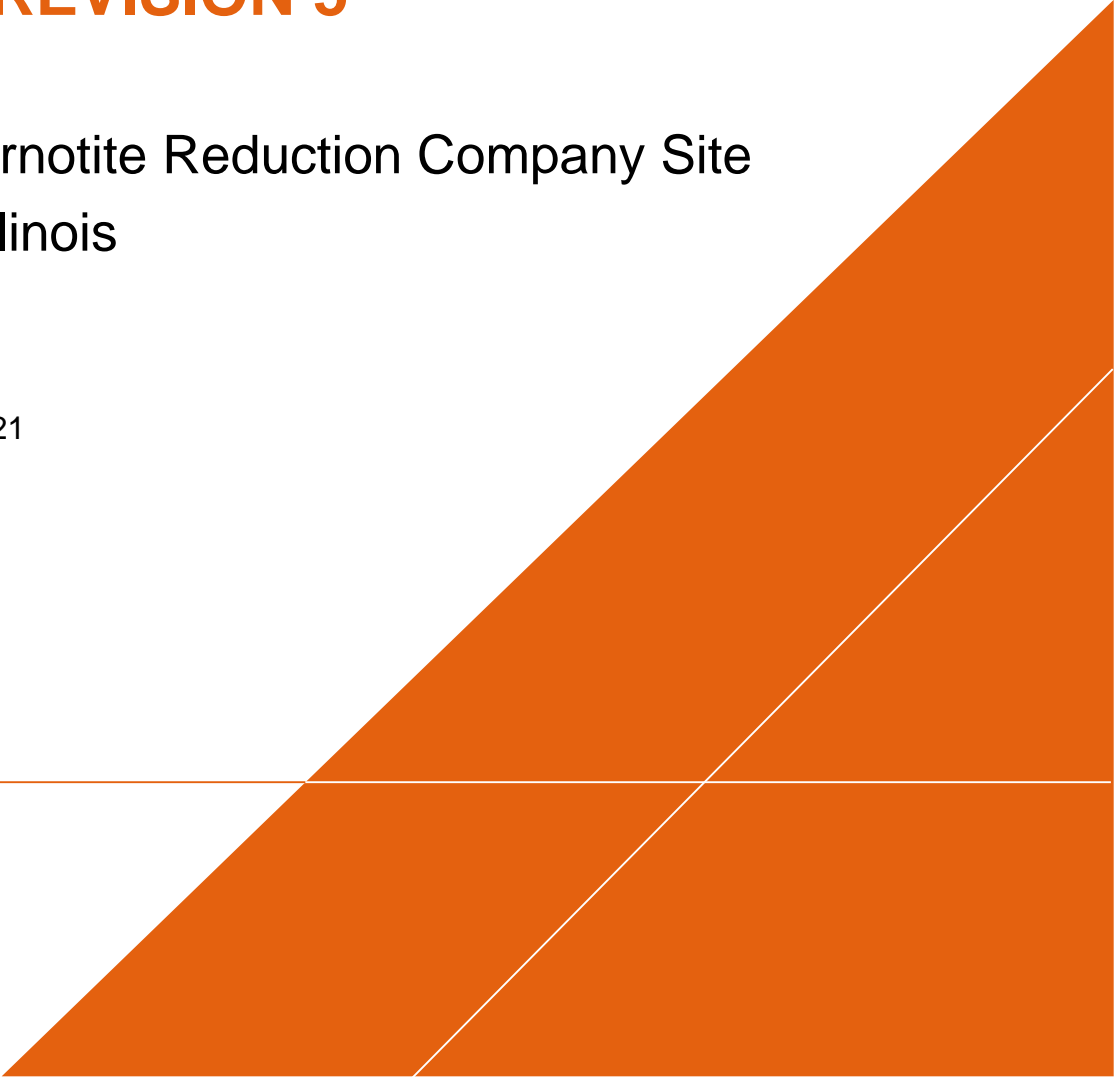


F.H. Paschen

TRANSPORTATION AND DISPOSAL PLAN – REVISION 5

Former Carnotite Reduction Company Site
Chicago, Illinois

December 31, 2021





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TRANSPORTATION AND DISPOSAL PLAN – REVISION 5

Former Carnotite Reduction Company Site

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ACRONYMS AND ABBREVIATIONS

AIS	City of Chicago Department of Assets, Information and Services
BNSF	Burlington Northern and Santa Fe
Carnotite	Former Carnotite Reduction Company
CFR	Code of Federal Regulations
cm	centimeter
CQAP	Construction Quality Assurance Plan
CRZ	Contamination reduction zone
cy	cubic yard
DOT	United States Department of Transportation
EPP	Environmental Protection Plan
F.H. Paschen	F.H. Paschen, S.N. Nielsen & Associates, LLC
FSP	Field Sampling Plan
Greenfield	Greenfield Logistics, Inc.
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IAC	Illinois Administrative Code
ID	Identification
IEMA	Illinois Emergency Management Agency
IP-1	PACTEC LiftPac IP-1
LC-192	License Condition-192
LLRW	low-level radioactive waste
LSA	Low Specific Activity
mrem/hr	millirem per hour
NRC	United States Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
OSLD	optically stimulated luminescent dosimeter
pCi	picocuries
pCi/g	picocuries per gram
Ra-226	radium-226
RCRA	Resource Conservation and Recovery Act
RPP	Radiation Protection Plan

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RPT	Radiological Protection Technician
RQ	reportable quantity
RSO	Radiation Safety Officer
SAHCI	Stan A. Huber Consultants, Inc
SOP	Standard Operating Procedure
SWP	Safe Work Practice
TCEQ	Texas Commission on Environmental Quality
Tetra Tech	Tetra Tech, Inc.
Th-230	thorium-230
U-238	uranium-238
U-235	uranium-235
U-234	uranium-234
U-nat	natural uranium
UPRR	Union Pacific Railroad
USEPA	United States Environmental Protection Agency
WCS	Waste Control Specialists

1 INTRODUCTION

This Transportation and Disposal Plan has been prepared to support the safe excavation, packaging, and shipment of radiologically contaminated soil and debris from the Former Carnotite Reduction Company (Carnotite) site located at 434 E. 26th Street in Chicago, Illinois, in accordance with radioactive materials License Number IL-02467-01 issued by the Illinois Emergency Management Agency (IEMA) (IEMA 2020).

Radioactive material at the site consists of contaminated soil resulting from former radium separation and refining operations, which included processing carnotite uranium ore at the site. The Carnotite ore refined at the site contained natural uranium (U-nat), which is by mass predominantly uranium-238 (U-238) with small fractions of uranium-235 (U-235) and uranium-234 (U-234). Site-specific radionuclides of concern include radium-226 (Ra-226), total uranium (U-234, -235, and -238), and thorium (Th-230), a long-lived daughter product of U-234 and -238. As a result, soil remediation is required for license termination. In addition, transportation and disposal of non-radiologically contaminated soil and debris, not covered by the radioactive material license, may also be required during site remediation.

Site remediation requirements are identified within the Decommissioning Plan (Tetra Tech 2020). Soil surveying, management, and sampling is described in the Field Sampling Plan for Site Remediation (FSP) (Tetra Tech 2021a). Radiation safe work practices (SWP), including those implemented as part of transportation and disposal activities, are presented in the FSP, health and safety and radiation protection plan (HASP/RPP), and the bridging document (Tetra Tech 2021a, b, and c). Site remediation activities will also be conducted in accordance with the Construction Quality Assurance Plan (CQAP), Environmental Protection Plan (EPP), Traffic Control Plan, Dust Control Plan, and other relevant plans and procedures, as appropriate (Tetra Tech 2021d and e; F.H. Paschen 2021; Arcadis 2021a). All work will be conducted in accordance with the requirements and specifications included in the City of Chicago Department of Assets, Information and Services (AIS) Former Carnotite Reduction Company Site Remediation Specification Number 1187630.

All transportation and disposal will be conducted in accordance with all relevant Illinois radioactive waste transportation and disposal requirements identified in Illinois Administrative Code (IAC) Title 32, Parts 310, 330, 340, 341 and 609, as well as relevant special waste, hazardous waste, and construction debris regulatory requirements listed in the site-specific remediation specifications.

2 TRANSPORTATION AND DISPOSAL PERSONNEL

The following personnel will manage the transportation and disposal of the impacted material from the Carnotite site. In addition, Glenn Huber a Certified Health Physicist with Stan A. Huber Consultants, Inc. (SAHCI) has been designated by AIS as the site Radiation Safety Officer (RSO). As specified in the IEMA radioactive materials license, the site RSO, or designee, will supervise and oversee all tasks involving radioactive material at the site in accordance with IEMA-approved plans and procedures. Also, Tetra Tech, Inc. (Tetra Tech), the AIS remediation oversight contractor, will oversee and document transportation and disposal activities and conduct other project tasks described in Tetra Tech's FSP, HASP/RPP, and bridging document (Tetra Tech 2021a, b, and c).

The F.H. Paschen, S.N. Nielsen & Associates, LLC (F.H. Paschen) Project Manager will provide overall direction to the project. The Project Manager will identify and provide necessary project resources and

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coordinate overall project activities with AIS. This position is the administrative point of contact among F.H. Paschen, AIS, and IEMA.

The F.H. Paschen Project Manager will also be responsible for controlling project work quality, maintaining project records, and identifying and scheduling resources necessary to accomplish the excavation and restoration. The Project Manager has authority, within limits of pre-approved budgets and normal AIS purchasing and personnel procedures, to acquire necessary subcontracts, purchase materials, and hire personnel as necessary to accomplish the work.

Project Manager

Jason Faivre

F.H. Paschen

jfaivre@fhpaschen.com

(847) 561-7978

The Transportation and Disposal Coordinator, or appropriately trained designee, will be responsible for ensuring that the United States Nuclear Regulatory Commission (NRC) 540/541 manifests are created along with determining any Class 7 shipments. The Transportation and Disposal Coordinator will work closely with Greenfield Logistics, Inc. (Greenfield; the transporter subcontractor) and Waste Control Specialists (WCS) to ensure that weight certifications, acceptance of waste, identifying the proper United States Department of Transportation (DOT) placarding for each truck and rail car, and other documents are prepared and provided to AIS in a timely manner.

Transportation and Disposal Coordinator

Les Skoski, PhD, Radiation Safety Officer

Arcadis U.S., Inc.

Les.Skoski@arcadis.com

(201) 398-4377

Radiological Protection Technician (RPT) screening personnel will be responsible for conducting dose and exposure rate surveys and removable contamination surveys on the IP-1 bags, trucks, and railcars; implementing air monitoring at the rail transload facility in the event of a release; performing daily calibration and background determinations for on-site radiologic screening equipment; coordinating distribution and collection of optically stimulated luminescent dosimeters (OSLD) for F.H. Paschen and subcontractor personnel; and frisking of employees, if required.

RPT Screening Personnel:

Benito Castillo

Arcadis U.S., Inc.

Liam McNamara

Arcadis U.S., Inc.

The Generator, or designee, will be responsible for the approval and signing of the waste manifests.

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Generator

Ram Ramasamy, P.E.
Project Manager
City of Chicago – Department of Assets, Information and Services
Ram.Ramasamy@cityofchicago.org
(312) 742-2565

The following are additional subcontractors of F.H. Paschen and will manage and perform the excavation, transport, and disposal of the impacted material from the Carnotite site.

The excavation subcontractor will be responsible for excavating the contaminated soil and filling the IP-1 bags.

Excavation Subcontractor

Tecnica Environmental Services, Inc.
16W066 Jeans Rd.
Lemont, IL 60439
Jesus Marquez, Site Manager
(630) 655-9455

Transporters and Transfer Locations

The transporters are responsible for transporting the IP-1 bags to the WCS facility in Andrews, Texas.

Greenfield Logistics, Inc.
1325 West 2200 South, Suite D
Salt Lake City, UT 84119
United States Environmental Protection Agency (USEPA) Identification (ID) Number: UTR000005728
DOT Number 919061
Shane Johanson, President
Office: (801) 676-1575
Cell: (435) 669-6935
Email: sjohanson@greenfieldlogistics.com

Great Lakes Reload (transload facility)
13535 South Torrence Avenue,
Chicago, IL 60633
Joe Marias, General Manager
773 646-6363
Great Lakes Reload does not have a DOT number as they do not operate trucks.

Great Lakes Terminal Railroad
13535 South Torrence Avenue,
Chicago, IL 60633
DOT Number 3527732
(Great Lakes Trans Inc)

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Indiana Harbor Belt Railway
2721 161st St, Hammond, IN 46323
John Wright – General Manager
(219) 989-4923
DOT Number 269723

Burlington Northern and Santa Fe (BNSF)
2500 Lou Menk Drive
Fort Worth, TX 76131
DOT Number 281683

Lubbock and Western Railway
103 N Steck Ave.
Wolfforth, TX 79382
(806) 781-2784
Shellee Currier
(913) 601-3930
DOT Number 2778943

Seagraves Transload
102 Railroad Ave.
Seagraves, TX 79359
Darrel Clem – Operations Manager
(575) 390-4977

Union Pacific Railroad (UPRR)
1400 Douglas Street
Omaha, NE 68179
Response Management Communications Center
(888) 877-7267 DOT Number 051019550022BD

The disposal subcontractor is responsible for disposal of the IP-1 bags at their disposal facility in Andrews, Texas.

Disposal Subcontractor

Contact person Keri Gonzalez (432) 425-8500
Waste Control Specialists
The Summit at Preston Trails
17101 Preston Road, Suite 115
Dallas, TX 75248
DOT Hazardous Materials Certificate ID: 52726
USEPA ID: TXR000075788

3 TRAINING

All work on this project will be carried out in compliance with the Occupational Safety and Health Administration's (OSHA's) Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations and training listed in OSHA regulations 29 Code of Federal Regulations (CFR) 1910.120 Subpart H. F.H. Paschen and subcontractor personnel will adhere to OSHA-related requirements in the site-specific Health and Safety Plan and Radiation Protection Plan (HASP/RPP) dated June 8, 2021 (Arcadis 2021b). Tetra Tech and subcontractor personnel will adhere to the OSHA-related requirements in the site-specific Health and Safety and Radiation Protection Plan dated September 2021 (Tetra Tech 2021b).

F.H. Paschen subcontractors working onsite or at the Great Lakes transload facility who are classified as site radiation workers or hazmat employees, such as heavy equipment operators and laborers, will comply with the radiation safety training requirements of Condition 2 of the site IEMA radioactive materials license and detailed in SWP-101, Site Radiation Training Requirements. Tasks involving radioactive material will be conducted in accordance with SAHCl radiation safe work practices (SWP) and Arcadis' internal and external dosimetry standard operating procedures (SOP) contained in Tetra Tech's HASP/RPP and addendum, FSP, and bridging document (Tetra Tech 2021a, b, c, and f).

Employees preparing or signing uniform hazardous waste manifests, loading, unloading, packaging, or handling hazardous or radioactive waste will complete the appropriate function specific DOT training according to 49 CFR 172 Subpart H. The rail carriers and highway carriers will possess the respective specific training credentials (49 CFR 174 and 178).

Employees screening rail gondolas will receive Federal Railroad Administration training in accordance with 49 CFR Part 243.

F.H. Paschen will provide onsite security awareness training. Security awareness training for truckers and railroad employees will be provided by their employers as specified in 49 CFR 172.704(a).

Personnel training requirements are summarized in Table 1, Training Requirements Summary.

Training documentation will be maintained onsite (electronic or hard copy) and readily available upon request and will be submitted to AIS. Training documentation will include:

- The person(s) name, job title, and employer;
- The name and address of the entity or person(s) that provided the training;
- A description, copy, or location of the training materials;
- A certificate of training completion; and
- A date of the training completion.

Employee resumes will also be maintained and available onsite, if required based on specific training requirements.

4 RADIOACTIVE WASTE EXCAVATION AND PACKAGING

Soil within the soil remediation area delineated in the project specifications and decommissioning plan, as well as any additional radioactive waste, such as personal protective equipment, investigation derived waste, and spent wastewater treatment system media, generated at the site, will be excavated and loaded using a CAT 320 excavator or similar equipment with an appropriate bucket size (approximately 1 cubic yard [cy]) to fill the IP-1 bags. The area undergoing excavation will be visually scanned for large debris and the approximate area for the day's excavation will also be estimated. This area will be misted with a water spray to control dust, in accordance with the Dust Control Plan (Arcadis 2021a).

Contaminated soils will be excavated and placed directly into IP-1 bags. The PACTEC LiftPac IP-1 Bag Operating Instructions and diagrams are provided as **Appendix A**. Each bag is marked with a unique serial number pre-printed on the surface for tracking purposes.

IP-1 bags will be secured to the frames at the staging area and transported to the excavation area using a forklift or equivalent. Each IP-1 bag will be inspected for cracks, holes, seam failure, or strap deficiencies as it is fitted onto the rigid metal frame. IP-1 bags deemed insufficient or damaged will not be used. Minor IP-1 bag damage, such as holes or tears less than 2 inches, will be repaired onsite using a special tape (PTNUR tape; see **Appendix A**). Four frames will be set up on level ground, and the IP-1 bags will be secured to the frames. Once secured to a frame, the IP-1 bag interior duffle will be pulled out from the interior of the IP-1 bag and will be draped over the outside walls of the IP-1 bag, which also covers the loading frame during loading. This prevents contaminated materials from being deposited on the surface of the IP-1 bag or the frame. The duffle also protects the zipper closures and lifting straps. The framed IP-1 bags will be transported to the excavation area for filling. They will be set on level ground or pallets to ensure a stable receptacle. The secured IP-1 bags will be within reach of the excavator. Operating Instructions for the IP-1 bags (**Appendix A**) also present the details of setting up the frames and securing the IP-1 bags to the frame assemblies.

Approximately 9 cy of soil will be excavated to fill an IP-1 bag. Care will be taken during excavation to minimize dust generation. If rebar or other construction debris that can puncture an IP-1 bag is encountered, the debris will be set aside. Such debris will be cut into smaller pieces and loaded separately into IP-bags to prevent bag punctures or tears. Note, as per the IEMA site Radioactive Materials License, excavation may be halted due to wind or precipitation conditions (sustained winds greater than 20 miles per hour or precipitation greater than 0.25 inch per hour). Tetra Tech or a team subcontractor designee will collect soil samples from the IP-1 bags as detailed in the FSP (Tetra Tech 2021a). These analytical results will be used to determine the concentrations of the site-specific radionuclides of concern and total activity of the IP-1 bag as required for waste classification to facilitate transportation of waste packages, trucks, and railcars containing uranium (U-234, U-235, and U-238), Ra-226, and Th-230 in accordance with IEMA, NRC, and DOT regulations. SWP-420, Radioactive Waste Shipment, in Tetra Tech's HASP/RPP contains additional details regarding waste classification and shipping requirements (Tetra Tech 2021b).

Once filled to within a few inches of the top of the IP-1 bag (the load height will be approximately 3 to 4 inches below the top seam of the IP-1 bag), the interior duffle will be pulled up and over the loaded material. The duffle will be closed by gathering it to a center point and tying it with the attached tie webbing or duct tape. The outer IP-1 bag lid will then be pulled over and zipped closed. All lifting straps (loops) will be inspected to ensure there is no damage to the lifting straps and that they are free from the interior sidewalls of the loading frame. During inspection, Velcro straps will be detached from the top

guide loops around the top outer perimeter of the IP-1 bag and each strap will be removed from the top guide loops, and the strap will be positioned across the top of the bag. Detaching the straps will prevent tearing during the lifting process (see **Appendix A** for additional details).

The frame assembly, including the filled IP-1 bag, will be relocated from the excavation area to the bag staging and loading area within the exclusion zone using a rubber-tired forklift, or equivalent. Each IP-1 bag will be weighed prior to off-site shipment. Bag weights are required to determine total activity of the package for waste classification and shipment purposes. Bag weights may be obtained using a standard truck or equipment scale or crane hook scale. The scale will be calibrated and operated in accordance with manufacturer instructions. Calibration certificates will be provided to AIS. The filled IP-1 bags will be lifted from the frame assembly and moved to and staged in the bag staging and loading area for future loading. The bag staging and loading area will be gridded; IP-1 bag locations will be charted and tracked to allow identification of IP-1 bags in the event identification numbers become illegible.

5 RADIOACTIVE MATERIALS LOADING AND TRANSPORT

Once soil analytical results have been received for an IP-1 bag and prior to loading, the Arcadis Transportation and Disposal Coordinator, or appropriately trained designee, will classify each bag for shipment in accordance with IEMA, NRC, and DOT regulations and prepare the required manifest, as outlined in SWP-420, Radioactive Waste Shipment (Tetra Tech 2021b), and presented in **Figure 6** of this plan. Bags will be shipped from the site to the Great Lakes transload facility contained in exclusive-use dump trucks that will be sequestered at the site, transload facility, or trucking company's yard when not in use.

5.1 Shipping Documents - Manifests

The Arcadis Transportation and Disposal Coordinator, or appropriately trained designee, will prepare one manifest, consisting of NRC 540 form "Uniform Low-Level Radioactive Waste Manifest – (Shipping Paper)" and NRC 541 form "Uniform Low-Level Radioactive Waste Manifest – Container and Waste Description," with manifest attachment listing all carriers, for each truck as outlined in SWP-420, Radioactive Waste Shipment (Tetra Tech 2021b). The manifest forms will be completed using the on-line computer program LOWTRACK, or equivalent. Once complete, the program creates an mc-file, which populates the NRC 540/541 forms. The mc-file is then uploaded into the disposal facility (WCS) Electronic Inventory Tracking Engine customer portal and will be sent to Greenfield Logistics, Inc. (Greenfield), the transportation logistics coordinator. AIS will designate an on-site representative on the F.H. Paschen team to sign completed manifests in AIS' absence.

Greenfield will coordinate consignment transfer records at each transportation stage through the rail and truck system until the IP-1 bags arrive at the WCS facility. WCS will also receive daily tracking reports for each gondola from Greenfield. Copies of the NRC 540/541 forms will also be loaded onto the F.H. Paschen Procore website and a printed copy kept onsite. Copies of completed NRC 540/541 forms will be submitted to AIS weekly.

Before shipment of any material offsite, the Transportation and Disposal Coordinator, or appropriately trained designee, will provide written certification to AIS that materials have been properly packaged, labeled, and marked per DOT requirements in accordance with bid Specification 02 81 00, Transportation and Disposal, Section 3.1.8. Bags with LSA-Class 7 activity concentrations will be marked

“RADIOACTIVE-LSA” in all capital letters as specified in DOT 173.427(a)(6). IP-1 bags with below Class 7 levels may be labeled “NOT-REGULATED WASTE.” Each IP-1 bag will also be labeled “RQ” if there is a reportable quantity. Each IP-1 bag will then be marked with the manifest number (same as on the NRC 540/541), the package number or serial number as it appears on the manifest, and the WCS profile number.

5.2 Truck Loading and Screening

If trucks enter the contamination reduction zone (CRZ), truck drivers will not leave the truck cab. Trucks will be loaded from the bag staging and loading area. Typically, two IP-1 bags from the storage area will be loaded in each truck. Using a rubber-tired crane, or equivalent, and the lifting straps attached to the IP-1 bags, the IP-1 bags will be lifted out of the bag staging and loading area and screened for removable contamination before loading onto the truck. If not previously conducted, gamma dose rate surveys will be completed at this time. The gamma dose rate and removable contamination screens will be conducted in accordance with SWP 219, IP-1 Waste Bag Surveys (Tetra Tech 2021b) and procedures summarized in **Figure 7**. Once the surveys are complete and meet applicable criteria, the IP-1 bags will be loaded in the dump truck trailer and positioned to maximize stability.

Upon completion of loading, the truck will travel through the wheel wash. If the truck entered the CRZ, screening of the trailer and tires will be conducted in accordance with SWP 220, Waste Truck Surveys and procedures summarized in **Figure 7** (Tetra Tech 2021b). If the truck does not enter the CRZ but is carrying a LSA shipment, the trailer will be screened in accordance with SWP 220. Once the required truck surveys are complete and meet applicable criteria and upon site RSO, or designee, concurrence, the truck will be released from the site for travel to the Great Lakes transload facility. Trucks carrying radiologically-impacted soil will not require a tarp because the impacted soil will be contained in fully enclosed IP-1 bags.

After review and sign off by the site RSO, or designee, the Arcadis Transportation and Disposal Coordinator, or appropriately trained designee, will provide the truck driver with completed manifest forms, exclusive use instructions, and emergency response instructions before leaving the Carnotite site, in accordance with SWP 420, Radioactive Waste Shipment (Tetra Tech 2021b).

Truck loading may also occur in Seagraves, Texas, if the BNSF rail carrier is utilized. In this case, trucking will be required from the Seagraves transload facility to the WCS facility. At the Seagraves transload facility, IP-1 bags will be transferred to trucks from rail gondolas in the same pairs or single bags as written on the manifest prepared for the transport from the site to the Great Lakes transload facility. Therefore, the existing manifests will accompany the shipments and existing load screening documentation will apply. Greenfield will also coordinate all shipping logistics to verify compliance with all applicable regulations and requirements.

5.3 Truck Route

Figure 1 contains the truck route on site; however, the site layout, including work zones and truck route, may vary. **Figure 2** contains the truck route to and from the site and **Figure 3** includes the truck route to the Great Lakes Reload facility. **Figure 4** includes the detailed truck route at the Great Lakes Reload facility and the truck route from Seagraves Transload to the WCS facility is included as **Figure 5**.

Trucks will leave 434 E 26th Street in Chicago, Illinois, from the south of the Carnotite site on South Ellis Avenue heading toward East 31st Street, where trucks will head east and enter Lake Shore Drive North toward the Stevenson Expressway South. The trucks will exit onto the Dan Ryan Expressway East (southbound) toward the Great Lakes Reload facility at 13535 South Torrence Avenue in Chicago, Illinois, 60633, where trucks will off load at the transload facility onto rail cars. There will be no temporary staging area at the transload facility. **Figures 3 and 4** show the truck route to and at the Great Lakes reload facility. In case of road construction or other detours, alternate truck routes may be utilized.

The final truck transport will be from Seagraves Transload to WCS along US385 to FM181S to Texas 176 into WCS. **Figure 5** show the truck route from Seagraves Transload to WCS.

5.4 Rail Loading and Screening

At the Great Lakes transload facility, the IP-1 bags will be offloaded from the trucks directly into a railcar gondola by Great Lakes Transload personnel. Great Lakes transload personnel will access the truck trailer and lift bags with their overhead crane. A spotter will be stationed inside the gondola to guide the operator for placement of the bags. Once bags are placed into the gondola, the spotter will unhook the rigging from the bag. Transload and railroad workers handling the IP-1 bags classified as LSA shipments will comply with personnel frisking requirements in SWP 346, Personnel Frisking Surveys (Tetra Tech 2021b). An Arcadis radiation protection technician will be present to oversee loading of LSA shipments at the Great Lakes transload facility.

It is not expected that transload and railroad workers handling the IP-1 bags will meet the conditions requiring individual monitoring of external and internal occupational dose detailed in 32 Illinois Administrative Code, Section 340.520. However, external dose monitoring will be performed daily for the two most likely exposed individuals at the transload facility using personal radiation monitors in accordance with SWP-108f, Operation of Ludlum Model 25 Personal Radiation Monitor. An administrative dose limit of 40 millirem per month will be utilized to demonstrate that no individual is receiving a dose in excess of 10 percent of the limits in 32 Illinois Administrative Code, Section 340.210(a). In the event that any individual exceeds the 40 millirem per month administrative limit, the dosimetry program will be implemented by the Arcadis RSO, or designee, in accordance with Arcadis SOP A03, Procedure for the Use of Optically Stimulated Luminescence Dosimeters (OSLDs) and SOP A04, Internal Dose Calculations (Tetra Tech 2021c). In addition, in the event of a release of IP-1 bag contents, personnel air monitoring using lapel samplers on most likely exposed individuals will be conducted by the Arcadis radiation protection technician or Great Lakes Reload personnel located at the railyard in accordance with SWP-112, Personnel Air Monitoring (Tetra Tech 2021b). Personnel frisking will also be implemented in the event of a release in accordance with in SWP 346, Personnel Frisking Surveys (Tetra Tech 2021b).

The railcar interface and railcar loading will be managed and observed by Greenfield. Bag handling and management will be conducted in accordance with Greenfield's Handling, Storage, and Shipping Standard Operation procedure QAP 13.1 (see **Appendix B**). Greenfield will transfer the relevant manifests for each railcar (consignment) to the rail carrier and will verify that any additional requirements are met. Greenfield will also provide railcars in sufficient quantity to maintain the schedule. They will also provide WCS with daily tracking reports for each consignment, and they will notify WCS of back ordered railcars or other delays.

Eight to 14 IP-1 bags (based on combined weight) will be loaded into each gondola. Gamma exposure rate and removable contamination screening will be conducted on loaded gondolas containing LSA packages by the Arcadis radiation protection technician located at the railyard in accordance with SWP 221, Rail Gondola Surveys (Tetra Tech 2021b), and procedures summarized in **Figure 7**. Once the surveys are complete and meet applicable criteria and upon site RSO, or designee, concurrence, the railcar will be released for travel to the Seagraves transload facility or WCS.

5.5 Rail Route

Approximately 15 to 17 filled gondolas are expected to enter the rail system per week. One of two primary rail carriers will be utilized, BNSF or UPRR.

The BNSF proposed rail route is:

- Chicago, Illinois, to McCook, Illinois
- McCook, Illinois, to Galesburg, Illinois.
- Galesburg, Illinois, to West Quincy, Missouri.
- West Quincy, Missouri, to Tulsa, Oklahoma.
- Tulsa, Oklahoma, to Amarillo, Texas.
- Amarillo, Texas, to Lubbock, Texas.
- Lubbock, Texas, to Seagraves, Texas.

According to the railroad route provided by BNSF, the states to be traversed by the railroad are Illinois, Missouri, Oklahoma, and Texas. None of these states charge a fee for this waste.

At Seagraves, the IP-1 bags will be offloaded by lifting each IP-1 bag and placing two IP-1 bags on a truck in the same pairs or single bags as listed on the 540/541 manifest prepared for transport from the site to the Great Lakes transload facility. The trucks will transport the IP-1 bags to the WCS facility. The gondola railcars will be sent back to the Great Lakes transload facility in Chicago.

If UPRR is utilized, an example rail route is presented below; however, other routes may be followed based on rail traffic and availability at the time:

- Chicago, Illinois, to Effingham, Illinois
- Effingham, Illinois, to East St. Louis, Illinois
- East St. Louis, Illinois, to Essex, Missouri
- Essex, Missouri, to Pine Bluff, Arkansas
- Pine Bluff, Arkansas, to Texarcana, Texas
- Texarcana, Texas, to Monahans, Texas
- Monahans, Texas, to Eunice, New Mexico
- Eunice, New Mexico, to WCS in Andrews, Texas

No additional transloading is associated with the UPRR carrier route.

Empty railcars will be surveyed and returned to the Great Lakes transload facility. Survey information will be provided for every returning railcar. The expected railcar turnaround time is 20 to 25 days. It is estimated that 40 to 60 railcars will be required to support the work.

6 TRANSPORTATION SECURITY

Truck and rail transportation security will be in accordance with the Greenfield logistics document, Transportation Security Plan GL-D5, provided in **Appendix C**. The document includes risk mitigation elements including personnel security, en-route security, unauthorized access, communication, and training.

6.1 Transload Facilities

Greenfield will secure each transload facility from unauthorized access. Facilities, offices, and equipment will only be accessed or utilized by personnel who have been evaluated and approved by Greenfield, Great Lakes Reload, or Seagraves Transload. Access to the transload facilities will be authorized on an as needed basis for employees of subcontractors, shippers, and/or carriers having an acceptable need for access.

The Great Lakes transload facility is fenced with security at the entrance to the facility.

- The facility operates 24 hours per day;
- Routine security checks are performed during work shifts to ensure safety; and
- IP-1 bags will be loaded into gondolas upon arrival within the fenced area by transload trained personnel.

The Seagraves transload facility is fenced to secure the facility.

- The facility operates under normal 7 am to 4 pm work hours with trained personnel;
- Routine security checks are performed during work shifts to ensure safety; and
- All bagged material will be loaded onto trucks for shipment upon arrival.

6.2 Rail Transportation

Each rail shipment is entered into the rail carrier's electronic system for purposes of tracking and 24-hour identification. For hazardous shipments, special identification will be included on waybills, track and train list inventories, and will include special handling instructions (including in-train placement checks and automatically updated train list entries). Emergency response information is provided to train crews and operations managers. Shipments are tracked throughout the rail routing to ensure proper routing and reporting by the railroad contractors.

Rail cars are equipped with ID equipment that is scanned at each rail station when in transit. Rail tracking systems will be accessed by Greenfield personnel daily to provide updated reporting on each rail shipment until it has reached its destination. Any rail cars delayed for any reason during transit will be flagged and investigated to ensure prompt resolution and secure transit to the transload facility in Seagraves, Texas or WCS. Tracking reports will be provided to designated project personnel daily.

Additionally, rail car inspections will be performed routinely by rail carrier personnel at rail yards upon arrival and during stationing to verify they are secure and in proper order.

7 SPILL RESPONSE

Response to spill of material is dependent on the location of the spill. If a spill occurs onsite, the response will be contained and cleaned up by on-site personnel. Responses to spills occurring offsite will be coordinated by Greenfield in accordance with Greenfield SOP QAP 5.7, Emergency Response Plan for Transportation Operations (see **Appendix D**). Spills occurring during transport from the site to the Great Lakes transload facility will be addressed in accordance with the emergency response procedures and exclusive use instructions carried by the truck driver. Upon receiving notification of the spill, Greenfield will notify F.H. Paschen and the on-site radiation protection technician or RSO will be mobilized to support the cleanup, including ensuring that any waste is returned to the site for transportation and disposal according to this plan, and ensuring that all equipment and release surfaces meet clean release criteria and/or site-specific field action limits, as appropriate. Spills occurring in the Great Lakes transload facility will be handled by Great Lakes personnel in accordance with Great Lakes response procedures included in **Appendix F** and supported by the on-site personnel, including the radiation protection technician or RSO. Spills on any of the railroad segments are the responsibility of the railroad and will be handled in accordance with the railroad's Emergency Response Plan, such as the BNSF Emergency Response Plan, or equivalent (see **Appendix E**). Spills occurring from Seagraves to the WCS facility will be handled by Greenfield. Any project-related personnel responding to spills will meet radiation worker training and monitoring requirements (Tetra Tech 2021b and c).

Upon completion of spill cleanup, a gamma scintillator (Ludlum 44-10 coupled to a Ludlum 2221 ratemeter/scaler) will be used to survey the area and confirm that the spill has been cleaned of contamination above site-specific field action levels in accordance with soil screening and equipment procedures presented in the FSP (Tetra Tech 2021a). A radiation protection technician or RSO will verify the cleanup of the spill with the gamma scintillator.

8 RADIOACTIVE WASTE DISPOSAL

The final destination and disposal facility for the consignment of radioactive waste is the WCS facility in Andrews, Texas. Once a truck shipment of waste arrives at the WCS facility, the driver will check in with site security. Upon confirmation of the scheduled driver and shipment, WCS Radiation Safety and Waste Acceptance personnel then begin processing the shipment. An incoming radiological receipt survey and vehicle inspection is performed, and shipment manifest/paperwork is reviewed. After the shipment passes this initial inspection, the truck is directed to the unloading area. IP-1 bags are removed from the transport truck, Radiation Safety personnel conduct IP-1 bag surveys, and Waste Acceptance personnel inspect IP-1 bag integrity and check labels against the manifest. Shipment receipt procedures are similar for rail shipments, which arrive at the facility's private rail spur.

Each IP-1 bag is checked with an ionization chamber or scintillation gamma meter to confirm that it meets the acceptance criteria of less than 100 millirem per hour (mrem/hr) at 30 cm perpendicular from the face of the IP-1 bag on four sides. This dose rate is correlated with activity for acceptance (dose to curie based on the isotopic concentration is listed on the manifest). If the limit is exceeded, the generator is notified within 24 hours. In the event that the waste shipped to WCS does not confirm to the profile, WCS will examine the waste prior to deciding whether to accept or reject the waste. WCS will work with the generator to pursue all reasonable alternative options for disposal. If processing or treatment is required,

these services will be at an additional charge. If necessary, bags may be returned to the railcar and shipped back to site.

If accepted by WCS, the manifest is signed, and a copy is sent to F.H. Paschen along with a Certificate of Disposal. The contents of the NRC 540/541 forms consignment at this point are under the WCS radioactive materials license.

After the waste is approved for acceptance by WCS in accordance with the facility's waste acceptance criteria, possession of the radioactive waste is transferred to WCS's Radioactive Materials License, which was issued by the Texas Commission on Environmental Quality (TCEQ). Similar to Illinois, Texas is an NRC agreement state. The consignment is still considered a low-level radioactive waste (LLRW). Based on the isotopic activity determined by the dose to curie check described above, the waste should fall under WCS's license, Condition LC-92, which allows the waste to be exempted from the LLRW disposal requirements in the 10 CFR 61 for an alternate disposal.

The exemption criteria the waste must meet for alternative disposal are the following:

- Ra-226 less than 5,000 picocuries per gram (pCi/g);
- Th-230 less than 25,800 pCi/g;
- U-nat less than 300,000 pCi/g;
- U-238 less than 336,000 pCi/g;
- U-235 less than 245,000 pCi/g; and
- U-234 less than 302,000 pCi/g.

Based on the analysis of the material to date, the waste will be exempted and will be disposed of in WCS's Resource Conservation and Recovery Act (RCRA) Subtitle C permitted landfill.

The IP-1 bags are either held or brought directly to the disposal trenches, where they are placed in the trench. The IP-1 bags may be temporarily placed in WCS's covered bin storage area pad if the IP-1 bags are not directly routed for disposal. IP-1 bags sitting on the bin storage area pad may remain there for up to 7 days before disposal.

Certificates of disposal will be provided within 7 days after the waste has been accepted at the WCS facility. While delays are not expected, F. H. Paschen has no control over the railroad to ensure that waste arrives within the 21-day period of initial shipment.

Finally, AIS, and IEMA will be notified when any shipment or part of a shipment has not arrived within 60 days after receipt of an advance manifest, unless notified that the shipment has been cancelled.

9 EXCLUSIVE USE EQUIPMENT RELEASE

The exclusive use trucks and gondolas used by Greenfield, will undergo equipment release procedures in accordance with SWP 345, Surveys for Surface Contamination and Release of Equipment for Unrestricted Use, which will be verified by the site RSO (Tetra Tech 2021a). Greenfield will report the results to F.H. Paschen. F.H. Paschen will submit the results to AIS weekly.

10 OTHER WASTE

In addition to radioactive waste, other non-radioactive waste may be generated, transported, and disposed of from the site. These other waste streams are presented below. All waste streams will be managed, transported, and disposed of in accordance with all applicable requirements and regulations, including but not limited to those identified in the AIS site-specific remediation specifications.

10.1 Concrete and Debris

Concrete and debris determined to be radiologically contaminated will be disposed of using the IP-1 bags in accordance with the radioactive waste transportation and disposal requirements discussed above. If determined to be free of radiological contamination in accordance with the FSP, concrete and asphalt will be loaded into semi dump trucks, hauled out and disposed of at the Waste Management Laraway RCRA Subtitle D landfill located at 21233 W. Laraway Road in Joliet, Illinois (Tetra Tech 2021a). The construction debris must be contained in the truck bed, and the truck bed must be securely covered with a tarp during transport to the landfill. Some concrete and asphalt (and other debris such as fencing, posts and light poles) will be screened before leaving the site, and then hauled out and disposed of at a recycling facility. Any trucks entering the CRZ will require that drivers not exit their cabs while in the CRZ and trucks must pass through the wheel wash. After the wheel wash, the truck tires will be screened for removable contamination in accordance with SWP 220, Waste Truck Surveys.

10.2 Special or Non-Special Waste

Soil and debris with radioactivity levels not exceeding radiological field action levels or soil remediation criteria outlined in the FSP (Tetra Tech 2021a) will be excavated and temporarily stockpiled on the Non-Hazardous Material Stockpile Area separated from radioactive or hazardous material. Waste characterization samples will be collected from the stockpile and analyzed in accordance with the FSP (Tetra Tech 2021a). A waste profile will be prepared and presented to the Waste Management's Laraway Landfill for approval. Once approved, Special Waste manifests or truck tickets will be used to track the transportation of the material to the landfill. This includes soil and debris that contains concentrations of compounds exceeding Tiered Approach to Corrective Action Objectives Tier 1 remediation objectives or Clean Construction or Demolition Debris Maximum Allowable Concentrations standards. Special or Non-Special waste may also include decontaminated concrete debris and decontaminated bituminous debris.

Special and Non-Special waste will be hauled to the Waste Management Laraway Landfill in trucks provided by Brites Cartage under their IEPA Special Waste Haulers Permit No. 4041. All Special Waste will be contained in the truck bed, and the truck bed must be securely covered with a tarp during transportation to the landfill. Any trucks entering the CRZ will require that drivers not exit their cabs while in the CRZ and trucks must pass through the wheel wash. After the wheel wash, the truck tires will be screened for removable contamination in accordance with SWP 220, Waste Truck Surveys.

10.3 Hazardous Waste

Hazardous waste is not expected at the site. If such waste is discovered, it will be segregated, stockpiled separately, and waste characterization samples will be collected in accordance with the FSP (Tetra Tech 2021a). Materials stockpiled, tested, and shown to be hazardous waste will remain staged to be

transported and disposed of at an approved hazardous waste disposal facility in accordance with the project-specific AIS specifications. A Transportation and Disposal Plan addendum will be prepared identifying the disposal facility and any additional requirements.

10.4 Mixed Waste

Mixed waste is not expected at the site. If such waste is discovered, it will be segregated, stockpiled separately, and waste characterization samples will be collected in accordance with the FSP (Tetra Tech 2021a). Materials stockpiled, tested, and shown to be mixed waste will remain staged to be transported and disposed of once a new waste profile is approved by WCS. A Transportation and Disposal Plan addendum will be prepared, if necessary, identifying any necessary revisions to the transportation and disposal procedures included in this plan.

Similarly, field notes and daily reports will be maintained on site.

11 RECORD KEEPING

All subcontractors will keep accurate records to support information provided to AIS regarding waste transportation and disposal. Shipment records will be maintained for at least 3 years from the date of shipment or as required by jurisdictions having authority. In addition, the following and any other relevant documentation will be kept onsite for inspection, if requested, and submitted weekly to AIS or as required by the project specifications. Also, these files will periodically be scanned and archived in an on-line file administered by F.H. Paschen.

- NRC forms 540 and 541, including attachment identifying all carriers
- Non-radioactive waste manifests
- Landfill waste receipt and acceptance documentation, including weight tickets and signed manifests
- Disposal facility pre-approval certificates
- Waste profiles and supporting analytical results
- Land disposal restriction notifications, if required
- Written certification provided to AIS documenting that materials have been properly packaged, labeled, and marked in accordance with relevant regulations and requirements
- Required personnel training records
- On-site scale calibration, certification, truck tare and net weights, and/or bag weights, as appropriate
- Exclusive use equipment survey and release documentation
- Copies of completed field forms and related documentation required by SWP 219 IP-1 Waste Bag Surveys, SWP 220 Waste Truck Surveys, SWP 221 Rail Gondola Surveys, SWP 348 Large Area Wipes, SWP 420 Radioactive Waste Shipment and related procedures and requirements
- Documentation of all relevant instrument calibration and daily function checks and related requirements as documented in relevant instrument SWPs, including but not limited to
 - SWP 108a Operation of Ludlum Model 2221 Scaler/Ratemeter
 - SWP 108b Operation of Bicron MicroREM Survey Meter

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- SWP 108c Operation of Ludlum Model 3 Survey Meter with Ludlum Model 44-9 G-M Pancake Detector
- SWP 108d Operation of Ludlum Model 3 Survey Meter with Ludlum Model 44-38 Energy Compensated G-M Detector
- SWP 108e Operation of Ludlum 2224-1 Alpha-Beta Scaler/Ratemeter with Ludlum Model 43-93 Alpha-Beta Scintillation Detector
- SWP 108f Operation of Ludlum Model 25 Personal Radiation Monitor
- SWP 373 Operation of The Ludlum Model 2929 Alpha/Beta System
- Documentation of personnel air monitoring, including results, collected at the Great Lakes Transload facility in the event of a release as required by SWP 112 Personnel Air Monitoring

REFERENCES

- Arcadis. 2021a. Site Dust Control Plan, Former Carnotite Reduction Company.
- Arcadis. 2021b. Health and Safety Plan/Radiation Protection Plan, Former Carnotite Reduction Company Site.
- F.H. Paschen. 2021. Traffic Control Plan, Former Carnotite Reduction Company Site Remediation.
- IEMA. 2020. Correspondence Regarding Amendment Number 4 of Radioactive Material License IL-02467-01, including attached license amendment. From Kelly Horn, Section Head, Environmental Management, Division of Nuclear Safety. To Kimberly Worthington, P.E., Deputy Commissioner, City of Chicago Department of Assets, Information and Services. May 19.
- TetraTech. 2020. Decommissioning Plan Revision 5, Former Carnotite Reduction Company Site.
- TetraTech. 2021a. Field Sampling Plan for Site Remediation, Former Carnotite Reduction Company.
- Tetra Tech. 2021b. Health and Safety and Radiation Protection Plan for Site Remediation, Revision 3, Former Carnotite Reduction Company Site.
- Tetra Tech. 2021c. Health and Safety and Radiation Protection Program Bridging Document, Former Carnotite Reduction Company Site.
- Tetra Tech. 2021d. Construction Quality Assurance Plan, Former Carnotite Reduction Company Site.
- Tetra Tech. 2021e. Environmental Protection Plan, Former Carnotite Reduction Company Site.
- Tetra Tech. 2021f. Health and Safety and Radiation Protection Plan for Site Remediation, Revision 3 - Addendum, Former Carnotite Reduction Company Site. Transportation and Disposal Radiation Safe Work Practices.

TABLE



**TABLE 1
TRAINING REQUIREMENTS SUMMARY**

Overall Site Role Designation	Additional Designation	Name	Company	Location									
					NRC Radioactive Waste Packaging, Transportation, and Disposal Training Including 10 CFR 71.97 - Advanced Notification	10 CFR 61.55 - Waste Classification	10 CFR 61.56 - Waste Characteristics	49 CFR 172, Subpart H* Training Specific to Requirements of 49 CFR 177, Carriage by Public Highway**	49 CFR 174, Carriage by Rail**	Fundamentals of Radiation Safety Training SWP-101 or Equivalent†	40-Hour OSHA HAZWOPER Training	8-Hour Annual Refresher Training	30-Hour Construction Training
Overall Site Radition Safety Officer	--	Glenn Huber	Stan A. Huber Consultants, Inc.	On-Site	X	X				X	X	X	
Project Manager (Remediation Contractor)	--	Jason Faivre	F.H. Paschen	On-Site						X	X	X	
Site Superintendent (Remeditaion Contractor)	Site Safety Officer	Dan Cooper	F.H. Paschen	On-Site						X	X	X	X
Project Manager (Environmental)	--	Carol Nissen	Tetra Tech, Inc.	On-Site						X	X	X	
Field Team Leader (Environmental)	Site Safety Coordinator	Paul Pallardy	Tetra Tech, Inc.	On-Site						X	X	X	X
Radiological Protection Technician	--	TBD	Stan A. Huber Consultants, Inc.	On-Site						X	X	X	
Field Team (Environmental)	--	TBD	GSG Consultants, Inc.	On-Site						X	X	X	
Field Team (Environmental)	--	TBD	Environmental Design International Inc.	On-Site						X	X	X	
Transportation and Disposal Coordinator	Radiation Safety Officer	Les Skoski	Arcadis U.S., Inc.	Off-Site	X	X							
Radiological Protection Technician	--	Benito Castillo	Arcadis U.S., Inc.	On-Site						X	X	X	
Radiological Protection Technician	--	Liam McNamara	Arcadis U.S., Inc.	On-Site						X	X	X	
Excavation Subcontractor Personnel	Operator	TBD	Tecnica Environmental Services, Inc.	On-Site		X				X	X	X	
Excavation Subcontractor Personnel	Laborer	TBD	Tecnica Environmental Services, Inc.	On-Site		X				X	X	X	
Transportation Logistics	--	Shane Johanson	Greenfield Logistics, Inc.	Off-Site	X	X	X	X	X#				
Highway Carrier (Chicago)	Truck Driver	TBD	TBD	On-Site		X	X						
Transload (Chicago, IL)	--	Joe Marias	Great Lakes Reload	Off-Site		X		X	X#				
Rail Carrier	--	Joe Marias	Great Lakes Transportation, Inc.	Off-Site		X		X					
Rail Carrier	--	John Wright	Indiana Harbor Belt Railway	Off-Site		X		X					
Rail Carrier	--	TBD	BNSF Railway	Off-Site		X		X					
Rail Carrier	--	TBD	Union Pacific Railroad	Off-Site		X		X					
Rail Carrier	--	Shellee Currier	Lubbock and Western Railway	Off-Site		X		X					
Transload (Seagraves, Texas)	--	Darrel Clem	Seagraves Transload	Off-Site		X		X	X#				
Highway Carrier (Texas)	Truck Driver	TBD	TBD	Off-Site		X	X						

Notes:

*As required by 49 CFR 172, Subpart H, a hazmat employer shall ensure that each of its hazmat employees is trained in accordance with the requirements prescribed in this subpart.

† Site-specific SWP-101, Site Radiation Training Requirements, has been approved by the Illinois Emergency Management Agency.

These off-site personnel will received general radiation safety awareness and function-specific site-related training only.

-- = Not applicable

CFR = Code of Federal Regulations

DOT = Department of Transportation

HAZWOPER = Hazardous Waste Operations and Emergency Response

NRC = Nuclear Regulatory Commission

OSHA = Occupational Safety and Health Administration

SWP = Safe Work Practice

TBD = To be determined

FIGURES





ZONES

- EXCLUSION ZONE**
- CONTAMINATION REDUCTION ZONE**
- SUPPORT ZONE**

*Excavation Area, until sampled, verified, and released for backfill, is and will remain part of the Exclusion Zone

Figure 1 - Site Layout and Work Zone
Former Carnotite Reduction Company Site
434 East 26th Street
Chicago, Illinois

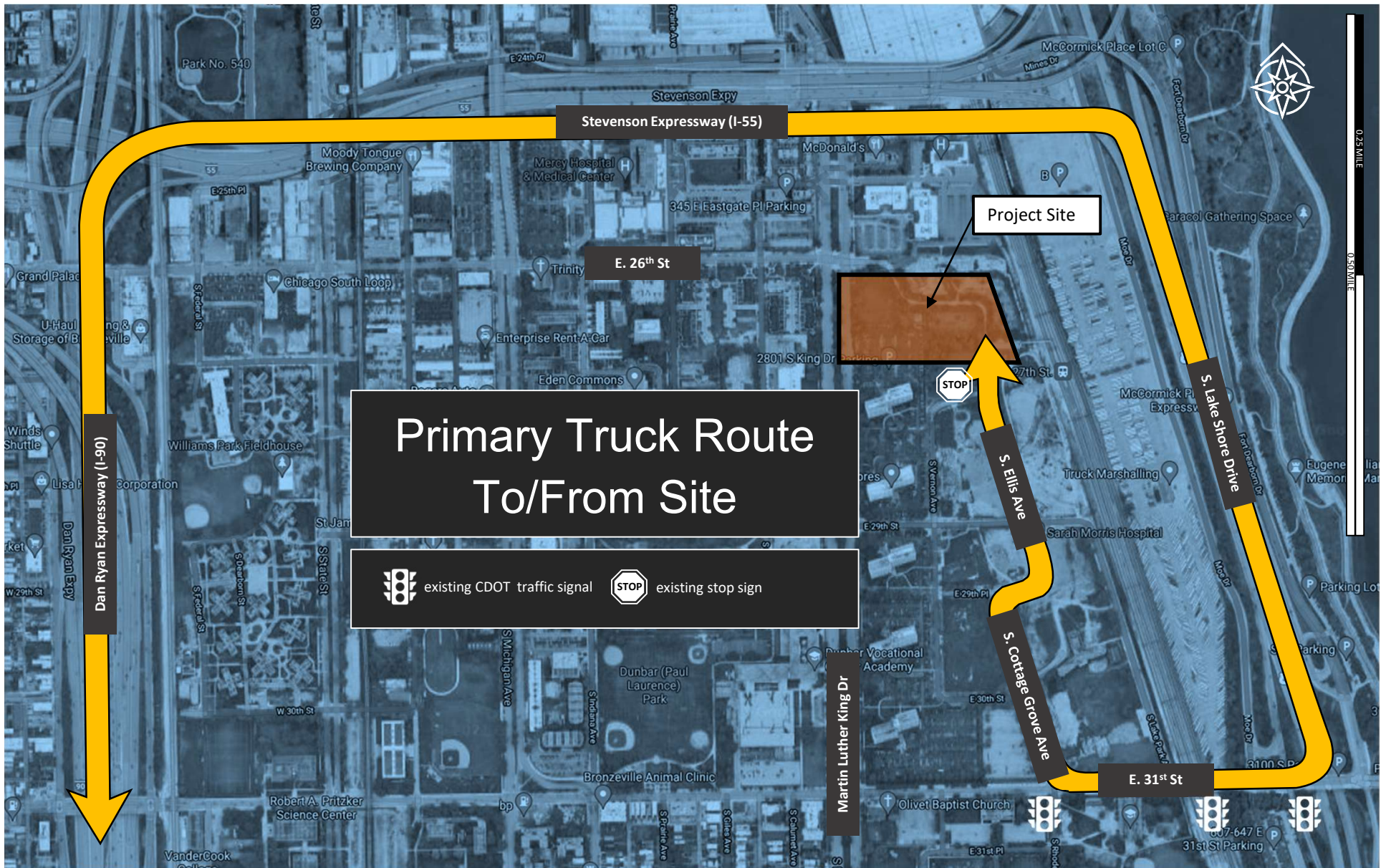


Figure 2 - Truck Route To and From Carnotite Site
Former Carnotite Reduction Company Site
434 East 26th Street
Chicago, Illinois

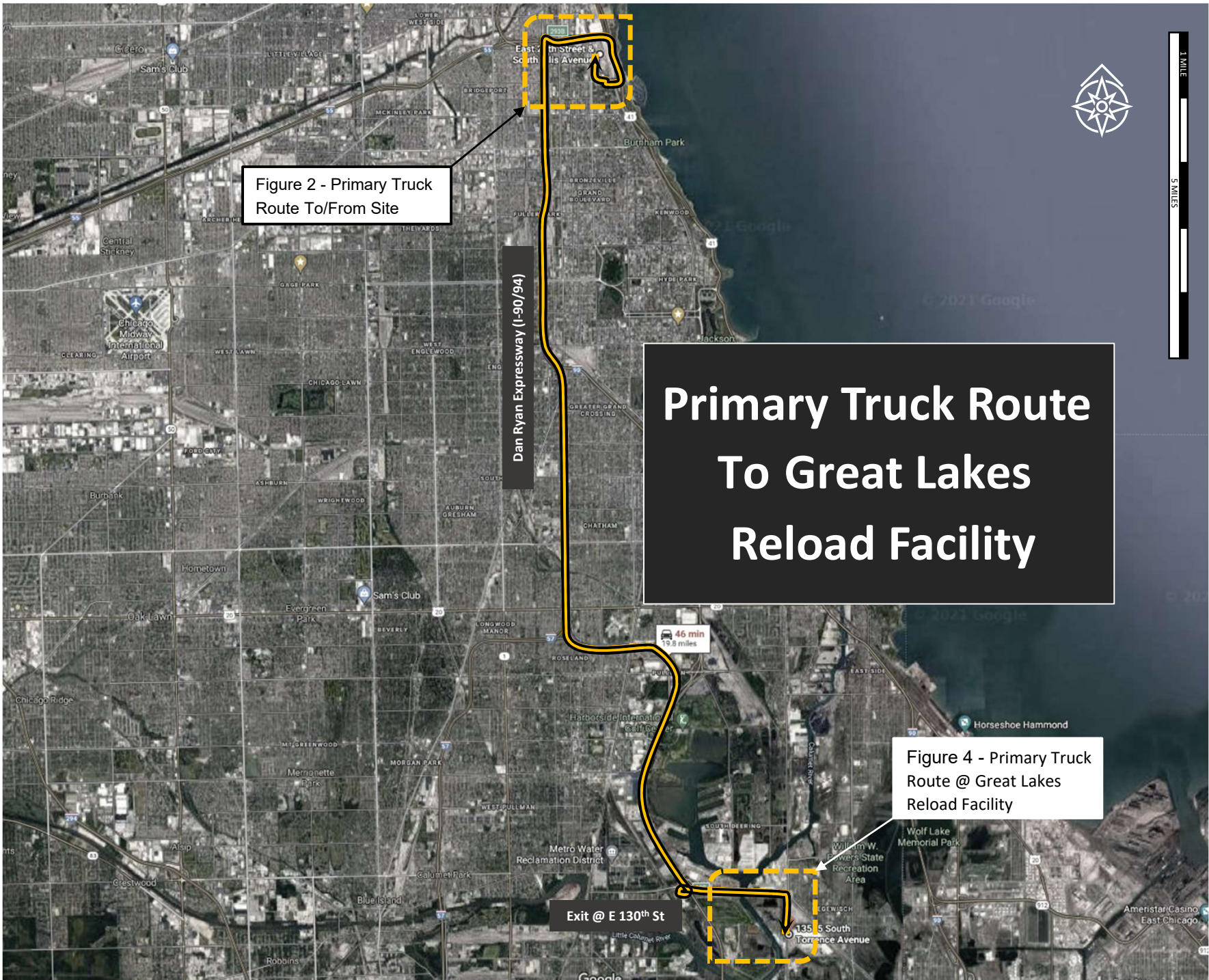


Figure 3 - Truck Route to Great Lakes Reload Facility
Former Carnotite Reduction Company Site
434 East 26th Street, Chicago, Illinois

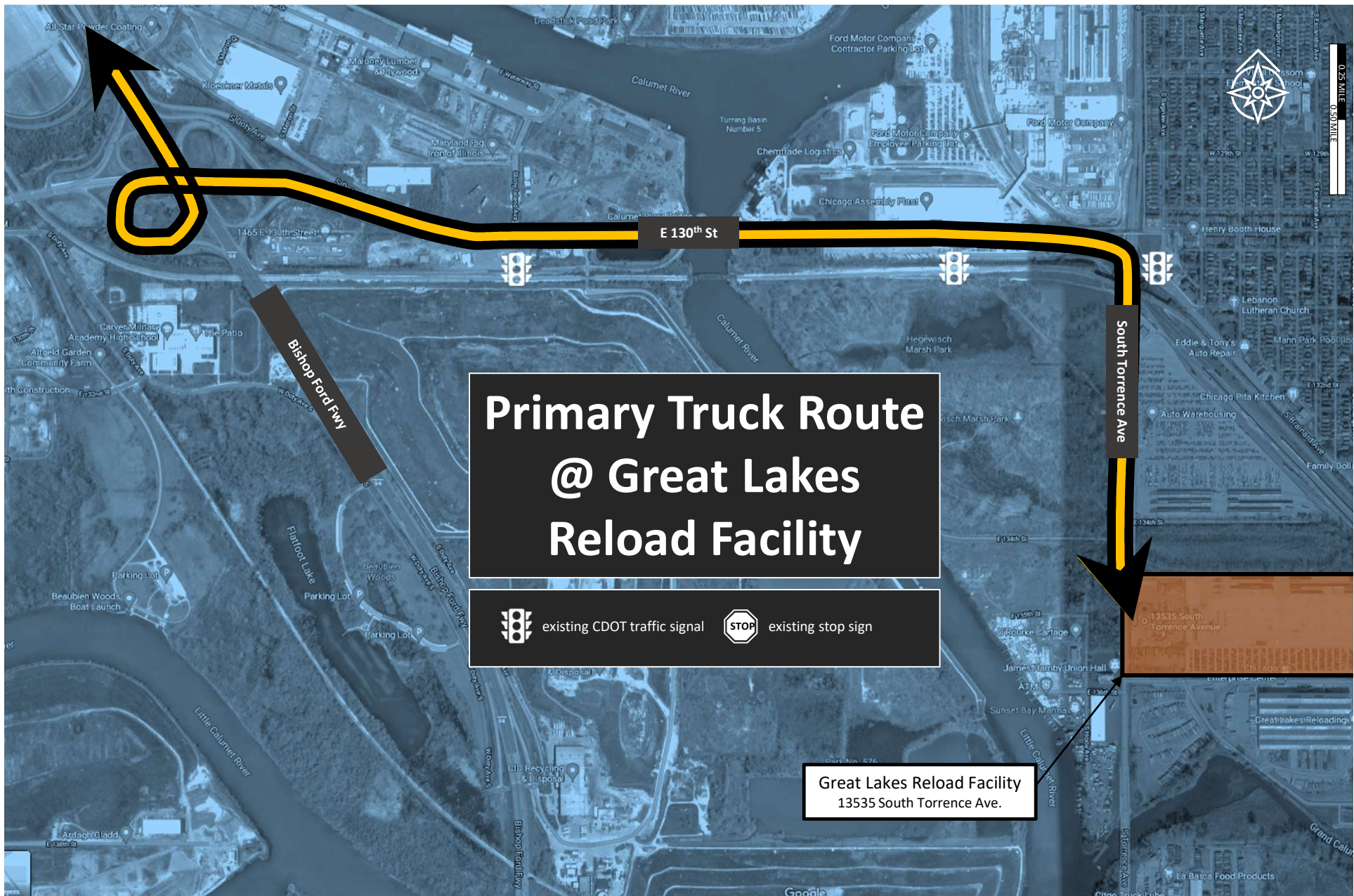


Figure 4 - Truck Route at Great Lakes Reload
Former Carnotite Reduction Company Site
434 East 26th Street
Chicago, Illinois

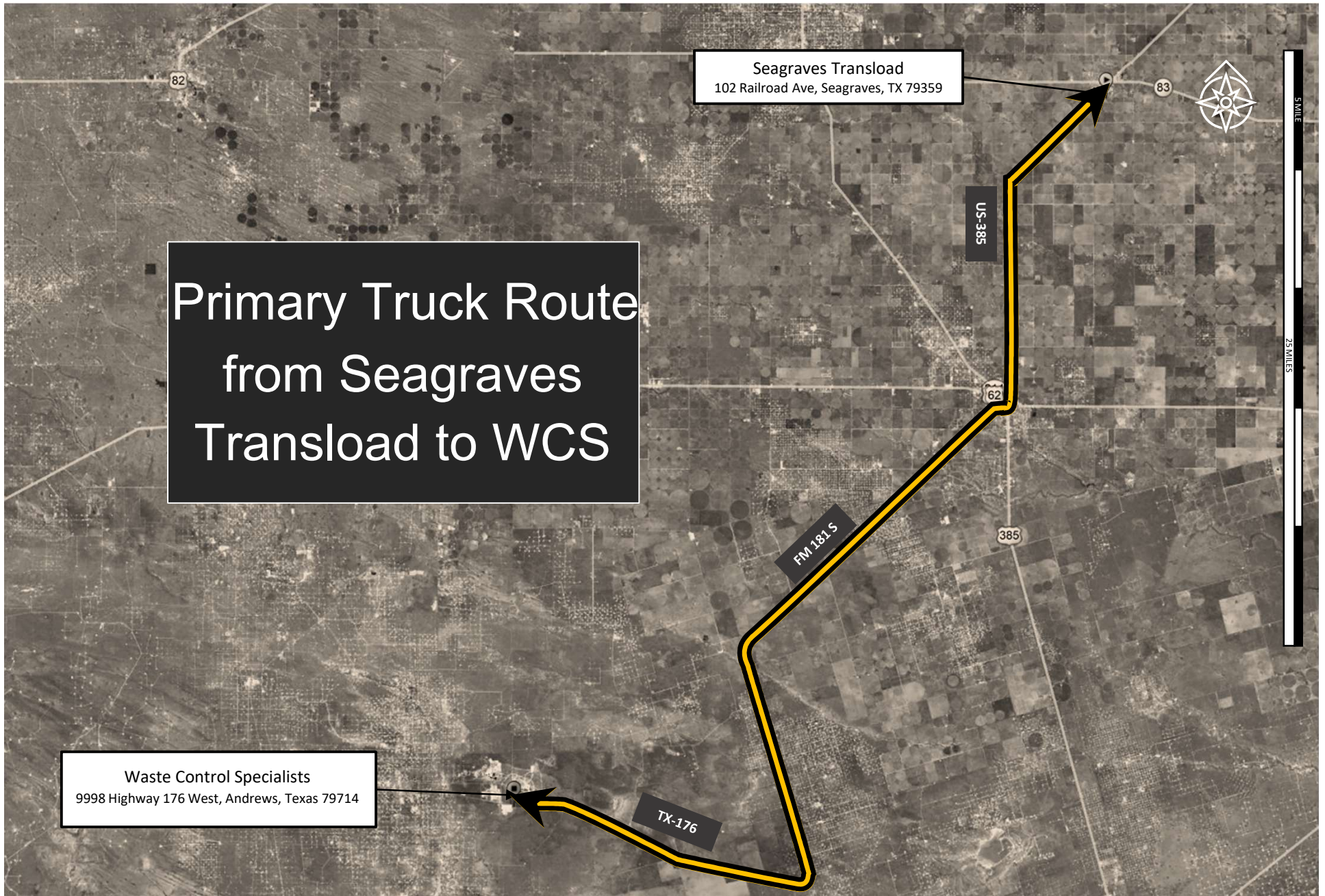
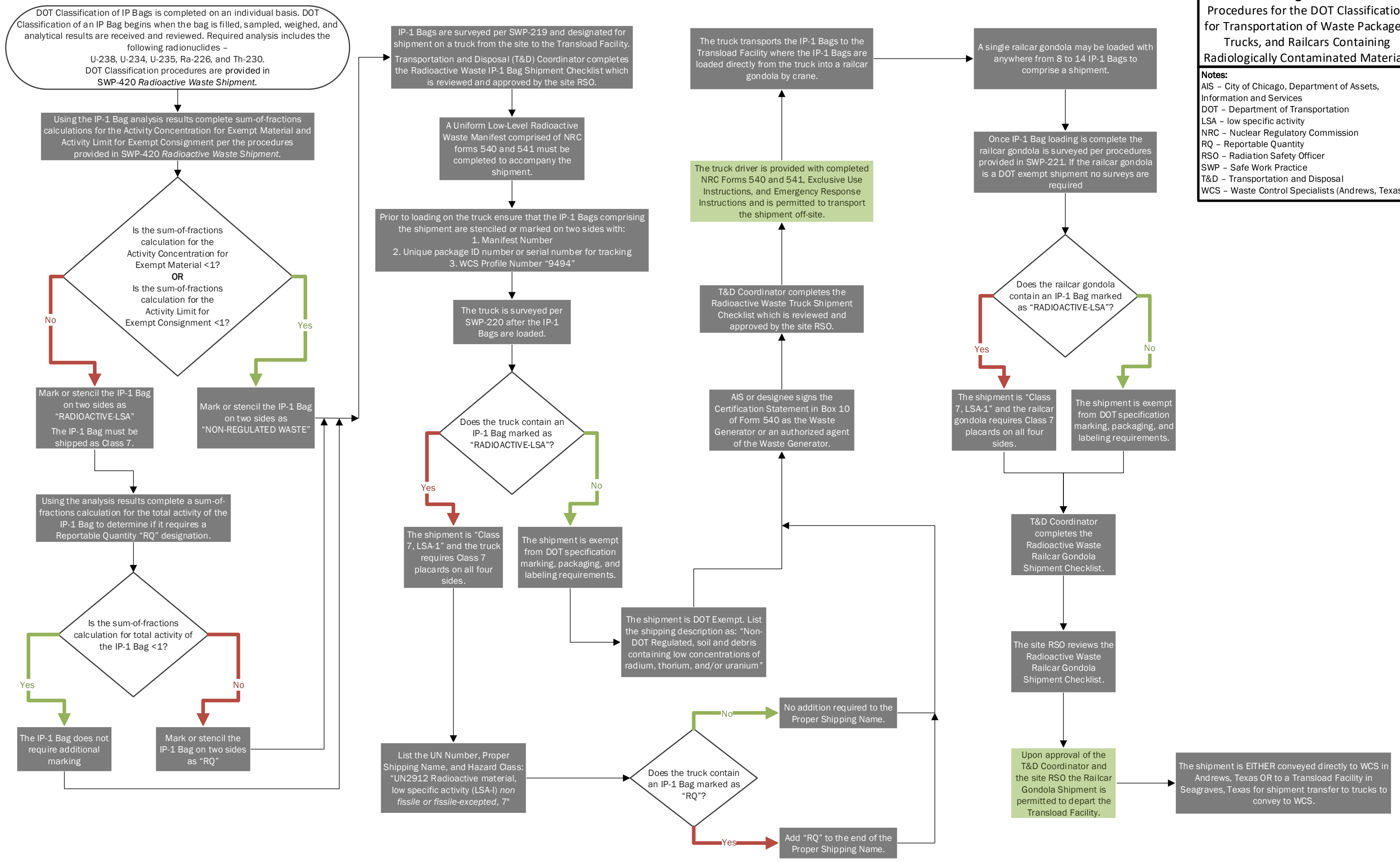
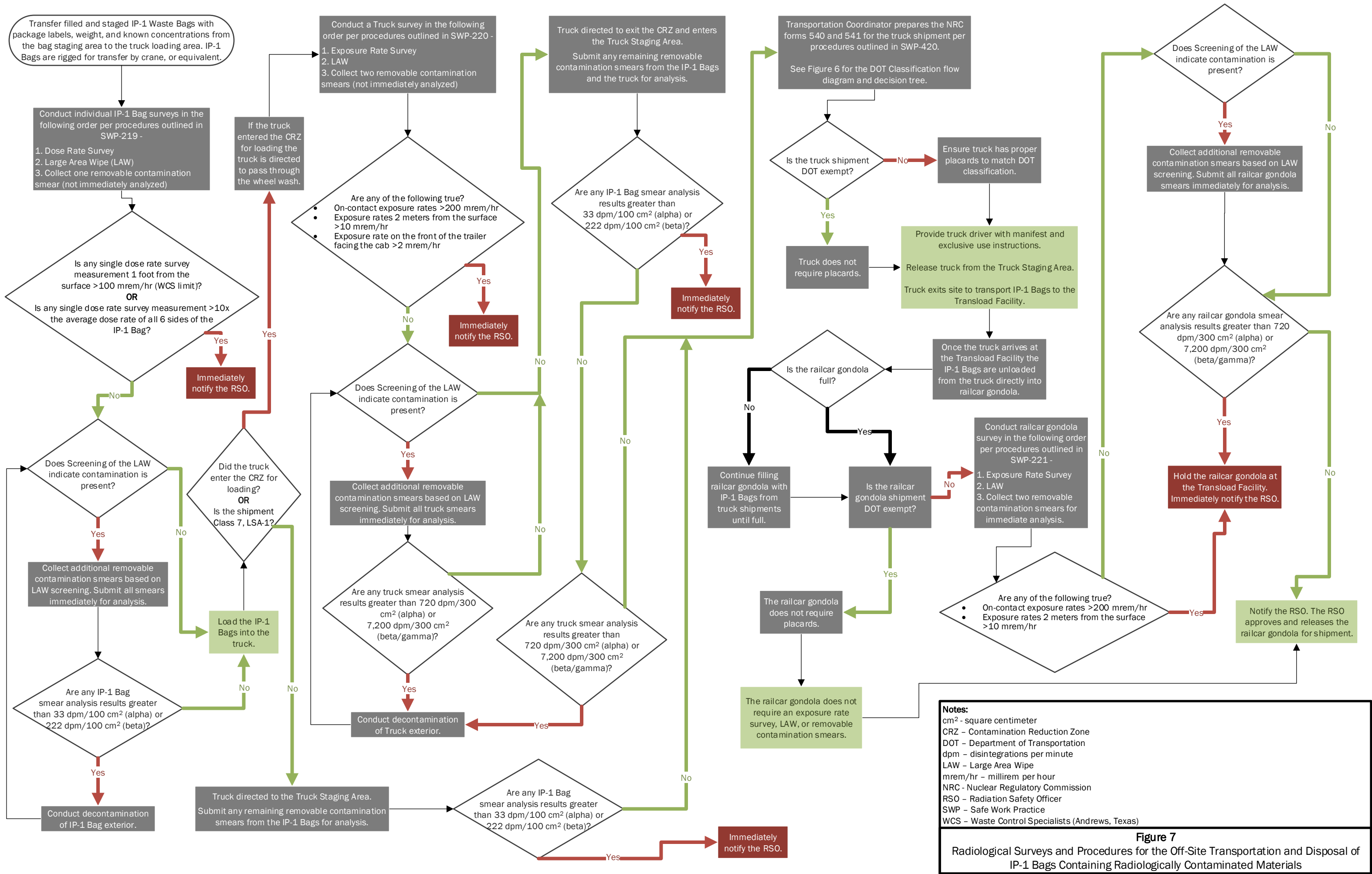


Figure 5 - Truck Route from Seagraves Transload to Waste Control Specialists
Former Carnotite Reduction Company Site
434 East 26th Street
Chicago, Illinois

Figure 6
Procedures for the DOT Classification for Transportation of Waste Packages, Trucks, and Railcars Containing Radiologically Contaminated Materials

Notes:
 AIS – City of Chicago, Department of Assets, Information and Services
 DOT – Department of Transportation
 LSA – low specific activity
 NRC – Nuclear Regulatory Commission
 RQ – Reportable Quantity
 RSO – Radiation Safety Officer
 SWP – Safe Work Practice
 T&D – Transportation and Disposal
 WCS – Waste Control Specialists (Andrews, Texas)





Notes:
 cm² - square centimeter
 CRZ - Contamination Reduction Zone
 DOT - Department of Transportation
 dpm - disintegrations per minute
 LAW - Large Area Wipe
 mrem/hr - millirem per hour
 NRC - Nuclear Regulatory Commission
 RSO - Radiation Safety Officer
 SWP - Safe Work Practice
 WCS - Waste Control Specialists (Andrews, Texas)

Figure 7
 Radiological Surveys and Procedures for the Off-Site Transportation and Disposal of IP-1 Bags Containing Radiologically Contaminated Materials

APPENDIX A

PacTec LiftPac IP-1 Bags Operating Instructions and Diagrams



Form: LPOI-WCS

Revision: 1.0

Creation Date: 12/10/21

Date Printed: 12/15/21

LIFTPAC OPERATING
INSTRUCTIONS FOR LP855-
7.5L63ZT(CP) IP-1 Rev 0.0
CENTER PICK

PACTEC


Approved by: Troy Town

PACTEC

**Operating Instructions For
The PacTec LiftPac[®]
LP855-7.5L63ZT(CP) IP-1 Rev 0.0
Center Pick**

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Form: LPOI-WCS Revision: 1.0 Creation Date: 12/10/21 Date Printed: 12/15/21	LIFTPAC OPERATING INSTRUCTIONS FOR LP855- 7.5L63ZT(CP) IP-1 Rev 0.0 CENTER PICK	 Approved by: Troy Town
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DEFINITIONS	
Standard Zipper LiftPac IP-1 with Center Pick option	A 4-sided, 2-ply soft-sided box-shaped bag. The exterior shell is made from a heavyweight woven polypropylene material and has a duffle and liner both made from a lightweight woven polypropylene material. The bag has a flat bottom and a top hinged on one side which is closed by means of a continuous coil zipper. The bag is lifted by 14 lift loops connected to a center pick hook.

I. STANDARD ZIPPER LIFTPAC

I-A. Scope


The scope of this standard operating procedure is to outline the steps that are necessary to safely and effectively install the LiftPac into the Loading Frame.

I-B. Overview

The PacTec, Inc. LiftPac® is a (4) sided, box shaped, soft sided bag with a flat bottom and zippered top.

- 1) **IP-1 certified** has the following features:
 - a) A bag manufactured with a heavyweight woven and coated polyolefin material, lined with a coated polyolefin material
 - b) The top of the LiftPac is hinged on one side and seals by means of a continuous zipper to provide a quick and secure closure
 - c) An interior duffle which is draped over the outside walls of the LiftPac and covers the Loading Frame during the loading process. The duffle protects the zipper closures and minimizes the potential for contamination during the loading process. When the LiftPac has been filled and is ready for closure, the duffle is pulled up and over the top of the loaded material, gathered and tied or folded and duct taped prior to sealing the LiftPac


The LiftPac, once loaded, is lifted with integral lifting straps. The lift straps are held in position during the loading process by guide loops affixed to the sides and bottom of the LiftPac.

<p>Form: LPOI-WCS Revision: 1.0</p> <p>Creation Date: 12/10/21 Date Printed: 12/15/21</p>	<p>LIFTPAC OPERATING INSTRUCTIONS FOR LP855- 7.5L63ZT(CP) IP-1 Rev 0.0 CENTER PICK</p>	 <p>Approved by: Troy Town</p>
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I-C. Installation Procedures for the STANDARD U-SHAPED ZIPPER LiftPac

NOTE: Prior to use, inspect the bag to ensure that no damage occurred during shipping or handling. PacTec does a complete inspection of the LiftPac prior to shipping, but it is a good practice to visually inspect the LiftPac prior to use for any damage that may occur in transit

1. Place Loading Frame into position on level surface. The Loading Frame sidewalls should be in the closed and ready to load position. The chain ratchet binders should be tightened so that no slack is in the chain, and all eight corner pins should be in place.
2. Remove one LiftPac from the pallet and unfold the LiftPac with the zipper top facing up.
3. Holding the top corners of the LiftPac, position the LiftPac over the Loading Frame making sure that the LiftPac is properly aligned with the corresponding length of sidewalls of the Loading Frame. (Ex: The 96" side of the LiftPac should align with the 96" side of the Loading Frame)
4. Shake the bag to allow the bottom of the LiftPac to drop to the bottom of the loading frame.
5. Align the four bottom and top corners of LiftPac with the bottom and top corners of the Loading Frame.
6. Check the position of the lift straps to ensure that all lifting straps are draped over the outer top edge of the Loading Frame. Lift straps should be flat with no twists or folds, and positioned from the bottom of the LiftPac, up the sidewalls and attached at the top edge of the LiftPac with Velcro to the guide loops. **CAUTION: IF A LIFT STRAP IS NOT IN PLACE, IT MUST BE LOCATED AND PULLED OVER THE OUTER WALL OF THE LOADING FRAME IN ORDER TO FOLLOW THE PACTEC, INC LIFTING PROCEDURES WHICH REQUIRES THE USE OF ALL LIFTING STRAPS.**
7. To prevent the lift straps from being drawn into the container during loading, the LiftPac shall be secured in position by attaching a rope or bungees to loops at the end of each lifting strap and attaching the rope or bungees to the chain wrapping the exterior of the Loading Frame
8. Once the LiftPac is in place and secured, unzip the top flap of the LiftPac and drape the top flap over the top outside edge of the Loading Frame.
9. Using a blunt object on the end of a pole, extend the bag so that it conforms to the interior

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sidewalls and bottom of the Loading Frame making the fabric as smooth as possible.

10. Pull interior duffle up and out to drape over the sidewalls of the Loading Frame.
NOTE! Zipper should be entirely covered by the duffle for protection.

11. The LiftPac is now ready for loading. Please refer to PacTec, Inc. recommended standard operating procedures for loading the LiftPac.


II. STANDARD ZIPPER LIFTPAC: MATERIAL LOADING INTO THE LIFTPAC

II-A. Scope

The scope of this standard operating procedure is to outline the steps that are necessary to safely and effectively load waste material into the LiftPac when properly installed in the Loading Frame.

II-B. Procedure to Load Material into the STANDARD U-SHAPED ZIPPER LiftPac

1. Prior to loading, it is important to calculate the approximate density of the material being loaded so that a maximum load height can be determined. This will ensure that the weight capacity of the bag is not exceeded.
2. If the material to be loaded consists of very large concrete, debris, or steel, including large rebar and like materials, then measures must be taken to protect the LiftPac. For example, plywood sheeting or wooden pallets may be placed on the internal floor to protect against puncture. If soil or smaller rubble is available, then that material may be loaded in the bottom of the LiftPac to help protect the floor surface.
3. When loading construction debris or large objects, every effort should be made to load soils first, then smaller rubble, then large debris in the center portions, then surround and backfill with additional rubble and/or soil.
4. When the LiftPac has been loaded to the appropriate load height (load height should be approximately 3-4 inches below the top seam of the LiftPac), the interior duffle is pulled up and over the loaded material. Close the duffle by gathering it to a center point and tying it with the attached tie webbing or duct tape. This is an important step if it is required that you have redundancy in closures. If this is not required, you may lay the duffle across the top of the load in a flat overlapping manner.
5. The top flap should then be pulled over and laid flat over the duffle.
6. Locate either of the zipper tabs with attached webbing pulls. (Any foreign debris should be removed from the zipper track prior to closing for safety). Using the webbing pull loop, pull

<p>Form: LPOI-WCS Revision: 1.0</p> <p>Creation Date: 12/10/21 Date Printed: 12/15/21</p>	<p>LIFTPAC OPERATING INSTRUCTIONS FOR LP855- 7.5L63ZT(CP) IP-1 Rev 0.0 CENTER PICK</p>	 <p>Approved by: Troy Town</p>
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the zipper down the short side of the LiftPac, around the corner, down the long side of the LiftPac, around the corner and down the opposite short side of the LiftPac. Stop when both zipper pulls meet. **NOTE! If a zipper becomes stuck, steadily work it back and forth until it is free. If this does not work, use the redundant zipper pull on the opposite side, and zip it closed meeting the other zipper at its stuck point.** Carefully inspect the zippers to insure complete closure.

7. Secure the pulls by tying them together and covering the pulls using PacTec repair tape if desired.
8. The LiftPac is now ready for the lifting procedure deployment. NOTE: Remove each of the lifting straps from the top guide loops to reduce any stress prior to lifting.

III. LIFTING PROCEDURES NOTE: USE ALL LIFTING STRAPS

III-A. Standard Operating Procedure

1. Carefully inspect the loaded and sealed LiftPac prior to lifting. Extra effort should be made to closely inspect the top flap zipper to insure complete closure.
2. Locate and inspect all lifting straps (loops) making sure there is no damage to the lifting straps and they are free from the interior sidewalls of the Loading Frame. **During inspection, detach Velcro straps from the top guide loops around the top outer perimeter of the LiftPac and remove each strap from the top guide loops, and position the strap across the top of the bag.** Detaching the straps will prevent tearing during the lifting process. **NOTE: Failure to remove straps from the top guide loops will exert unnecessary stress on the package.**
3. Gather all straps to the center point and place over lifting device (hook).
4. The loading frame must now be loosened from contact with the bag in order to minimize drag when lifting the bag. This is accomplished by removing all eight (8) corner pins first, then releasing the tension on the chains using the attached ratchets.
5. Mobile equipment/crane/fork truck operator may now begin to slowly lift the LiftPac straps attached until there is even tension on all lift straps.
6. Now stop the lift and double check that the straps are connected properly and safely continue the lifting process slowly until the LiftPac is completely lifted out of the loading frame.

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7. Once the bag has been carried to its destination and placed down on a secure area, the lifting hook is lowered to remove the tension from the lifting straps.
8. Now the lifting straps can be unattached from the lifting hook.
9. The lifting straps are now re-attached to the top “belt loop” straps with the Velcro straps.
10. The lifting straps can now be secured across the top of the bag by weaving a tie string through the 12” loop of each and secured.

IV. REPAIR INSTRUCTIONS FOR IP-1 LIFTPAC:

Malfunctioning Zipper Closure, Minor Bag Damage, Repair Tape

- If both zipper pulls do not close the bag properly, it is recommended to repackage the material, however for IP-1 it is acceptable to use PTNUR repair tape that can be provided. Be sure that the exterior surface of the bag, where the tape is to be applied is clean and free of any foreign debris. Now trace the entire path of the zipper with the repair tape until fully closed.
- If there is any minor damage to the bag, such as holes of less than 2-3”, it is also recommended to use PTNUR repair tape. The repair tape should be applied so that a minimum of 6” of tape extends past the damaged area. Tape may be overlapped.

V. MODES OF TRANSPORTATION

- The loaded LiftPac can be shipped via road or rail. **NOTE! THE LOADED LIFTPAC IS NOT INTENDED TO BE TRANSPORTED VIA AIR.**

VI. STORAGE, SHELF LIFE AND SHIPPING

STORAGE & SHELF LIFE

- INDOORS: If the IP-1 LiftPacs are intended to be stored indoors, protected from the effects of sunlight and adverse weather, there is essentially no limit to the shelf life.

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- **OUTDOORS:** If the IP-1 LiftPacs are to be stored outdoors it is recommended that they are covered with a durable UV resistant and weatherproof tarp to keep the package out of the elements. Additionally, it is recommended to protect the underside of the LiftPacs by keeping them off the ground, or placing a tarp underneath to prevent the bags from sitting in pools of accumulated water.

- **SHIPPING**

- **FLATBED TRUCK:** Prior to shipping, the packages should be strapped down with the appropriate strapping, determined by the shipper.
- **RAIL, ROLL-OFF, INTERMODAL CONTAINER:** If shipping by rail, roll off, or intermodal container, ensure that the bags are placed inside the conveyance to minimize shifting and movement during transit.

APPENDIX B

Greenfield Handling Storage and Shipping QAP 13.1



Handling, Storage, and Shipping


Standard Operating Procedure QAP 13.1




Revision: 03
Revision Date: 06/29/21

Approval Date: 08/27/21

 Signature:	 Signature:
Title: Quality Assurance Representative	Title: Safety Representative
 Signature:	 Signature:
Title: Operations Director	Title: President

Standard Operating Procedures		QAP 13.1
	Revision Log	
	Revision: 03 Revision Date: 06/29/21 Page 1 of 1	

Section #	Title	Revision Date	Revision #	Description of Change
GLP-5.11	Handling, Storage, and Shipping	09/10/09	00	SOP Created.
QAP 5.11	Handling, Storage, and Shipping	04/21/12	01	Procedure updated and reformatted.
All	Handling, Storage, and Shipping	02/27/13	02	Updated numbering and cross references to agree with new matrix. Changed procedure number from 5.11 to 13.1 to comply with numbering of NQA-1
QAP 13.1	Handling, storage and shipping	6/29/21	03	Updated to address transloading of IP-1 bags.

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HANDLING, STORAGE, AND SHIPPING

1.0 PURPOSE AND APPLICABILITY

- 1.1 The purpose of this procedure is to describe the methods to be used for handling, storage and shipping of intermodal and waste packaging.
- 1.2 This procedure applies to waste packages, replacement parts and packaging supplies.

2.0 SUMMARY OF PROCEDURE

- 2.1 Containers, materials and supplies should be handled, stored and shipped in a manner to prevent damage, deterioration, theft, loss or other detrimental effects.

3.0 HEALTH AND SAFETY

- 3.1 General safety and health practices should be utilized when performing Light Tests in the field.

4.0 DEFINITIONS

ABC Railcars: Articulated Bulk Container Railcars

Chassis Trailer: Trailers designed for the transport of containers having ISO connection points.

Roll-off Trucks: Trucks designed for self-loading and unloading.

5.0 PERSONNEL QUALIFICATIONS/RESPONSIBILITIES

- 5.1 **Greenfield Personnel** are responsible for the proper handling, storage and shipping of these items and to provide protection against damage, deterioration, theft or loss.

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6.0 PROCEDURE

6.1 Handling:

6.1.1 Containers will be handled in the manner consistent with their intent and design. Items will be handled carefully to avoid damage. Containers shall only be lifted at locations that are a designed for the handling and lifting of the container (i.e., ISO connections and fork pockets).

6.1.2 IP-1 bags arriving on trucks will be managed in an approved loading/ unloading area.

- Bags will be inspected for tears prior to lifting.
- Bags will not be opened. Rather, bags will only be picked from the truck and placed into dedicated railcars or staging area and documented for shipping.
- Personnel will not open or come into contact with the contents of the loaded bags. Bags will be picked up and transported by mechanical means only.
- An onsite spill kit will be present to contain any potential release in the event of an accidental rupture of the one of the bags. Any spillage would be contained using the onsite spill containment kit. Emergency response would be conducted in accordance with the GFL emergency response procedures.

6.2 Storage:

6.2.1 Containers, materials and supplies will be stored at a location that is secure (i.e., fencing, guarded, etc.).

6.2.2 Containers, materials and supplies will be stored in an area that will not cause damage or promote deterioration. If an intermodal or other steel container is to be stored for a long period of time, the container shall be managed to prevent excessive rusting (i.e., store on railcars, rinsed, stack, etc.).

6.3 Preservation:

6.3.1 Containers shall be stored with all closures fully closed and secured to prevent the collection of excessive moisture.

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6.3.2 Containers, materials and supplies shall be marked in accordance with QAP 14.1 Inspection and Operating Status. This will indicate the readiness for use or the need for inspections or repairs for use.

6.3.3 Materials, supplies and non-metallic packaging will be stored to minimize ultraviolet exposure which may cause deterioration.

6.4 Shipping:

6.4.1 Containers or bags shall be shipped on conveyances that are capable of transporting the containers (i.e., ABC railcars, flatcars, pin trailers, flat bed trailers, roll-off trailers, etc.).

6.4.2 Containers or bags shall be properly secured to the conveyance vehicle with twist locks, chains, ratcheting nylon straps, or a combination of these methods. When shipping intermodal containers, the securing materials shall not be placed over the lid areas of the containers.

7.0 RECORDS MANAGEMENT

None

8.0 REFERENCES

QAP 14.1 Inspection and Operating Status

APPENDIX C

Greenfield Transport Security Plan GL-D5



Transportation Security Plan

GL-D5




Prepared By:
Greenfield Logistics
1325 West 2200 South, Suite D
Salt Lake City, UT 84119
801-676-1575

Revision 01
03/01/13

Approval Date:

4/15/13

 Signature:	 Signature:
Title: Quality Assurance Manager	Title: Safety Representative
 Signature:	 Signature:
Title: Operations Director	Title: President

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Section #	Title	Revision Date	Revision #	Description of Change
All GL-D5	Transportation Security Plan	03/01/13	01	Updated Procedure and Formatting Revised Table of Contents


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1.0 Purpose of Security Plan:

- 1.1 Greenfield Logistics prepared this Security Plan in response to the requirements set forth by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration and promulgated through 49 CFR Subpart I. This Security Plan addresses security risks related to the transportation of hazardous materials in commerce.

2.0 Scope of Security Plan:


- 2.1 The scope of this Transportation Security Plan addresses security risks associated with the transportation of hazardous materials by Greenfield Logistics. The Security Plan will be utilized to establish the base line for the appropriate risk assessment and mitigation measures.
- 2.2 As stated in 49 CFR 172 Subpart I, §172.800 (b), each person who offers for transportation in commerce or transports in commerce one or more of the following hazardous materials must develop and adhere to a security plan for hazardous materials.
- Highway route-controlled quantities of a Class 7 (radioactive) material, as defined in § 173.403, in a motor vehicle, railcar or freight container;
 - More than 25 kilograms (55 pounds) of a Division 1.1, 1.2 or 1.3 (explosive) material in a motor vehicle, railcar, or freight container;
 - More than one (1) liter (1.06 quarts) per package of a material poisonous by inhalation, as defined in § 171.8 that meets the criteria for Hazard Zone A, as specified in §173.116(a) or 173.133(a);
 - A shipment of a quantity of hazardous materials in a bulk packaging having a capacity equal to or greater than 13,248 liters (3,500 gallons) for liquids or gases or more than 13.24 cubic meters (468 cubic feet) for solids;
 - A shipment in other than a bulk packaging of 2,268 kilograms (5,000 pounds) gross weight or more of one (1) class of hazardous materials for which placarding of a vehicle, railcar or freight container is required for that class under the provision of 49 CFR Part 172 subpart F;
 - A select agent or toxin regulated by the Centers for Disease Control and Prevention under 42 CFR part 73; or

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- A quantity of hazardous material that requires placarding under the provisions of 49 CFR Part 172 subpart F.
- 2.3 This Security Plan will provide the administrative and physical controls necessary for the proper implementation, instruction, performance and training to ensure proper security controls are enacted.
- 2.4 The plan will consist of the following areas and will discuss the appropriate evaluations and actions necessary.
- Hazardous materials and package control
 - Personnel Security
 - En Route Security
 - Technical Innovations
 - Management Prerogatives and Input
 - Communications
 - Emergency Response
- 2.5 If Greenfield Logistics does not directly conduct the transportation, or the offering of, hazardous materials for transportation, Greenfield Logistics will ensure that vendors are approved and have provided evidence of a Transportation Security Plan compliant to 49 CFR §172.800. Greenfield Logistics will obtain documentation certifying compliance with the requirements.
- 2.6 Attachment 1: Risk Assessment contains an overview of security concerns regarding materials routinely transported and information about how to reduce security threats of the associated materials and methods of transport.
- 2.7 Attachment 2: FBI Field Office contact list, should a condition arise warranting notification of the FBI.

3.0 RISK ASSESSMENT:

Greenfield will conduct a risk assessment for each method of transportation to be utilized and will complete a "Transportation Risk Assessment and Mitigation" form. Many of the projects performed by Greenfield are similar in activities and materials. In such cases Greenfield will utilize a standard risk assessment and mitigation,

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3.1 Hazardous Materials and Risk Potential

Greenfield Logistics will apply the appropriate security commensurate with the material that is being transported. In addition, not every hazardous materials shipment is vulnerable to terrorist attacks or sabotage. For example, a drum load quantities of low-toxicity hazardous materials are not likely to be targeted by terrorists due to the negligible impact a release of such materials may have to the public. Terrorists are more likely to target large, bulk shipments of highly toxic hazardous materials that have properties capable of harming large populations.

3.1.1 The major risks posed by the hazard classes routinely transported by Greenfield Logistics include the following:

- Radioactive Materials
- Hazardous Waste (RCRA, TSCA)


3.1.2 Hazardous Material Classifications

3.1.2.1 Radioactive Materials

Radioactive Materials (DOT Class 7) are generally a mixture of materials that contain small amounts, or low concentrations, of radioactive contamination. Greenfield Logistics does not transport highway route controlled quantities of radioactive materials. Instead, Greenfield Logistics transports very low concentrations of radioactive material distributed evenly within environmental media and demolition debris. These materials may include other hazardous materials (heavy metals, asbestos, PCBs, etc.) that are contaminated with radioactive material. These materials may be released to the environment causing both exposure to radioactive materials and any other hazardous component that may be present in the material.

3.1.2.2 Hazardous Waste

Shipments of hazardous waste materials may be specifically listed or be characteristic of materials meeting the definition RCRA, TSCA or a combination of the two. These materials for example, may contain heavy metals, PCBs, asbestos or other environmentally hazardous materials. In some cases, these shipments may contain regulated and unregulated quantities of radioactive materials (mixed waste).

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Note: Greenfield will determine or obtain the appropriate waste classification or identification (proper shipping name) and establish if the materials are subject to security risks during transport, and if so, establish the appropriate security and risk mitigation.

3.1.3 Transportation Risk Potential

3.1.3.1 HIGHWAY

Large volumes of Hazardous Materials (of all classes) are transported daily in trucks across public highways in the United States. Greenfield Logistics commonly utilizes truck transportation to move hazardous materials. This includes flat bed, enclosed or van trailers, bulk trailers and DOT permitted shipping containers.

Prior to reaching the final destination, vehicles may stop in various location including truck stops, transfer facilities and rest areas. Risks associated with truck transportation are:


- Theft of the truck or its contents
- Unauthorized access
- Vandalism of the truck or its contents

Note: In such cases where the vehicle stops in transit, the vehicles must be secured against theft of the vehicle, release of the contents, sabotage or high-jacking of the vehicle contents.

3.1.3.2 RAIL

Rail transportation is the largest method for the bulk shipment of Hazardous Materials (of all classes) via railroads across the United States. Greenfield Logistics commonly utilizes rail transportation to move hazardous materials. This includes gondola railcars, box cars, intermodal, and other DOT permitted railcars.

Prior to reaching the final destination, railcars are sorted, switched and handled at various locations along the rail route. Rail transportation has come to the forefront for security concerns. This is due in part to the volumes of material in a single car, railroad routing through populated areas, and unlike truck

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transportation, each railcar is not attended by a single person. Risks associated with rail transportation are:

- Sabotage of the rail equipment or rail lines
- Theft of the truck or its contents
- Unauthorized access
- Vandalism of the railcar or its contents

3.1.3.3 Air

The risk of terrorist activities involving air shipment by Greenfield Logistics is slight due to the limited quantity of material that may be shipped by air and the limitations of the types of hazardous materials that may be transported by air. Greenfield Logistics does not routinely ship via air transport. However, should such transport be required, air shipments of hazardous materials follow the International Air Transport Association (IATA) guidelines, requirements of the air carrier such as UPS, Fed Ex and US Postal Service, and DOT regulations.


3.2 Employees

Greenfield Logistics will carefully screen potential employees who have access to hazardous materials. Terrorist groups may attempt to gain access to hazardous materials through employment with Greenfield Logistics either as drivers or as laborers responsible for loading, unloading and packaging of hazardous materials prior to transport.

Note: Greenfield Logistics will screen potential employees or subcontractors prior to employment or subcontracting.

Greenfield Logistics will work closely with agencies and/or companies where appropriate to ensure the safety and security of hazardous materials in transit. This may include but is not limited to:

- Shippers;
- Receivers;
- Transporters;
- Local emergency response organizations; and
- Law enforcement personnel

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4.0 RISK MITIGATION:

4.1 Based on the types of materials transported and the transport methods and quantities, Greenfield Logistics has identified points in the hazardous materials transport chain where security risks exist, but where actions can be taken to reduce the security risk. The Risk Control Points are as follows:


- 4.1.1 Personnel backgrounds –security for personnel with access to hazardous materials cargo and storage areas.
 - Conduct background checks on employment history and citizenship.
 - Review references and confirm that terminated employees have returned all security access devices.

- 4.1.2 En route security - security to protect hazardous materials being transported by highway, rail or air
 - Inspection of vehicles
 - Locking of vehicles and
 - Responding to or reporting suspicious activities.

- 4.1.3 Unauthorized Access – prevent unauthorized personnel from gaining access to hazardous material vehicles, storage areas and shipment information.
 - Locking of vehicles
 - Parking in areas with adequate lighting
 - Reporting of suspicious activities.

- 4.1.4 Communications – security of shipment or material information, conveyance location and destination.
 - Provide shipment tracking via GPS, Qualcomm or other tracking systems
 - Use of Cellular phones
 - Limit access to shipment information such as bill of lading, manifests or work orders

- 4.1.5 Employee Awareness – train and reinforce acknowledgement of security risks and issues.
 - Employee training of the Greenfield Security Plan
 - Updates and refresher training
 - Input from employees and periodic group reviews

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4.2 Personnel Security:

For activities that require the screening and verification of personnel, Greenfield will obtain all information necessary to ensure personnel are appropriate and approved by Greenfield for the work. The level and detail in which personnel screening will be conducted will be commensurate with the work activity and the associated security risks. Greenfield will approve personnel prior to conducting any work associated with the activities covered under this security plan.

In many cases, personnel screening will be performed by the Greenfield vendors or subcontractors. Greenfield will verify that vendors and subcontractors have instituted an employee screening program, and in such case where vendors or subcontractors do not have an established employee screening program, Greenfield will conduct a personnel security screening under this program and document the results on the "Personnel Security Evaluation" form contained in Appendix B. At a minimum, the following information shall be obtained to verify personnel and their acceptability.


- Full Name (first, middle, last)
- Current physical address
- Current phone number
- Citizenship
- Social Security Number
- Licensing
- Training

4.3 En-Route Security:

Greenfield Logistics approves suppliers and subcontractors prior to work activities and only works with carriers that have been confirmed to have implemented and maintain a Transportation Security Plan in accordance with 49 CFR §172.800.

When possible, containers, packages or conveyances will be sealed with a tamper indication device (TID) or a durable security lock. In such cases where a container, package or conveyance is locked using a keyed locking mechanism, one (1) key will be maintained by a person authorized for access. Greenfield Logistics will verify that its subcontracted carriers;

- Park vehicles in well-lit areas when stopped en-route
- Lock, and periodically inspect vehicles during transport
- Limit access to shipment information

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- Place vehicles or conveyances within a fenced yard limiting access by personnel or vehicles.
- If necessary, contact the local authorities or the state office of the FBI if a breach in security of a hazardous material is observed or discovered

4.4 Unauthorized Access:

Greenfield will secure all facilities, offices and equipment owned or operated by Greenfield from unauthorized access. Facilities, offices and equipment will only be accessed or utilized by personnel that have been evaluated and approved by Greenfield. Access to these areas will be authorized on an as needed basis for employees of subcontractors, shippers and/or carriers having an acceptable need for access.

To reduce or eliminate the unauthorized access to hazardous materials while the packaged materials are staged for shipping or are in storage “incident to transportation,” the following are some measures which will be taken to reduce or eliminate unauthorized access.


- Fencing or barriers identifying or preventing access to conveyances, packages or storage areas
- Use of logs to document and control personnel accessing controlled areas; and/or
- Limiting vehicles access security areas by tags, signs or escort
- Identification indicating authorization for access such as the use of badges or other identifying methods.

The control of personnel and vehicles will be controlled through the use of security personnel, or designated personnel charged with that duty.

4.5 Communications:

Greenfield Logistics will control the communications of specific information regarding the materials being transported, transport methods, origin, destination, shippers and transporters that may be inappropriately utilized. Greenfield will protect the access and dissemination of information by utilizing the following methods:

- Limit access through the use of password protection for critical information and web based programs
- Distribution only to personnel that have a specific need or are part of the transportation process, receivers, or transporter

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4.5.1 While shipments are en route, Greenfield Logistics will monitor the locations and progress of the shipments to ensure that the shipments are being appropriately routed and are on schedule. The location and progress of the shipment are activity points that may indicate if the security of the shipment has been compromised.

4.5.1.1 For truck transportation, the transporter and operator must have the ability to maintain contact through the following:

- Global Positioning Systems (GPS) equipment
- Qualcomm
- Cellular phone or
- Other accessible communication methods that provide near real time contact.

4.5.1.2 For rail transportation, shipments will be monitored using the following methods:


- Global Positioning Systems (GPS) equipment
- Web based tracking systems
- Other accessible methods that provide near real time results

4.6 Training:

Greenfield Logistics employees will be trained on security requirements and this Transportation Security Plan in accordance with 49 CFR 172.800. This can consist of, but is not limited to the following:

- 49 CFR 172.800 requirements
- General security awareness;
- Safety;
- Job specific safety and security requirements.

As required by 49 CFR §172.704 this training will be conducted at a minimum every three (3) years.

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Attachment 1- Risk Assessment



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Risk Assessment

Location or Project Name: _____

Material to be transported: _____

Physical Characteristics: Solid Liquid Gas

Proper shipping name: _____

Class: _____

Method of packaging: _____

Method of transport: _____

Is the material to be transported covered by DOT YES NO

or the Greenfield Logistics Transportation Security Plan?

Is the material to be transported of a nature that can YES NO

result in acute or immediate health risks to the public?

Types of Risks:

Level: low moderate high extreme


Level: low moderate high extreme

Level: low moderate high extreme

Level: low moderate high extreme

Is the material or conveyance subject to the possibility of theft? YES NO


Level of risk: low moderate high extreme

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If obtained, can the material be utilized for terrorist activities? YES NO
Level of risk: low moderate high extreme
Can the material be easily accessed? YES NO
Does the carrier have an implemented Transportation Security Plan YES NO

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ATTACHMENT 2 - FBI Field Office Directory

Alaska	Anchorage	(907) 258-5322	
Alabama	Birmingham	(205) 326-6166	Mobile (334) 438-3674
Arizona	Phoenix	(602) 279-5511	
Arkansas	Little Rock	(501) 221-9100	
California	Los Angeles	(310) 477-6565	
	Sacramento	(916) 481-9110	
	San Diego	(858) 565-1255	
	San Francisco	(415) 553-7400	
Colorado	Denver	(303) 629-7171	
Connecticut	New Haven	(203) 777-6311	
Florida	Jacksonville	(904) 721-1211	
	N. Miami Beach	(305) 944-9101	
	Tampa	(813) 273-4566	
Georgia	Atlanta	(404) 679-9000	
Hawaii	Honolulu	(808) 521-1411	
Indiana	Indianapolis	(317) 639-3301	
Illinois	Chicago	(312) 431-1333	
	Springfield	(217) 522-9675	
Kansas	Kansas City	(816) 512-8200	
Kentucky	Louisville	(502) 583-3941	
Louisiana	New Orleans	(504) 816-3000	
Maryland	Baltimore	(410) 265-8080	
Massachusetts	Boston	(617) 742-5533	

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ATTACHMENT 2 - FBI Field Office Directory –Continued

Michigan	Detroit	(313) 965-2323
Minnesota	Minneapolis	(612) 376-3200
Mississippi	Jackson	(601) 948-5000
Missouri	Kansas City	(816) 521-8200
	St. Louis	(314) 231-4324
Nebraska	Omaha	(402) 493-8688
Nevada	Las Vegas	(702) 385-1281
New Jersey	Newark	(973) 792-3000
New Mexico	Albuquerque	(505) 224-2000
New York	Albany	(518) 465-7551
	Buffalo	(716) 856-7800
	New York	(212) 384-1000
North Carolina	Charlotte	(704) 377-9200
Ohio	Cincinnati	(513) 421-4310
	Cleveland	(216) 522-1400
Oklahoma	Oklahoma City	(405) 290-7770
Oregon	Portland	(503) 224-4181
Pennsylvania	Philadelphia	(215) 418-4000
	Pittsburgh	(412) 432-4000
Puerto Rico	San Juan	(787) 754-6000
South Carolina	Columbia	(803) 551-4200
Tennessee	Knoxville	(865) 544-0751
	Memphis	(901) 747-4300

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ATTACHMENT 2 - FBI Field Office Directory -Continued

Texas	Dallas	(972) 559-5000
	El Paso	(915) 832-5000
	Houston	(713) 693-5000
	San Antonio	(210) 225-6741
Utah	Salt Lake City	(801) 579-1400
Virginia	Richmond	(804) 261-1044
	Norfolk	(757) 455-0100
Washington	Seattle	(206) 622-0460
Wisconsin	Milwaukee	(414) 276-4684

APPENDIX D

Emergency Response Plan SOP QAP 5.7



Emergency Response Plan for Transportation Operations


Standard Operating Procedure QAP 5.7




Revision: 04
Revision Date: 04/03/2019

Approval Date: 4/29/19

 Signature: For:	 Signature:
Title: Quality Assurance Manager	Title: Safety Representative
 Signature:	 Signature:
Title: Operations Director	Title: President

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Section #	Title	Revision Date	Revision #	Description of Change
GFL D5	Emergency Plan for Transportation Operations	08/22/02	01	
All GLP 5.9	Emergency Plan for Transportation Operations	04/21/12	02	Procedure updated and reformatted. Renumbered to fit new QA Manual criteria.
All QAP 5.7	Emergency Plan for Transportation Operation	02/25/13	03	Take out some emergency equipment not needed and references in write-up. Updated numbering and cross references to agree with new matrix. Changed procedure number from 5.9 to 5.7 to comply with numbering of NQA-1
6.2 and 6.8	Emergency Plan for Transportation Operation	04/03/19	04	6.2 Updated Emergency Contact. 6.8 Updated Safety Equipment list.

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EMERGENCY RESPONSE PLAN FOR TRANSPORTATION OPERATIONS

1.0 PURPOSE AND APPLICABILITY

1.1 The purpose of this procedure is to establish the basic Greenfield Logistics guidelines for emergency response to an upset condition to minimize the potential risk to the general public and employees, to minimize the potential for an uncontrolled release to the environment, and to minimize the risk of damage to equipment and materials.

2.0 SUMMARY OF PROCEDURE

2.1 This procedure outlines the steps necessary for managing an Emergency Response, during transportation of a shipment. It includes reporting requirement for internal and external communications.

3.0 HEALTH AND SAFETY


3.1 The first priority is to protect human health and the environment. If conditions exist that threatens human health and/or the environment, report the incident immediately and take actions as may be deemed appropriate to protect human health and/or the environment. Under no circumstances should first responders place themselves in jeopardy while combating or responding to a potential upset condition or incident.

4.0 DEFINITIONS

None

5.0 PERSONNEL RESPONSIBILITIES

5.1 **Emergency Coordinator** is a Greenfield Logistics representative or duly designated responsible person. They are responsible for working with local authorities, as needed, to determine the appropriate direction to manage incidents that may occur during

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transportation. They will work to protect human health and the environment, as well as the interests of the company. In addition, the Emergency Coordinator will prepare and submit written reports, as required.

- 5.2 **Truck Driver** is responsible for regular inspection of load during transportation of shipment and take appropriate measures in an upset condition has occurred.

6.0 PROCEDURE

6.1 Emergency Reporting

6.1.1. Upon learning or becoming involved in an incident that would keep the transportation unit from safely, and compliantly arriving on schedule to the assigned destination, etc., the driver should immediately stop the vehicle and assess the situation and the threat to human health and/or the environment. Items may include:

- Over the road accident.
- Leaking transport vehicle (i.e., cargo tank trailer, roll-off trailer, dump trailer, and van trailer).
- Getting lost.
- Encounter mechanical
- Nature problems.


6.1.2. In the event of a minor leak that poses no threat to human health and/or the environment, the driver should take appropriate steps to control the leak.

6.1.3. If there is a spill, which requires State or Federal notification, Greenfield drivers will immediately report the incident to Greenfield emergency coordinators who will contact the applicable emergency response authorities.

6.1.4. If the emergency is of such magnitude as to threaten human health and/or the environment, Greenfield drivers will report the incident directly to the emergency response authorities and contact Greenfield's emergency coordinators for their respective facility.

6.2 Emergency Contacts

Greenfield Office: 801-676-1575

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CHEMTREC: 800-424-9300, as applicable

National Response Center: 800-424-8802

US DOT: 800-467-4922

After hours:

Shane Johanson: 435-669-6935

Jesse Garcia 801-550-8803

6.3 Incident Reporting Requirements


6.3.1 Provide the following information about the incident when reporting it to Greenfield Emergency Coordinators or emergency response authorities:

- Name of person reporting the incident.
- Phone number where reporting person can be contacted.
- Date, time, and location of incident.
- Brief description of the incident (i.e., spill, fire or other emergency).
- Volume of spill and source.
- Extent of injury (if any).
- Type of vehicle involved (i.e., roll-off, tank, van, etc.).
- License number of transport vehicle and the US DOT Number.
- Weather conditions at spill site.
- Extent of any contamination to land, water, or air (if known).
- Actions taken so far.

6.4 Manifest Reporting Requirements

6.4.1 Report the following information from the manifest:

- Shipping name, hazard class and UN/NA number for the waste spilled.
- Name and ID number of generator of the waste.
- The shipping name, hazard class, and UN/NA number of any other material carried on same vehicle.
- Total quantity of manifested waste.

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Note: Greenfield drivers have been trained and instructed not to leave the vehicle to make such notifications (i.e., 6.1.3 and 6.1.4 above) unless there is no danger to the general public, and/or the vehicle is under guard by a responsible individual. If possible, they are to have a responsible individual make such notification while they remain with the vehicle.

6.5 Guidelines for Reporting

6.5.1 Generator - Greenfield Project Manager will notify the generator whenever there has been a release or incident, which involves their hazardous and or radioactive waste. This will be completed for any amount of acute or non-acute hazardous or radioactive waste.

6.5.2 The National Response Center and Department of Transportation will be contacted, by the Emergency Coordinator, if any of the following occur:


- As a result of hazardous or radioactive material/waste, someone is killed or receives injuries requiring hospitalization.
- Estimated property damage exceeds \$50,000.00.
- An evacuation of the general public occurs, lasting one hour or more.
- One or more major transportation arteries or facilities are closed or shut down for one hour or more.
- The operational flight pattern or routine of an aircraft is altered.
- The incident presents a continuing danger to human health or the environment.
- The accident/spill involves radioactive material or etiological agents.
- A reportable quantity (RQ) of hazardous or radioactive material/waste is released.

6.5.3 In case the truck driver cannot reach the Greenfield office by phone, the driver should immediately contact the local police and fire departments by cell phone.

6.6 Written Report Requirements

6.6.1 The Emergency Coordinator will prepare the following written reports after any incident:

6.6.1.1 Greenfield shall report in writing, in duplicate, on DOT Form F5800.1 to the Department within 30 days of the date of discovery, each incident that occurs during the course of transportation (including loading,

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unloading, and temporary storage) in which any circumstances set forth in Section D occurs.

6.6.1.2 If any quantity of hazardous and or radioactive waste is released including the following with the F5800.1 Form:

- A copy of the hazardous and or radioactive waste manifest.
- An estimate of the quantity of waste removed from the scene, the name and address of the facility to which it was taken, and the manner of disposition of any removed waste must be entered in Section IX.
- A copy of the report shall be retained for a period of two years.
- Forward forms 5800.1 to the following upon completion:


Information Systems Manager
DHM-63
Research and Special Programs Administration
Department of Transportation
Washington, D.C. 20590

- State Environmental agencies are sent copies of the DOT written report, with any additional information required by the state in which the incident occurred.
- OSHA must be informed if anyone is killed or if five or more people are injured as to require medical care.
- Contact Greenfield Health and Safety for required internal reports.

6.7 Response Actions

6.7.1 Fire and Explosion: Fire and explosion are discussed together due to their close relationship.

- Personnel at the scene immediately clear the area and summon the fire department regardless of how small the fire or explosion appears.
- Greenfield Emergency Coordinators should be informed immediately.
- If the fire or explosion, or any subsequent release of hazardous and/or radioactive materials could threaten human health or the environment, notify local authorities and help them determine whether surrounding areas should be evacuated.

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- ONLY if a fire is small and well contained will personnel wearing protective clothing, attempt suppression with hand extinguishers.
- Personnel will assist firefighters with information, (i.e., nature of materials and associated hazards.). Only under the direction of the fire department will personnel become involved in fire suppression.
- Run-off of water or released wastes must be controlled (as for any other discharge) by use of dikes, berms, or absorbents. All storm drains, sewers, streams, or surface water must be protected if at all possible. These activities should be concurrent with fire suppression activities.
- When the immediate problem of fire or explosion is controlled, clean up and decontamination activities will be conducted as for a discharge.


6.7.2. Personnel Protection: As dictated by the actual hazards present, the following precautions may be taken:

- Response personnel don appropriate personal protective equipment.
- Absorbents or impervious material, such as plastic sheeting is spread under the vehicle to prevent or minimize ground contamination.
- Isolation of leaking containers from uninvolved personnel and other containers.
- If ignitable materials are involved, fire extinguishers should be kept at the scene and the fire department notified that they may be needed.
- Cordoning off the work area via ropes and/or warning signs.
- Prevent smoking, sparks, and open flames in the vicinity of flammable or combustible materials.

6.7.3. Evacuation Guidelines: If the incident could threaten human health or the environment notify local authorities and help them determine whether surrounding areas should be evacuated. Notify emergency coordinator so that the National Response Center or other agencies may be contacted if necessary.

6.7.4. Containment Procedures: Containment of discharged material should be accomplished by:

- Attempt to stop leaks from containers using plugs, bolts, duct tape, or harnesses as appropriate. The container may also be moved so that the leak is uppermost.

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- Diking or berming on firm or impervious surfaces, using vermiculite, Oil Dry, Soil or Hazard pillow, taking special care that materials do not escape to storm drains, sewers, streams, or other surface water.
- Ditching around discharges onto soil using shovels.
- Leaking containers may be opened and inspected with the intent to find any free liquids and add absorbents to stop the leakage.

6.7.5. Cleanup Guidelines: Cleanup operations may include, but are not limited to the following steps:


- Free standing liquids absorbed and placed into a suitable container.
- Solids, semisolids, absorbents, etc. shoveled or swept up should be placed in appropriate containers, and properly disposed of.
- Residual materials on the ground may be removed by:
 1. Digging up contaminated soil or even pavement if necessary.
 2. Neutralization if appropriate, for example: acids or bases.

6.7.6. Decontamination Guidelines:

- Emergency coordinators shall determine the extent of any potential pollution or contamination by sampling and analysis of soil, water, vegetation, etc. The sampling necessity may be determined by the nature of the incident, quantities involved, types of surface exposed, and hazards associated with materials, including factors such as toxicity and environmental persistence.
- All disposable contaminated items, such as: gloves, clothing, and hand tools are placed in appropriate, labeled shipping containers.
- Non-disposable equipment is decontaminated using appropriate decontamination agents and techniques, and debris from this decontamination placed in appropriate labeled containers.

6.7.7 Spills into Waterways, Streams, Rivers, Lakes, Ponds, etc.: In the event that such spill occurs, it must be reported to Greenfield and the appropriate authorities immediately.

6.7.8. Vehicle Inspection: Contaminated vehicle or area is checked for any damage, which may have been caused by the leak, such as corrosion.

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6.7.9. Transport/Disposal Requirements: All drums are manifested, sealed, and labeled per state, EPA and DOT guidelines and transported to a T/S/D facility for disposal.

6.7.10. Report Filing Requirements: The Greenfield Emergency Coordinator files any required notifications and or reports.


6.7.11. Medical Evaluation Requirements: Medical evaluation of responding personnel as dictated by the incident and material involved.

6.8 Safety Equipment: The following is a minimum equipment list, to be carried by each driver/unit, which transports hazardous and or radioactive material/waste including PCB's. This equipment is located in the cab of the tractor or hauling unit.

- First aid kit (includes eye wash chemical).
- Emergency tool kit.
- Fire Extinguisher (ABC dry chemical) minimum rating of 10 lbs.
- Disposable suits, gloves, boots.
- Hard hats.
- Sealant.
- Federal Motor Carrier Safety Regulations Pocketbook Parts 390-399.
- Driver's Pocket Guide to Hazardous Materials.
- Safety glasses.
- Snow chains (as season dictates).
- Copies of the Emergency Response Guide - Emergency Response Plan.
- CB radio and/or cell phone.
- 1 set of 3 bi-directional reflective triangles.
- Spare fuses.
- 6 mil plastic liner.
- Absorbent.
- Shovel.
- Flash Light.
- Five Gallon Pail.

6.9 Emergency Equipment

- In the event of an incident, which cannot be handled with supplies on the vehicles, Greenfield can respond with additional equipment and trained personnel.

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- Emergency equipment is maintained and decontaminated as necessary. Expendable items such as protective clothing are stocked in fairly large quantities. When contaminated by use, such items are placed in proper shipping containers and disposed of with any recovered spill debris. Non-expendable equipment, such as fire extinguisher, etc. is maintained per manufacturer's instructions. If these items become contaminated, and residues are packaged and disposed of with any recovered spill debris.
- If a vehicle becomes contaminated, it will be swabbed with a cleaning solution (primarily water) appropriate for removing or neutralizing the material. If decontamination of the floorboards is not possible in this manner, floorboards may be removed and replaced. This assures that the condition of the vehicle with regards to contamination is known and provides an added degree of worker safety, especially the safety of truck maintenance personnel who may not be aware of chemically related hazards.

7.0 RECORDS MANAGEMENT

- 7.1 All reports will be maintained in accordance with QAP 6.3 Records Management
- 7.2 Records shall be maintained for a minimum of 3 years beyond the performance of the work.
- 7.3 Records shall be maintained in compliance with the Standard Operating Procedure for records management and at a minimum be protected from the following:
- Deterioration
 - Damage
 - Loss
 - Unauthorized access

8.0 REFERENCES

QAP 6.3 Records Management

DOT Form F5800.1

APPENDIX E

BNSF System Emergency Response Plan



**System Hazardous Materials
Emergency Response Plan Summary for
First Responders**



“By failing to prepare, you are preparing to fail.”

— Benjamin Franklin —

www.BNSFHazmat.com

System Emergency Response Plan Summary for First Responders

In the event of a hazardous materials emergency, **Immediately Perform the Following:**

1. Take all precautions necessary to protect yourself, coworkers, and the public.
2. Check the wind direction.
3. Isolate and secure the immediate area and directly down wind.
 - ✓ Ensure that your employees and the public do not enter the affected area.
4. Obtain as much information on the situation as possible, including:
 - ✓ Car numbers
 - ✓ Commodities
 - ✓ Injuries
 - ✓ Amount spilled
 - ✓ Distance to homes and business
 - ✓ Bodies of water (lakes, rivers, streams) affected.
5. If spill may effect or may impact the general public, call 911.
6. Contact either the BNSF Service Interruption Desk (817-352-2832/817-352-2833) or BNSF Resource Operations Call Center (800-832-5452).



System Hazardous Materials Emergency Response Plan Summary for First Responders

If you have any questions regarding this plan summary, please contact Patrick Brady, BNSF General Director of Hazardous Materials Safety at

(817) 352-3652.

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1. Purpose

The purpose of the *Hazardous Materials Emergency Response Plan Summary for First Responders* is to provide and document the framework for BNSF and civil first responders to follow, in the event of a hazardous material incident. For purposes of this plan, an **incident** means a release, or potential release, of a material that may adversely affect human life, health, or the environment. This plan includes procedures for prompt notification of responders, shippers, and the public, as necessary, along with a description of their roles in response, post-incident critique, and follow-up. To ensure an effective response is carried out, it is extremely important that all involved personnel understand their assigned roles, so that sound decisions are made; and that action is initiated, in a timely manner.

BNSF recognizes its communities' and shippers' concerns, and its own responsibility to have an effective contingency plan. The plan must ensure reasonable response to minimize and control health, environmental, and liability risks. Railroads in the United States have primary responsibility for controlling incidents involving their operations, equipment, and property. BNSF recognizes and embraces this responsibility. With regard to hazardous material incidents, BNSF will utilize all available resources, including the knowledge and experience of our shippers, to safely mitigate an incident. In the event of an incident, the handling of the event will be performed with priority given to the protection of life, health, and the environment, in that order.

BNSF's System Emergency Response Plan (SERP) provides a map for our overall hazardous materials emergency preparedness. Included within our SERP are Local Reaction Plans (LRP), Geographic Response Plans (GRPs), and Local Emergency Response Plans (LERPs).

LRPs have been developed, and are a part of the SERPs, for locations that have a specific unique hazard that can endanger BNSF employees or the environment and may not be covered by the Local Preparedness Plans. BNSF LRPs are:

- Pueblo Chemical Agent Storage and Disposal Facility – Pueblo, CO

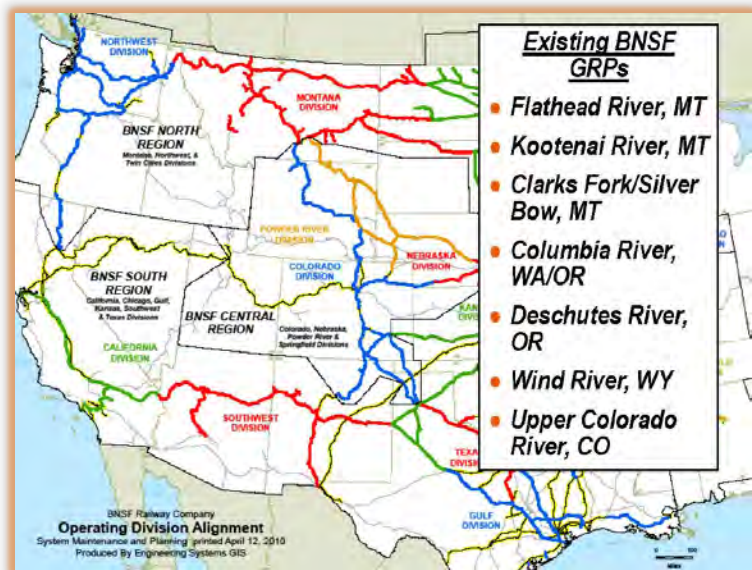
Geographic Response Plans (GRPs) provide a clear and comprehensive oil/hazardous materials emergency response plan for a specific body of water. The GRP includes maps of the emergency response strategies of how the spill is to be contained, in the quickest most efficient way, while minimizing the impact to the water body. GRPs also identify environmentally sensitive areas.

A GRP is developed to:

- Prioritize zones of response based on site specific social, cultural, environmental, microeconomic, and macroeconomic potential impacts.
- Understand unique site logistic constrains and topographic challenges.
- Identify solutions to site specific problems.
- Determine man power requirements.
- Define emergency response tasks, their execution priority, and location to successfully contain and clean the spill.

BNSF Completed GRPs:

- Flathead River GRP – Hi-Line and Kootenai
- Wind River GRP – Casper Subdivision
- Upper Mississippi and St. Croix GRP – St. Croix and Aurora Subdivision
- Wind River GRP – Casper Subdivision
- Deschutes River GRP – Oregon Trunk Subdivision
- Kootenai River GRP – Kootenai River Subdivision
- Colorado River GRP – UP's Moffat Subdivision
- Lake Pend Oreille (Sandpoint, ID).



Public (State or EPA) GRPs used by BNSF and adapted for BNSF Subdivisions and Mileposts:

- Columbia River – Fallbridge Subdivision
- Anacortes (WA) – Spur
- Bellingham (WA) – Subdivision
- Seattle (WA) – Subdivision.

BNSF GRPs planned or under construction:

- Upper Mississippi (Minneapolis, MN to Savanna, IL)
- Yellowstone River (Huntley, MT to Buford, ND)
- Missouri River (Napier, MO to Kansas City, MO)
- South Platte River (Brush, CO to Sterling, CO)
- Missouri River (Stanton, ND to Mandan, ND)
- Missouri River (Glasgow, MT to Williston, ND)
- Lake Almanor, CA.

The requirement for an LERP and exercise frequency is based on the amount and type of hazmat traffic, along with activity at the facility.

These plans provide the following:

- ✓ Local emergency notification procedures.
- ✓ Evacuation procedures.
- ✓ “Safe haven” locations for leaking hazmat packages.
- ✓ Available internal and external BNSF resource listings.
- ✓ LERPs can be found at primary yard, terminal, and/or intermodal facility offices.

LERPs and scheduled drills are required at the following locations:

Table 1

LERP Location	Exercises	LERP Location	Exercises
Amarillo, TX	Annual	Albuquerque, NM	Biennial
Avondale, LA	Biennial	Alliance, TX (Intermodal)	Annual
Bakersfield, CA	Biennial	Alliance, NE	Biennial
Barstow, CA	Annual	Ark City, KS	Biennial
Beaumont, TX	Biennial	Belen, NM	Biennial
Casey, TX	Biennial	Birmingham, AL	Biennial

LERP Location	Exercises	LERP Location	Exercises
Cicero, IL	Annual	Casper, WY	Biennial
Corwith, IL	Annual	Centralia, WA	Biennial
Dayton, TX	Annual	Clovis, NM	Annual
Emporia, KS	Biennial	Denver, CO	Annual
Eola/Aurora, IL	Biennial	Denver, CO (Intermodal)	Biennial
Fort Madison, IA	Biennial	Dilworth, MN	Annual
Fresno, CA	Biennial	El Paso, TX	Annual
Galesburg, IL	Annual	El Paso, TX (Intermodal)	Biennial
Galveston, TX	Biennial	Enid, OK	Biennial
Glendive, MT	Biennial	Everett, WA	Biennial
Hastings, NE	Biennial	Fort Worth, TX	Annual
Havre, MT	Biennial	Gallup, NM	Biennial
Houston, TX (New South Yard)	Annual	Gillette, WY	Biennial
Houston, TX (HUB)	Biennial	Hauser, ID	Biennial
Joliet, IL	Biennial	Klamath Falls, OR	Biennial
Kansas City – Argentine	Annual	Mandan, ND	Biennial
Kansas City – Murray	Annual	Memphis, TN	Annual

LERP Location	Exercises	LERP Location	Exercises
LA Terminal (Commerce, La Mirada, Hobart)	Annual	Memphis, TN (Intermodal)	Biennial
Lacrosse, WI	Biennial	New Westminster, BC	Biennial
Lafayette, LA	Biennial	Northtown, MN	Annual
Lincoln, NE	Annual	Oklahoma City, OK	Annual
Logistics Park, IL	Annual	Omaha, NE	Biennial
LPKC Edgerton, KS	Annual	Pasco, WA	Annual
Lubbock/Slaton, TX	Biennial	Phoenix, AZ	Biennial
Minot, ND	Annual	Portland HUB	Annual
New Orleans, LA (Intermodal)	Biennial	S. Seattle and SIG HUBs	Annual
Newton, KS	Biennial	Salt Lake City (Utah Railway)	Biennial
North Bay, CA (Intermodal)	Biennial	Seattle, WA (Interbay, Balmer)	Annual
Oakland, CA (Intermodal)	Biennial	Sioux City, IA	Biennial
Richmond, CA	Biennial	Spokane, WA (Intermodal)	Biennial
San Bernardino, CA	Biennial	Spokane, WA	Annual
San Diego, CA	Biennial	Springfield, MO	Biennial
Shelby, MT	Biennial	St. Joseph, MO	Biennial
Stockton, CA	Biennial	St. Louis, MO	Biennial

LERP Location	Exercises	LERP Location	Exercises
Stockton, CA (Intermodal)	Biennial	St. Paul (Intermodal)	Biennial
Teague, TX	Biennial	Superior, WI	Biennial
Temple, TX	Annual	Tacoma, WA	Annual
Watson, CA (LA Terminal)	Annual	Tulsa, OK	Annual
Wellington, KS	Biennial	Vancouver, WA	Annual
Whitefish, MT	Biennial	West Quincy, MO	Biennial
Wichita, KS	Biennial	Wichita Falls, TX	Biennial
Williston, ND	Biennial	Willmar, MN	Annual
Willow Springs, IL	Biennial	Winslow, AZ	Biennial

NOTE: LERP's, LRP's, and GRP's will only be made available to applicable agencies upon request and at the discretion of BNSF.

2. Notification Procedures

Notification procedures are initiated immediately following the report of an incident, potentially involving hazardous materials. An incident is considered an emergency, until complete information from the scene indicates that the situation is stabilized. It is essential that proper notification be initiated promptly to ensure a timely response.

a. Dispatcher, Trainmaster, or Yardmaster

A dispatcher, trainmaster, or yardmaster will generally receive the first report of an incident. This report will usually come from a train crew or switch crew. If a train crew or switch crew member is incapacitated, or the incident does not involve a train or switching movement (such as a car leaking at a siding), the initial report may come from a local emergency response agency through the Resource Operations Call Center (800-832-5452). The dispatcher, trainmaster, yardmaster, or Resource Operations Call Center (ROCC) will obtain as much information as possible, such as:

- ✓ Exact location of the incident.
- ✓ Initials and numbers of cars that may be involved.
- ✓ Commodities or materials involved.
- ✓ Severity of the incident, specifically situations that may pose immediate danger to life, health, or the environment.
- ✓ Circumstances of the incident.
- ✓ Weather conditions, including wind direction, at the incident site.
- ✓ Distance to the nearest populated areas.
- ✓ Possible impact to waterways.
- ✓ Where the train or switch crew can be located and how they can be identified.
- ✓ Any emergency response activities already initiated and by whom.

b. Service Interruption Desk (SID)

After the dispatcher, trainmaster, or yardmaster receives a report of an incident, notification will be made to the BNSF Network Operations Center's (NOC) Service Interruption Desk in Fort Worth (**North Operations at (817) 352-2832 or South Operations at (817) 352-2833**). The SID can also be notified through the Resource Operations Call Center (ROCC) at 1-800-832-5452 or (817)234-7200.

After the SID or the ROCC receives notification of an incident, they will first ensure that the other is notified of the event. The SID will then notify the following organizations:

- ✓ **Hazardous Materials and Environmental Responders (HMRs)** — The SID immediately notifies a sufficient number of the nearest BNSF HMRs.
- ✓ **US, Canadian, State, Provincial, and/or Industry Agencies** — As soon as possible, the SID will notify US, Canadian, State, Provincial, and/or Industry. These may include:
 - National Response Center (NRC) for NTSB, FRA, USCG, and USEPA notifications.
 - Transport Canada.
 - State or Provincial agencies, including the environmental agencies, offices of emergency services, public utilities commissions, and railroad commissions.
 - Center for Disease Control (CDC).
 - Nuclear Regulatory Commission (NRC).
 - Association of American Railroads (AAR) Bureau of Explosives.

The SID will provide agencies with supplemental reports, as changes in the incident are known during the emergency phases. Otherwise, HMRs will provide follow-up reports detailing incident circumstances.

- ✓ **Shippers and Customers** — As soon as reasonably possible, the SID will notify shippers whose shipments may be involved in the incident. The telephone number for this notification will be the number provided on the shipping paper, bill of lading, or waybill. If no emergency response telephone number is available, the SID will notify **CHEMTREC**, and request notification of the customer.
- ✓ **Resource Operations Center (ROCC)** — As soon as the ROCC receives notification of an incident, but after the SID and the ROCC, ensure the other is notified, the ROCC will notify the following:
 - **Civil Emergency Responders** — The ROCC will notify appropriate civil emergency responders if they have not been already notified.
 - **BNSF Departments** — The ROCC will notify and provide communication liaison between the scene and following BNSF departments:
 - Corporate, regional, and local claims representatives.
 - Special agents (for site security).

c. Hazardous Material and Environmental Responders (HMRs)

BNSF HMRs will contact either directly, or through the SID, the following groups, and will also provide follow-up information:

- ✓ Hazardous materials response contractors
- ✓ State and federal regulatory agencies
- ✓ Shippers.

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3. Public Relations

BNSF Corporate Relations will provide press releases for the news media. They will consult with shippers regarding specific product information for their press releases. When circumstances warrant, BNSF Corporate Relations will coordinate with the civil responders' Public Information Officer to provide a joint press release.

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4. Hazard Identification

The most critical aspect of response to a hazardous materials incident is the initial assessment of the situation. This assessment must be based on a thorough understanding of the hazards and potential hazards involved in the situation. Every incident involving a hazardous material is considered an emergency, until there is reasonable certainty that no hazardous materials have been released.

Typically, a train or switch crew will initiate an incident response by notifying a dispatcher, trainmaster, or yardmaster. The train crew can quickly determine if an incident may involve hazardous materials, by reviewing the train list or other shipping papers. Hazardous materials shipping papers identify hazards associated with the materials, along with response information that indicates proper handling and personnel protective measures. If the train or switch crew, for whatever reason, is unable to provide the needed information, the dispatcher, trainmaster, or yardmaster has access to the train list and emergency response information. Upon arrival at the site, the HMR will conduct a situation and safety briefing with the crews, trainmaster, yardmaster, or dispatcher. The briefing will consist of the car(s) and product(s) involved, nature of the release, evacuations, reported injuries, and response objectives. The HMR will provide instructions to the crews, trainmaster, yardmaster, or dispatcher on isolation zones and train/yard activities.

The HMR will make a thorough evaluation of the hazards and potential impact on life, health, and the environment. The HMR's evaluation will include:

a. Weather

- ✓ Current wind direction and speed
- ✓ 24-hour forecast.

b. Chemical Hazards

- ✓ Organic vapors, gases, and particulates
- ✓ Inorganic vapors, gases, and particulates
- ✓ Oxygen deficiency
- ✓ Specific characteristics of the chemicals involved
- ✓ Combustible vapors or gases
- ✓ Radiation.

c. Physical Condition of Materials Involved

- ✓ Solids, liquids, and gases
- ✓ Color
- ✓ Behavior (foaming, vaporizing, corroding).

d. Potential Pathways of Dispersion

- ✓ Air
- ✓ Surface water
- ✓ Ground water
- ✓ Land surface
- ✓ Ditches, wells, streams, and ponds.

e. Site Configuration

- ✓ Accessibility
- ✓ Characteristics (conducive to product containment or recovery)
- ✓ Post-emergency remediation factors (short term and long term).

The identification of hazards will vary in complexity, depending on the characteristics of the involved materials, incident site, and the severity of the incident.

5. Incident Level Classification

An understanding of the distinction between an incidental release of a hazardous material and a release that requires an emergency response, is fundamental to proper compliance with the provisions of OSHA's HAZWOPER regulations (29 CFR 1910.120 (q)).

Potential releases of hazardous materials that may occur along a BNSF owned track or yard can be categorized into three distinct groups, which include:

1. Releases that are clearly incidental regardless of the circumstances.
2. Releases that may be incidental or may require an emergency response, depending on the circumstances.
3. Releases that clearly require an emergency response, regardless of the circumstances.

Therefore, a system to classify incidents based on its severity and availability of resources is an effective tool in managing an actual or potential threat to human health or the environment. Incident level classification will help the first-arriving personnel initiate appropriate actions.

The criteria used to identify the severity of the incident are:

- ✓ Extent of injuries and/or deaths.
- ✓ Extent or need of evacuation.
- ✓ Extent of need for hazardous materials or environmental response specialists.
- ✓ Level of technical expertise needed to abate the incident.
- ✓ Extent of governmental involvement.

The first-arriving personnel will evaluate these factors to determine classification of the incident. The incident will then be assigned one of three categories based on severity.

a. Level I Incident

In Level I Incidents:

- ✓ No evacuation is required.
- ✓ First responders can contain and control the release without specialist support.
- ✓ BNSF HMRs or contractor first-response personnel can effectively manage and mitigate the release.

This is an incidental release of a hazardous material which does not pose a significant safety or health hazard to employees in the immediate vicinity or to the employee mitigating the release. It does not have the potential to become an emergency, within a short time frame. Level I incidents are limited in quantity, exposure potential, or toxicity, and present minor safety or health hazards to employees in the immediate work area and those assigned to mitigate the release. An example of a Level I incident, is a leak that can be stopped by tightening a valve. In this case, the shipper will be given non-emergency notification.

The OSHA HAZWOPER Standard does not require emergency response to incidental releases. An incidental release poses an insignificant threat to health or safety, and is safely mitigated by BNSF employees, in the area, who are familiar with the hazards of the chemical with which they are working, as allowed under OSHA Standards.

b. Level II Incident

In Level II Incidents:

- ✓ The release or potential release is effectively contained with specialized equipment and supplies employed by a HMR team.
- ✓ Evacuation is needed only in the immediate area of an actual or potential release.
- ✓ Governmental agencies respond with technical specialists.

Level II Incidents require BNSF HMR personnel and additional technical assistance from a BNSF strike team, environmental response contractor, industrial specialist, and/or government agency strike team.

A representative Level II Incident is a tank car that is involved in a derailment with a large quantity of its lading released on the ground or in a waterway. Appropriate BNSF personnel are mobilized immediately. HMR contractors, environmental response contractors, and shippers are notified immediately, as determined by the first-arriving personnel.

c. Level III Incident

In Level III Incidents:

- ✓ Releases are not properly abated with immediately accessible HMRs and equipment.
- ✓ Sustained evacuation of the surrounding area is required.
- ✓ Multiple governmental agencies are involved.

Level III Incidents pose major threats to life, health, or the environment. A representative Level III Incident is a derailment involving multiple, incompatible chemical products. Such an incident constitutes a major event and all appropriate departments, emergency response contractors, and shippers are immediately notified, for mobilization.

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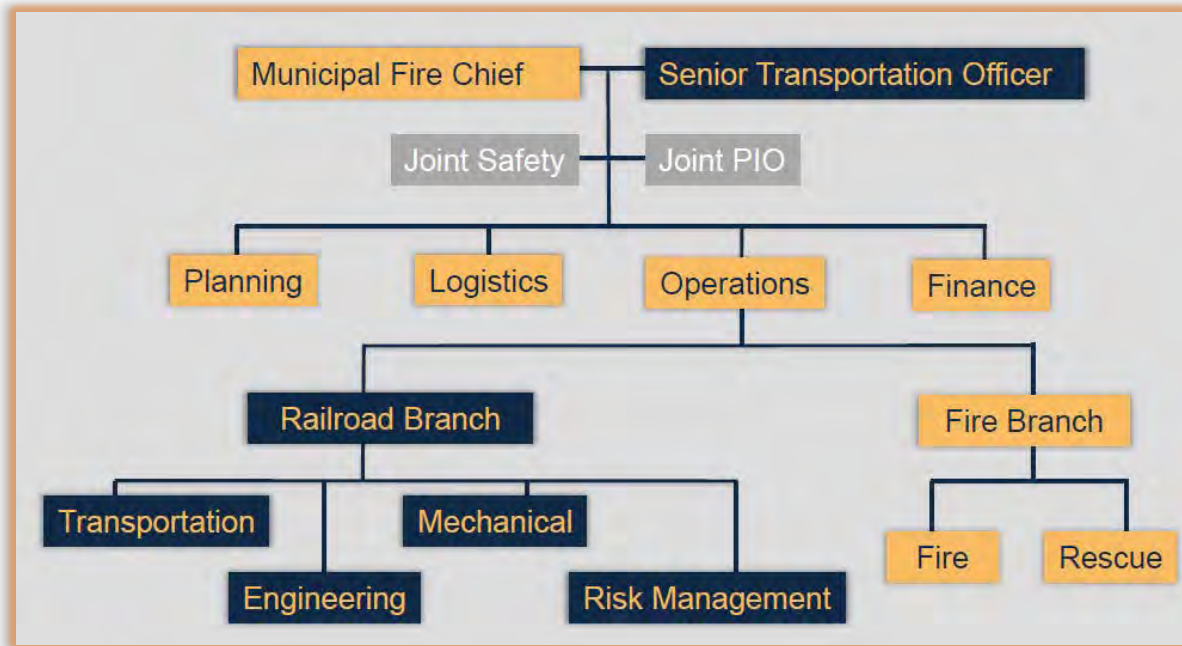
6. Incident Management

Depending on the level of an incident, the responsibilities and actions taken by various departments will vary. Because every detail of an emergency situation is not identified in advance, this section provides guidance and procedures to follow, when managing emergencies.

An Incident Command System (ICS), established on the National Incident Management System (NIMS) is necessary to effectively control an emergency situation. The typical steps and transactions of control are likely to progress, as follows:

1. A train or switch crew notifies the dispatcher, trainmaster, or yardmaster of an incident.
2. The highest-ranking BNSF officer at the site assumes the lead emergency management role, and becomes the BNSF Incident Director (ID). This company officer is responsible for all railroad activities at the incident, and works directly with civil authority's Incident Commander (IC).
3. Local, state, and federal regulations require that the civil IC be the individual in charge of the incident. However, it is BNSF's preference (because of our specific knowledge, experience, and training) to have control over the hazardous materials operations.
4. Regardless of who is managing the emergency, the objectives to ensure public safety and mitigate environmental damage are of primary concern. The first priority is human life and health.
5. The HMR uses the shipping documents to identify and verify the commodities involved. Information obtained from the shipping documents and other information provides an outline of chemical hazards involved. Guidelines for proper emergency handling of the product also accompany the shipping documents. If the train list or shipping papers are destroyed, additional copies are available by contacting the BNSF Customer Service Center at 1-800-786-2873.
6. The IC, BNSF ID, or the person who assumed the emergency management responsibilities should brief the HMR on the situation.
7. The HMR will conduct a situation and safety briefing with the crews, trainmaster, yardmaster, or dispatcher. The briefing will consist of the car(s) and product(s) involved, nature of the release, evacuations, reported injuries, and response objectives.

8. The HMR provides instructions to the crews, trainmaster, yardmaster, dispatcher, and BNSF Incident Director, on isolation zones and train/yard activities.
9. Because of their experience and specialized training, the HMR evaluates the stability of the incident. In many Level II and III Incidents, release of product occurs and timely action is essential to minimize damage. The HMR has authority to use available resources to initiate an appropriate response.



a. National Incident Management System (NIMS)

For incidents on significant water bodies or incident of national significance, a State or Federal NIMS structure needs to be established.

b. Control Zones

After the hazards are identified and the initial plan developed, the next action is to establish control zones:

- ✓ **Exclusion Zone** — The area that represents danger to life or health and is entered only with extreme caution. Depending on the material involved, special protective clothing and equipment is required to enter this zone. Appropriate reference resources are used to determine safe distances for this zone.

- ✓ **Contamination Reduction Zone** — Provides the forward-access point for exclusion zone support personnel. Decontamination stations are located in this zone.
- ✓ **Support Zone** — A safe area, where the Incident Commander and other functions that do not have a need to be closer to the incident, are located.
- ✓ **Evacuation Zone** — When needed, BNSF deploys third-party professionals to conduct air, soil, and water monitoring to determine and document the extent of contamination. This monitoring is used to increase or decrease evacuation zones.

c. Site Security

Areas around the danger area are controlled, during emergencies, by prohibiting unauthorized personnel from entering pre-established control zones. Emergency response is coordinated from a command post, a safe distance away from the exclusion zone. BNSF's Police and Special Agents have responsibility for site security and control, and are responsible for taking all actions and decisions required, under the circumstance, to save lives, prevent injuries, provide safety to the general public and BNSF personnel, and to protect property within the BNSF right-of-way. However, in many cases the local law enforcement agency may be the first to arrive on-scene, and began site security and management operations, prior to the arrival of BNSF Police. In these cases, the highest-ranking special agent has the responsibility to coordinate site security with the local law enforcement agencies. These entities work together to ensure that the site is secured, and will not allow unauthorized personnel or the public to enter the area.

Contracted security services are considered, if BNSF and the civil agencies cannot provide enough resources for proper security.

d. Safety and Operational Status Briefings

At periods predetermined by the Incident Commander (IC), BNSF Incident Director (ID), and the HMRs, safety and operational status briefings are conducted to determine the status of the incident, operations to be conducted over the next operational period, and all safety related issues. These briefings must be documented with the time and date of the meeting, those who attended, and topics of the briefing.

Upon completion of the IC's safety and operational status briefing, a designated HMR or the BNSF ID briefs BNSF employees and BNSF contractors at the site.

Other departments may have activities taking place outside the Exclusion Zone and Contamination Reduction Zone. These departments should be aware of ongoing emergency activities. When shifts change and new personnel are brought to the site,

they should be made aware of ongoing activities. The HMR is given appropriate relief, dependent upon the availability of qualified personnel, and the relieving HMR is briefed concerning the situation and intended plan, prior to assuming responsibility.

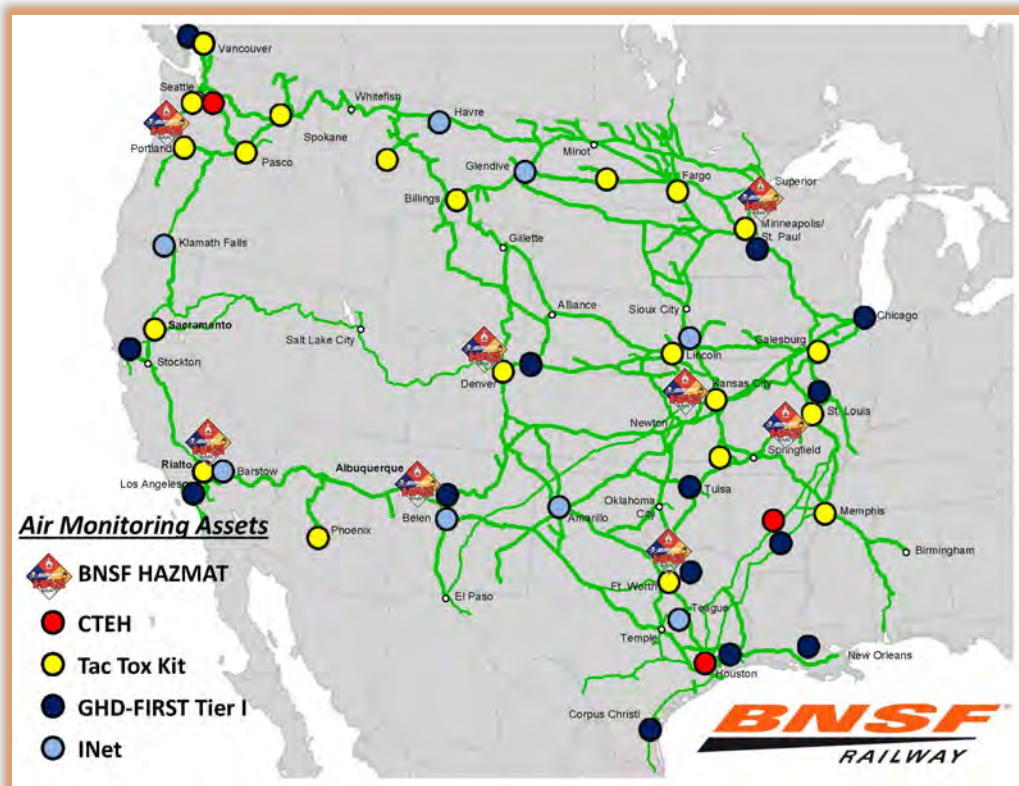
e. Contract Responders

As stated previously, local, state, and federal regulations require that the civil IC be the individual in charge of the incident. However, as it is BNSF's preference to have control over the hazardous materials operations, all private response contractors hired by BNSF work directly for BNSF. All tasks authorized or mandated by the IC must have the concurrence of the BNSF ID or HMR.

f. Air Monitoring Contractors and Assets

Air monitoring is used to quantify exposures to responders and the community. The results of air monitoring is critical in determining the required personal protective equipment for responders and evacuations and shelter in place needs in the community. Therefore, rapid mobilization of air monitoring assets are imperative.

BNSF Air Monitoring Assets – Locations



g. Emergency Management Contractors

Emergency management contractors provide emergency management systems and resources. These systems and resources include:

- ✓ Mobile command posts
- ✓ Portable command posts
- ✓ Communications
- ✓ Generators
- ✓ Bar coding of resources
- ✓ Crisis communication center.

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7. *DECIDE* Process

HMR uses the **DECIDE** process, when managing and mitigating a hazardous material incident. The **DECIDE** process follows these steps:

DETERMINE if there is a hazard by placards, shape of container, location and by freight bills or train list.

ESTIMATE harm without intervention.

CHOOSE response objectives

IDENTIFY action options.

DO the best option.

EVALUATE progress – have the options achieved the desired results?

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8. Response

The HMRs respond to the incident, as outlined below:

a. Assessment

HMRs conduct an assessment of the site to determine products involved and whether there are any containers leaking. If the containers are leaking, an assessment needs to be made whether the leaks can be stopped, slowed, and/ or contained. Additionally, damage assessment must be conducted on all tank cars involved in the incident, especially tank cars transporting compressed gases that have sustained extensive damage, without releasing their contents. However, tank car damage can lead to a delayed release of its contents. In one case, the release was delayed as long as 40 hours after the derailment.

b. Intervention Alternatives

Utilizing the **DECIDE** process, the HMRs determine the intervention alternatives.

c. Evaluations

The HMRs evaluate all of the intervention alternatives to identify the alternatives that provide the greatest efficiencies with the least risk.

d. Intervention Selection

The HMRs select the best intervention plan.

e. Concurrence by Incident Commander

Upon selection of the best possible intervention plan, the IC is briefed. It is imperative that the IC is provided with the intervention alternatives and the criteria for the selected procedure.

The HMRs and BNSF ID will ask the IC for concurrence with the plan.

f. Implementation

Upon getting IC concurrence, the intervention plan is initiated. During all phases of the implementation, the HMRs must assess their progress and reevaluate whether they chose the best option. If they have not, another intervention plan must be selected.

g. Mitigating the Release

Management of a hazardous material incident or environmental emergency should make every effort to mitigate the release of material, provided such actions can be taken without unnecessary risk to human life or health. Once the source of release is controlled, the next response is to determine the extent of contamination, while taking steps to mitigate further environmental damage.

9. Environmental

The Superfund Amendments and Reauthorization Act (SARA, or more commonly “Superfund”) is the controlling federal law that applies to an environmental release or significant threat of a release, as defined by the Act. Most states have a structure to manage their own Superfund programs. The purpose of Superfund is to establish a mechanism of response for the immediate cleanup of contamination from accidental spills and chemical releases. There are three types of responses under Superfund:

- ✓ **Removals** — the removal of impacted soil.
- ✓ **Remedial Actions** — utilizing designed technology such as pump and treatment.
- ✓ **Enforcement Actions** — penalties and fines assessed for noncompliance or non-action.

It is important to note that Title I of SARA ensures citizen involvement in all remedial and removal actions that last longer than 45 days; consequently, cleanup becomes a negotiated position with the regulatory agency that has jurisdiction. Therefore, the company must use every effort during an event to identify, document, and record all data relevant to the event. This information can be used to negotiate subsequent clean up criteria.

The information to establish a company position will usually come by understanding short-term and long-term effects to the environment. An understanding of the vertical and horizontal extent of contamination is needed, along with a risk assessment and a feasibility study that includes cost estimates. These reports, however, can take many days, if not weeks, to develop.

Once the imminent danger to human health is understood and action is under way to mitigate further damage, the preferred resources become more readily available with time. As a result, the immediate emergency may have come and gone by the time the final clean-up is completed, for major liquid spills or gaseous releases.

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10. Resource Utilization

Utilizing resources effectively minimizes exposure. Conversely, improper utilization of resources is very costly.

The HMR, working with the BNSF Incident Director (ID), has the authority to direct company resources and BNSF contractors to provide reasonable assistance to abate the emergency. As resources become available, the HMR will oversee the deployment of those resources to ensure the objectives of the plan are met. BNSF has primary responsibility for managing incidents involving its operations. The HMRs have training and experience to know their own capabilities and the capabilities of BNSF contractors and governmental agencies. The HMRs will have authority to marshal whatever resources are needed to mitigate the incident. BNSF will exercise prudence in utilizing every available resource to mitigate an incident involving hazardous materials and assure that this is carried out in a safe and environmentally sound manner.

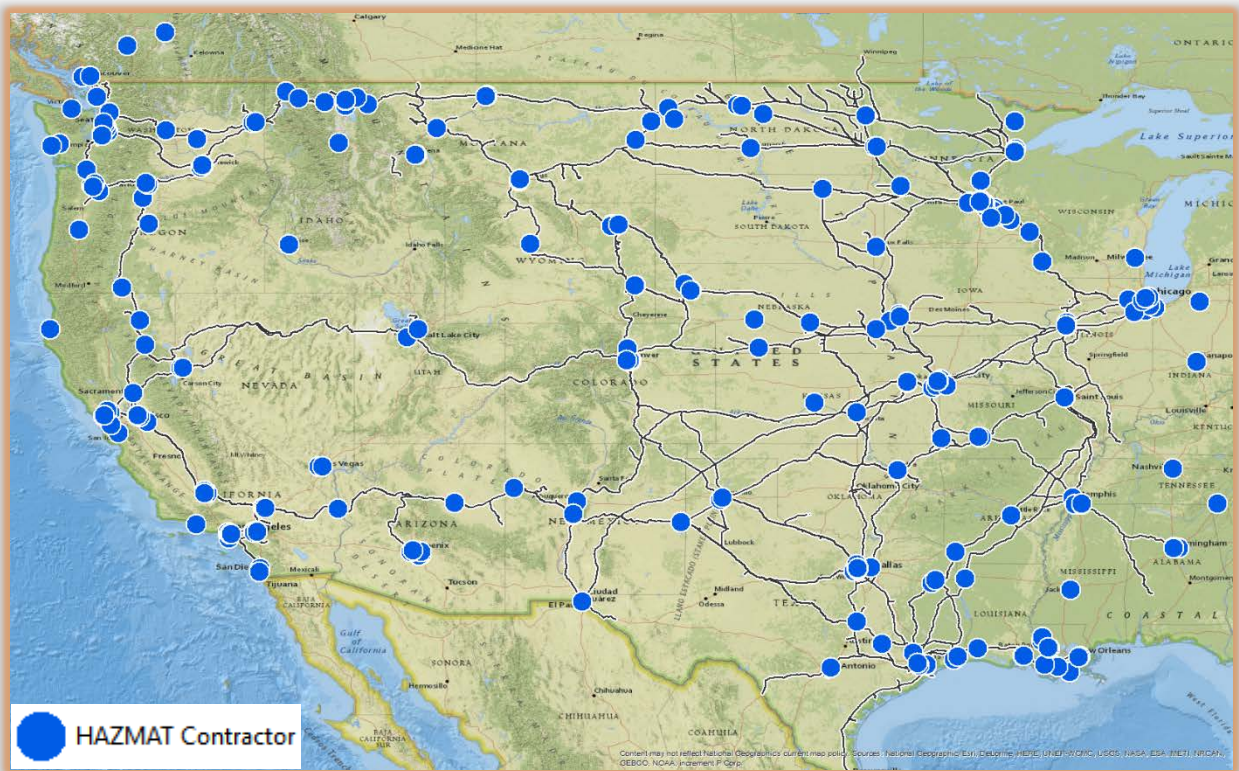
BNSF has established master service agreements with emergency response and environmental contractors who are capable of providing assistance at the incident site. Additionally, there are resources available from government agencies and associations that are useful in managing an emergency. BNSF also involves shippers, as primary contacts, when seeking technical information about a product.

a. Emergency Response Contractors

Emergency response contractors provide services including:

- ✓ Leak repair
- ✓ Commodity transfers
- ✓ Industrial fire fighting
- ✓ Environmental cleanup and restoration
- ✓ Oil Spill Response Organization (OSRO).

Emergency Response Contractors – Locations

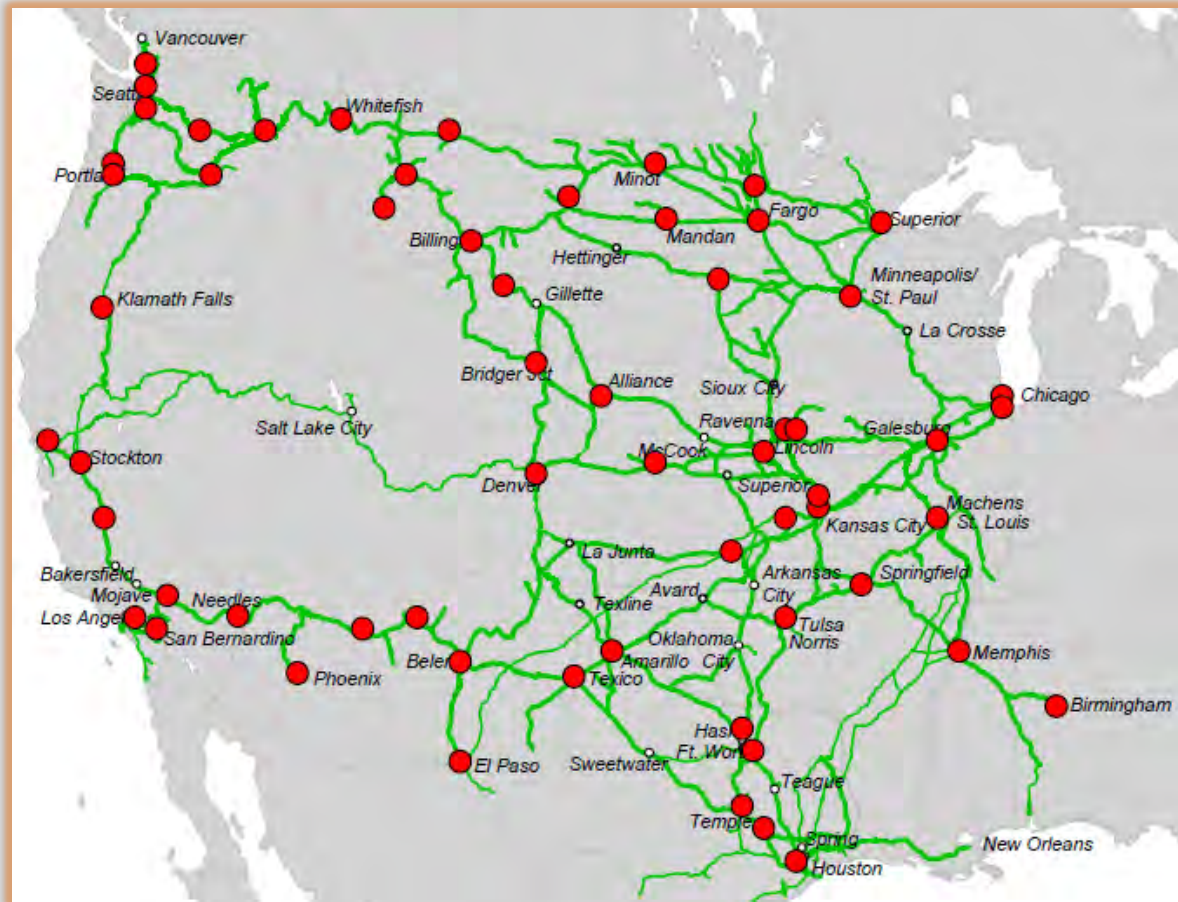


b. BNSF Hazardous Material Emergency Response Team (HMERT)

Trained HMERT members, located throughout the BNSF system, provide timely response to emergency situations. The HMERT program is comprised of employees from various departments.

Each member of the HMERT has completed 80 hours of initial training and 24 hours of yearly refresher training, and meets the requirements necessary to assume the responsibility accorded to a HMR. All HMRs are capable of Level A site entry. Equipment for a Level A entry includes self-contained breathing apparatus, appropriate encapsulating suits, and hand and foot protection.

HMERT – Locations



c. Hazardous Materials Response “Strike Team”

The HMERT program is augmented with BNSF technical specialists who comprise a Hazardous Materials Response “Strike Team.” The Strike Team, when needed, converges at the site of the hazardous materials incident, and provides technical assistance to the local BNSF HMR.

d. BNSF Heavy Equipment and Specialized Equipment

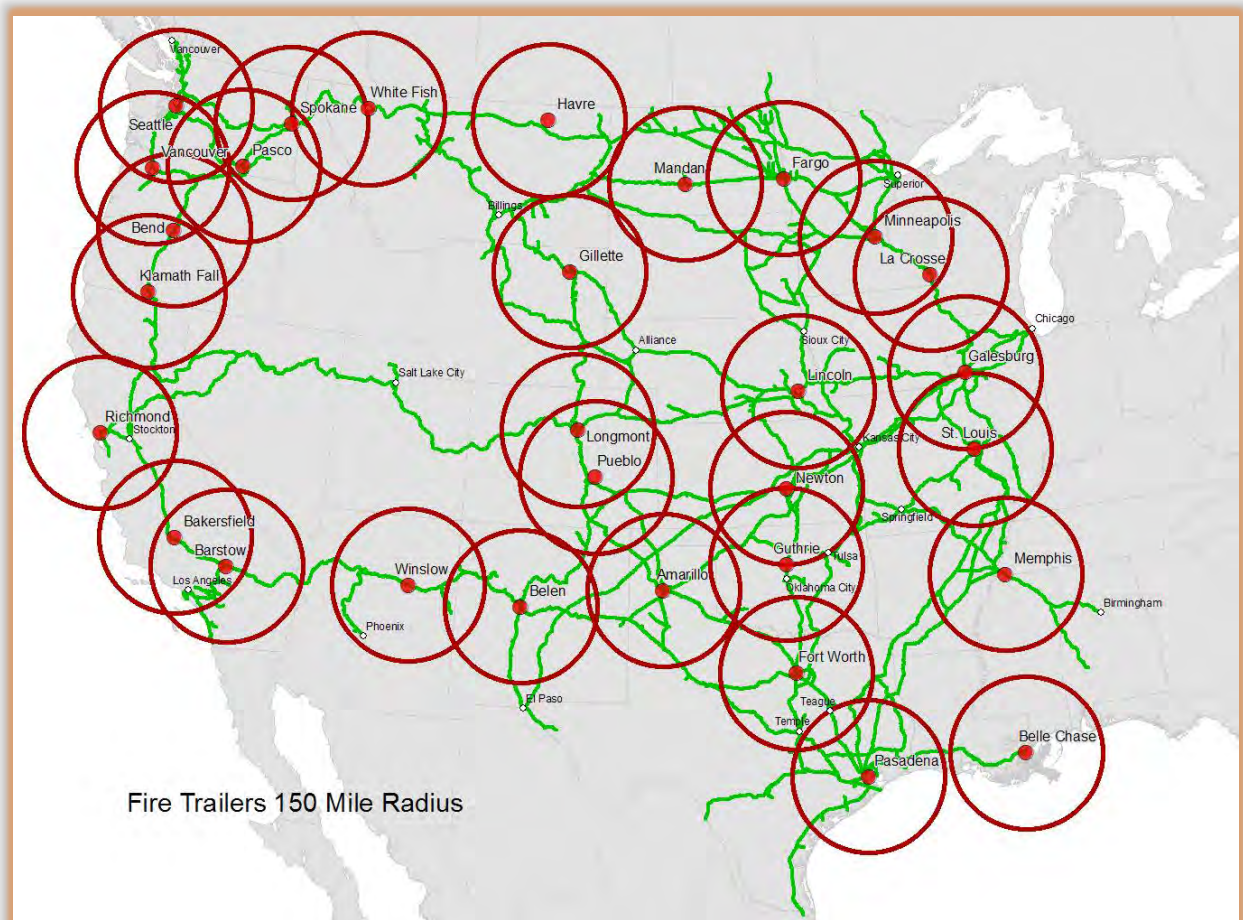
BNSF work crews have access to specialized equipment and to operators capable of moving supplies into incident sites. Remote areas may require specialized rail-mounted equipment to bring supplies or personnel to the site. BNSF has response equipment, such as cranes, material trucks, loaders, backhoes, and dump trucks. This equipment is available to build containment areas and transport supplies. BNSF also has fire trailers that are equipped with foam, hose, and pumps. Specialized mitigation equipment is also

available, and is spread throughout the BNSF network (see map). BNSF work crews, who are skilled in operation of the equipment listed above, may not be “40-hour” OSHA

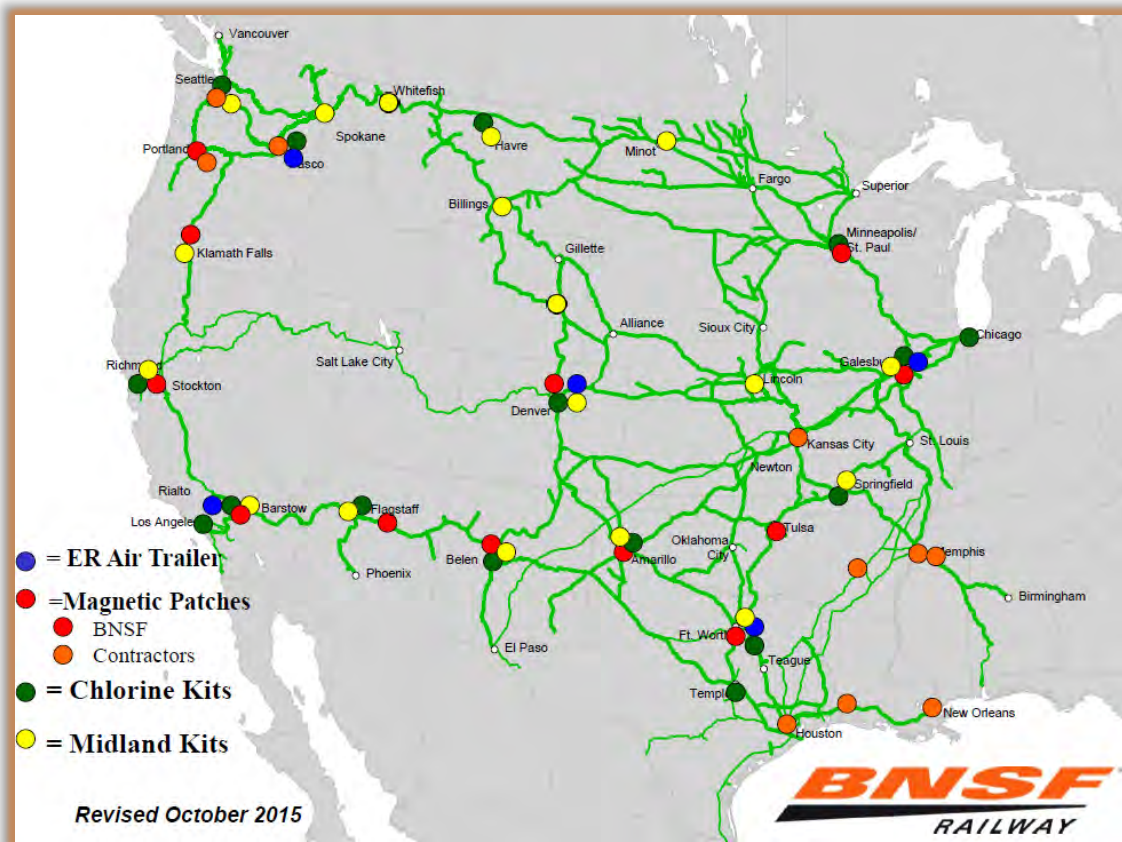
Trained, but can work at the site, as permitted by Section 1910.120(q) of 29 CFR. However, they are not expected to function as HMR, and must be given a safety briefing at the site, prior to their participation in any emergency response. The initial briefing includes the instruction of wearing appropriate personal protective equipment, what chemicals are involved, and what duties are performed.



BNSF Industrial Fire Fighting Trailers – Location Map



BNSF Specialized Hazmat Equipment – Location Map



e. BNSF Geographic Information System (GIS)

BNSF has developed a GIS that provides point-and-click information about specific locations on the BNSF rail network. The GIS is especially important in a situation that may impact the health and safety of local communities, as it provides rapid access to information about the rail infrastructure, chemical spill handling procedures, environmental risks, and demographic factors. This knowledge enables BNSF to quickly and effectively work with local emergency response agencies.

The GIS includes BNSF track locations and infrastructure data, as well as environmental and community demographics within several miles of the right-of-way. Several databases are integrated into the GIS, including:

- ✓ SAFER air dispersion model
- ✓ Database of local emergency contacts.

GIS also includes a database of street network data, including street names, which allows BNSF staff to locate problems reported by private citizens and local agencies.

f. Regulatory and Technical Support

When an incident meets the criteria established in 49 CFR 171.15, the SID notifies the National Response Center (1-800-424-0201) and state response centers, as required by law. The SID will notify shippers, whose shipments may be involved in the incident. The telephone number for this notification is the number provided on the shipping paper, bill of lading, or waybill. If no emergency response telephone number is available, the SID will notify **CHEMTREC**, and request notification of the customer. For incidents in Canada, the SID will contact CANUTEC (Canadian Transportation Emergency Center) (1-613-996-6666).

g. Municipal Responders

Typically, municipal hazardous materials responders are used at the discretion of the Incident Commander. Their roles vary, and may be used as entry, decontamination, or rescue. Additionally, municipalities may have resources, such as sand and heavy equipment that can be used for damming or diking.

h. Government Resources

If governmental resources are needed at the incident, the request for those resources is made through the Incident Commander.

i. BNSF Corporate Relations Department

The BNSF Corporate Relations Department receives initial notification from the SID. The ROCC and SID supply updated information, so that the Corporate Relations team will remain current on the status of the event.

11. Site Safety and Health Plan

A BNSF HMR or designee establishes a Site Safety and Health Plan. Although not specifically required under OSHA (29 CFR 1910.120(Q)), the Site Safety and Health Plan outlines and documents the hazards and mitigation of hazards at the site.

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12. Terminating the Incident

Systematic procedures must be followed for terminating a Level II or III hazardous material incident. Incident termination procedures are designed to facilitate any remaining cleanup or restoration actions that are required. The termination procedure will focus on:

- ✓ Proper decontamination of personnel and equipment to ensure that the contamination is not carried off-site.
- ✓ Proper disposal to ensure that all waste materials and products, resulting from the incident or generated by the response activities, are properly handled and documented.
- ✓ Site restoration and rehabilitation to ensure that reasonable measures are taken to allow for any site damage caused by the incident or response activities. Typically, final clean-up is a negotiated position with regulatory agencies.
- ✓ Medical surveillance to ensure response personnel, who were possibly exposed during the incident, are examined, as part of the termination phase, to document any health effects related to the incident.

a. Post-Incident Analysis

Following termination of an incident response, when applicable, BNSF Hazmat completes the DOT5800.1 hazmat release report form. The Asst. Director of Hazmat discusses with the HMR the following questions:

- ✓ **Procedures** — Were adequate or correct orders given and actions taken? Were these the result of sufficient information, good judgment, and procedures? Can procedures or training be improved?
- ✓ **Communication** — Was communication adequate? Was contact with appropriate resources readily available?
- ✓ **Involvement** — Were all responders sufficiently or properly involved in managing the response?
- ✓ **Equipment** — Was the hazmat equipment (BNSF and contractor) adequate? Are changes necessary?
- ✓ **Contractors** — Were the hazmat contractors adequate? Are changes necessary?

When requested, HMR and Hazmat Group participates in after action meetings with community responders.

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13. Responsibilities

The responsibilities listed in this section should be followed as closely as possible; however, judgment, based on actual circumstance, must be the final guide for protecting lives, property, and the environment.

a. Incident Director

1. Upon reporting to the incident Emergency Command Post, the most senior railroad official takes over as BNSF Incident Director (ID), and can dismiss the train crew and/or junior officer of their ID duties.
2. Review the status of the emergency.
3. Interface with civil emergency responders, and ensure that they have all the information they need.
4. Review civil responders plan of actions, and give input, where it is needed.
5. Jointly, with representatives from the HMERT, environmental, and the civil Incident Commander, determine a mitigation and clean-up plan, as outlined in the ***Incident Management*** section of this plan.
6. Ensure that all government agencies are notified, as required.

b. BNSF Hazardous Material Responders

1. The Service Interruption Desk notifies the BNSF HMRs of any incident involving, or potentially involving, hazardous materials. If the responder is notified by anyone else, or is the first to detect a situation, immediate notification must be made to the appropriate area operation official and the SID.
2. At the scene, the HMRs serve as advisors and resources to the BNSF Incident Director and the civil Incident Commander.
3. If safe to do so, the HMR will:
 - Determine the location and the status (health, injuries, medical) of all employees or involved persons, and determine if emergency support services are required.
 - Determine a safe perimeter.
 - Assess the degree of contamination to the environment.

- Determine if assistance or additional resources are required, and if so, advise the ID, IC and/or SID so the resources (medical, shipper, contractor, etc.) are obtained.
4. Evaluate the situation, prior to entering the area, as follows:
 - Identify the commodities involved.
 - Determine what dangers the materials, containers, and possible conditions present.
 - Consult the shipper and the BNSF monitoring and personal protective equipment guide to select the correct protective clothing, respiratory protection, and monitoring equipment.
 - Confirm that there is proper back-up, and use the buddy system.
 - Determine the extent of damage to hazardous materials containers, by assessing the scene remotely and by entry.
 - If possible, monitor the atmosphere for contamination (flammable, toxic, etc.) and oxygen levels.
 - Monitor environmental contamination for leaks or spills.
 5. Follow the **DECIDE** process and the procedures outlined in the ***Incident Management*** section of this plan.

All the responder's actions must be consistent with the capabilities of the individual HMR and the protective equipment available.

c. Directors and Managers of BNSF Hazmat

1. Contact and mobilize hazmat and remediation contractors, when needed.
2. Coordinate all site remediation activities with BNSF's Incident Director, civil Incident Commander, and BNSF HMRs.
3. Ensure that local, state, and federal regulatory agencies are notified and are aware of the environmental and remediation activities.
4. Manage all site environmental sampling and monitoring activities.

d. BNSF Police and/or Special Agents

Provide and coordinate site security with local law enforcement agencies.

e. Corporate Relations

1. Schedule, coordinate, and manage periodic press releases and/or interviews.
2. Maintain a log of key events and press inquiries.
3. Provide a liaison between the BNSF on-site personnel and the media.
4. Provide and manage external and internal communications of the incident.
5. Interface with HMRs, environmental, and industrial hygiene personnel to ensure that press releases are technically correct and scientifically sound.

f. BNSF Claims

1. Establishes a claim center for displaced citizens/businesses due to evacuation.
2. Investigates property loss claims.
3. Provides disbursement to affected parties, as applicable.

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14. Security

The purpose of this section is to provide information on the security plans BNSF has in place to protect hazardous materials shipments, as required by the federal regulations in 49 CFR, Part 172.800-802.

The railway industry, in collaboration with the Association of American Railroads, American Chemistry Council, The Fertilizer Institute, and others, has formed a Railroad Security Task Force to develop and maintain a Terrorism Risk Analysis and Security Management Plan. Components of this plan identify risks associated with the transportation of hazardous materials and specific countermeasures that are commensurate with the railway's threat level. For security reasons, specific countermeasures remain on a **strict** need-to-know basis, and are provided to the responsible individuals as a need develops.

a. Threat Levels

The threat level is determined by using a model to establish the level of risk. Risk assessment includes the type of asset, vulnerability, and the threat, which is driven by intelligence information. It accounts for risks to the population, national economy, and national security. There are four established threat levels:

- **Level 1** — New/normal day-to-day operations.
- **Level 2** — Heightened security awareness.
- **Level 3** — Credible threat of an attack on U.S. or the railroad industry (subject to continuous reevaluation).
- **Level 4** — Confirmed threat of attack against the railroad industry or an actual attack in the U.S. (up to 72 hours and reevaluated).

b. Unauthorized Access to Hazmat and En Route Security

Hazardous materials shipped on BNSF receive special identification on waybills, track and train list inventories, and special handling (including in-train placement checks and automatically updated train list entries). Emergency response information is provided to train crews and operations managers.

c. Community Training

Our hazmat team has a strong commitment to training local responders on hazmat awareness and emergency response. We want to ensure that we can work with communities, and respond quickly in the unlikely event that a hazmat emergency occurs.

The training focuses on identifying and training fire departments and emergency responders in smaller communities along our rail lines, areas where trained emergency responders are less common. Through this program, BNSF trains approximately 4,000 responders per year.

Committed To Safety



IN PARTNERSHIP WITH



www.BNSFHazmat.com

APPENDIX F

Great Lakes Reload Hazardous Materials Handling Safety and Spill Protection Protocols





Great Lakes Reload
13535 South Torrence Avenue
Chicago, IL 60633
(773) 646-6363

Joe Marias – General Manager

Project Site: Former Carnotite Site Remediation
434 East 26th Street
Chicago, IL

Project Description: 22,000 tons of hazardous soil packaged in 9 yard soft sided IP-1 bags. Bags delivered to the Great Lakes Reload (“GLR”) in 22 ton capacity end dump trucks, 2 bags per load. Volume of material shipped weekly will be approximately 1600 tons. GLR to provide enough unloading and track space to accommodate transferring bags from end dump trailer to high-sided gondola railcars with approximate 105 ton capacity. GLA will provide crane equipment and operator to safely perform unloading and loading activities at the transload facility.

General Hazmat Safety Procedures

What processes do you have to ensure you and your employees are remaining safe?

The Haz-Mat BAGS arrive closed via 3rd party trucks. The truck drivers drop the paperwork off with the office and then proceed to truck unloading area. The bags are inspected for tears but are not opened, they are simply picked from the truck and placed in to the customers dedicated railcars and documented for way-billing. Employees never open or come into contact with the contents of the loaded bags. The bags themselves are picked up and transported by mechanical means only.

Should contamination or spill occur, what process would you follow?

In the event of an identified spill or release, the employee who notices the issue is instructed to identify the bag by the truck receiving number and immediately report the incident to Terminal Management for immediate action. Terminal Management, will then cross reference that number with the manifest in the office to identify the bag & truck number. The bag and release will be assessed to determine what containment and cleanup procedures are required to rectify the issue. The customer will be contacted and notified of the incident in order to gain their concurrence and/or insight to the necessary next steps. Spill containment kits are on site at Great Lakes Reload.

If the material is hazardous, the customer will be contacted in order to gain additional information about the contents of the bag and what associated hazards may be affiliated with its contents and subsequent release. If the customer is unreachable in a reasonable timeframe, the emergency contact number on the top of the associated hazardous waste manifest will be called for further instruction.

How will you prevent accidents or spillage?

The bags are picked up vertically and are not tipped from side to side which would create potential for spillage or tearing. In the event the bags go to ground prior to rail loading the bags will be stored on asphalt or on concrete, so in the event of a release environmental impacts should be to a minimum.. Any spillage would be contained using the onsite spill containment kits.

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