

**Phase I Modified Environmental
Site Assessment Report and Phase II
Investigation of Fort Carson Landfill 11
State Highway 16/Interstate Highway 25 Area
El Paso County, Colorado**

Prepared for:

Colorado Department of Transportation, Region 2
905 Erie Avenue
Pueblo, Colorado

Prepared by:

Carter & Burgess, Inc.
707 17th Street, Suite 2300
Denver, Colorado 80202

Project Number: 070672.402.5.3001

September 28, 2006

Carter::Burgess

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and
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Prepared by:

Craig R. Gander, L.P.G.
Task Manager

Reviewed by:

Craig M. Carter, P.G.
Manager, Environmental Services

**Carter & Burgess, Inc.
707 17th Street, Suite 2300
Denver, Colorado 80202**

Project Number: 070672.402.5.3001

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1.0 Executive Summary

Carter & Burgess, Inc. (Carter & Burgess) has conducted a Phase I Modified Environmental Site Assessment (MESA) for the Project Area adjacent to the intersection of State Highway 16 (SH16) and Interstate Highway 25 (I-25) located in El Paso County, Colorado (Figure 1). This MESA updates a MESA performed by Carter & Burgess in May 2002.

The Project Area includes the current roadway rights-of-way and certain adjacent properties between the Clover Ditch on Fort Carson property to the west, Syracuse Street to the east, Crews Gulch to the north and South Mesa Road to the south. Local roads that will be affected include Fort Carson Tank Road A, Bandlely Drive, Southmoor Drive, Willow Springs Road, Assembly Court and Rice Lane.

The current SH16/I-25 interchange is bordered by Fort Carson to the west. The proposed improvements to the interchange include placing a loop ramp and the southbound I-25 on-ramp onto property that is currently part of Fort Carson.

To the east of the interchange, SH16 traverses a bridge over Fountain Creek, a raised embankment between Ceresa Park and Fountain Creek Regional Park, and a bridge over US 85. SH16 reaches the surrounding grade before intersecting with Syracuse Street.

SH16 is the major east-west roadway within the Project Area. Major north-south roadways include I-25 and US 85. Lands within the Project Area include properties currently used for military, agricultural, commercial and residential purposes.

A Study Area was established encompassing the Project Area and a surrounding 1 mile buffer zone. Because of the large size of the Study Area, no properties were entered and no interviews were conducted.

Mr. Craig Gander, an Environmental Project Manager with Carter & Burgess, conducted an on-site Phase I MESA inspection of the Project Area on January 30, 2006. No indications of surface environmental contamination were observed.

Within the environmental database search distance of the Study Area, there is one Department of Defense Site, one Above Ground Storage Tank site, five Underground Storage Tank sites, three Leaking Underground Storage Tank sites, one registered small quantity hazardous waste generator, and six Facility Index System sites.

Based on observations made and information reviewed, Carter & Burgess concludes that at the time of this Phase I MESA, the Project Area includes a medium environmental risk. A medium risk rating means that there are possible or suspected environmental concerns that may warrant further investigation.

Sites that may warrant further investigation are:

- **Map IDs 5 and 6: Colorado Springs Auto Auction, 7360-7390 S HWY 85.**
Because the current SH16 reconstruction plan calls for taking a portion of this property, additional research on the location and disposition of the LUST and petroleum contaminated soil is recommended.
- **Transmission repair facility located on the north side of Southmoor Drive.**

Because the current SH16 reconstruction plan calls for taking a portion of this property, additional research on the condition of this property is recommended.

In addition:

- Penetration into the known PCE groundwater plume should be avoided if possible. Water from construction dewatering in the plume area is likely to require treatment prior to discharge.
- Colorado regulations require a formal asbestos inspection and possibly abatement for any buildings that will be demolished.

These conclusions have been based on a limited inspection and research of public documents pertaining to the Project and Study Areas. Conclusions drawn by others from the results of this assessment should recognize the limitations of the methods used. This report was produced for the exclusive use of the Colorado Department of Transportation (CDOT) Region 2.

A Phase II Investigation of Fort Carson Landfill 11 was conducted during April 2006. Waste materials observed in the two completed excavations consisted primarily of the types of materials that had been described in previous investigations by Army contractors, such as metal banding, broken concrete, brick, tile, plastic, wood, asphalt, bottles, and cans.

In addition, both friable and non-friable suspect asbestos containing materials (ACM) were found. Laboratory analysis confirmed the presence of greater than 1 percent asbestos in floor tiles, transite siding, debris stuck to roofing material, two types of fibrous plaster-like insulation and one type of fibrous loose insulation. Asbestos was also detected in one of two soil samples.

Fort Carson Landfill 11 is a regulated Solid Waste Management Unit (SWMU) under the Colorado Resource Conservation and Recovery Act (RCRA) Corrective Action Program. The presence of ACM is merely an additional property of the SMWU that must be taken into account during any RCRA-permitted activity. Under RCRA, any remedy proposed for the landfill area must go through a public notification process and be approved by the CDPHE. Fort Carson environmental personnel have stated that, in previous discussions with CDPHE regulators, CDPHE has appeared to be very supportive of complete removal of the landfill.

2.0 Objectives and Limitations

2.1 Objective of the Phase I MESA

The objective of the Phase I MESA was to identify, to the extent feasible pursuant to the processes prescribed in ASTM Standard Practice E 1527, "Environmental Site Assessments: Phase I Environmental Site Assessment Process," *recognized environmental conditions* in connection with the subject Project Area.

The term recognized environmental conditions is defined as the presence or likely presence of any hazardous substances or petroleum products (see Appendix Section 1 for definitions) on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any such substances into structures on the property or into the ground, groundwater, or surface water of the property. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The following components, as prescribed in the ASTM standard, comprise the fundamental scope under which the Phase I MESA was performed:

- An overview of the Study Area, including location, general description, and property use and occupancy
- A summary of Study Area background information and a review of available historical information
- A description of the environmental setting of the Study Area, including topography, drainage, flood potential, soil characteristics and subsurface geology and groundwater information
- Results of the on-site inspection, including a visual inspection for indications of soil contamination and/or other hazards, and an evaluation of the environmental condition of the areas immediately surrounding the Study Area
- A review of federal, state, and local regulatory records to evaluate whether Study Area properties have faced or are currently facing any regulatory actions, fines, or violations, and whether there are any active or abandoned oil and gas wells in or near the Study Area
- Conclusions and Recommendations
- References

References and copies of raw data and documentation used in the preparation of this report are included in the Appendix.

2.2 Phase I MESA Limitations and Exceptions

The conclusions provided in this Phase I MESA Report have been based on a review of certain public documents and a limited on-site inspection. This report cannot wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with the Project Area. Performance of the ASTM Practice is intended to reduce, but not eliminate, uncertainty regarding the potential for such conditions, and the ASTM Practice recognizes reasonable limits of time and cost. Conclusions drawn by others from the results of this assessment should recognize the limitations of the methods used.

The accuracy of this assessment is limited by the availability and correctness of the public information reviewed. Environmental risks may be present and not documented by regulatory agency files. Therefore, Carter & Burgess, Inc. does not warrant, guarantee, or certify the accuracy or completeness of such regulatory information. Carter & Burgess, Inc. disclaims any and all liability for errors, omissions, or inaccuracies in such information and data, and for any and all inaccurate conclusions, inadvertent or otherwise, which may be based on such inaccurate information and data obtained from third parties.

The accuracy of the on-site inspection is limited to evidence detected through visual and olfactory senses at the time of the inspection. Evidence of environmental impacts obscured by vegetation, soil, debris, structures or water is excluded from the responsibility of detection by representatives of Carter & Burgess. Some substances may be present on a property in quantities and under conditions that may lead to contamination of the property, or nearby properties, but are not included in CERCLA's definition of hazardous substances or do not otherwise present potential liability.

This report does not constitute an appraisal of value or legal opinion, and Carter & Burgess Inc. makes no representations or warranties of the fitness of the property for any use. Carter & Burgess, Inc. assumes no responsibility for misinterpretation or improper use of this report. Carter & Burgess, Inc. shall not be liable for any special, consequential or exemplary damages resulting, in whole or in part, from the client's use of this report. Liability on the part of Carter & Burgess, Inc. is limited to the monetary value paid for this report.

2.3 Objectives of the Phase II Investigation of Fort Carson Landfill 11

The objectives of the Phase II investigation were to collect additional information regarding (1) the types of waste present in the landfill and (2) depths to the base of the waste in portions of the landfill where no information existed.

2.4 Phase II Investigation Limitations and Exceptions

Because only limited testing was performed, Carter & Burgess makes no representations regarding conditions at other locations or depths, or for constituents not tested for, makes no representations or warranties regarding data provided by others, and makes no representations or warranties regarding the fitness of the property for any purpose or use.

2.5 Special Terms and Conditions

Carter & Burgess, Denver, Colorado has performed services for, and this report can be relied on by the Colorado Department of Transportation (CDOT) in accordance with the terms and conditions of an agreement between Carter & Burgess, Denver, Colorado and CDOT. Reliance

is in accordance with the Terms and Conditions under which the services were provided. Any use by entities not listed above is prohibited without prior written permission from Carter & Burgess, Denver, Colorado.

3.0 Project Area and Study Area Overview

The SH16/I-25 Project Area is located in El Paso County, Colorado, within Sections 24 and 25, Township 15 South, Range 65 West, and Sections 19 and 30, Township 15 South, Range 64 West (Figure 1). SH16 is the major east-west roadway within the study Area. Major north-south roadways include I-25 and US 85.

The Project Area includes the current roadway rights-of-way and certain adjacent properties between the Clover Ditch on Fort Carson property to the west, Syracuse Street to the east, Crews Gulch to the north and South Mesa Road to the south. Local roads that will be affected include Fort Carson Tank Road A, Bandlely Drive, Southmoor Drive, Willow Springs Road, Assembly Court and Rice Lane.

The current SH16/I-25 interchange is bordered by Fort Carson to the west. The proposed improvements to the interchange include placing a loop ramp and the southbound I-25 on-ramp onto property that is currently part of Fort Carson.

To the east of the interchange, SH16 traverses a bridge over Fountain Creek, a raised embankment between Ceresa Park and Fountain Creek Regional Park, and a bridge over US 85. SH16 reaches the surrounding grade before intersecting with Syracuse Street.

The Study Area includes the Project Area plus a 1 mile buffer zone. Lands within the Study Area include properties currently used for military, agricultural, commercial and residential purposes.

4.0 Project Area Usage History

The following paragraphs provide information on the history of the Project Area as determined by an analysis of historical materials.

4.1 Review of Topographic Maps

Historical USGS Topographic maps of the Project Area were reviewed for the years 1909, 1949, 1961, 1976 and 1994. A brief summary of changes observed on the maps follows. The maps are included in Appendix Section 2.

- 1909 There is little development shown in the Study Area other than the two sets of railroad tracks and a parallel road located approximately on the alignment of the current Southmoor Drive, west of the current US 85.
- 1949 In addition to the development shown on the 1909 map, US 85 is shown just west of the railroad right-of-way, and a new road (Carson Boulevard/Bandley Drive) is shown connecting Camp Carson (established 1942) to the road along the Southmoor Drive alignment.
- 1961 I-25 is shown, but there is no interchange in the area. The western portion of Carson Boulevard has been moved south to pass under I-25 in Section 25. A trailer park, still existing, is shown on Southmoor Lane. A pond is shown in Section 25 east of Fountain Creek, and residential development is shown in Security and Widefield. What appears to be a commercial structure is present at the northwest corner of Southmoor Drive and US 85 (the structure is no longer present; the location is now within the northern loop of the SH16/ US 85 interchange).
- 1969 An additional pond is shown in Section 25 east of Fountain Creek at the water treatment plant facility and additional residential development is shown in Security, Widefield, and north and south of Carson Boulevard west of US 85.
- 1976 The SH16/I-25 interchange is shown connecting the entrance of Fort Carson (name changed from "Camp" to "Fort" in 1954) with US 85 and Syracuse Street.

4.2 Review of Aerial Photographs

A search for historical aerial photographs of the Study Area by Environmental Data Resources, Inc. (EDR) concluded that historical aerial photographs were not available. Photographs obtained from the U.S. Geological Survey (USGS) for the years 1999 and 2002 were reviewed. A brief summary of land use and changes observed in the photographs follows. The photographs are included in Appendix Section 3.

- 1999 The photograph shows the current roadway configuration, except that roadway reconstruction appears to be underway east of US 85. An auto salvage yard appears to be in operation north and east of Southmoor Drive.
- 2002 No significant changes in land use are apparent from 1999, with the exception that the automobiles visible in the 1999 photograph north and east of Southmoor Drive are no longer present. Based on the January 30, 2005 site inspection, the property is now

divided into what is labeled a transmission repair facility on the east (see Photograph 20 in Appendix Section 4), and a landscape materials yard on the west (see Photograph 21 in Appendix Section 4).

4.3 Historic Document Review

Two historical documents were reviewed. Appendix Section 5 includes selected pages from the two documents.

- (1) Final RCRA Facility Investigation Report for Landfill 11 (SWMU 11/FTC-015), Fort Carson, Colorado (Harding ESE and Earth Tech, Inc, 2004). Landfill 11 is located on the portion of Fort Carson where the SH16/I-25 interchange loop ramp is proposed.

According to the document, Fort Carson Landfill 11 is regulated as a Solid Waste Management Unit (SWMU) by the Colorado Department of Public Health and Environment (CDPHE). It is approximately 3 acres in size and reportedly operated for an unknown length of time between 1970 and 1984. Although site operations are undocumented, site investigations completed by Army contractors indicate that the landfill received primarily construction debris.

Investigations of Landfill 11 were conducted by Army contractors in August 1998, February 1999 and March 2001. Results of the investigations are described in the reviewed document. The investigations evaluated the location of the landfill boundaries, the landfill contents, soil vapor impacts, soil impacts, and groundwater impacts.

An engineered landfill cap was not encountered, and the thin soil cover that was present could not be differentiated from the fill material. Landfill contents were described as metal banding, broken concrete, brick, tile, plastic, wood, asphalt, bottles, cans and animal bones. According to the report, silt, sand and shale fragments were the principal fill materials. Waste material reportedly comprised approximately 40 to 80 percent of the volume of material excavated from trenches within the landfill boundary. Because no indications of chemical contamination were observed, no samples of the landfill contents were collected or analyzed.

No waste decomposition gases or volatile organic compounds were detected in soil gas samples, and possible impacts to soil were considered minimal. The site did not appear to be affecting the shallow groundwater.

To supplement available information about the nature and depth of the Landfill 11 waste, Carter & Burgess conducted a focused Phase II Investigation of Landfill 11 in April 2006. Information regarding the Phase II Investigation is included in Section 8.

- (2) Information from the El Paso County website about a groundwater tetrachloroethylene (PCE) plume that is present beneath a portion of the Study Area. The plume of contaminated groundwater, which originates at a Schlage Lock Company manufacturing facility in Security, passes beneath a portion of Ceresa Park, SH16, and Fountain Creek Regional Park (see Section 5.4).

To supplement available information about the area and degree of groundwater contamination, Carter & Burgess conducted a focused groundwater investigation of the

Ceresa Park/SH16/Willow Springs Ponds area in July 2003. A report of the investigation was issued in August 2003 (Willow Springs Ponds Area Tetrachloroethylene Investigation Report, State Highway 16 Project, El Paso County, Colorado [Carter & Burgess, 2003]).

5.0 Environmental Setting

5.1 Topography, Surface Drainage and Flood Potential

A review of the USGS Fountain, Colorado, 7.5-minute topographic quadrangle map indicates the Study Area is located at an approximate elevation of 5,650 feet above mean sea level.

Surface runoff along the SH16/I-25 interchange generally flows into the storm water system and/or into storm water retention ponds. As shown in the aerial photographs, Fountain Creek is located directly east of Bandle Drive, and flows to the south-southeast.

The Federal Emergency Management Agency's 100-Year Flood Zone is shown on Figure 1. The map indicates that the SH16/I-25 interchange is located outside the 100-year Flood Zone. The elevation of SH16 between the SH16/I-25 interchange and US 85 appears to be sufficient to place the road surface above the 100-year Flood Zone.

5.2 Soil Characteristics

According to the United States Department of Agriculture, Soil Conservation Service, General Soil Map for El Paso County, Colorado (1975), the surface soil in the Study Area consists primarily of brown and red clay loams. As shown on the Soil Survey Map (Appendix Section 6), the soils are described as Ninn clay loam, Blendon sandy loam, Schamber-Razor complex, Ellicott loamy coarse sand, Manzanola clay loam and Razor-Midway complex.

5.3 Geology

According to the Geologic Map of Colorado, the surficial geology of the Study Area generally consists of Pierre Shale, gravels and alluvium. Pierre Shale is located northwest of the SH16/I-25 interchange. Gravel and alluvium are located along Fountain Creek and generally across the remainder of the Study Area.

5.4 Groundwater

Carter & Burgess, Inc. has not performed an evaluation of groundwater data for the entire Study Area and cannot provide a definitive assessment of the condition or flow direction of the groundwater immediately beneath the entire Project Area. Generally, the local groundwater flow direction in the unconfined water-table aquifer is expected to follow the topography.

In July 2003, Carter & Burgess did install four groundwater monitoring wells in Ceresa Park north of SH16 and four groundwater monitoring wells in Fountain Creek Regional Park south of SH16 to assess the nature and extent of a known groundwater tetrachloroethylene (PCE) contamination plume associated with the Schlage Lock Company facility in Security (Carter & Burgess, 2003).

The investigation results indicated that a plume of PCE-containing groundwater at concentrations exceeding the Colorado Ground Water Standard was flowing from north to south beneath SH16 north of Willow Springs Pond #1 (the northern pond). The depth to the contaminated groundwater from the ground surface in Monitoring Well CB-8, located in the southeastern corner of Ceresa Park, was 7.9 feet.

6.0 On-Site Inspection

Mr. Craig Gander, an Environmental Project Manager with Carter & Burgess, conducted an on-site inspection of the Project Area on January 30, 2006. No access agreements were in place, and no private properties were entered. Fort Carson was not entered. The inspection consisted of a windshield survey for:

- Signs of surface contamination;
- The presence of drums or other containers.

Photographs taken during the on-site inspection are included in Appendix Section 4.

6.1 Project Area Observations

The Project Area was inspected for obvious or potential sources of environmental contamination. The following sections describe the observations made.

6.1.1 Buildings

Numerous buildings are present within the Project Area. Because of the size of the area, it was not possible to inspect every side of every building. No buildings were entered during the inspection visit.

6.1.2 Petroleum Storage Tanks

No evidence of petroleum storage tanks was observed, other than propane tanks (see Photograph 16). Because of the volatile nature of propane, the likelihood of migration in soil or groundwater is low.

6.1.3 Hazardous Materials

No evidence of hazardous materials was observed.

6.1.4 Indications of Surface Soil Contamination

No surface soil contamination was observed.

6.1.5 Historical Landfills

No evidence of landfills was observed.

6.1.6 Water Wells

No water wells were observed.

6.1.7 Unused Equipment, Vehicles, Materials and Debris

Apparently unused vehicles and/or debris were observed at the transmission repair facility located on the north side of Southmoor Drive (Photograph 20).

Because the current SH16 reconstruction plan calls for taking a portion of this property, additional research on the condition of this property is recommended.

6.1.8 Polychlorinated Biphenyl (PCB) Containing Equipment

Numerous pole-mounted and pad-mounted utility service electrical transformers were observed within the Project Area. The federal Toxic Substances Control Act, enacted on October 11, 1976, banned the manufacture of PCBs after 1978. Some of the transformers may contain PCBs. The owner(s) of any transformers that must be removed, relocated or replaced during the Project should be notified to inspect the transformers for leaks and to properly remediate any contaminated soil.

6.1.9 Oil/Gas Well and Production Facilities

No oil/gas wells were observed in the Study Area. Information from the Colorado Oil & Gas Conservation Commission is included in Appendix Section 7.

6.2 Study Area Observations

Reconnaissance of the Study Area, which includes a 1 mile buffer around the Project Area, was conducted by Carter & Burgess on January 30, 2006. Lands within the Study Area include properties currently used for military, agricultural, commercial and residential purposes.

No additional sites considered recognized environmental conditions were observed within the Study Area.

7.0 Government Regulatory Agencies Records Review

A review of environmental regulatory records was performed to determine if the properties within the Study Area have faced or are currently facing any regulatory actions, fines, or violations for conditions that may indicate an environmental impact. Table 1 summarizes these sites, and Figure 1 shows the Study Area and the locations of the identified environmental database sites.

The following federal and state information sources were reviewed by Environmental Data Resources Inc. (EDR) of Milford, Connecticut, to determine suspected or confirmed sites of environmental concern within or adjacent to the Project Area. The EDR data report is included in Appendix Section 8.

7.1 Databases with No Mapped Sites

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records within or adjacent to the Project Area for the following databases:

Federal Records

NPL - National Priority List Sites

Proposed NPL - Proposed National Priority List Sites

Delisted NPL - National Priority List Deletions

NPL Liens – Federal Superfund Liens

CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System ("Superfund")

CERC-NFRAP - CERCLIS No Further Remedial Action Planned

CORRACTS – Corrective Action Report

RCRA-TSDF - Resource Conservation and Recovery Act (Treatment, Storage and/or Disposal sites)

RCRA-LQG - Resource Conservation and Recovery Act Large Quantity Waste Generators

ERNS – Emergency Response Notification System

HMIRS – Hazardous Materials Information Reporting System

US ENG CONTROLS – Engineering Controls Sites List

US INST CONTROL – Sites with Institutional Controls

FUDS – Formerly Used Defense Sites

US BROWNFIELDS – A Listing of Brownfields Sites

CONSENT - Superfund (CERCLA) Consent Decrees

ROD – Records of Decision

UMTRA – Uranium Mill Tailings Sites

ODI – Open Dump Inventory

TRIS – Toxic Chemical Release Inventory System

TSCA – Toxic Substances Control Act

FTTS - FIFRA/TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

SSTS – Section 7 Tracking Systems

PADS – PCB Activity Database System
MLTS – Material Licensing Tracking System
MINES – Mines Master Index File
RAATS – RCRA Administrative Action Tracking System

State and Local Records

SHWS - State Hazardous Waste Sites. State does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.
METHANE SITE – Methane Site Investigations - Jefferson County 1980
SWF/LF - Solid Waste Sites & Facilities
HISTORICAL LANDFILL - Historical Landfill List
CO TRUST – Colorado LUST Trust Fund Sites
CO ERNS – Colorado Spills Database
AUL – Environmental Real Covenants List
VCP - Voluntary Cleanup and Redevelopment Act Application Tracking Report
DRYCLEANERS – Drycleaner Facilities
CDL – Meth Lab Locations
UMTRA – Uranium Mill Tailings Sites

Tribal Records

Indian Reserv - Indian Reservations
INDIAN LUST - Underground Storage Tanks on Indian Land
INDIAN UST - Underground Storage Tanks on Indian Land

EDR Proprietary Records

Manufactured Gas Plants – EDR Manufactured Gas (Coal Gas) Sites

7.2 Databases with Mapped Sites

Within or adjacent to the Project Area, 12 sites were found in EDR's search of available ("reasonably ascertainable") government records for the following databases (see Table 1 and Figure 1, and the associated EDR data, which is located in Appendix Section 8). Some sites appeared in more than one database.

DOD – Department of Defense Sites

There was one (1) DOD site identified:

- **Map ID (NONE) : Fort Carson Military Reservation**

No specific contamination site or event was determined by EDR. However, a "RCRA GPRA (Government Performance and Results Act) Cleanup Baseline" report found on the internet at www.epa.gov/epaoswer/hazwaste/ca/lists/ff_all.pdf run on October 18, 2005, indicates that the status of a release at Building 6236 is "unacceptable migration of contaminated groundwater is observed or expected."

Based on the location of Building 6236 over 3 miles from the SH16/I-25 interchange, the risk of contamination in the Project Area is considered low.

AST – Above Ground Storage Tank Database,

UST – Underground Storage Tank Database,

LUST – Leaking Underground Storage Tank Incident Reports and

There was 1 AST site, 5 UST sites, and 3 LUST sites identified. Some sites were in more than one database.

- **Map ID 1: Black Diamond Loaf & Jug, 7055 Alegre St.**

Note that Map ID 2 is an incorrect address (7055 Alegre Circle) for the same facility.

UST - The facility reportedly has 3 closed USTs.

LUST – A Leaking Underground Storage Tank Event was logged on 12/21/99. The event is listed as “Closed” by the agency.

Based on this information, the risk of contamination in the Project Area is considered low.

- **Map ID 3: New Generation Supply, 18 Jersey Lane.**

AST - The facility reportedly has 2 operational ASTs. No releases have been reported.

UST - The facility reportedly has 4 closed USTs.

LUST – A Leaking Underground Storage Tank Event was logged on 4/26/94. The event is listed as “Closed” by the agency.

Based on this information, the risk of contamination in the Project Area is considered low.

- **Map ID 4: KOA Kampground, 8100 Bandley Road.**

Note: the location of Map Symbol #4 is incorrect. This facility is located approximately 0.5 mile south of the interchange.

AST - The facility reportedly has 1 operational LPG tank. No releases have been reported.

Based on this information, the risk of contamination in the Project Area is considered low.

- **Map IDs 5 and 6: Colorado Springs Auto Auction, 7360-7390 S HWY 85.**

UST - The facility reportedly has 1 closed UST.

LUST – This facility, under the name “Colorado Auto Auction,” shows up in the EDR “Orphan Sites List.” A Leaking Underground Storage Tank Event was logged on 4/12/05/00. The event is listed as “Closed” by the agency.

Because the current SH16 reconstruction plan calls for taking a portion of this property, additional research on the location and disposition of the LUST and contaminated soil is recommended.

- **Map ID 8: 7-11 #33043, 7725 Fountain Mesa Road.**

UST - The facility reportedly has 2 operational USTs. No releases have been reported.

Based on this information, the risk of contamination in the Project Area is considered low.

- **Map ID 9: Hyponex Co., 3 Assembly Court.**
UST - The facility reportedly has 1 closed and 1 operational UST. No releases have been reported.
Based on this information, the risk of contamination in the Project Area is considered low.

RCRIS – Resource Conservation and Recovery Information System

There was one (1) RCRIS Hazardous Waste Small Quantity Generator identified:

- **Map ID 1: Aquila Inc. Fountain Service Center, 7060 Alegre St.**
“No Violations Reported,” therefore the risk of contamination in the Project Area is considered low.

FINDS – Facility Index System

Six (6) FINDS sites were identified within or near the Project Area.

- **Map ID 5: Colorado Springs Auto Auction, 7390 S HWY 85.**
Site listed as an Air Emissions Site. Based on this information, the risk of contamination in the Project Area is considered low.
- **Map ID 5: ADT Corp., 7390 S HWY 85.**
Site listed as a RCRA Info System site. No violations were reported. Based on this information, the risk of contamination in the Project Area is considered low.
- **Map ID 5: Peoples Choice, 7370 S HWY 85.**
Site listed as an Ecoregions Site. No violations were reported. Based on this information, the risk of contamination in the Project Area is considered low.
- **Map ID 7: Widefield Water and Sanitation District, 450 Willow Springs Road.**
Site listed as a Permit Compliance System Site. No violations were reported. Based on this information, the risk of contamination in the Project Area is considered low.
- **Map ID 9: Scott Co., 3 Assembly Court.**
Site listed as an Integrated Compliance Information Site. No violations were reported. Based on this information, the risk of contamination in the Project Area is considered low.
- **Map ID 9: Hyponex Co., 3 Assembly Court.**
Site listed as an Air Emissions Site. Based on this information, the risk of contamination in the Project Area is considered low.

7.3 EDR “Orphan Sites”

EDR listed 32 sites as “orphan sites,” meaning that the EDR could not pinpoint the location of the sites. Table 2 summarizes the available information about each orphan site.

Carter & Burgess has evaluated the applicability of each orphan site to the Project Area. In Carter & Burgess’ opinion, except for the Colorado Auto Auction site at 7360 US 85, none of the EDR orphan sites represent a recognized environmental condition in relation to the Project Area. The Colorado Auto Auction site is discussed in Section 7.2 above.

8.0 Phase II Investigation of Fort Carson Landfill 11

During April 2006, Carter & Burgess conducted a focused Phase II investigation of Fort Carson Landfill 11. The objectives of the Phase II investigation were to collect additional information regarding (1) the types of waste present in the landfill and (2) depths to the base of the waste in portions of the landfill where no information existed. Plans called for the excavation of five test pits to the base of the waste.

8.1 Initial Site Visit

During a site reconnaissance visit hosted by Fort Carson environmental personnel on February 24, 2006, several approximately 1-inch diameter pieces of non-friable transite tile were observed. Upon analysis at the Fort Carson laboratory, it was determined that they contained more than 1 percent asbestos.

8.2 Background Information Regarding Asbestos

Asbestos is a naturally occurring fibrous mineral that has been used in many applications for its fire resistance, noise insulation and electrical insulation properties. Common uses prior to the mid-1970s included building products such as pipe insulation, acoustical soundproofing, house insulation, fireproofing, house siding, floor coverings, roofing materials, and heating and cooling system insulation.

There are two general forms of asbestos containing materials (ACM): friable and non-friable. Friable ACM is the more dangerous form. Friable ACM, when dry, can be crumbled, pulverized or reduced to a powder by hand pressure. Friable ACM includes previously non-friable material that becomes damaged to the extent that when dry it may be crumbled, pulverized or reduced to a powder by hand pressure. Non-friable ACM cannot easily be pulverized or reduced to a powder.

Resilient floor tile, sheet vinyl flooring, roof felts, asphalt tiles, asphalts, mastics, and transite roofing shingles, siding, and pipe are considered non-friable forms of ACM, unless they are damaged during demolition or renovation activities.

Inhalation of asbestos fibers may cause cancer, so inhalation of asbestos fibers and dust must be avoided. The most important thing in handling, transporting, or disposing of asbestos is to do so in a way that prevents airborne release of fibers or dust.

8.3 Regulatory Overview of Asbestos

Asbestos is regulated under the authority of multiple statutes. The Environmental Protection Agency (EPA) regulates asbestos as a solid waste under the Resource Conservation and Recovery Act (RCRA), as a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as a building material under the Toxic Substance Control Act (TSCA), limits effluent discharges for asbestos fibers in water under the Clean Water Act, and as an airborne contaminant under the National Emission Standards for Hazardous Air Pollutants program (NESHAP) in accordance with the Clean Air Act.

NESHAP requires notification of asbestos abatement activities and requires abatement contractors to follow certain procedures related to removing and packaging asbestos for

disposal. It also requires specific work practices to be implemented to prevent releases of asbestos fibers to the air.

The Occupational Safety and Health Administration (OSHA) regulates asbestos in work-related exposures, while the Consumer Product Safety Commission regulates asbestos in consumer products, such as hair dryers and plaster. The Department of Transportation (DOT) regulates the transportation of asbestos and has designated asbestos as a hazardous material for purposes of transportation. The DOT has specific requirements for shipping documents, packaging, labeling, and vehicle placarding. Asbestos must be loaded, handled, and unloaded in a manner that will minimize occupational exposure to airborne asbestos fibers released during transit.

The Colorado Department of Public Health and Environment (CDPHE) has in-state authority to regulate asbestos under the Clean Air Act and RCRA. The Hazardous Materials and Waste Management Division and the Air Pollution Control Division share regulatory responsibility for asbestos. The Air Pollution Control Division regulates inspection and assessment activities for asbestos as well as the safe removal and handling of asbestos materials (abatement). The Hazardous Materials and Waste Management Division regulates the proper disposal of asbestos wastes in Colorado.

In April 2006, the CDPHE issued a draft document entitled "Asbestos-Contaminated Soil Guidance Document" that provides guidance for the management (including the handling, storing, collecting, transporting and disposing) of asbestos-contaminated soil. In the document, asbestos-contaminated soil is defined as soil containing any amount of asbestos.

8.4 Soil Characterization and Management Plan

Because of the identification of asbestos at the site, Carter & Burgess contracted with Walsh Environmental Scientists and Engineers, LLC (Walsh) to prepare a document entitled "Soil Characterization and Management Plan for Asbestos in Soil, Landfill 11, Fort Carson, Colorado." This document, which was prepared by a State of Colorado Certified Asbestos Inspector/Project Designer, included a sampling plan developed by Carter & Burgess, and described the project methodology and work practices, and the exposure mitigation and asbestos fiber control measures to be employed during the investigation.

8.5 Implementation of the Phase II Investigation

On April 26, 2006, two of the five test pits were excavated in accordance with the Soil Characterization and Management Plan. Due to the finding of what appeared to be friable asbestos in the second test pit, and the increasing wind speed, the other three planned test pits were not excavated.

As the pits were excavated, Mr. Robert Slaughter, a Colorado Certified Asbestos Building Inspector, examined the excavated materials for suspect asbestos containing materials (ACM), and classified such materials as either friable or non-friable.

8.6 Results of the Phase II Investigation

The first test pit excavated was designated Test Pit #47. The field description of waste materials identified in Test Pit #47 included:

- transite siding (non-friable suspect ACM)
- pieces of floor tile (non-friable suspect ACM)
- bricks and pieces of bricks
- pieces of various color plaster, or possibly block insulation (non-friable suspect ACM)
- pieces of concrete
- cobble stones
- pieces of mortar
- asphalt concrete
- concrete with reinforcing wire
- glass
- rectangular pieces of concrete approximately 4 feet long by 2 feet wide by 10 inches to 1 foot thick

Test Pit #47 was terminated at a depth of 5 feet when the rectangular pieces of concrete could not be penetrated further. With the exception of the laboratory samples, which were sealed in plastic bags, the excavated materials were returned to the hole.

The following four samples of non-friable suspect ACM from Test Pit #47 were submitted for laboratory analysis of their asbestos content, if any (sample descriptions are by the laboratory). The laboratory report is included in Appendix Section 9.

- white plaster (Sample 47-01) – no detectable asbestos
- tan granular plaster (Sample 47-02) – no detectable asbestos
- black mastic (Sample 47-03 subpart A) – trace (<1 percent) asbestos
gray tile (Sample 47-03 subpart B) – 8 percent asbestos
- white transite (siding) (Sample 47-04) – 15 percent asbestos

In addition, a soil sample from the excavation was submitted for analysis:

- brown soil (Sample 47-10) – no detectable asbestos.

The second test pit excavated was designated Test Pit #48. The field description of waste materials identified in Test Pit #48 included:

- pieces of floor tile (non-friable suspect ACM)
- bricks and pieces of bricks
- white plaster, or possibly block insulation (non-friable suspect ACM)
- asphalt concrete
- fibrous floor covering (linoleum) (non-friable suspect ACM)
- glass
- white and gray transite siding (non-friable suspect ACM)
- pieces of concrete block
- pull tab from aluminum can

- tar paper roofing material
- white fire brick (non-friable suspect ACM)
- pieces of concrete
- metal roof-edge flashing
- fibrous light gray light-weight material, ½-inch diameter clump – (friable suspect ACM)
- ½-inch thick built-up roofing with rounded pebbles (non-friable suspect ACM)
- several pieces of cream colored fibrous insulation – (friable suspect ACM)
- 4-inch diameter piece of pink fibrous insulation - (friable suspect ACM)

Test Pit #48 was terminated at a depth of 4 feet when the ambient wind speed increased, making control of asbestos fibers more difficult. Because several different kinds of friable suspect ACM had been identified, it was decided to submit the samples to the laboratory and hold off on additional test pits until the laboratory results had been received. After the samples were sealed in plastic bags, the remaining suspect ACM was placed into drums labeled “non-friable suspect ACM” and “friable suspect ACM,” and were removed from the site by Walsh. The remaining excavated materials were then returned to the hole.

The following eight samples of friable and non-friable suspect ACM from Test Pit #48 were submitted for laboratory analysis of their asbestos content, if any (sample descriptions are by the laboratory):

- white plaster (Sample 48-01) – no detectable asbestos
- white brick (Sample 48-02) – no detectable asbestos
- black mastic (Sample 48-03 subpart A) – trace (<1 percent) asbestos
gray tile (Sample 48-03 subpart B) – 8 percent asbestos
- white/gray transite (Sample 48-04) – 10 percent asbestos
- white transite (Sample 48-05) – 25 percent asbestos
- white debris (Sample 48-06 subpart A) – 20 percent asbestos
black tar w/brown pebbles (Sample 48-06 subpart B) - no detectable asbestos
- gray fibrous plaster (**field description: FRIABLE fibrous light gray light-weight material**) (Sample 48-07) – 17 percent asbestos
- white fibrous plaster (**field description: FRIABLE cream colored fibrous insulation**) (Sample 48-08) – 20 percent asbestos
- pink fibrous material (**field description: FRIABLE pink fibrous insulation**) (Sample 48-09) – 75 percent asbestos

In addition, a soil sample from the excavation was submitted for analysis:

- brown soil (Sample 48-10) – 1 percent asbestos.

9.0 Conclusions and Recommendations

9.1 Phase I MESA

Carter & Burgess, Inc. (Carter & Burgess) has performed a Phase I Modified Environmental Site Assessment (MESA) for the Project Area adjacent to the intersection of State Highway 16 (SH16) and Interstate Highway 25 (I-25) located in El Paso County, Colorado. Because of the large size of the Study Area, no properties were entered and no interviews were conducted.

Mr. Craig Gander, an Environmental Project Manager with Carter & Burgess, conducted an on-site inspection of the Study Area on January 30, 2006. No indications of surface environmental contamination were observed.

Within the environmental database search distance of the Study Area, there is one Department of Defense Site, one Above Ground Storage Tank site, five Underground Storage Tank sites, three Leaking Underground Storage Tank sites, one registered small quantity hazardous waste generator, and six Facility Index System sites.

Based on observations made and information reviewed, Carter & Burgess concludes that at the time of this Phase I MESA, the Project Area includes a medium environmental risk. A medium risk rating means that there are possible or suspected environmental concerns that may warrant further investigation.

Figure 2 shows the proposed SH16 improvements. Based on the areas shown where improvements are planned or additional right of way will be required, the following sites may warrant further investigation:

- **Map IDs 5 and 6: Colorado Springs Auto Auction, 7360-7390 S HWY 85.**
The facility reportedly has 1 closed UST, and, under the name "Colorado Auto Auction," shows up in the EDR "Orphan Sites List." A Leaking Underground Storage Tank Event was logged on 4/12/05/00. The event is listed as "Closed" by the agency.
Because the current SH16 reconstruction plan calls for taking a portion of this property, additional research on the location and disposition of the LUST and petroleum contaminated soil is recommended.
- Apparently unused vehicles and/or debris were observed at the transmission repair facility located on the north side of Southmoor Drive (Photograph 20).
Because the current SH16 reconstruction plan calls for taking a portion of this property, additional research on the condition of this property is recommended.

In addition:

- Penetration into the known PCE groundwater plume should be avoided if possible. Water from construction dewatering in the plume area is likely to require treatment prior to discharge.
- Colorado regulations require a formal asbestos inspection and possibly abatement for any buildings that will be demolished.

These conclusions have been based on a limited inspection and research of public documents pertaining to the Study Area. Conclusions drawn by others from the results of this assessment

should recognize the limitations of the methods used. This report was produced for the exclusive use of the CDOT Region 2 and their authorized representatives.

9.2 Phase II Investigation of Fort Carson Landfill 11

A focused Phase II Investigation was conducted to collect additional information regarding (1) the types of waste present in the landfill and (2) depths to the base of the waste in portions of the landfill where no information existed.

The first objective was achieved, the second was not, due in part to pieces of concrete too large for the excavator to dislodge, and in part to the discovery of several types of friable suspect ACM that would have required remobilization to the site at a later date with additional personnel and equipment.

Waste materials observed in the two completed excavations consisted primarily of the types of materials that had been described in previous investigations by Army contractors, such as metal banding, broken concrete, brick, tile, plastic, wood, asphalt, bottles, and cans.

In addition, both friable and non-friable suspect ACM were found. Laboratory analysis confirmed the presence of greater than 1 percent asbestos in floor tiles, transite siding, debris stuck to roofing material, two types of fibrous plaster-like insulation and one type of fibrous loose insulation. Asbestos was also detected in one of two soil samples.

Fort Carson Landfill 11 is a regulated Solid Waste Management Unit (SWMU) under the Colorado Resource Conservation and Recovery Act (RCRA) Corrective Action Program. The presence of ACM is merely an additional property of the SMWU that must be taken into account during any RCRA-permitted activity. Under RCRA, any remedy proposed for the landfill area must go through a public notification process and be approved by the CDPHE. Fort Carson environmental personnel have stated that, in previous discussions with CDPHE regulators, CDPHE has appeared to be very supportive of complete removal of the landfill.

10.0 References

Carter & Burgess does not warrant the data of regulatory agencies or other third parties supplying information used in the preparation of this report. Public documents and commercial information services used in the preparation of this report are listed below.

DOCUMENTS

ASTM Designation E 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process

Carter & Burgess, Willow Springs Ponds Area Tetrachloroethylene Investigation Report, State Highway 16 Project, El Paso County, Colorado, August 2003

Harding ESE and Earth Tech, Inc., Final RCRA Facility Investigation Report, Landfill 11 (SWMU 11/FTC-015), Fort Carson, Colorado, March 2004

United States Department of Agriculture, Soil Survey of El Paso County, Colorado, Soil Conservation Service, March 1975

U.S. Geological Survey, Geologic Map of Colorado, 1979

COMMERCIAL SERVICES

Environmental Data Resources (EDR) Inc., EDR DataMap™ Area Study

TABLES

FIGURES

APPENDIX

APPENDIX SECTION 1

DEFINITIONS

DEFINITIONS

For purposes of conducting a Phase I Environmental Site Assessment pursuant to ASTM Practice 1527-97, the following definitions relate to *hazardous substance*, *hazardous waste*, and *petroleum products* in this report:

Hazardous Substance--A substance defined as a hazardous substance pursuant to CERCLA 42 USC 9601(14), as interpreted by EPA regulations and the courts: "(A) any substance designated pursuant to Section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to Section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC 6901 *et seq.*) has been suspended by Act of Congress, (D) any toxic pollutant listed under Section 1317(a) of Title 33, (E) any hazardous air pollutant listed under Section 112 of the Clean Air Act (42 USC 7412), and (F) an imminently hazardous chemical substance or mixture with respect to which the Administrator (of EPA) has taken action pursuant to Section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

Hazardous Waste--any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act (42 USC 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC 6901 *et seq.* has been suspended by Act of Congress). The Solid Waste Disposal Act of 1980 amended RCRA. RCRA defines hazardous waste, in 42 USC 6903, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration or physical, chemical, or infectious characteristics may--(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

Petroleum Products--those substances included within the meaning of the *petroleum exclusion* to CERCLA, 42 USC 9601(14), as interpreted by the courts and EPA, that is: petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under Subparagraphs (A) through (F) of 42 USC 9601(14), natural gas, natural gas liquids, liquefied natural gas, and synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). The word fraction refers to certain distillates of crude oil, including gasoline, kerosene, diesel oil, jet fuels, and fuel oil, pursuant to *Standard Definitions of Petroleum Statistics*, American Petroleum Institute.

APPENDIX SECTION 2

TOPOGRAPHIC MAPS

APPENDIX SECTION 3
AERIAL PHOTOGRAPHS

APPENDIX SECTION 4
SITE PHOTOGRAPHS

APPENDIX SECTION 5
HISTORICAL DOCUMENT

APPENDIX SECTION 6

SOIL SURVEY MAP

APPENDIX SECTION 7

**COLORADO OIL AND GAS
CONSERVATION COMMISSION DATA**

APPENDIX SECTION 8

EDR DATAMAP AREA STUDY
REGULATORY DATABASE REVIEW

APPENDIX SECTION 9

**ASBESTOS ANALYTICAL REPORT
FOR SAMPLES COLLECTED AT LANDFILL 11,
FORT CARSON, COLORADO**