

**Transportation Plan**  
**for Phase B Soil Remediation of Remediation Zones RZ-B through RZ-E**  
**Tronox, LLC**  
**Henderson, Nevada**

May 4, 2010

*Prepared For:*

Tronox LLC (Owner)  
560 W. Lake Mead Parkway  
Henderson, Nevada 89015

*Prepared By:*

Northgate Environmental Management, Inc.  
300 Frank H. Ogawa Plaza, Suite 510  
Oakland, California 94612



---

Deni Chambers  
Principal-in-Charge



---

Derrick Willis  
Project Manager



---

Ted Splitter, P.E.  
Principal Engineer



## TABLE OF CONTENTS

<b>ACRONYM LIST</b> .....	<b>III</b>
<b>1.0 INTRODUCTION</b> .....	<b>1</b>
1.1 Background.....	1
<b>2.0 PURPOSE AND OBJECTIVES</b> .....	<b>3</b>
<b>3.0 CHARACTERISTICS OF MATERIALS TO BE TRANSPORTED</b> .....	<b>4</b>
3.1 Material Sorting .....	4
3.2 Material Classification .....	4
3.3 Quantity of Material to be Transported .....	4
3.4 Transportation Regulations and Requirements .....	5
<b>4.0 DESTINATION OF MATERIAL</b> .....	<b>6</b>
<b>5.0 MODE OF TRANSPORTATION</b> .....	<b>7</b>
5.1 Transport Company .....	7
5.2 Transportation Vehicles/Containers.....	7
<b>6.0 TRANSPORTATION ROUTE, SCHEDULING, AND EMERGENCY CONTACTS</b> .....	<b>8</b>
6.1 Transportation Routes.....	8
6.2 Scheduling of Transport.....	9
6.3 Emergency Contact.....	9
<b>7.0 ON-SITE TRAFFIC CONTROL AND LOADING PROCEDURES</b> .....	<b>10</b>
7.1 Location of Work Areas.....	10
7.2 Safe Loading Procedures .....	10
7.3 Decontamination Procedures .....	10
7.4 Inspection Procedures .....	11
<b>8.0 SITE-SPECIFIC TRAFFIC MANAGEMENT AND CONTROL</b> .....	<b>12</b>
8.1 Traffic Flow Patterns and Designated Areas for Vehicles.....	12
8.2 Signage and Traffic Control Devices.....	13
<b>9.0 RECORD KEEPING</b> .....	<b>14</b>
9.1 Transportation Records .....	14
9.2 Required Transporter Records .....	14
<b>10.0 HEALTH AND SAFETY</b> .....	<b>15</b>
10.1 Training Requirements for Workers .....	15
10.2 Communication of Health and Safety Procedures to Drivers .....	15
<b>11.0 CONTINGENCY PLAN</b> .....	<b>16</b>
11.1 Purpose of Contingency Plan.....	16
11.1.1 Emergency Response Procedures .....	16
11.1.2 Personal Protective and Emergency Equipment .....	17
11.1.3 Required Transporter Records .....	17
<b>12.0 REFERENCES</b> .....	<b>18</b>



## **FIGURES**

- 1 Site Location Map
- 2 Site Plan
- 3 Map Showing Route to Apex Landfill
- 4 Map Showing Route to U.S. Ecology Landfill

## **APPENDICES**

### **A EMERGENCY CONTACTS**

- Table A-1 Nevada Highway Patrol (NHP) Locations and Contact Numbers  
Table A-2 Emergency Contact Telephone Numbers

### **B DEPARTING VEHICLE TRANSPORTATION INFORMATION**

### **C TRANSPORTATION MANIFESTS**



## ACRONYM LIST

<b>Acronym</b>	<b>Meaning</b>
BMPs	Best Management Practices
NSR	Nevada Revised Statutes
NHP	Nevada Highway Patrol
DOT	Department of Transportation
HSP	Health and Safety Plan
POV	Personally-owned Vehicle
PPE	Personal Protective Equipment
NDEP	Nevada Division of Environmental Protection
RCRA	Resource Conservation and Recovery Act
SSO	Site Safety Officer
TP	Transportation Plan
U.S. EPA	U.S. Environmental Protection Agency



## 1.0 INTRODUCTION

This Transportation Plan (TP) has been prepared by Northgate Environmental Management, Inc. (Northgate) on behalf of Tronox LLC (Tronox) to address the transportation issues associated with the remediation of chemical-affected soil at the Tronox LLC Henderson Facility (the Site) located in Henderson, Nevada.

This report presents the transportation plan for the proposed remediation work, including building abatement and demolition, removal of structures including above and underground utilities and excavation, potential temporary stockpiling, loading and off-Site transport of materials and soil for disposal in accordance with the *Removal Action Work Plan for Soil, Remediation Zones RZ-B, RZ-C, RZ-D, and RZ-E, Tronox Facility, Henderson, Nevada*, dated May 4, 2010 (RAW; Northgate, 2010a). The RAW specifies removal of soil that exceeds the Basic Comparison Levels and Risk Based Cleanup Levels for the Site. Figure 1 identifies the location and configuration of the Site.

This TP addresses transportation measures for the proposed work at the Site, which includes:

- Demolition;
- Excavation;
- Debris segregation;
- Soil stockpiling and treatment;
- Off-Site hauling and disposal of excavated soil and demolition debris for disposal; and
- Off-Site hauling of recyclable materials.

Site features including proposed excavation areas, on-Site haul roads, and Site entrances and exits as shown on Figure 2.

### 1.1 Background

The Site is located roughly 13 miles southeast of the City of Las Vegas in an unincorporated area of Clark County, Nevada, and lies in Sections 1, 12 and 13 of Township 22 S, Range 62 E. The approximately 450-acre Site is located within the Black Mountain Industrial (BMI) complex, a 2,330-acre site comprising multiple chemical plants and operations, one of which is the Tronox facility. The Site is crossed by asphalt concrete roads, unpaved roads, and railroad spurs. Two of the rail spurs are still in service. A drainage ditch (Beta Ditch) crosses the Site from west to east.



Manganese tailings have been stockpiled and capped with soil over approximately 8.6 acres in the eastern central portion of the Site. This material is a non-hazardous solid waste product generated in the production of electrolytic-grade manganese dioxide. The total volume of this stockpile is approximately 213,000 cubic yards (ENSR, 2007). Tronox plans to relocate this historic tailings stockpile to the Apex landfill, consistent with its ongoing transport and disposal of the manganese tailings generated by its current manufacturing operations. The historic tailings pile will be removed from the Site between approximately May to July, 2010. This work will involved installation of various erosion and sediment control measures in accordance with Tronox's existing NPDES stormwater permit and SWPPP. These measures include installation of silt fences and gravel bag barriers to limit sediment erosion and retain runoff on the Site. Therefore, removal of the manganese tails will not be governed by this SWPPP.

Within the boundaries of the Site are the Sale Parcels A, B, C, D, E, F, G, H, and I. These parcels are at the edges of the Site at the north, west, and south sides. The Sale Parcels are not currently in use. The RAW does not include any removal actions on the Sale Parcels. Excavation of impacted soil on the Sale Parcels has been addressed in accordance with a work plan submitted to and approved by NDEP (Basic Environmental Company, 2008). Excavation and removal of soil from the Sale parcels began in March 2010 and will be completed in April 2010.

Approximately 213 acres will be accessed during construction activities addressed in this TP, including soil excavation over 170 acres. The remaining 237 acres in the southern portion of the Site will not be accessed during this project and are not subject to this TP.

The construction activities addressed in this TP will be conducted in accordance with the approved RAW and its support plans. The RAW specifies removal of soil from proposed excavation areas at the Remediation Zones RZ-B, RZ-C, RZ-D, and RZ-E. The layout of the Site including the Remediation Zones is presented as Figures 2. The following support plans will be implemented as part of the RAW:

- Dust Mitigation Plan and Clark County Dust Control Permit (Northgate 2010b);
- Perimeter Air Monitoring Plan (Northgate 2010c);
- Transportation Plan (Northgate 2010d); and
- Storm Water Pollution Prevention Plan (Northgate 2010e).



## **2.0 PURPOSE AND OBJECTIVES**

This TP has been prepared to specify and outline safe practices for off-Site transportation of materials including chemically affected soil and on-Site handling of materials and equipment that will require transportation during work to be conducted pursuant to the RAW. The scope of this TP also includes potential transportation of import soil for backfill and materials for construction of Best Management Practices in association with stormwater pollution prevention measures.

In addition, this TP specifies that traffic control measures will be required and implemented by the Contractor during demolition and remediation activities to be conducted at the Site.



### **3.0 CHARACTERISTICS OF MATERIALS TO BE TRANSPORTED**

Implementation of the RAW will require the removal and off-Site disposal of soil, construction and demolition debris, and other solid wastes generated during the project. Based on the Phase A and Phase B ECA investigations at the Site, most of the soil to be removed is suitable for disposal at a Class I landfill as non-hazardous waste. Some of the excavated soil may be classified as a hazardous waste based on the toxicity characteristic. None of the waste materials to be transported are anticipated to be reactive, corrosive, or ignitable.

#### **3.1 Material Sorting**

Initially, it is anticipated that the Site will be cleared of surface improvements (e.g., buildings, chemical plant manufacturing structures, debris, pavement, concrete slabs) and vegetation, except for those buildings and Site features that have been designated to remain (See Figure 2). Surface materials will be loaded into trucks and stockpiled at the Site for material segregation prior to transport to the designated disposal or recycling facility.

In accordance with the RAW, soil will be excavated, loaded, and transported for disposal at an approved off-Site landfill or temporarily stockpiled in a designated staging area for subsequent loading, transport, and disposal. Materials destined for off-Site disposal will be managed as (1) non-hazardous waste; (2) hazardous waste; or (3) recyclable materials.

Republic Services, Inc., the operator of the Apex Landfill located in Las Vegas (the intended destination for non-hazardous materials) does not require debris to be segregated from soils. If soil that is classified as a hazardous waste contains debris, some or all of the debris may be removed prior to off-Site disposal of this material. Debris may be segregated and stockpiled according to visual classification of debris type, and subsequently evaluated for off-Site recycling or disposal as hazardous or hazardous waste.

#### **3.2 Material Classification**

Material to be transported off-Site will be classified in accordance with Nevada laws and regulations and landfill facility requirements.

#### **3.3 Quantity of Material to be Transported**

Excavated soil is the primary waste to be hauled from the Site. Additional materials to be transported off-Site will include construction and demolition debris and other solid wastes. Based on available information, estimated quantities of the different waste streams, and the number of trucks required to





transport the materials from the Site, are shown in the table below. Truck capacity may vary from 20 to 40 tons depending on the types of trucks selected by the Contractors. Material types and quantities to be off-hauled could vary significantly depending on field conditions and characterization results.

**ESTIMATED QUANTITY OF MATERIAL AND TRANSPORTATION CAPACITY**

<b>Material Classification</b>	<b>Quantity (tons)</b>	<b>Number of Trucks per Day/Number of Days</b>
Non-Hazardous Soil	440,000	150/220
Hazardous Waste	24,000	150/8
Construction and Demolition Debris (e.g., concrete) (presumably Non-RCRA Hazardous)	1,000	50/1
Recyclable Materials (e.g., scrap metal)	500	25/1
Aggregate Base (BMP)	10,000	150/4
Backfill	TBD	TBD

**3.4 Transportation Regulations and Requirements**

Materials will be transported from the work area in accordance with applicable State and Federal regulations, including 49 CFR Parts 100-199 and 350-399, 40 CFR Parts 260-268, and State of Nevada regulations. All material that is classified as hazardous waste will be properly manifested and transported in accordance with Nevada Highway Patrol (NHP) requirements (i.e., valid registration, proof of insurance, and inspection of vehicles).



#### 4.0 DESTINATION OF MATERIAL

Material will not be transported out of the work area until it has been appropriately classified and a landfill and transporter have been designated. Northgate/Tronox will review analytical data, waste profile information, and waste classification details prior to off-hauling wastes from the Site.

Materials identified for off-Site deposit may be temporary stockpiled at designated on-Site areas until they have been appropriately characterized and approved for deposit at the selected receiving facility.

The following is a list of operating disposal and recycling facilities that have been identified for possible use.

Nevada Class I & II landfill for non- hazardous waste:

<b>Apex Regional Landfill Facility</b>	Republic Services, Inc.
<b>Facility Address:</b>	13550 North US Highway 93 Las Vegas, NV 89165
<b>Point of Contact:</b>	Fred Hayes
<b>Telephone:</b>	(480) 353-1301

Nevada Class I landfill for hazardous waste:

<b>U.S. Ecology Landfill and Resource Recovery Facility</b>	American Ecology Cooperation
<b>Facility Address:</b>	Highway 95, 11 miles south of Beatty Mile-marker 47, Beatty, NV 89003
<b>Point of Contact:</b>	Debbie Baker
<b>Telephone:</b>	1 (800) 239-3943

Northgate/Tronox may identify other facilities that are not listed above. The Contractor shall identify recycling/processing facilities for the off-Site removal of recyclables. Materials will be transported directly to the above receiving facilities. Maps illustrating the routes from the work area to the above landfills, the estimated travel time, and the contact person, address, and phone number, are presented in Figures 3 and 4.



## **5.0 MODE OF TRANSPORTATION**

### **5.1 Transport Company**

The companies transporting excavated material will be licensed transportation companies designated by the General Contractor in charge of the demolition and excavation activities. For any loads classified as hazardous waste, the transporter will be required to provide proof of valid registration as a hazardous waste hauler. A copy of the Contractor's selected waste hauler's Nevada Hazardous Waste Transportation Registration will be provided by the Contractor to Northgate and will be attached as Appendix B to this document.

### **5.2 Transportation Vehicles/Containers**

Materials removed will be transported in placarded trucks, Nevada Department of Transportation- (DOT) approved bins, and/or steel rail car containers. The type of vehicles used to transport material from the work area may include end-dump trucks, truck tractors that transport bins, and/or pin trailers pulled by a tractor (approximately 10 to 40 ton capacity per truck). Materials will be loaded in accordance with the procedures discussed in Section 7.0.

Vehicles will be inspected by Northgate before leaving the area to verify that they are properly registered and placarded in compliance with DOT guidelines, and in accordance with State of Nevada regulations, if appropriate. Northgate's inspector will complete the Departing Transporter Vehicle Checklist Form (Appendix B). NDEP will also be inspecting vehicles hauling contaminated soils and materials for quality of equipment and adequate decontamination. NDEP reserves the right to disapprove use of any vehicle based on visual inspection and require Tronox and its Contractor to take appropriate corrective action.

Some fill materials may be brought to the work area to build roads and backfill the excavations. Such material will be transported in DOT-approved trucks.



## **6.0 TRANSPORTATION ROUTE, SCHEDULING, AND EMERGENCY CONTACTS**

### **6.1 Transportation Routes**

Materials to be removed from the work area will be transported using the on-Site haul roads from the work areas to the Site exits, and public road ways between the Site exits and the disposal facilities. The following is a description of haul routes that have been identified for use during this project.

Maps of these routes are presented on Figure 3 and 4 showing the Site and facility location, the public roadways between the entrances/exits, driving directions and the facilities' addresses.

#### **For travel to and from both the identified disposal facilities:**

The Contractor will access U.S. Route 515 (Route 101) to and from the Site via 4th Street southbound to Westbound on Fiesta and west on to Lake Mead Parkway/NV-564 W toward W. Van Wagener St (0.6 miles) and take east exit onto I-515 N/US-93 N/US-95 N toward Las Vegas (14.4 miles).

#### **Transportation traffic to and from Apex:**

Take exit to 76B to merge onto I-15 N/US-93 N toward Salt Lake City (21.3 miles) and take exit 64 for US-93 N/Great Basin Hwy and turn east (right) onto landfill entrance road.

#### **Transportation Traffic to and from the U.S. Ecology Hazardous Waste Landfill:**

Take east exit onto I-515 N/US-93 N/US-95 N toward Las Vegas (14.4 miles), continue onto US-95 N (approx. 105 miles); the landfill is at mile-marker 47, 11 miles south (before) Beatty, NV.

Route 93, 95 and 515 are primary trucking corridors in Las Vegas and are heavily used by trucks. Therefore Site truck-traffic impacts on the local freeways that will be used are not expected to be significant. Inbound and outbound trucks will travel to Route 515 only via the West Lake Mead Drive.

Drivers may call the DOT at 511 to check road conditions before leaving the Site. There are no alternative routes available for transportation of waste between the Site and the disposal facilities identified in section 6.0. If the selected routes become unavailable, transportation will cease until the routes become available again.



## **6.2 Scheduling of Transport**

Transportation activities may be conducted over a period of approximately 40 weeks. At this time, it is estimated that the number of trucks leaving the work area during periods of removal will range up to approximately 150 to 300 trucks per day, and that the number of vehicles parked in the work area will range up to 50 per day.

## **6.3 Emergency Contact**

The transportation contingency plan (Section 11.0 of this Transportation Plan) includes phone numbers for emergency contacts within the transporter company (dispatch), who will be able to advise the driver concerning emergency response procedures, the nearest repair facility, the nearest weigh station, and/or any other information required in an emergency.

In the event of an emergency on roadways outside of the Site work area, the transporter will contact the NHP, in addition to other contacts included in the TP. NHP facility addresses along transportation routes in Nevada are included as Table A-1 in Appendix A.

The NHP may contact DOT to mobilize road crews and/or emergency response contractors, if needed, to clean up and contain spilled materials. The Contractor will provide a list of key contacts and emergency telephone numbers and they will be included as Table A-2 of Appendix A.



## **7.0 ON-SITE TRAFFIC CONTROL AND LOADING PROCEDURES**

### **7.1 Location of Work Areas**

Materials will be handled and loaded within designated areas identified in the RAW. Excavated, debris, and recyclable materials may be loaded onto trucks, transported and unloaded for temporary storage in designated stockpile areas. It is anticipated that contaminated soil will be loaded from the excavation areas directly into transport trucks for off-Site disposal. No additional on-Site stockpiling is expected. Transport trucks will not be staged on residential streets. The Contractor will identify designated sections of the on-Site haul route where truck staging will occur. RAW Figure 5 Remediation Support Features and Figure 2 of this Transportation Plan show the location of traffic routes, excavation areas, support zones, areas for staging of temporary stockpiles and heavy equipment, and the Site entrances/exits.

### **7.2 Safe Loading Procedures**

While loading materials into trucks, the area around the trucks will be kept clear. If needed, the material will be wetted with water before and during loading to reduce the potential of dust/particulate emissions. Foam or other odor suppressants may be applied if materials generate nuisance odors. Personnel observing the loading will wear personal protective equipment (PPE) as specified in the HSP, and as directed by the designated Site Safety Officer (SSO).

Materials will only be loaded into trucks with tarpaulin covers or containers with sliding steel covers. If material is spilled during loading, it will be immediately contained and subsequently loaded and hauled from the work area in accordance with the procedures outlined herein. NDEP will also be inspecting all hauling vehicles for quality of equipment including the tarpaulin or other covers. NDEP reserves the right to disapprove use of any vehicle based on visual inspection and require Tronox and its Contractor to take appropriate corrective action.

### **7.3 Decontamination Procedures**

Vehicles and equipment will be decontaminated before leaving the Site. The Contractor will prepare a Decontamination Plan that describes decontamination procedures for vehicles and equipment leaving the Site and implement these procedures during implementation of the RAW. NDEP will be inspecting decontamination procedures throughout the project. NDEP will have the right to require additional decontamination based on visual observation.

At a minimum the Contractor's Decontamination Plan will include the following requirements:



- All excavation equipment should be decontaminated prior to leaving an impacted area and traversing a non-impacted area. If hazardous materials are not present, decontamination of equipment will consist of removing residual dust or soil adhering to tires, flaps, and undersides of the equipment using shovels or other handheld equipment.
- Where hazardous materials are present, a potential exists for such materials to contact truck tires or the undersides of trucks. For this purpose, decontamination stations and inspection areas will be built and will be shown in the construction plans. The decontamination areas will consist of a rectangular, sloped area enclosed by four asphalt berms or wood walls about 1-foot high, with a lined trough to contain decontamination rinsate. A central berm or wall will be constructed across the middle of the enclosed area and perpendicular to the longitudinal berms/walls. The wall will support two steel grates as tracks for the trucks. The berms/walls and the enclosed area and trough will be covered with either asphalt or plastic sheeting.
- Earthen ramps covered with gravel will slope up to the decontamination area on opposite ends. Trucks will drive up one ramp and onto the steel grates while their tires, flaps, and lower parts are washed free of residual dust and soil picked up during loading. Water for decontamination will be obtained from a local fire hydrant or other temporary water connection, pending City approval. Rinsate will flow down the asphalt or plastic-lined slope into the trough at the lower corner of the area. Rinsate in this trough will be pumped out as needed to a portable storage tank located nearby. Rinsate will be sampled before reaching capacity and analyzed for profiling purposes. After the sampling results have been received and evaluated, the rinsate will be transported to an appropriate facility in a DOT-approved vacuum truck, as appropriate. Chemical analysis of samples will depend on the requirements of the potential receiving facility.

#### **7.4 Inspection Procedures**

The Contractor will identify on-Site areas where trucks will be inspected for proper loading, covering/sealing, decontamination, and manifesting. During removal activities, the inspection areas will be in the same location as the decontamination areas. The Contractor-designated inspector will use an information form for departing transportation vehicles to guide and document the inspections. The departing vehicle transportation information form will be generated by the Contractor and provided in Appendix B. NDEP will also be providing inspections as deemed necessary during the removal process



## **8.0 SITE-SPECIFIC TRAFFIC MANAGEMENT AND CONTROL**

This section of the TP identifies traffic control measures, appropriate signage, and traffic control devices which will be implemented by the Contractor prior to and during the work to be conducted at the Site. The purpose of the traffic management and control measures is to regulate, warn, and direct on-Site and off-Site vehicular traffic. These measures shall be in accordance with the current *Commercial Driver's License Hazardous Material Handbook* published by the Nevada Department of Motor Vehicles (Nevada DMV; Nevada DMV, 2008), the *Nevada Driver's Handbook* published by the DMV (Nevada DMV, 2010), and the *DOT Work Zone Safety and Mobility Implementation Guide* (DOT, 2009).

### **8.1 Traffic Flow Patterns and Designated Areas for Vehicles**

All Contractors' vehicles, including but not limited to personal vehicles of workers, construction vehicles, maintenance vehicles, and hauling and transport vehicles will enter and exit the Site from 4<sup>th</sup> Street.

Personal vehicles of workers and authorized Site visitors will park in the Contractor's designated personally owned vehicle (POV) area providing for approximately 20 POVs. Workers and visitors will access the Site at the 4<sup>th</sup> Street north and south access gates, and register at the field office before entering the work area.

Authorized Site visitors will park in the designated POV area providing for approximately 20 POVs at the Tronox Site entrance at Wagner Avenue.

The Contractor will identify on-Site staging areas for all hauling trucks. No hauling trucks will be allowed to stage or park on 4<sup>th</sup> Street or any public street adjacent to the Site. The Contractor will determine the number of staging areas and maximum number of hauling trucks which can be staged at the designated staging areas. The Contractor will manage inbound and outbound truck flow so no construction vehicles will be parked or staged on public streets and will only park in the designated staging areas.

Hauling and transport vehicles waiting to be loaded will be staged or stacked in the designated truck staging areas. Trucks waiting in the staging area will be permitted to idle for no more than 2 minutes, after which time they will turn off their engines.

The Contractor will identify and construct one or more wet decontamination pads area near the Site exit. After hauling and transport vehicles have been loaded, vehicles will be directed through the wet decontamination pad. Hauling and transport vehicles will be directed through the decontamination





station to remove debris from truck tires, chassis, and from the sides of the tractors and end-dumps or transport bins. The Contractor will describe and implement decontamination procedures for vehicles and equipment leaving the Site and include the procedures in the Decontamination Plan. RAW Figure 5, Remediation Support Features, and Figure 2 of this Transportation Plan show the Track-out Pad/Wheel Wash station locations at the proposed Site exists.

The Contractor will utilize a motorized street sweeper and/or water truck to sweep and maintain all paved Site access roads, parking areas, staging areas, and public streets adjacent to the Site. Excavation equipment including, but not limited to, steel-tracked excavators and bulldozers, rubber-tire front end loaders, and compactors will remain on-Site for the duration of the work.

Prior to demobilization from the Site, all excavation and earth moving equipment will be decontaminated.

## **8.2 Signage and Traffic Control Devices**

Prior to commencement of field activities at the Site, the Contractor will install temporary signs and traffic control devices which may include, but are not limited to: road striping, flashing beacons, and traffic barricades (K-rails).

Temporary traffic signs will be installed for the duration of the Project. Traffic signs to be installed include, but are not limited to:

- Arrow Signs to Site Access/All Other Traffic;
- Staging Area/Parking Only for Construction Vehicles;
- Site Visitor/POV Parking Only;
- Detour Ahead;
- Multi-Directional Arrow Signs;
- Stop Signs;
- No Stopping Any Time; and
- 15 mph Speed Limit (on-Site).

“No Stopping Any Time” signs will be installed at a maximum interval of 100 feet apart.

Upon completion of field activities, all temporary signage and traffic control devices will be removed, and traffic control measures will be restored to conditions prior to commencement of the work.



## **9.0 RECORD KEEPING**

### **9.1 Transportation Records**

Records will be maintained for each load of material that leaves the Site. A Contractor's designated representative will be posted at the inspection area during transportation activities to complete the information form, provided in Appendix C, which includes:

- Manifest or bill of lading number;
- date and time each truck departs the area;
- vehicle type, license number and vehicle registration number;
- transport company, motor carrier permit number and driver's name;
- approximate volume or weight (if measured) of material being removed; and
- material destination.

All records will be maintained at the Site for the duration of the project and thereafter archived by the Contractor for a minimum of 5 years.

### **9.2 Required Transporter Records**

Documentation carried by the driver will include:

- Bills of lading or non-hazardous or hazardous waste manifests;
- Proof of insurance, valid registration, and current driver's license;
- Material profile information (reflecting chemical analysis results);
- Material weight records; and
- Copy of this TP including travel routes, emergency procedures, and contacts.

A copy of a hazardous waste manifest and a copy of a nonhazardous waste manifest are included in Appendix C. A copy of an example bill of lading, proof of insurance, valid registration for the transporter trucks, and a NHP inspection certificate for the transporter trucks will be required, prior to off-hauling wastes from the Site.



## **10.0 HEALTH AND SAFETY**

### **10.1 Training Requirements for Workers**

The remediation staff will be trained in hazardous materials operations in accordance with 49 Code of Federal Regulations (CFR) Parts 100-199 and 350-399 (42 U.S. Code 6901 et seq.); 40 CFR Parts 260-268; and State of Nevada DOT regulations. Once the material is characterized, if hazardous materials are to be transported, then the transportation subcontractors trained in accordance with the latter regulations will be selected. Health and safety procedures to be followed during the work are outlined in the Contractor's HSP.

### **10.2 Communication of Health and Safety Procedures to Drivers**

Drivers will not be directly involved in loading activities. The transporter will be given a copy of the HSP and the Transportation Plan. The transport company is responsible for the health and safety of its workers and for instructing those workers on health and safety procedures as they apply to transport of both non-hazardous and hazardous material. If the material to be transported from the work area is classified as hazardous waste, the transporter will be required to show proof of valid registration for transport of hazardous waste. Before leaving the work area, each driver will be briefed on the nature of the material to be transported. Drivers carrying material classified as hazardous will be trained in health and safety and will be required to carry the appropriate PPE.

Before leaving the work area, the inspector may question the driver on specific elements of the Transportation Plan including the Contingency Plan (see Section 12.0). At a minimum, the driver should carry emergency phone numbers and be aware of the notification processes set forth in this Plan.



## **11.0 CONTINGENCY PLAN**

### **11.1 Purpose of Contingency Plan**

The purpose of the contingency plan is to facilitate a quick and effective response in the unlikely event of a transportation emergency. This TP describes response procedures to be implemented if an emergency occurs while materials are being transported.

#### **11.1.1 Emergency Response Procedures**

In the event of an emergency after the transporter exits the Site, the transporter will first contact the NHP. Afterwards, the driver will notify the appropriate emergency contact for its company. A list of critical contacts and emergency telephone numbers is included in Appendix A.

The NHP will respond to the call and contact DOT. DOT will then contact road crews and/or emergency response contractors who are trained to respond to such emergencies with the appropriate methods of containing and cleaning up of spills. As stated in Section 3.1 of this TP, materials may be classified as one of the following: (1) non-hazardous; (2) hazardous; or (3) recyclable materials.

The emergency contact within the transporter company will advise the driver concerning other emergency response procedures that may be necessary, and the location of the nearest repair facility, as appropriate.

After the NHP and the emergency contact within the transporter company have been notified of an emergency, the driver will notify Contractor's Project Manager, who will be responsible for informing Northgate/Tronox.

After the NHP and the emergency contact within the transporter company have been notified of an emergency, the driver will notify the Project Coordinator and the NDEP's Project Manager.

NDEP's Project Manager, Ms. Shannon Harbour, will be notified of any transportation emergency, immediately after emergency authorities have been notified. A list of critical contacts and emergency phone numbers is contained in Appendix A to this transportation plan.



### **11.1.2 Personal Protective and Emergency Equipment**

The following PPE and emergency equipment will be kept on each transporter truck for use in case of an emergency:

- Gloves;
- Tyvek™ coveralls;
- Hard hat;
- Steel-toed boots or shoes; and
- Fire extinguisher.

### **11.1.3 Required Transporter Records**

The following documents will be kept on each waste hauling truck:

- Bills of lading or non-hazardous or hazardous waste manifests;
- Proof of insurance, valid registration, and current driver's license;
- Material profile information (reflecting chemical analysis results);
- Material weight records;
- Copy of this TP, including travel routes, emergency procedures, and contacts; and
- Copy of the Contractor's HSP.

The Contractor will provide copies of hazardous and non-hazardous waste manifests in Appendix C. A copy of an example bill of lading, proof of insurance, valid registration for the transporter trucks and a NHP inspection certificate for the transporter trucks will be required.



## 12.0 REFERENCES

- Basic Environmental Company 2008. *Removal Action Workplan for Soil, Tronox Parcels “C”, “D”, “F”, “G”, and “H” Sites*, Henderson, Nevada, July 1, 2008.
- ENSR Corporation (ENSR), 2007. *Volume Determination of Manganese Tailing Pile*, Tronox LLC Facility. Henderson, Nevada. April 2007.
- Nevada Department of Transportation (DOT). Nevada Vehicle Code.
- Nevada DOT 2009. *Work Zone Safety and Mobility Implementation Guide from NDOT*, Nevada Department of Transportation, March 2009.
- Nevada Department of Motor Vehicles (DMV) 2010. *Nevada Driver’s Handbook*, Department of Motor Vehicles, Carson City, Nevada, March 2010.
- Nevada DMV 2008. *Commercial Driver’s License Hazardous Material Handbook*, Department of Motor Vehicles, Carson City, Nevada, April 2008.
- Nevada Hazardous Waste Control Laws; NRS 459.400-459.600 Disposal of Hazardous Waste.
- Northgate Environmental Management, Inc. (Northgate) 2010a. *Removal Action Work Plan for Soil, Remediation Zones RZ-A, RZ-B, RZ-C, RZ-D, and RZ-E, Tronox Facility, Henderson, Nevada*, March 2010.
- Northgate. 2010b. *Dust Mitigation Plan and Clark County Dust Permit, Remediation Zones RZ-A, RZ-B, RZ-C, RZ-D, and RZ-E, Tronox Facility, Henderson, Nevada*, March 2010.
- Northgate. 2010c. *Perimeter Air Monitoring Plan, Remediation Zones RZ-A, RZ-B, RZ-C, RZ-D, and RZ-E, Tronox Facility, Henderson, Nevada*, March 2010.
- Northgate. 2010d. *Stormwater Pollution Prevention Plan, Remediation Zones RZ-A, RZ-B, RZ-C, RZ-D, and RZ-E, Tronox Facility, Henderson, Nevada*, March 2010.
- United States Department of Transportation. 49 Code of Federal Regulations (CFR) Parts 100–199 and 350–399 (42 U. S. Code 6901 et seq.).
- United States Environmental Protection Agency. 40 CFR Parts 260–268.
- United States Environmental Protection Agency 2003. *Site Specific Land Disposal Restriction Treatment Variance*. July 2003.



## FIGURES



**APPENDIX A  
EMERGENCY CONTACTS**





**APPENDIX B**  
**DEPARTING VEHICLE TRANSPORTATION INFORMATION**



**APPENDIX C**  
**TRANSPORTATION MANIFESTS**

