☐Tension Straps/Tie-Down/Tarp	
☐Bonding and Grounding	☐LOTO	☐Chem-Resistant Apron	☐MSDS	
☐Harness/Lanyard	☐GFCI	☐Barrier Cream	☐Eye Wash	
☐Evacuation Plan	☐Ventilation:	☐Decon Station/Response Zones established and clearly identified		

DEBRIEFING NOTES – What went well today? What do we need to improve or change?

_____

_____

CONCERNS TO BE ADDRESSED – Who will address the concerns raised and by when?

_____

_____

Reminder: *As conditions change, be certain to rebrief with all workgroups*

Led by:_____

Attendees Initials Below:

COMPANY/ PROJECT NAME or ID/ LOCATION (City, State)	DATE PREPARED FOR	☐ NEW ☒ REVISED from S: Drive
TRC	HSP: 3/20/2020	
JSA WORK ACTIVITY (Description): **Soil Sampling**	List of Contractor(s) and key work activity:	

SITE SPECIFIC JSA AUTHOR	POSITION / TITLE	DEPT	SIGNATURE

"TRC APPROVED" JSA DEVELOPMENT TEAM	POSITION / TITLE	APPROVAL DATE

Required PPE (indicate with "R") vs. Must Have Available On-site (indicate "A")

__R__ REFLECTIVE VEST _ A _HARD HAT _ A _GLOVES __R__SAFETY GLASSES _____GOGGLES _____FACE SHIELD	__A__ HEARING PROTECTION __R__SAFETY SHOES: Protective Toe _____ 5pt HARNESS / LANYARD PPE CLOTHING: ____Coveralls ____Tyvek Suit ____Nomex ____Other (specify):	RESPIRATORY PROTECTION: ☐ NA ____Dust Mask ____½ face Air Purifying Respirator (APR) _____Particulate Mask: ☐ PM100 ☐ PM95 _____ Cartridge: ☐ P100-Multigas ☐ _____ _____Full face ARP; specify cartridge type: _____ Air Supplied Respirator ____SCBA _____Air-line	Additional PPE:

Always perform a Safety Assessment: 1) prior to starting work; 2) when changing tasks; and 3) throughout the day. Focus on each new task, procedures, and skill sets to be used.

[1] JOB TASKS	[2] POTENTIAL HAZARDS	[3] HAZARD CONTROLS (beyond wearing "Required" PPE)
1) Soil Sampling Set-up	a. Slips, trips, and falls from water, soil piles, and collapsing sidewalls.	a. Conduct SPSA and maintain awareness of other activities occurring on site.
	b. Physical injury from being struck by moving vehicle and/or machinery.	b. Wear proper PPE and control access.
	c. Ingestion or contact from impacted soil and groundwater.	c. Use proper decontamination procedures. No eating or drinking in work zone. c. Decontaminate all sampling equipment and sample collection devices in an Alconox-type solution and store in clean, potable water.
	d. Flares, fire and explosion from ignited vapors.	d. Place first aid kit and fire extinguishers in highly visible, nearby location.
2) Soil Sampling	a. Slips, trips, and falls from water, soil piles, and collapsing sidewalls.	a. Conduct SPSA and maintain awareness of other activities occurring on site.
	b. Physical injury from being struck by moving vehicle and/or machinery	b. After showing sampling locations to backhoe operator, always stand well away from working arc of the backhoe. Only approach backhoe bucket after operator has completely stopped movement and established eye contact with sample taker.
	c. Ingestion or contact from impacted soil and groundwater.	c. Wear nitrile gloves when handling of soil. c. No eating, drinking, or smoking while conducting sampling activities or in the exclusion zone. c. Always wash hands prior to eating, drinking, or smoking away from site.
	d. Potential cross-contamination of soil	d.Collect soil samples (if possible) from mounded soil that is not in contact with metal.

COMPANY/ PROJECT NAME or ID/ LOCATION (City, State) **TRC**	DATE PREPARED FOR HSP: 3/20/2020	☐ NEW ☒ REVISED from S: Drive
JSA WORK ACTIVITY (Description): **Soil Sampling**	List of Contractor(s) and key work activity:	

	sampling equipment.	d. Ensure soil samples are capped and placed in a clean, secure area after collection.

	LOCATION(S) WHERE HAZARD IS TO BE EXPECTED	**[3] HAZARD CONTROLS (beyond wearing "Required" PPE)**
1.	a.	a.
2.	a.	a.
3.	a.	a.

Field Notes:

LIMITATION: As part of TRC's EHS Policy, a JSA is provided by TRC for its employees. The purpose of a JSA is NOT to identify all hazards associated with a task, but to identify key potential hazards to get TRC and other onsite personnel thinking about other potential safety hazards and mitigating actions for unsafe conditions and behavior during various works. TRC recognizes that JSA's may not cover every conceivable step or hazard that emerges during a job, so we've provided a "Field Change" section below to amend a JSA if required. The JSA does not supersede or replace any local, state or federal permit, regulation, statute or other entities policies and procedures but is simply a tool for enhancing the execution of safe work at a jobsite under TRC's supervision. Similarly, all subcontractors are required to provide their own JSA(s) for their specialty prior to performing any work for TRC or its customers in accordance with TRC's EHS Policy; however, any unsafe condition or hazard not covered in any JSA is ultimately the direct responsibility of the person or entity performing the work.

AUTO INCIDENT REPORT

EMPLOYEE INFORMATION (V-1):

Name: _____ Phone: ( ) _____

Sector/Practice: _____ Office Location: _____

Supervisor's Name: _____ Supervisor's Phone: ( ) _____

Project #: _____ Client's Name: _____

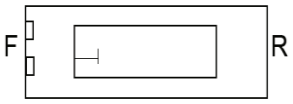
Driver's License #: _____ State: _____

VEHICLE INFORMATION (V-1):

Year/Make/Model of Vehicle: _____

License Plate #: _____ Vehicle ID # (VIN): _____

Circle Point of Contact:



Was Vehicle Drivable? ☐ Yes ☐ No

Personal: ☐ Yes Rental: ☐ Yes Fleet: ☐ Yes

Rental Company (Use Drop List):

INCIDENT INFORMATION:

Date of Incident: _____ Time of Incident: _____ A.M. _____ P.M. Photos Taken: ☐ Yes ☐ No

Location of Incident: _____ City: _____

Were The Authorities Contacted? Police: ☐ Yes ☐ No Ambulance: ☐ Yes ☐ No Fire: ☐ Yes ☐ No

Name of Police Dept: _____ Case #: _____ Officer Name: _____

Were Citations Issued? ☐ Yes ☐ No If Yes, To Whom? _____

Citation Number: _____

Were There Any Witnesses? ☐ Yes ☐ No If Yes, Please Provide Name, Address and Phone Below:

Witness Name: _____ Witness Phone: ( ) _____

Witness Address: _____

Traffic Conditions (i.e., heavy, light): _____ Weather Conditions (i.e., dry, wet, ice, fog): _____

WorkCare Contacted? ☐ Yes ☐ No

TRC Driver Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Front Seat Passenger Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Rear Driver Side Passenger Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Rear Passenger Side Passenger Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Describe Injuries:

Describe Damage to Property Other Than Motor Vehicles (i.e., guardrails, mailboxes, etc.):

AUTO INCIDENT REPORT

OTHER DRIVER & VEHICLE INFORMATION (V-2):

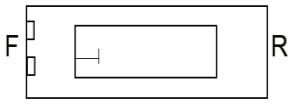
Driver's Name: _____ Driver's Phone: ( ) _____

Driver's Address: _____

Owner's Name (If different than driver): _____ Owner's Phone: ( ) _____

Owner's Address: _____

Year/Make/Model of Vehicle: _____ License Plate #: _____ State: _____

Circle Point of Contact: 

Was Vehicle Drivable? ☐ Yes ☐ No

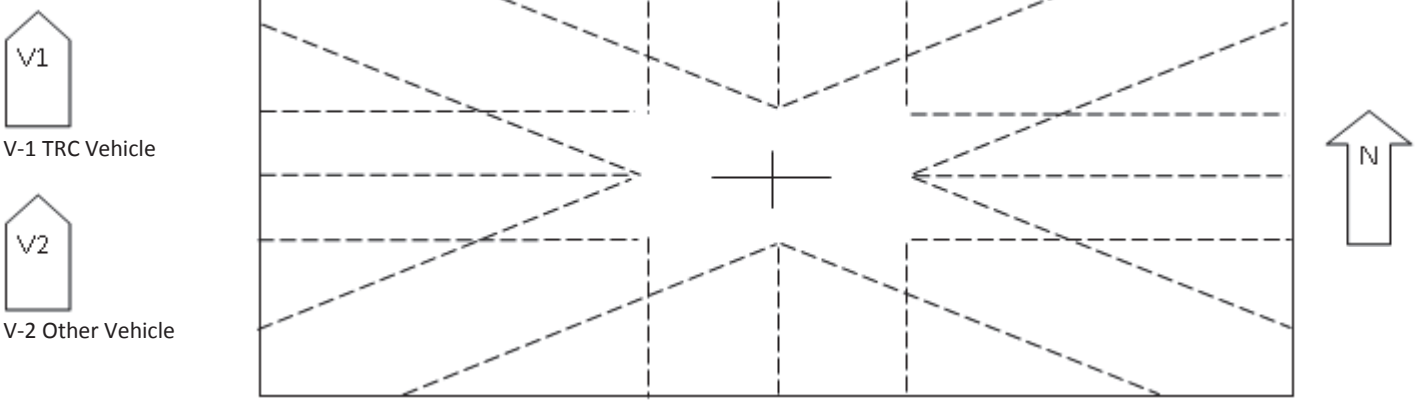
Insurance Company Name: _____ Policy Number: _____

Insurance Company Phone: ( ) _____ Number of Passengers in Vehicle: _____

List Persons Injured: _____

Were Any Other Vehicles Involved in Incident? ☐ Yes ☐ No If yes, provide details below:

PLEASE DESCRIBE THE INCIDENT AND COMPLETE THE DIAGRAM BELOW. Be sure to indicate as many details as possible (i.e., How many lanes in each direction; Were there any turn lanes; What kind of traffic controls were there – light, stop sign, yield sign, Positions of vehicles on impact).



Completed By: _____ Signature: _____

INCIDENT NOTIFICATION REPORT

(To be completed immediately after an Injury, Illness, Incident or Significant Near Miss by Employee's Supervisor and Employee involved)

Incident Category

☐ Injury/Illness ☐ Near Miss/Loss ☐ Property Damage ☐ Other

1 Incident Location: _____

2 Project #: _____

3 Client: _____

4 Date Incident Occurred: _____ Time: _____

5 Date Incident Reported: _____ Time: _____

TRC Employee Information

6 Name: _____ Phone: _____

7 Office: _____ Address: _____

8 Supervisor Name: _____ Phone: _____

9 Title or Occupation: _____

10 Sector/Practice:

Incident Description

11 Task Performed/Description of Incident:

12 Conditions at the Time of Incident (weather, lighting, etc.):

13 Description of Property Damage:

Employee Injury or Illness Description

14 Describe the Injury or Illness:

15 First Aid/Medical Treatment Administered:

16 Was WorkCare Contacted? ☐ Yes ☐ No

17 Name of Doctor's Office, Clinic or Hospital: _____

18 Address: Phone:

INCIDENT NOTIFICATION REPORT

(To be completed immediately after an Injury, Illness, Incident or Significant Near Miss by Employee's Supervisor and Employee involved)

Subcontractor Involvement

19 Was a subcontractor involved? ☐ Yes ☐ No

20 Name of Company: _____

21 Address: _____

22 Contact Name: _____ Phone: _____

23 Description of the Incident:

Witness Information

24 Were there witnesses to the incident? ☐ Yes ☐ No

25 Name(s) Address(es) Number(s)

Immediate Corrective Actions

26 Describe the Immediate Corrective Actions Taken:

Supervisor: _____ Signature: Date:

Employee: Signature: Date:

TRC OBSERVATION FORM

Revised January 2014

PERSONAL PROTECTIVE EQUIPMENT	Safe	At-Risk	Comments
1. Hearing Protection (e.g. Ear Plugs)			
2. Head Protection (e.g. Hard Hat)			
3. ANSI Rated Eye Protection (e.g. Safety Glasses)			
4. Hand Protection (e.g. Kevlar Gloves)			
5. Foot Protection (e.g. Safety Shoes)			
6. Respiratory Protection			
7. Fall Protection Inspected (e.g. harness)			
8. ANSI Rated Reflective Vest/High Visibility Clothing			
9. Other (Specify)			
BODY USE AND POSITIONING	**Safe**	**At-Risk**	**Comments**
10. Correct Body Use and Positioning When Lifting/Pushing/Pulling			
11. Pinch Points/Moving Equipment - Hands/Body Clear			
12. Mounts/Dismounts Using 3-Points of Contact			
13. Other (Specify)			
WORK ENVIRONMENT	**Safe**	**At-Risk**	**Comments**
14. Work/Walk Surface Free of Obstructions (e.g. tripping hazards)			
15. Housekeeping/Storage			
16. Defined and Secured (e.g. warning devices, barricades, cones, flags)			
17. Suspended Load, Swing Radius & Lift Area is Barricaded			
18. Safety Shut Down Devices			
19. Proper Storage & Labeling /Disposal of Sample & Waste Materials			
20. Cylinders Stored Upright, Secured, & Caps in Place			
21. Manhole/vault Inspected for Hazards			
22. Other (Specify)			
OPERATING PROCEDURES	**Safe**	**At-Risk**	**Comments**
23. Job Planning (HASP reviewed, JSAs, etc.)			
24. Fire Extinguishers Accessible and Inspections Current			
25. Work Permit/Authorization to Work (Hot, Cold, LOTO, Confined Space)			
26. JSA Reviewed & Followed			
27. Hazard Assessment - Hazard Hunt			
28. Interfaces with Other Functions (awareness with other personnel on site)			
29. Operators Looking Behind Prior to Backing Up			
30. Operators Wearing Seat Belts While Operating Equipment			
31. Subsurface Structures Identified			
32. Proper Trench Protective Equipment in Place			
33. Adequate Egress Is Available for Excavation & Trench (within 25 ft. if depth is <4 ft.)			
34. All Materials Set Back at Least 2 Feet From Edge of Trench/Excavation			
35. Other (Specify)			
TOOLS/EQUIPMENT	**Safe**	**At-Risk**	**Comments**
36. Hand Tools (Proper Equipment Selection, Condition, and Use)			
37. Power Tools (Proper Equipment Selection, Condition, and Use)			
38. Equipment, Including Heavy (Proper Equipment Selection, Condition, and Use)			
39. Hoses Inspected			
40. Required Monitoring Equipment Calibrated & Used			
41. Ladders Setup Correctly & Inspected			
42. Right Tools for the Job are Available and in Good Condition - No Fixed Open Blade Knifes (FOBKs)			
43. Other (Specify)			
Total #	0	0	

Health and Safety Plan.

BNSF E-Waste Removal and Disposal.

13.0 SITE SPECIFIC INFORMATION

Site Name: Removal Action/Remediation of Electronics Waste, BNSF

Site Location: Sioux City, Woodbury County, Iowa

Plan Date: 02/05/2020

Revision Date: NA

This plan addresses those activities and operations proposed for the removal of lead contaminated E Waste containers by Clean Harbors Environmental Services Inc. for BNSF Railway (BNSF).

This Site-Specific Information has been developed from the latest available information revisions and alterations to this plan may become necessary as further information, (i.e., environmental sampling results, changes in site conditions, changes in scope of work, etc.), is developed or becomes available. Clean Harbors' Manager of Occupational Health and Safety must approve any proposed changes, before the on-site implementation.

All on-site personnel are required to review and comply with this Health and Safety Plan. It is the responsibility of the Project Manager to ensure this plan is implemented.

13.1 SITE HISTORY

13.1.1 Former Nature of Site:

XX	Industrial	XX	Commercial
	Residential		Rural
			Other (SPECIFY)

13.1.2 Former Use of Site:

XX	Manufacturing (Feed Mill)		Landfill
	Residence		TSDF
	Maintenance Facility		Gasoline Distributor
			Other (SPECIFY)

13.1.3 Reason for Site Mobilization/Activity:

	Public Complaints	XX	Agency Authorized Clean-Up
XX	Client Request		Emergency Response
	Previous Site Research/Investigation		
	Other (SPECIFY		

13.1.4 Work Ordered By:

XX	Client		Government Agency		Other (SPECIFY)

13.1.5 Nature of Problem:

_____ Uncontrolled Dumping _____ Leaking Underground Storage Tank
_____ Buried Drums _____ Spill _____ Truck Roll-Over

XX Other (SPECIFY)
Contaminated E-Waste

13.1.6 Detailed Site History:

BNSF Railway (BNSF) presents the following Request for Proposal (RFP) for electronic waste (E-waste) removal and associated environmental remediation services for a property formerly operated as a feed mill facility north of its Sioux City Railyard at 3035 Highway 75 North, Sioux City, Iowa. The former feed mill facility was utilized to store hazardous E-waste materials, including crushed cathode ray tubes and leaded glass from television and computer screens (the Site). TRC Environmental Corporation (TRC) will serve as project engineer (Engineer) for the work outlined herein and will coordinate with BNSF and subcontractor representatives during waste handling, profiling, tracking, transfer and disposal activities during the removal action to ensure compliance with requirements of a Work Plan approved by the United States Environmental Protection Agency

13.2 SITE DESCRIPTION

13.2.1 General Site Topography:

____ HILLY XX FLAT ____ MARSHLAND ____ Other

13.2.2 Affected Area:

____ URBAN ____ RURAL ____ RESIDENTIAL XX INDUSTRIAL
____ Other (SPECIFY)

13.2.3 Bodies of Water Neighboring Site:

____
____ OCEAN NA Other (SPECIFY)
____ STREAM ____ RIVER ____ POND ____ LAKE ____ BAY

13.2.4 Approximate Site Size: 3 acres

13.2.5 Unusual Site Features:
Floyd river 0.35 miles to the west.
BR 75 100 feet from building to the east

(SPECIFY: Process/Utility lines and proximity to site operations; overhead obstructions; Building locations; Landmarks; etc.)

13.2.6 Properties or Operations Abutting (adjacent to) the Site and Current Use:
(NOTE: SPECIFY APPROXIMATE DISTANCES TO WORK AREAS)

NORTH:	31st street 300 ft
SOUTH:	Open
EAST:	Roadway
WEST:	Railway 75 ft

13.3 CURRENT SITE STATUS

_____ Active XX Inactive

13.3.1 Current Site Activities:

environmental and industrial services

CLIENT OPERATIONS: Storage.

GOVERNMENTAL AGENCY OPERATIONS:
none

ADDITIONAL SITE CONTRACTORS:
various

13.4 SCOPE OF WORK/PROJECT OBJECTIVES

Removal and packaging of approximately 1,000 gaylord boxes of crushed, hazardous Ewaste from the Site building;
• Packaging (includes transloading, as appropriate), transport, and disposal of approximately 625 tons of hazardous E-waste to a contractor-designated and BNSF-approved disposal facility;
• Packaging, transport, and disposal of any nonhazardous E-waste encountered during the removal action to a contractor-designated and BNSF-approved disposal facility;
• Site restoration; and
• Site security, as appropriate

13.5 CONTAMINANTS

13.5.1 Waste Type:

Liquid ____ Solid X Gas _____ Sludge _____ Other _____

13.5.2 Waste Characteristics (from Manifest):

CORROSIVE		FLAMMABLE		EXPLOSIVE	
COMBUSTIBLE		VOLATILE		TOXIC	X
REACTIVE		RADIOACTIVE		OTHER	
UNKNOWN					

13.5.3 Containment:

EXCAVATION		LAGOON		BODY OF WATER	
TANK		DRUMS		TANK CAR	
PIPING		ROLL-OFF		PROCESS VESSEL	
SOIL		GROUND WATER		OTHER gaylords	X

13.5.4 Substances of Concern:

Provide a summary of the chemicals Known (x), or Suspected (S) to be present on-site. Indicate Concentrations by laboratory analysis, exposure monitoring results, bulk samples, etc. found in ppm, ppb, mg/l, ug/l, per cent (%), etc.

CONCENTRATION RANGE OF CHEMICALS FOUND:			X or S
CHEMICAL NAME	Sediment	WATER	
lead	5 to 120 mg/m3		X

13.5.5 Exposure Limits:

This table lists the accepted exposure limits of those substances outlined in Contaminants of Concern and Chemicals to be used On-Site. Attach appropriate Material Safety Data Sheets (MSDS) in Appendix C.

	EXPOSURE LIMITS[1]					
	ACGIH		OSHA			
CHEMICAL NAME	TLV	STEL	PEL	STEL	IDLH	IP (eV)
Lead	0.05 mg/m^3	None	0.05 mg/m^3	None	100 mg/m^3	N/A

[1]Specify units i.e. ppm; mg/m^3, etc.

NOTES: (For 13.5.5)

a - TLV-TWA ACGIH, Threshold Limit Value - Time Weighted Average

b - TLV-STEL ACGIH, Threshold Limit Value - Short Term Exposure Limit

c - PEL-TWA OSHA, Permissible Exposure Limit - Time Weighted Average

d - PEL-STEL OSHA, Permissible Exposure Limit - Short Term Exposure Limit

e - IDLH NIOSH, Immediately Dangerous to Life or Health; a maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.

f - Al ACGIH, Known Human Carcinogen

g - A2 ACGIH, Suspected Human Carcinogen

h - SKIN This attention-calling designation refers to the potential contribution to the overall exposure through skin absorption, including mucous membranes and eye, either airborne or through direct contact with the substance.

i - CEILING ACGIH, The concentration that should not be exceeded during any part of the working exposure.

13.5.6 Chemicals Used On-site:

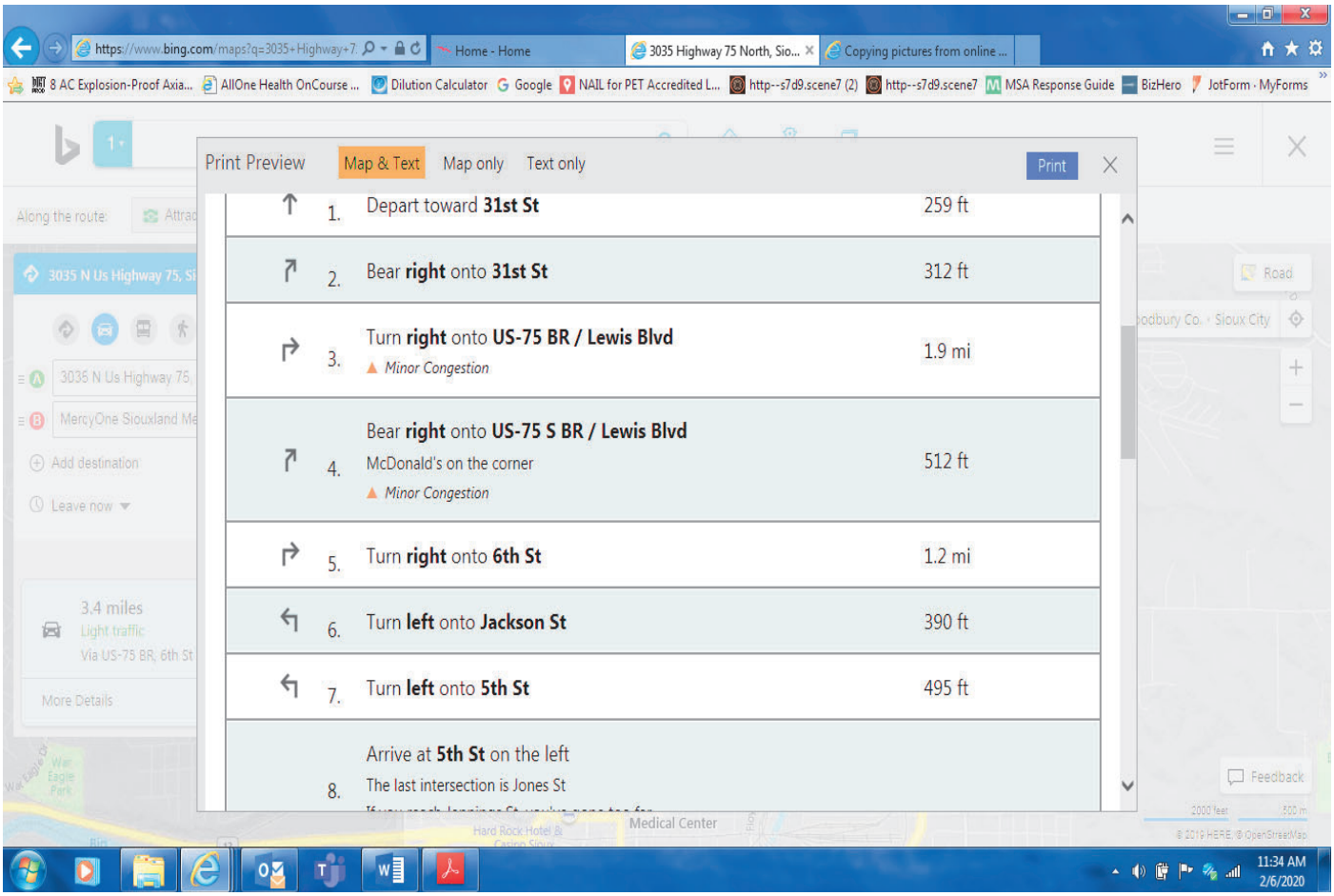
Summarize the chemicals that will be brought to the site and used by CHI Personnel. (Include each product that will be on site, e.g. the decontamination solution, oil/grease for equipment maintenance, etc.). Attach appropriate MSDS in Appendix C.

CHEMICAL NAME	TASK USED FOR	QUANTITY OF CHEMICAL	CONC. OF SOLUTION
Diesel Fuel	Equipment	100 gals	100
Grease	Equipment	1 gal	100
Gasoline	Equipment	100 gals	100
Enviroblend*	Lead stabilization	If needed*	3%

13.6 KEY PERSONNEL and EMERGENCY NUMBERS

Indicate Location	Non-Emergency	Emergency
Sioux City Police Department, 601 Douglas St, Sioux City, IA 51101	(712) 279-6440 (business)	911
Sioux City Fire Department, 205 Sodrac Dr, North Sioux City, SD 57049	(605) 232-4286 (Business)	911
State Poison Control		(800)442-6305
CHEMTERC		(800) 424-9300

NEAREST HOSPITAL:
MercyOne Siouxland Medical Center,
801 5th St, Sioux City, IA 51101



DIRECTIONS TO HOSPITAL FROM SITE:

Directions are for reference only any injured personnel are to be transported to the hospital in licensed ambulance service.

CLEAN HARBORS OPERATIONS CONTACTS:

CLEAN HARBORS HEALTH & SAFETY CONTACTS	
Health & Safety Manager	
Name:	Tim Lavin
Telephone:	[redacted]
Director of Health & Safety	
Name:	Ben McWhorter
Telephone:	[redacted]
Business Unit General Manager	
Name:	Dan Petrich
Telephone:	[redacted]
Project Manager	
Name:	Todd Prescott
Telephone:	[redacted]
"Clean Harbors Off-Hours phone coverage provided by Central Answering Service" Telephone – (800) 282-0058	
CLIENT CONTACT	
Name:	TBD
Title:	
Company:	
Telephone:	
Regulatory Agency Contacts:	
FEDERAL CONTACT	
Name:	TBD
Title:	
Agency:	
Telephone:	
STATE/PROVINCIAL CONTACT	
Name:	TBD
Title:	
Agency:	
Telephone:	

" CHESI Off-Hours phone coverage provided by Central Answering Service "

Telephone 800-645-8265

13.7 SITE HEALTH AND SAFETY CONTROLS

The following information has been developed to identify, communicate and minimize the risk of exposure to toxic materials and physical hazards on the job site. This preliminary evaluation identifies anticipated hazards and recommends control measure to minimize recognized hazards. Additional information on hazards should be gathered during site activities and can be added to this document to supplement this plan.

Changes to this plan (i.e. changes in levels of protection, use of alternative controls, additional tasks, etc.) must be approved, by the Manager - Occupational Health and Safety, prior to initiation or implementation.

	TASK	LEVEL OF PROTECTION
1.	**Soil Stabilization**	**Modified D/C**
2.		
3.		

See Attached Job Hazard Analysis

13.8 PHYSICAL HAZARD EVALUATION SHEET

TASK NUMBER	HAZARD	ACTION
	ABRASIVE BLASTING	Attach Physical Hazard Data Sheet
	BOBCAT LOADER	Attach Physical Hazard Data Sheet
	BONDING & GROUNDING	Attach/Refer to Program
	CHAIN SAW	Attach Physical Hazard Data Sheet
	COLD STRESS	Attach/Refer to Program
	COMPRESSED GAS CYLINDER HANDLING	Attach Physical Hazard Data Sheet
	CONFINED SPACE ENTRY	Attach/Refer to Program
	CONTROL OF HAZARDOUS ENERGY (Lock-out/Tag-Out)	Attach/Refer to Program
	CRANES	Attach Physical Hazard Data Sheet
	DRUM HANDLING	Attach/Refer to Guidance Manual (Chapter I)
1,2,3	EXCAVATING & TRENCHING	Attach/Refer to Program
1,2,3	EXCAVATION/BACKHOE	Attach Physical Hazard Data Sheet
	EXPLOSIVE ACTUATED FASTENING DEVICES	Attach Physical Hazard Data Sheet
	FALLING OBJECTS	Attach Physical Hazard Data Sheet
	FLOOR HOLES	Attach Physical Hazard Data Sheet
All	HAND TOOLS	Attach Physical Hazard Data Sheet
All	HEAT STRESS	Attach/Refer to Program
	HOTSY	Attach Physical Hazard Data Sheet
All	HOUSEKEEPING	Attach Physical Hazard Data Sheet
	HYDRO-BLASTER	Attach Physical Hazard Data Sheet
	INERTTNG SPACES	Attach Physical Hazard Data Sheet
	LADDERS	Attach Physical Hazard Data Sheet
,	LIGHTING	Attach Physical Hazard Data Sheet
All	MANUAL LIFTING	Attach /Refer to Training Program
	MARINE SAFETY	Attach/Complete Checklist
	OVERHEAD WIRES	Attach Physical Hazard Data Sheet
	PERSONNEL LIFTS	Attach Physical Hazard Data Sheet
	PNEUMATIC HAMMER	Attach Physical Hazard Data Sheet
	POWER TOOLS	Attach Physical Hazard Data Sheet
	RIGGING	Attach Physical Hazard Data Sheet
	SCAFFOLDS	Attach Physical Hazard Data Sheet
	SHARP OBJECTS	Attach Physical Hazard Data Sheet
All	SLIPS, TRIPS, AND FALLS	Attach Physical Hazard Data Sheet
	VACUUM TRUCK OPERATIONS	Attach Physical Hazard Data Sheet
	WELDING, CUTTING, BURNING	Attach Physical Hazard Data Sheet
	WORKING AT ELEVATORS	Attach Physical Hazard Data Sheet
All	WORK ZONE TRAFFIC CONTROL	Attach Physical Hazard Data Sheet

13.9 ACTION LEVELS[1]

Assuming 120mg/m3 is the highest sample of lead for the entire site.
120/1,000,000 = 0.00012 or 0.012% lead in soil.
0.00012mg/m^3 lead X (T) mg/m^3 total dust = 0.025mg/m^3 (CHES level D Action Level)
T = 0.25/0.00012
T = 208 mg/m^3 dust to reach the 0.025 mg/m^3 lead action level

OSHA limit for non regulated dust = 5 mg/m^3
CHES limit for non regulated dust = 2.5mg/m^3

MAXIMUM CONCENTRATION

SUBSTANCE	LEVEL B[2]	Level C[3]	PEAK	LEVEL D
Lead	100 mg/m^3	0.25 mg/m^3		0.025 mg/m^3
Total dust (0.00012 mg/m^3 lead)		25 mg/m^3		2.5 mg/m^3

NOTES:

[1] Concentrations are maximums for the Level of Protection. If these concentrations are exceeded, unless addressed below, the level of protection must be upgraded.

[2] If the airborne levels exceed this concentration, even instantaneously**, STOP WORK IMMEDIATELY** and contact the Regional Health and Safety Representative, Corporate Industrial Hygienist, or the Manager-Occupational Health and Safety.

[3] Airborne levels may exceed the Level C limit for up to five (5) minutes so long as the PEAK MAXIMUM concentration is not exceeded. This may happen up to three (3) times during any eight (8) hour shift.

IF: **PEAK** is exceeded at any time;

and/or

LEVEL "C" MAXIMUM is exceeded more than three (3) times in any one shift;

THEN: UPGRADE TO LEVEL "B", IMMEDIATELY.

13.10 WORK ZONES

The Project Manager will determine the specific location and size of the work zones. The decision will be based on the latest available information including scope of work, environmental conditions, site conditions, and direct reading instrument monitoring results. (Refer to Section 5.0 of the Site Specific Plan for Determination Criteria,)

13.11 SITE MONITORING

13.11.1 Monitoring Equipment:

	PID	X	DUST MONITOR		FID
	MERCURY Jerome 431		4-Gas Multi Meter		DETECTOR TUBES
	GEIGER		PERSONAL PUMP		OTHER
	NOISE				

13.11.2 Frequency and Methods of Site Monitoring

The Project Manager is responsible for ensuring air monitoring is conducted and that personnel protection and site integrity are maintained. Air monitoring shall be conducted periodically, and when changes occur in work practices, procedures, locations, or tasks.

The Project Manager shall be responsible for ensuring a daily, site/personnel monitoring log, (using CHI Atmospheric Monitoring Log, or equivalent) is maintained on site.

13.11.3 Documentation

The Project Manager is responsible for assuring that monitoring results are properly obtained, documented and maintained in appropriate locations. Additionally, the Project Manager is responsible for assuring that samples requiring analysis are promptly submitted to Clean Harbors' Analytical Services (CHAS) and sample pumps are post-calibrated.

Recording Forms

Atmospheric Monitoring Logs - Used to record direct reading instrument results. The Hazardous Work/Confined Space Entry Permit may also be used for this purpose. Additional sheets or blank sheets may be used if the forms are not sufficient to record all data.

Air Sampling Worksheet - Used to record data for personal exposure monitoring. ALL! information on this form must be completed before submittal to CHAS.

Copies - After monitoring is complete the Project Manager should retain the COLLECTOR COPY and place it in the job folder. The remaining two (2) copies should be submitted to CHAS.

Other Forms - Other forms than those mentioned above, may be used with permission of the Health and Safety Department.

13.12 DECONTAMINATION

All personnel and equipment leaving the Exclusion Zone must be thoroughly decontaminated before passing to the Support Zone. The Project Manager must designate decontamination stations, as necessary, and continually evaluate and implement the site Specific decontamination procedures.

Based on the associated hazards and levels of protection required with this operation, the following steps shall be followed during the decontamination of personnel and personal protective equipment

Step 1 - SEGREGATED EQUIPMENT DROP:
Deposit equipment used on site on plastic drop cloths.

Step 2 - BOOT COVER. GLOVE, CHEMICAL – RESISTANT COVERALL WASH/RINSE:
Outer gloves, boot covers, and chemical protective clothing will be rinsed to remove any visible contaminants.

Step 3 - TAPE REMOVAL:
Remove tape from around boot covers and outer gloves and deposit in appropriate waste container.

Step 4 – BOOT COVER AND OUTER GLOVE REMOVAL:
Remove boot covers, followed by cuter glove removal, and deposit in appropriate waste container.

Step 5 - CHEMICAL RESISTANT SUIT REMOVAL:
Remove chemical resistant suit and deposit in appropriate waste container.

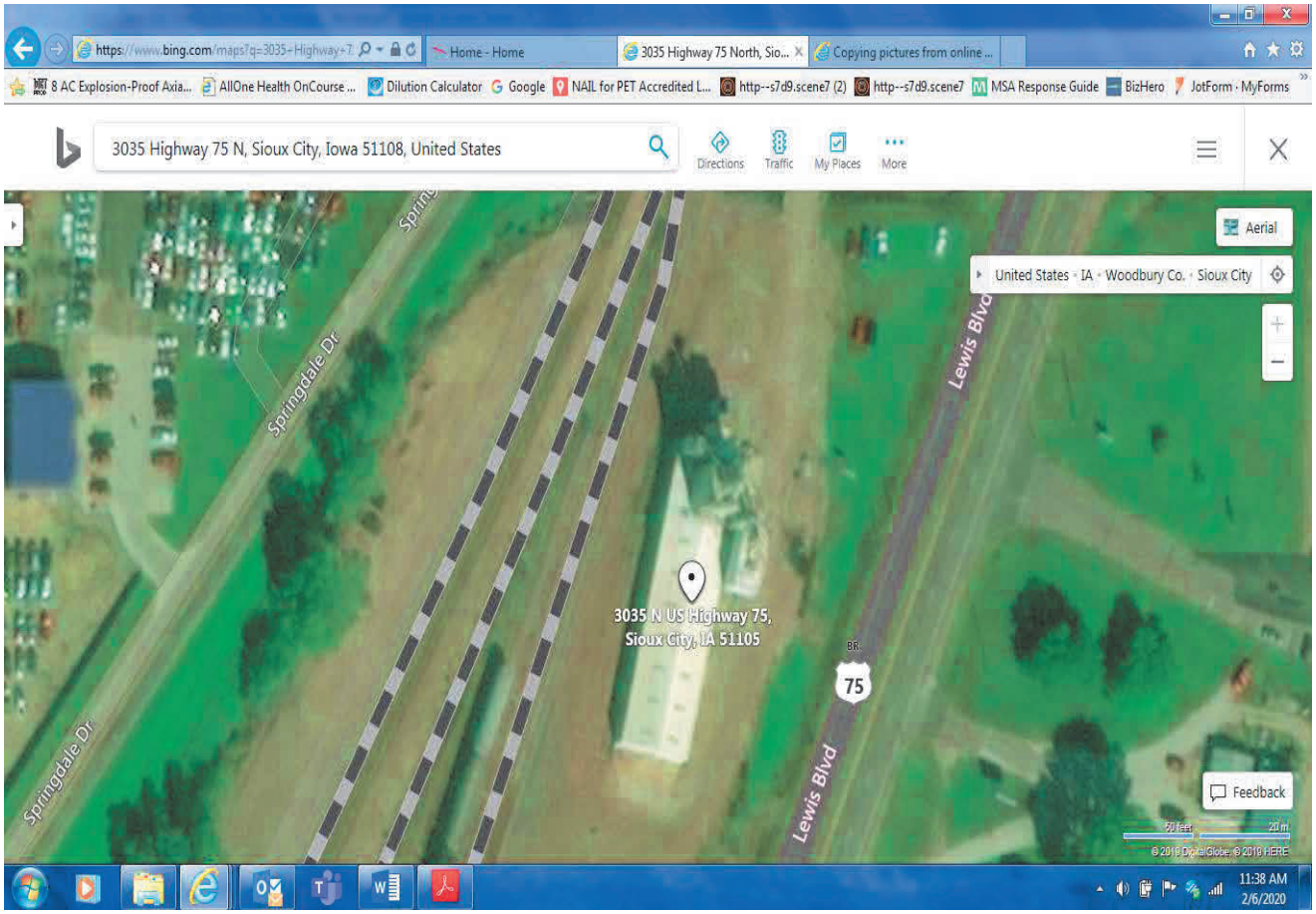
Step 6 - RESPIRATOR REMOVAL:
Remove respirator and place in soap/water solution for further cleaning and decontamination.

Step 7 - INNER GLOVE REMOVAL:
Remove inner gloves and place in appropriate waste container.

The Project Manager shall be responsible for establishing the appropriate decontamination stations at which these steps shall be performed. If appropriate, a more comprehensive decontamination procedure will be utilized. Refer to Section 7.0 of the Site Specific Plan for additional steps.

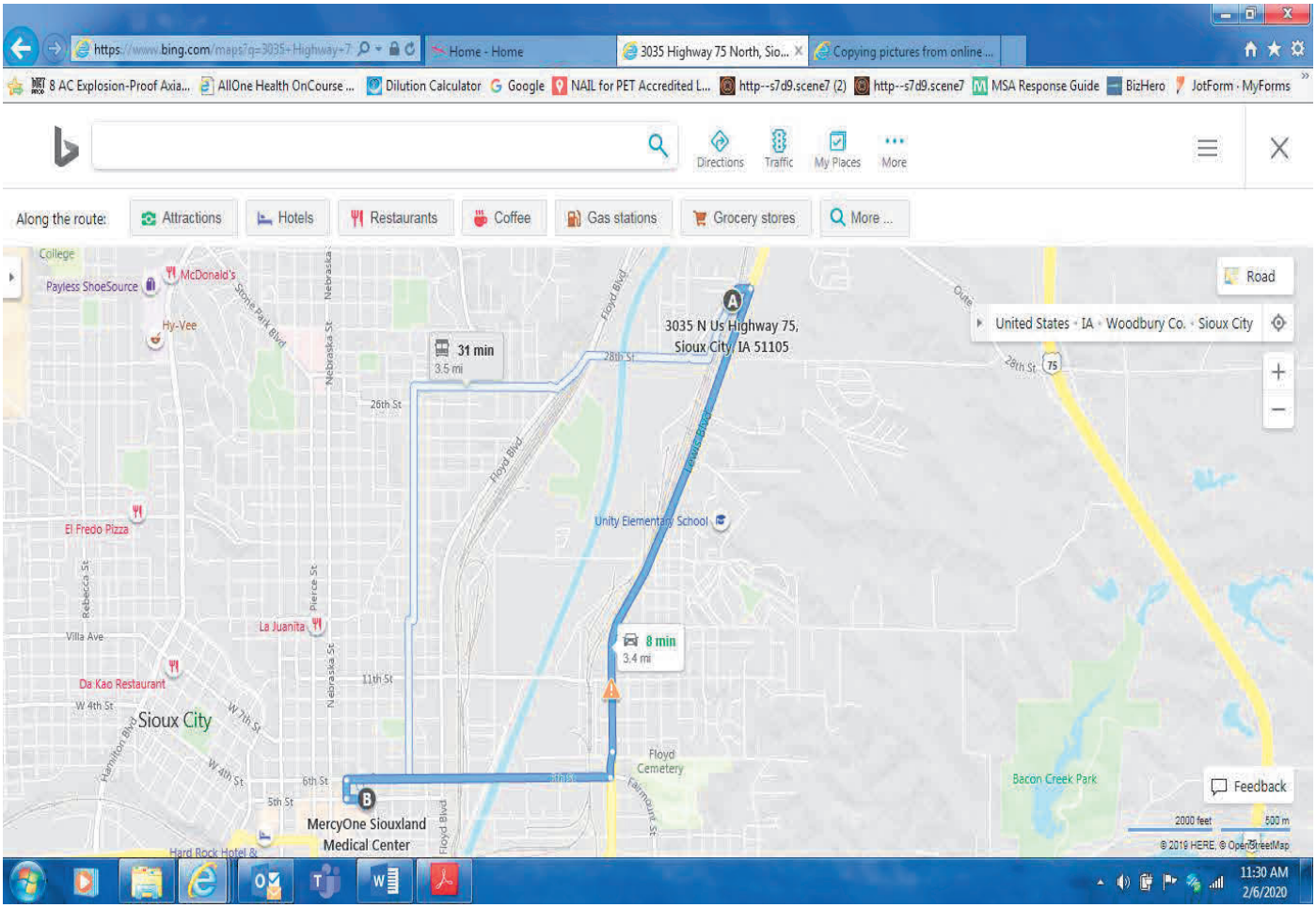
13.13 SITE MAPS

13.13.1 Detailed Site Map:



13.13.2 Hospital Route Map:

Attached is a route map to the nearest hospital, (with directions from the site highlighted), as identified under Key Personnel and Emergency Numbers.



APPENDIX – A

PLAN APPROVAL AGREEMENT

The following individuals have reviewed the site specific health and safety plan for the BIW Facilities Upgrade Project Soil Stabilization Project. They are responsible for implementing and enforcing the procedures and items covered by this plan. In addition, Clean Harbors' Manager, Occupational Health and Safety must approve any revisions or alterations to this plan before implementation.

Notify Tom Hagadorn of any alterations or deviations from the procedures, requirements, etc., listed in this plan, (Return a signed copy of this document to Corporate EH&S).

Senior Health & Safety Manager	Date:
Project Manager	Date:
Project Supervisor	Date
Branch Manager	Date

APPENDIX - B

COMPLIANCE AGREEMENT

All on-site personnel, (i.e., CHI employees and Subcontractors), must complete and sign this section before the commencement of site activities for the BIW Facilities Upgrade Project Soil Stabilization Project. (Return a signed copy of this document to Corporate EH&S).

I have read and understand the contents of this site-specific health and safety plan, and have had all relevant questions answered to my satisfaction. In addition, I agree to comply with the conditions/provisions outlined therein.

NAME (Print)	SIGNATURE	COMPANY/ CHI BRANCH	DATE

Page _____ of _____

APPENDIX - C

APPROPRIATE
MATERIAL SAFETY DATA SHEETS
(MSDS)

APPENDIX – D

APPROPRIATE PHYSICAL HAZARD DATA SHEETS

And

PROGRAMS

APPENDIX – E

DETAILED JOB HAZARD ANALYSIS

CleanHarbors	JOB HAZARD ANALYSIS	Document Control ID: HS.00023.FM-10HS Revision Date: 01-Sep-2011 / Revision #: 8 Owner: Health & Safety

SECTION 1: JOB/TASK/PROCESS *(Document General Information Below)*

FACILITY/CLIENT LOCATION:PC Construction	CH BRANCH CODE:	FACILITY PROCESS AREA/CLIENT PROJECT	PROJECT DATE:	JOB CODE /PERMIT #:
	42DMI	BNSF E Waste Warehouse		

SCOPE OF WORK:	DURATION OF PROJECT/TASK:
Remove E waste from site.	

ANALYSIS LED BY (Print Name):	TITLE	ORIGINAL ANALYSIS DATE:	REVISION DATE:
Tim Lavin	Health & Safety Manager	02/06/2020	
REVIEWED BY (Print Name)::	**TITLE:**	**APPROVED BY:**	**TITLE:**

SECTION 2: Chemical/Physical/ Biological Hazards *(Describe Job Hazard Agents Identified)*

Chemical Agents (HAZCOM/ WHMIS MSDS Review)	Physical Agents	Biological Agents
Lead, silica	Struck by Heavy Equipment, exposure, heat/cold stress,	None expected

SECTION 3: PPE HAZARD ASSESSMENT SUMMARY

Head	☒ Hard Hat ☐ Side Impact Hard Hat ☐ DOT Approved Helmet ☐ Lock-On-Life Support Helmet ☐ Other:
Eyes/Face/Neck	☒ Safety Glasses with Side Shields ☐ Goggles – Chemical ☐ Goggles – Dust ☐ Face Shield ☐ Welding Helmet ☐ Balaclava (F.R.) ☐ Other: _____
Respiratory	☐ Dust Mask ☐ Half Face Respirator/Cartridge Type: _____ ☒ Full Face AP Respirator/Cartridge Type: P100 ☐ PAPR/ Cartridge Type: _____ ☐ SABA ☐ SCBA ☐ Lock-On-Life Support Helmet ☐ Other: _____
Ears/Hearing	☒ Ear Plug ☐ Ear Muff ☐ Double (Combination Ear Plugs & Ear Muffs) ☐ Other:
Hands/Arms	☐ Cotton Gloves ☒ Leather Gloves ☒ Puncture/Cut Resistant ☐ PVC ☐ Nitrile ☐ Anti-vibration ☐ Impact Protection ☐ Thermal ☐ Sleeves ☐ Wristlets/Type: _____ ☐ Other: _____
Body	☐ Fire Retardant Coveralls/Uniform ☐ Chemical Protective Clothing/Type: _____ ☒ Tyvek/Type: White Tyvek ☐ Apron ☐ Sleeves ☐ Life Jacket/Vest ☒ High Visibility Vest ☐ Heat Reflective Suit ☐ Foul Weather Gear ☐ Cool Vest ☐ Kevlar Cut Resistant Suits ☐ Other: _____
Feet	☒ Safety Boots – Leather or Rubber ☐ Metatarsals (Feet & Shin) ☐ Ice Cleats (Slip-Overs) ☒ Booties/ Type: Latex ☐ Other: _____

SECTION 4: HAZARD ANALYSIS PROCESS ***(Document Hazard Analysis and Controls Based on each Job Step/ Task Sequence)***

Sequence Of Job Steps/Tasks (Number)		Hazards/Potential Hazards & Effects (What could go wrong?)	Recommended Hazard Control Or Safe Job Procedures (How can harm be prevented?)	Required PPE (List PPE required for each Job Step)
1	Use mechanical loaders to move gaylords to dumping area	a. Defective equipment b. Struck by heavy equipment c. Water infiltration d. Means of egress e. Overhead Loads f. Securing the site	a. Complete daily equipment checklist; Defective equipment will be removed from service b. Always wear a safety vest when working around heavy equipment; Never approach equipment unless the operator is aware of your approach. c. Ensure all water infiltration is being pumped out as needed; nobody enters an excavation with uncontrolled water infiltration. d. Ensure there is adequate means of egress into warehouse. e. Ensure never to lift the bucket of a piece of equipment over an individual. f. Should the excavation be left over night, ensure we are using adequate (mobile fencing 6') means of securing the site so as to nobody could enter and become endangered in our work area. This could involve possible overnight security.	Hard Hat FFAPR w/P100 Safety Glasses Uncoated Tyvek Steel toe boots Latex booties Leather Gloves Reflective Vest Hearing protection
2	Load trucks with Waste for disposal	a. Struck by heavy equipment b. Falling objects c. Dust generation	a. Always wear a safety vest when working around heavy equipment; Never approach equipment unless the operator is aware of your approach. Place bucket on ground when attaching super sack. b. Use properly rated lifting chains, straps and shackles; stay clear of raised super sack when opening trunk c. Keep bucket as low to the pile as possible	Hard Hat FFAPR w/P100 Safety Glasses Uncoated Tyvek Steel toe boots Latex booties Leather Gloves Reflective Vest Hearing protection
3	Secure loads with covers	d. Defective equipment	d. Complete daily equipment checklist; Defective equipment will be removed from service	Hard Hat FFAPR w/P100

		e. Struck by heavy equipment f. Overhead Loads g. Securing the site	e. Always wear a safety vest when working around heavy equipment; Never approach equipment unless the operator is aware of your approach. f. Ensure never to lift the bucket of a piece of equipment over an individual. g. Should the excavation be left over night, ensure we are using adequate (mobile fencing 6') means of securing the site so as to nobody could enter and become endangered in our work area. This could involve possible overnight security.	Safety Glasses Uncoated Tyvek Steel toe boots Latex booties Leather Gloves Reflective Vest Hearing protection
4	Stage and load additional trucks for disposal.	a. Defective equipment b. Struck by heavy equipment c. Slips, trips, falls	a. Complete daily equipment checklist; Defective equipment will be removed from service b. Stay clear of equipment during operation(s); Signal "backfill" dump truck to stop in desired position by hand or horn signals; Always wear a safety vest when working around heavy equipment; Never approach equipment unless the operator is aware of your approach. c. Always use 3-point mount/dismount procedures on heavy equipment; Awareness of surroundings. Practice good housekeeping	Hard Hat Safety Glasses Steel toe boots Leather Gloves Reflective Vest Hearing protection
5	Package and remove generated debris.	a. Pinch points b. Sharp objects c. Slips, trips, and falls	a. Hand location; Never place your hands in locations you cannot see; Wear leather gloves. b. Leather, or cut resistant gloves pending task, consult supervisor. c. Awareness of surroundings; Practice good housekeeping;	Hard Hat Safety Glasses Steel to boots Leather Gloves Safety Vest Hearing protection

SECTION 5: Atmospheric Monitoring Required: ☒ Yes ☐ No

[For assistance determining exposure action levels please refer to Clean Harbors' Respiratory Protection Standard - Appendix 9]

List Substance(s) or Material(s) of Concern Below:	Monitoring Instrument	Substance / Material Exposure Action Levels			
		Level A	Level B	Level C	Level D
Lead as Total Dust	Particulate monitor		500 mg/m^3	25 mg/m^3	2.5 mg/m^3

SECTION 6: Training ***(Document the required Job Task Training)***

40Hr HAZWOPER, Lead awareness, Heavy Equipment operator, Excavation Competent Person Training (1 person minimum)

SECTION 7: Emergency Procedures ***(Document the Emergency Response Procedures - i.e. First Aid, Emergency Call #'s, etc.)***

Call 911 in case of emergency, contact Health and Safety as well as GM and Supervisor. Contact client contact as needed

SECTION 8: Decontamination Procedures *(Document the Decontamination Procedures –i.e. People and Equipment)*

Clean and wash hands and face prior to eating, drinking, or smoking.

Step 1	**SEGREGATED EQUIPMENT DROP:** Deposit all contaminated equipment on poly sheeting for further decontamination
Step 2	**BOOT COVERS, GLOVES, CHEMICAL – RESISTANT COVERALL VACUUM:** Spray down with Simple Green and water.
Step 3	**TAPE REMOVAL:** Remove Tape from around outer gloves and deposit in appropriate waste container.
Step 4	**OUTER GLOVE REMOVAL:** Remove outer gloves and deposit in appropriate waste container
Step 5	**CHEMICAL RESISTANT SUIT AND BOOT COVER REMOVAL:** Remove chemical resistant suit and boot covers; deposit in appropriate waste container.
Step 6	**RESPIRATOR REMOVAL:** Remove respirator and place in soap/water solution for further cleaning and disinfecting.
Step 7	**INNER GLOVE REMOVAL:** Remove inner gloves and place in appropriate waste container
Step 8	**PERSONAL HYGIENE:** Thoroughly wash hands and face

SECTION 9: Additional Job Specific Considerations: ☐ Yes ☐ No

.

SECTION 10: Job Hazard Analysis Verification (Crew Supervisor Review and Sign Off)

The Job Hazard Analysis Team has assessed the worksite conditions and confirms:

- The job and site specific conditions have been reviewed to ensure additional hazards have been addressed as warranted.
- The JHA addresses the significant Task Steps and applicable hazards and necessary controls.
- The Team has the appropriate resources (people and equipment) to do the job safely.
- Others that could be affected by the work have been informed.
- Energy isolation (if applicable) has been VERIFIED AND DEMONSTRATED.
- This document facilitates compliance of the PPE assessment and hazard analysis pursuant to company, legislative and client requirements.

SUPERVISOR / PM/ GM (Please Print):	POSITION:	SIGNATURE:	DATE:

SECTION 11: Job Hazard Analysis Review (Work Team Reviews and Sign-Off)

NAME (Print)	Signature	NAME (Print)	Signature	NAME (Print)	Signature

Appendix A: Table of Hazards and Controls *[This can be used as a tool to trigger situational awareness pertaining to potential Job Hazards]*

This Table of Hazards and Controls can assist the JHA work group to manage hazards for the proposed work. The table does not include all possible hazards and only acts as a guideline. Its intent is to aid in the JHA thought process to determine Job Task Hazards that may be present and identify implementation controls for consideration.

☐ Pressurized Equipment	☐ Poor Lighting or visibility	☐ Personnel	☐ Confined Space	☐ Simultaneous Operations (SIMOPS)	☐ Environment	☐ Ignition Sources
☐ Perform isolation – LO/TO, blinding, or defeat ☐ Depressurize, drain, purge, and vent ☐ Relieve trapped pressure ☐ Avoid auto-refrigeration when depressurizing ☐ Anticipate residual pressure or fluids	☐ Provide alternate lighting ☐ Wait or defer until visibility improves ☐ No work over water that could require rescue	☐ Provide induction or training for new workers ☐ Mentor, coach, or supervise ☐ Verify competencies, skills, and experience ☐ Address applicable limitations (fatigue, exhaustion, and restricted duty) ☐ Manage multiple languages	☐ Discuss confined space entry safe work practice ☐ Monitor access or entry ☐ Protect surfaces from inadvertent contact ☐ Do not locate mobile engines near confined space ☐ Provide observer ☐ Develop rescue plan	☐ Interface between groups ☐ Use barriers and signs to segregate activities ☐ Have permit counter signed by leader of affected groups	☐ Implement controls for slippery surfaces ☐ High winds – goggles ☐ Heat – hydration, breaks ☐ Cold – PPE, heaters ☐ Lightning – tool selection, defer work ☐ Wildlife encounters	☐ Remove, isolate, or contain combustible materials ☐ Provide fire-fighting equipment ☐ Construct a fire-safe habitat ☐ Provide a fire watch during and after hot work ☐ Conduct continuous gas testing ☐ Bond or earth for static electricity or cathodic protection ☐ Intrinsically safe tools, equipment, etc?
☐ Hazardous Substance	**☐ Potential Spills**	**☐ Equipment Hot or Cold**	**☐ High Noise**	**☐ Falling or Dropped Objects**	**☐ Lifting Equipment**	**☐ Work at Heights**
☐ Drain or purge equipment ☐ Follow MSDS controls ☐ Implement health hazards controls (Lead, Asbestos, H_2S, Iron Sulphide, Sulfur Dioxide, NORM) ☐ Test or analyze material	☐ Drain equipment ☐ Provide spill containment equipment ☐ Have spill clean up materials and equipment on hand ☐ Restrain and isolate hoses when not in use	☐ Heat or cool equipment before work starts ☐ Install barriers ☐ Provide warning signs ☐ Implement cold temperature and brittle failure controls ☐ Wear hermal gloves	☐ Wear correct hearing PPE ☐ Manage exposure imes ☐ Shutdown equipment ☐ Use "quiet" tools ☐ Sound barriers or curtains ☐ Provide or use suitable communication techniques	☐ Use signs and barriers to restrict entry or access under work at eleva ion ☐ Use lifting equipment to raise tools to or from the work platform ☐ Secure tools (tie-off)	☐ Confirm lifting equipment condition and certification ☐ Obtain approval for lifts over processing equipment ☐ Have a documented and approved lift plan	☐ Discuss working at heights safe work practice ☐ Verify fall restraint and arrest equipment certification ☐ Apply abseiling safe work practice
☐ Portable Electrical Equipment	**☐ Radiation Hazard**	**☐ Moving Objects or Equipment**	**☐ Manual Handling**	**☐ Equipment and Tools**	**☒ Vibrating Equipment**	**☐ Slips, Trips, and Falls**
☐ Inspect equipment for condition and test date currency ☐ Implement continuous gas testing ☐ Protect electrical leads from impact or damage ☐ Use GFI's	☐ Use barriers and signs to restrict access ☐ Notify personnel who may be affected ☐ Implement NORM controls ☐ Conduct RAD testing	☐ Confirm machinery guard integrity ☐ Provide protective barriers ☐ Observer to monitor proximity of people and equipment ☐ Shut down or lockout equipment	☐ Assess manual handling task ☐ Limit load size ☐ Manage posture ☐ Confirm stability of load and work platform ☐ Get assistance or mechanical aid to avoid pinch points	☐ Inspect equipment and tools ☐ No use of modified tools ☐ Use protective guards ☐ Use correct tools and equipment for task ☐ Protect or remove sharp edges	☐ Manage exposure times ☐ Assess affect of vibration on equipment ☐ Use low vibration equipment ☐ Apply noise controls	☐ Identify and shield uneven surface or projections ☐ Secure or cover cables, cords, and tubing ☐ Clean up liquids ☐ Barricade or rope-off openings and holes
☐ High Energy or High Voltage	**☐ Excavations**	**☐ Waste Clean Up and Disposal**	**☐ Other Energy Sources**	**☐ Mobile Equipment**	**☐ WHAT IF? Other Hazards**	**☐ Emergency Response**
☐ Restrict access to authorized personnel only ☐ Discharge equipment and make electrically dead ☐ Observe safe work distances for live cables ☐ Use flash burn PPE suit ☐ Use insulated gloves, tools, and mats	☐ Have an excavation plan or safe work prac ice ☐ Locate underground pipes or cables by hand digging ☐ De-energize underground services ☐ Implement confined space entry controls ☐ Barricade/Flag open excavations	☐ Apply environmental management practices ☐ Follow site waste management procedures ☐ Clean up equipment and materials at site ☐ Optimize task to minimize waste production	☐ Spring compression or expansion control ☐ Implement electromagnetic (radio) controls ☐ Manage pressure or vacuum ☐ Manage heat generating processes ☐ Use seismic activity safe work practice	☐ Assess equipment condition ☐ Implement controls on users or access ☐ Limit and monitor proximity to live equipment or cables ☐ Manage overhead hazards ☐ Adhere to road and site rules ☐ 3-point contact when entering/exi ing mobile equip. ☐ Driver security	☐ Implement abrasive blasting controls (for equipment and practices) ☐ Establish a driver journey management plan ☐ Manage potential blocked or plugged equipment ☐ MOC required for temporary connections or modifications	☐ Keep egress route open ☐ Keep shower and eye wash stations accessible ☐ Have a rescue plan in place ☐ Keep emergency alarm, fire equipment, and shutdown locations unobstructed ☐ Plan for emergency first aid in place ☐ Remote Medi-vac plan in place

ATTACHMENT B

Ambient Air Quality Monitoring Plan

Ambient Air Quality Monitoring Plan

FORMER FEED MILL FACILITY
SIOUX CITY, WOODBURY COUNTY, IOWA

April 2020

Prepared for:

BNSF RAILWAY

BNSF Railway Company

Prepared by:

TRC

Eagan, Minnesota

Ambient Air Quality Monitoring Plan

FORMER FEED MILL FACILITY
SIOUX CITY, WOODBURY COUNTY, IOWA

Prepared for:

BNSF Railway Company
Minneapolis, Minnesota

Prepared by:

TRC Environmental Corporation
1301 Corporate Center Drive, Suite 177
Eagan, Minnesota 55121

TRC Project No. 364413

April 2020

Table of Contents

Table Index

List of Acronyms

AAQMP	Ambient Air Quality Monitoring Plan
ACGIH	American Conference of Governmental Industrial Hygienists
BNSF	Burlington Northern Santa Fe
CRT	Cathode Ray Tube
IDLH	Immediately Dangerous to Life and Health
IM	Interim Measures
IOSHA	Iowa Occupational Safety and Health Administration
mg/m^3	mg per cubic meter of air
NAAQS	National Ambient Air Quality Standard
NE	Not Established
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PEL	Permissible exposure limit
PPE	Personal Protection Equipment
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RA	Removal Action
TLV	Threshold Limit Value
TRC	TRC Environmental Corporation
TWA	time weighted average
U.S. EPA	United States Environmental Protection Agency

1. Introduction

This Ambient Air Quality Monitoring Plan (AAQMP) was prepared by TRC Environmental Corporation (TRC) for electronics waste (E-waste), consisting primarily of leaded cathode ray tube (CRT) glass, removal activities to be completed at the BNSF Railway (BNSF) Former Feed Mill Facility building located at 3035 Highway 75 N, Sioux City, Woodbury County, Iowa (Site). The Site was formerly operated by an E-waste recycling center, which stockpiled approximately 625 tons of CRT glass in cardboard gaylord boxes. The purpose of the AAQMP is to present ambient air monitoring activities which will be conducted during E-waste removal work at the Site. E-waste removal work will require forklift and skid steerer equipment to move the CRT glass from the building into lined dump trucks, which will transport the material under profile to a licensed hazardous waste landfill.

The objective of this air monitoring program is to measure the potential lead concentrations that may become airborne during waste removal activities, if any, for the potential exposure receptors (i.e. the remediation workers within the exclusion zone and surrounding community). The purpose of this work plan is to address and outline air monitoring procedures that will be implemented during the E-waste removal and subsequent loading for offsite transport and disposal. The specific objectives include the following:

- Communicate the hazards associated with exposures to dust and potential lead-impacted dust to the remediation workers and other potential receptors.
- Provide recommendations for controlling Site exposures, respiratory protection and other personal protective equipment (PPE) to be utilized by the remediation workers and Site management.
- Perform real-time air monitoring for total dust in the exclusion zone and surrounding areas, and screen readings against the permissible exposure limits (PELs) calculated for lead, based on the maximum total lead concentration identified in CRT glass at the Site.
- Establish and implement procedures to ensure appropriate responses to elevated levels of dust detected during the work activities. This may include slowing or stopping work activities, identifying areas requiring respiratory protection, application of dust suppressants, or arranging for a timely evacuation of the Site in the event that hazardous concentrations of airborne emissions are detected, and decontamination procedures for the workers exiting the exclusion zone.
- Perform background perimeter air monitoring to establish baseline real-time dust concentrations inside the Site building and around the exterior waste loading area.

TRC will conduct air monitoring during active waste removal work. This monitoring will continue until potential worker exposures to lead and dust are mitigated and/or the work is completed. The air monitoring data will be collected and compiled in accordance with established guidelines. In addition, the results will be communicated to BNSF Railway, Site workers, United States Environmental Protection Agency (USEPA), and others as required and/or as necessary to ensure the safety and health of individuals entering the work area.

2. Exposure Standards and Guidelines

The U.S. Occupational Safety and Health Administration (OSHA) promulgate workplace standards to protect the safety and health of workers. The administration of these standards has been delegated to the Iowa Occupational Safety and Health Administration (IOSHA), which is part of the Iowa Department of Labor. The IOSHA standards are identical to the OSHA standards and apply to all places of employment in the state, with the exception of federal government employees, the U.S. Postal Service, private sector maritime activities, and certain agricultural operations. The National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) have established guidelines to protect workers from chemical hazards on the job. Table 2.1 summarizes the OSHA PEL, NIOSH Immediately Dangerous to Life and Health (IDLH) guidelines, and ACGIH threshold limit values (TLV) for lead and total dust.

Table 2.1 Occupational Exposure Limits and Guidelines

Analyte	IOSHA PEL TWA[1]	ACGIH-TLV TWA[2]	NIOSH - IDLH[3]	Units
Lead	0.030	0.05	100	mg/m^3
Total Dust[4]	15	10	NE	mg/m^3

Notes:

1. Permissible Exposure Limit - Time Weighted Average (PEL-TWA) = An 8-hour time weighted average. An exposure to any material listed in 29 CFR 1910.1000, Tables Z1 and Z2, in any 8-hour work shift of a 40-hour workweek shall not exceed the 8-hour time weighted average limit given for that material in the table.
2. Threshold Limit Value - Time Weighted Average (TLV-TWA) = The TWA concentration for a conventional 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect (ACGIH, 2015).
3. Immediately Dangerous to Life and Health (IDLH) = Indicates an exposure to airborne contaminants that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment.
4. A TLV for Particles Not Otherwise Specified (PNOS) has not been established. ACGIH recommends that airborne concentration for these compounds be kept below 10 mg/m^3.

The U.S. Environmental Protection Agency (U.S.EPA) has established National Ambient Air Quality Standards (NAAQS) for five primary pollutants, including particulate matter (dust). The NAAQS for particulate matter is based on a 24-hour exposure average. The NAAQS are derived at levels designed to protect public health and are based on the known effects of each substance on human health, vegetation and other components of the environment such as soil, water, materials (e.g., metalwork and masonry), visibility and personal comfort and well-being. The current NAAQS for lead of 0.00015 mg/m3 is based on a 3-month exposure average. Community exposure guideline values for the identified COI are summarized in Table 2.2:

Table 2.2 Community Exposure Guidelines (Inhalation)

Compound of Interest (COI)	Averaging Period	Exposure Standard/Guideline	Units
Particulate Matter (PM-10)[1]	24-hour	0.15	mg/m^3
Lead	3-month	0.00015	mg/m^3

Notes:

1. PM10 is particulate matter 10 micrometers or less in diameter

3. Dust Action Level Derivation from Lead Data

Work area and community action levels have been established to facilitate a timely and appropriate response to the detection of airborne hazards associated with airborne dust. Action levels have been set at levels lower than the established exposure limits and guidelines. The purpose is to ensure that if these levels are detected, they are effectively communicated to workers that have the potential to become affected and Site management so that appropriate actions can be taken to reduce airborne concentrations to acceptable levels. The Site-specific action levels for the project are listed in Table 3.1. The real-time dust monitoring data will be compared to the PELs for dust of 15 mg/m^3. The concentration of lead in CRT glass (based on previous Site investigations) will be used to establish the lead action level by estimating the concentration of airborne lead-containing dust as outlined below.

Measuring the total dust concentration provides the quickest means of screening potential exposure to workers and those immediately outside the exclusion zone for lead. The total dust concentration necessary to reach the work area action level of 0.03 mg/m^3 (OSHA PEL) can be estimated from the CRT glass sampling data. This estimate is based on calculating the Equivalent Airborne Dust Concentration based on the applicable exposure limit (EADCEL). The EADCEL calculation determines what dust level would equal the exposure limit for a specific CRT glass, in this instance, lead. The following equation shows this relationship.

$$EADC_{EL} = EL \times Conc^{-1}_{\text{Contaminated concrete}} \times 10^6$$

Where:

EL	=	Exposure Limit, mg/m^3
$Conc^{-1}_{\text{CRT Glass}}$	=	Inverse of the lead concentration in CRT glass, kg/mg

The maximum Site lead concentration in CRT glass is reported to be 9,570 mg/kg based on previous waste characterization sampling. Using the equation above, the $EADC_{EL}$ is calculated as shown below:

$$Total\ dust = EADC_{EL} = \frac{mg_{CRT\ glass}}{m^3_{air}} = \left(\frac{0.03\ mg_{Lead}}{m^3_{air}}\right)\left(\frac{kg_{CRT\ glass}}{9{,}570\ mg_{Lead}}\right)\left(\frac{10^6}{kg_{CRT\ glass}}\right) = 3.14\ \frac{mg}{m^3}$$

Where:

EL		= The OSHA PEL of 0.03 mg/m^3
Conc^{-1}	Contaminated concrete	= One kg of CRT glass contains 9,570 mg of lead
10^6		= The number of mg CRT glass in a kg of CRT glass

In addition to dust monitoring, lead-specific personal (worker) exposure sampling will be conducted during initial waste removal activities at the Site to confirm PEL compliance. Real time air monitoring for worker exposure throughout the project will be tracked using dust readings as summarized in Table 3.1.

Table 3.1 Real Time Air Monitoring Site Action Levels

Analyte	Action Level	Description of Action
Total Dust Readings (Work Zone Action Levels)[1]	< 1.0 mg/m³	No action required
	≥ 1.0 - < 3.14 mg/m³	Apply water or dust suppressant to CRT glass and work areas generating the dust.
	≥ 3.14 mg/m³	Initiate Stop Work Authority (SWA). Measure dust levels at background location inside building.[2] Notify onsite Safety & Health Officer (SES HSO) and construction superintendent. Institute engineering controls to reduce dust levels.
Total Dust Readings (Perimeter Action Levels)[3]	< 0.15 mg/m³	No action required. Continue monitoring at upwind perimeter (background0 and at up to three perimeter downwind locations.
	≥ 0.15 mg/m³	1. Initiate SWA, immediately measure the upwind background level. 2. Determine primary source of dust and then apply water or dust suppressant to dusting surfaces. Continue dust monitoring activities with increased focus on downwind dust levels until readings are consistently below 0.15 mg/m³.Apply water or dust suppressant to CRT glass and work areas generating the dust. 3. If dust suppression efforts do not reduce perimeter dust concentrations below 0.15 mg/m³ within 15 minutes after initiating SWA, consult with PM, project CIH, and others to determine appropriate course of action to reduce dust readings to acceptable levels.

Notes:

1. Work area action Levels are based on sustained (>1 min) airborne concentrations within the worker's breathing zone. Spurious or non-sustained peak readings or surface contact readings, while cause for concern, may not indicate the need for additional action requiring PPE upgrade.
2. Perimeter dust readings will be taken upwind (background) prior to initiating work.
3. Dust readings will be recorded over a sampling interval not to exceed every 15 minutes.

The maximum lead concentration in the CRT glass samples collected was also used to determine the $EADC_{EL}$ for community exposures. The community exposure limit for lead is 0.00015 mg/m^3 (based on a 3-month average). Using the same maximum CRT glass concentration reported for lead, the community $EADC_{EL}$ is calculated as follows:

$$Total\ dust = EADC_{EL} = \frac{mg_{CRT\ glass}}{m^3_{air}} = \left(\frac{0.00015\ mg_{Lead}}{m^3_{air}}\right)\left(\frac{kg_{CRT\ glass}}{9{,}570\ mg_{Lead}}\right)\left(\frac{10^6}{kg_{CRT\ glass}}\right) = 0.157\ \frac{mg}{m^3}$$

Where:	EL	= The NAAQS of 0.00015 mg/m^3
	$Conc^{-1}$ Contaminated concrete	= One kg of CRT glass contains 9,570 mg of lead
	10^6	= The number of mg CRT glass in a kg of CRT glass

Since the derived community exposure action limit is slightly above the total dust action limit of 0.15 mg/m^3, the total dust community action limit will be utilized.

4. Work Zone Monitoring

Level D PPE will be worn while conducting work on the Site until personnel exposure or dust monitoring results indicate additional dermal and/or respiratory protection from dust or lead is required during E-waste removal activities. The Level D protective uniform detailed below is designed for reasonable dermal and respiratory protection in conjunction with work zone dust monitoring. PPE should be inspected on a daily basis and replaced if any visible damage is noted.

Level D Protective Uniform

- Standard PPE uniform, including hard hat, reflective vest or clothing, steel-toe work boots, and eye protection.
- Work gloves;
- Hearing protection will be worn when noise levels exceed 85 dBA (i.e., unable to communicate in a normal voice level at arm's length distance from another individual); and
- Face shield (use if there is a possibility of splashing should dust suppression measures require adding water to waste materials);

The following controls will be in place to protect workers and the local population:

- To limit exposure and prevent safety related incidents (e.g. struck by equipment, slips, trips, or falls), only authorized personnel will be allowed in the work area. Cones and barriers will be utilized as necessary.
- If heavy equipment (e.g. forklifts, skid steers, etc.) are to be utilized in the building's interior, a ventilation plan will be implemented that will include collecting dust readings near exterior doors. These readings will be compared to pre-remediation background dust concentrations. Only authorized personnel will operate heavy equipment.

- A dry decontamination area will be provided for workers leaving the work area.
- Dust monitoring equipment will be operated to determine if airborne dust concentrations warrant additional controls.

TRC and the waste removal contractor, Clean Harbors, will use dust monitors in the immediate work area (worker's breathing zones) and at designated background locations inside and outside the Site building to monitor airborne dust concentrations during waste removal activities. At the conclusion of each work shift, the recorded data from these instruments will be filed, downloaded, and stored by TRC. If airborne concentrations of dust are detected above the action levels established for the Site, designated Site safety personnel, affected workers, and/or BNSF representatives will be notified and appropriate actions will be taken to ensure the health and safety of Site workers.

Should work zone air or personnel exposure monitoring during E-waste removal activities indicate the need for additional dermal or respiratory protection from dust or leaded CRT glass currently stored in cardboard gaylord boxes, the following modifications to the level D PPE uniform may be added:

- Half-face respirator with P100 combination cartridges approved for respiratory protection against organic vapors and particulates. Employees shall wear only respirators for which they have been fit-tested by a competent individual; and,
- Tyvek suit or poly-coated Tyvek suit, and replace when ripped.

The half-face respirators and Tyvek suits should be readily available on-Site should work zone conditions warrant their use for adequate dermal and/or respiratory protection. All equipment, including decontamination equipment, shall be fully decontaminated before removal from the Site. All decontamination waste materials shall be containerized disposed at an approved off-Site facility.

5. Field Documentation

Appropriate field documentation will be collected including a daily activity log, calibration logs, air monitoring field forms, Site observations, and other pertinent monitoring documentation. Real-time air monitoring data and supporting documentation collected during this project will be stored in a secure electronic filing system that only necessary and authorized TRC personnel can access.

The daily activity logs will consist of observations and field notes taken throughout the work shift. The daily log will be recorded either in bound log books or on pre-printed daily log forms. To the extent possible, TRC will document work activities observed throughout each day to better correlate these activities with elevated air contaminant concentrations.

6. Quality Assurance / Quality Control (QA/QC) and Reporting

Air monitoring data will be recorded and stored on-a secure TRC filing system daily. Manually collected and automatically recorded real-time data will be reviewed to ensure accuracy and completeness. Data entry forms and field notes will be kept on-Site and retained for reference upon completion of the project. Errors identified during the QA/QC process in field notes or data will be noted appropriately, while retaining original information to ensure a proper historical record.

Data collected during work zone/perimeter air and personnel exposure monitoring and activities conducted during waste removal work will be provided to the USEPA as an appendix to the Removal Action Completion Report.