

Commodity Flow Study Final Report

October 2013



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FINAL

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1. Objective

The objective of this project is to develop and implement a commodity flow study for the South Dakota Dept. of Public Safety (DPS), Office of Emergency Management (OEM). The Request for Proposal stated that the study should “include as many counties as funding will provide for”. Funding for the project is provided through a US Dept. of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration grant that ended on September 30, 2013. The work plan identified 25 sites and 2 optional sites to survey major roads entering Eastern South Dakota. Spink County was not included since it had been surveyed in 2010. The consulting contract with Project Solutions Inc. (PSI) was finalized on May 17, 2013.

PSI conducted the first phase of the study by surveying roads in Western South Dakota in 2012. This report documents the second phase of the study. This commodity flow study does not quantify all of the hazardous materials that are transported on highways through Eastern South Dakota counties that were surveyed. It provides a representative sample of the types and traffic patterns of hazardous materials that are transported on major highways in this area. This study will be used by the State Emergency Response Commission, Local Emergency Planning Committees, and emergency responders to train, equip, and respond to hazardous materials incidents. Study data may be used by community planners and elected officials to designate highway routes for the transportation of hazardous materials. According to the USDOT “Guidance for Conducting Hazardous Materials Flow Surveys”, January 1995, a commodity flow analysis is an important step in assessing transportation-related hazardous materials risks.

2. Work Plan

The project work plan included 25 proposed survey locations (plus 2 optional survey sites) and the process for conducting the study:

1. Obtain SD Dept. of Transportation (SDDOT) permits to occupy right-of-way (ROW).
2. Secure needed supplies and equipment.
3. Train a 2-person crew.
4. Deploy the crew to collect data on placarded vehicles for 8-10 hours for 2 days at each site beginning May 20, including a total vehicle count.
5. Collect survey forms and update the Excel spreadsheet weekly.
6. Submit monthly progress reports and invoices to the OEM June through September 15.
7. Analyze data including a comparison to the 2010 Spink County study.
8. Submit a draft report to OEM by September 23 and a final report and invoice by September 30.

3. Data Gathering

Applications for SDDOT permits to occupy ROW were submitted to the Aberdeen (Aberdeen, Huron, and Watertown Areas), Mitchell (Mitchell, Sioux Falls, and Yankton Areas), and Pierre (Mobridge, Pierre, and Winner Areas) Regions. SDDOT Area personnel provided suggestions for when to survey sites based on planned construction and preferred survey locations. Our crews observed vehicles from the highway right-of-way and rest areas near the South Dakota/Minnesota and South Dakota/North Dakota borders. We also conducted surveys from the Winner and Yankton weigh stations and the Jefferson Port of Entry. PSI's Project Manager was responsible for notifying SDDOT and DPS personnel weekly by e-mail of our planned survey locations.

PSI project team members were:

Sandy Burns	Contract Manager
Lori Litzen	Project Manager
Chase Carlson	Field Technician
John Farris	Field Technician
Kiefer Haug	Field Technician
Aaron Lawrence	Field Technician
Tom Schleusener	Field Technician
Anna Stuard	Accounting

PSI's Project Manager prepared a detailed schedule, secured equipment and supplies, made hotel reservations, and provided the field crew with training on hazardous materials transportation placarding and vehicle types, data collection using the Pennington County Data Collection Form (see Appendix), equipment operation, roadside safety, and PSI new employee and travel policy training. "Vehicle/Trailer Types Identified During Study" photos from the Rapid City/Pennington County Hazardous Materials Commodity Flow Study 2011 were also included in the Crew Manual as a reference to assist PSI's field crew in vehicle identification.

Survey equipment included:

- Trailer (with generator and fuel) and pickup
- Chairs, safety vests, clipboards, pens, survey forms, binoculars, camera with zoom lens, and tripod
- Crew Manual with log sheet, latitude/longitude information sheet, survey schedule, hotel information, State of SD contract, equipment and site checklist, DPS and SDDOT contacts, hazardous materials training materials, PSI phone list and travel policy, and local radio stations and hospitals lists
- Survey Crew signs
- Weather radio, toolkit, bug spray, sunscreen, hand sanitizer, and first aid kit

The 2-person crews (Chase and John or Aaron and Tom) worked 4-day weeks every other week and Kiefer was an alternate crew member. They observed vehicles for 4 to 11 hours (8.6 hours average) from May 20 to August 22 at the following locations:

Location	Description
Winner	US183/SD44 intersection west of Winner (weigh station)
Fairfax	US281/18 intersection east of Fairfax
Corsica	US281/SD44 intersection south of Corsica
Olivet	US18/SD25 intersection west of Olivet
Ethan	SD42/37 intersection west of Ethan
Forestburg	SD34/37 intersection east of Forestburg
Huron	US14/SD37 intersection in Huron
Miller	US14/SD45 intersection in Miller
Gettysburg	US212/83 intersection west of Gettysburg
Selby	US12/83 intersection northwest of Selby
Yankton	US81/SD50 intersection north of Yankton (weigh station)
Vermillion	SD19/50 intersection in Vermillion
Jefferson Southbound Jefferson Northbound	I-29 northwest of Jefferson (Port of Entry)
Beresford	SD11/46 intersection east of Beresford
Parker	SD44/19 intersection east of Parker
Sioux Falls	I-229 in Sioux Falls
Madison	US81/SD34 intersection west of Madison
Brandon Eastbound Brandon Westbound	I-90 east of Brandon (rest area)
Elkton	US14 north of Elkton
Reville	US212/SD15 intersection southwest of Reville
Big Stone City	US12/SD109 intersection in Big Stone City
Watertown	US81/212 intersection in Watertown
Victor Southbound Victor Northbound	I-29 north of Victor (rest area)
Hecla	SD10/37 intersection south of Hecla
Aberdeen	US281/12 intersection in Aberdeen

Table 1 Study Locations

Location latitude/longitude is included in the Excel spreadsheet (see Appendix). In addition to recording placarded vehicle information, crews determined a total vehicle count, if possible. A printout of the Excel spreadsheet is included in the Appendix. A CD with electronic copies of this report and the spreadsheet is included in the report binder. A map with study sites is included on Page 4. These sites are located on SDDOT Principal Arterials (State Highway Functional Classification) including Interstates 29 and 90 and major highways. These routes have the highest Average Daily Traffic counts. The volume of truck traffic varies from 6-30% along these routes (SDDOT “2012 South Dakota Traffic Flow Map”).

4 ★ 2013 Study Sites (25)

Spink County was surveyed in 2010.

★ 2010 Study Sites (9)

Functional Class

- Principal Arterial - Interstate
- Principal Arterials - Freeways, Other
- Minor Arterials
- Major Collectors
- Local Roads



Figure 3 Eastern SD Commodity Flow Study Sites

These are pictures of our equipment setup. The pickup was used at locations with limited space or on windy days. The pickup and trailer were used at locations with adequate space.



Figure 2 Survey Location with Pickup



Figure 3 Survey Location with Pickup and Trailer

A hazardous material is a substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce (49 Code of Federal Regulations (CFR) 171.8). It includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the criteria for hazard classes and divisions described in 49 CFR 173. The 9 hazard classes and divisions are:

Class 1 Explosives
Division 1.1 Mass explosion hazard (affects entire load instantaneously)
Division 1.2 Projection hazard
Division 1.3 Fire hazard and minor blast hazard or projection hazard or both
Division 1.4 Minor explosion hazard (confined to package)
Division 1.5 Very insensitive explosives with a mass explosion hazard
Division 1.6 Extremely insensitive articles
Class 2 Gases
Division 2.1 Flammable gas
Division 2.2 Non-flammable gas
Division 2.3 Gas poisonous by inhalation
Class 3 Flammable Liquids
Class 4
Division 4.1 Flammable solids
Division 4.2 Spontaneously combustible materials
Division 4.3 Dangerous when wet materials
Class 5
Division 5.1 Oxidizers
Division 5.2 Organic peroxides
Class 6
Division 6.1 Poisonous materials
Division 6.2 Infectious substances
Class 7 Radioactive Materials
Class 8 Corrosive Materials
Class 9 Miscellaneous Hazardous Materials

Table 2 Hazard Classes and Division

DANGEROUS, OXYGEN, and COMBUSTIBLE placards may also be displayed on vehicles as well as BIOHAZARD, HOT, and sour crude oil hazard markings and identification numbers. Many placards include the 4-digit North American (NA) or United Nations (UN) number on a white background.

A vehicle is required to display placards if transporting any quantity of the following hazardous materials:

Class/Division	Placard
1.1	EXPLOSIVES 1.1
1.2	EXPLOSIVES 1.2
1.3	EXPLOSIVES 1.3
2.3	POISON GAS
4.3	DANGEROUS WHEN WET
5.2	ORGANIC PEROXIDE
6.1	POISON INHALATION HAZARD
7	RADIOACTIVE

Table 3 49 CFR 172.504(e), Table 1 Requirements

Vehicles transporting 1001 pounds or more of the following hazardous materials must display placards (49 CFR 172.504(e), Table 2):

Class/Division	Placard
1.4	EXPLOSIVES 1.4
1.5	EXPLOSIVES 1.5
1.6	EXPLOSIVES 1.6
2.1	FLAMMABLE GAS
2.2	NON-FLAMMABLE GAS
3	FLAMMABLE
Combustible Liquid	COMBUSTIBLE
4.1	FLAMMABLE SOLID
4.2	SPONTANEOUSLY COMBUSTIBLE
5.1	OXIDIZER
5.2	ORGANIC PEROXIDE
6.1	POISON
8	CORROSIVE
9	Class 9

Table 4 49 CFR 172.504(e), Table 2 Requirements

DOT Chart 14 “Hazardous Materials Markings, Labeling and Placarding Guide” was included in the Crew Manual as a reference.

4. Data Analysis

Survey forms were turned in by crews weekly and the data input into an Excel spreadsheet by the Project Manager. The spreadsheet includes dropdown lists for Direction of Travel, Vehicle Type, Hazard Class, UN No., and Hazardous Material Name to eliminate spelling and improper data errors. Dropdown lists were revised as additional hazardous materials were observed. Table 5 on Pages 9 and 10 summarizes the number of vehicles observed and the hazardous materials transported.

A. Placarded Vehicles by Location

Date	Location	Number of Vehicles Surveyed	Non-Flammable Gas (Division 2.2)	Flammable Liquid (Class 3)	Other*
5-20-13	Winner	1	0	1	4
5-21-13	Winner	4	0	3	4
5-22-13	Fairfax	6	0	6	0
5-23-13	Fairfax	2	1	0	0
5-28-13	Corsica	6	2	3	3
5-29-12	Corsica	6	0	5	1
5-30-13	Olivet	0	0	0	0
5-31-13	Olivet	5	3	2	1
6-3-13	Ethan	7	1	5	2
6-4-13	Ethan	14	4	9	2
6-5-13	Forestburg	17	5	8	1
6-6-13	Forestburg	7	0	6	4
6-10-13	Huron	13	0	12	0
6-11-13	Huron	7	1	5	0
6-12-13	Miller	24	0	21	2
6-13-13	Miller	22	0	19	0
6-16-13	Gettysburg	2	0	1	2
6-17-13	Gettysburg	2	1	1	4
6-18-13	Selby	8	0	3	1
6-19-13	Selby	4	0	4	0
6-24-13	Yankton	2	0	1	0
6-25-13	Yankton	12	0	7	1
6-26-13	Vermillion	17	1	8	3
6-27-13	Vermillion	13	5	7	0
6-30-13	Jefferson SB	3	0	3	1
7-1-13	Jefferson SB	20	1	13	4
7-2-13	Jefferson NB	10	4	2	2
7-3-13	Jefferson NB	13	2	2	0
7-8-13	Beresford	5	0	1	1
7-9-13	Beresford	17	0	5	3
7-10-13	Parker	3	1	1	0
7-11-13	Parker	8	0	7	1
7-15-13	Sioux Falls	3	1	2	1
7-16-13	Sioux Falls	7	2	3	4
7-17-13	Madison	13	1	8	1
7-18-13	Madison	5	0	4	5

Table 5 Placarded Vehicle Counts

Date	Location	Number of Vehicles Surveyed	Non-Flammable Gas (Division 2.2)	Flammable Liquid (Class 3)	Other*
7-22-13	Brandon EB	15	1	11	
7-23-13	Brandon EB	27	3	17	
7-24-13	Brandon WB	18	5	11	58
7-25-13	Brandon WB	16	1	5	
7-29-13	Elkton	2	0	0	
7-30-13	Elkton	6	0	4	
7-31-13	Revilla	6	0	3	3
8-1-13	Revilla	7	2	4	1
8-6-13	Big Stone City	6	0	4	2
8-7-13	Big Stone City	13	0	11	2
8-8-13	Watertown	29	0	24	5
8-9-13	Watertown	21	0	17	4
8-12-13	Victor SB	2	1	1	0
8-13-13	Victor SB	3	1	2	0
8-14-13	Victor NB	3	0	3	0
8-15-13	Victor NB	4	1	3	0
8-18-13	Hecla	1	0	0	1
8-19-13	Hecla	9	2	4	3
8-20-13	Aberdeen	29	0	18	11
8-21-13	Aberdeen	43	0	35	8
Totals		568	53	365	150

* Includes Explosives (1, 1.3, 1.4, and 1.5), 2.1 Flammable Gas, 2.3 Poison Gas, 4.3 Dangerous When Wet, 5.1 Oxidizer, Poisons (6 and 6.1), 8 Corrosive, and 9 Miscellaneous. Detailed information is included in the Excel spreadsheet (see Appendix).

Table 5 Placarded Vehicle Counts

B. Placarded Vehicles by Hazard Class/Division

Some vehicles displayed multiple placards. The majority of vehicles (529) displayed only 1 placard, 32 vehicles had 2 placards, and 7 vehicles displayed 3 or more placards. Hazard Class/Division for the 617 placards observed were:

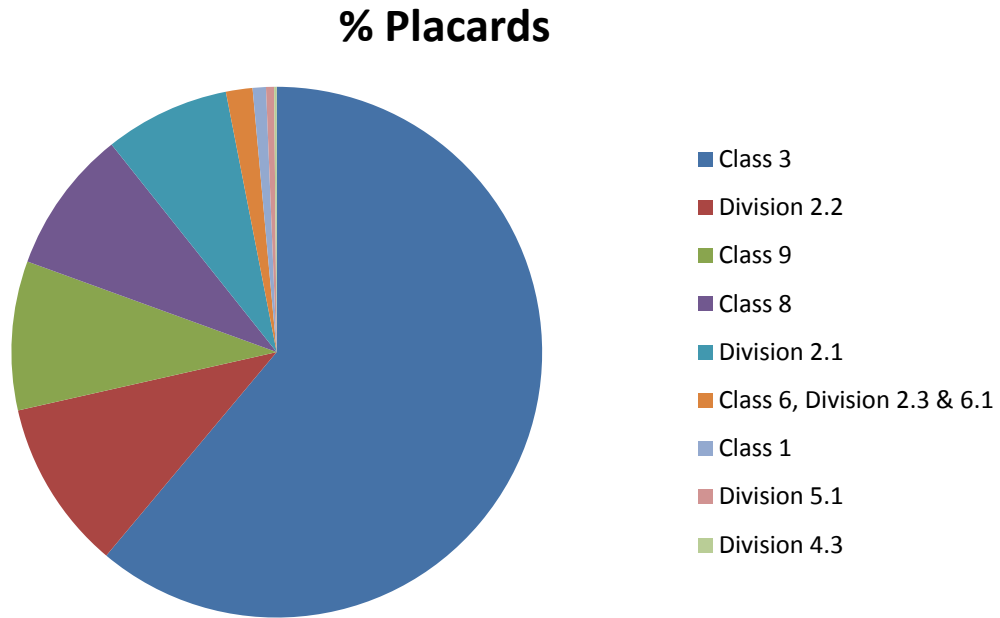


Figure 4 Placarded Vehicle Class/Division

Hazard Class/Division and Hazardous Material Name for the 617 placards observed were:

Hazard Class/Division	Hazardous Material Name	Number of Placards	% Placards
3	UN 1133 Adhesives	377	61% (W SD 64%)
	UN 1170 Ethanol		
	UN 1203 Gasoline		
	UN 1208 Hexanes		
	UN 1267 Crude oil		
	UN 1863 Aviation fuel		
	UN 1987 Alcohols, n.o.s.		
	UN 1992 Toxic, n.o.s.		
	UN 1993 n.o.s.		
	UN 1999 Tars		
	UN 2985 Chlorosilanes, n.o.s.		
UN 3256 Elevated temperature			
Unknown			
2.2	UN 1005 Anhydrous ammonia	64	10% (W SD 2%)
	UN 1073 Oxygen		
	UN 1951 Argon		
	UN 1977 Nitrogen		
	UN 2187 Carbon dioxide		
Unknown			
9	UN 2071 Ammonium nitrate fertilizer	56	9% (W SD 6%)
	UN 3062 Organic peroxide*		
	UN 3082 Environmentally hazardous substances, n.o.s.		
	UN3257 Elevated temperature		
Unknown			

Table 6 Hazard Class/Division and Hazardous Material Name

Hazard Class/ Division	Hazardous Material Name	Number of Placards	% Placards
8	UN 1760 n.o.s.	54	9% (W SD 6%)
	UN 1781 Hexadecyltrichlorosilane		
	UN 1789 Hydrochloric acid		
	UN 1791 Hypochlorite solutions		
	UN 1819 Sodium aluminate		
	UN 1824 Sodium hydroxide		
	UN 1830 Sulfuric acid		
	UN 1903 Disinfectants, n.o.s.		
	UN 2582 Ferric chloride		
	UN 2672 Ammonia solutions		
	UN 2693 Bisulfites		
	UN 2705 1-pentol		
	UN 2789 & UN 2790 Acetic acid		
	UN 3266 Basic inorganic, n.o.s.		
UN 3267 Basic organic, n.o.s.			
	Unknown		
2.1	UN 1038 Ethylene	47	8% (W SD 20%)
	UN 1075 Propane		
	Unknown		
2.3, 6, & 6.1	UN 1017 Chlorine	10	2% (W SD <1%)
	UN 1079 Sulfur dioxide		
	UN 1887 Bromochloromethane		
	UN 2783 & UN 3017 Pesticides		
	Unknown		
1, 1.3, 1.4, & 1.5	Unknown	5	<1% (W SD <1%)
5.1	UN 1942 Ammonium nitrate	3	<1% (W SD 1%)
	Unknown		
4.3	UN 2257 Potassium	1	<1% (W SD 0%)

n.o.s. = not otherwise specified

* UN 3062 no longer used; UN 3101-3120 (Division 5.2)

Table 6 Hazard Class/Division and Hazardous Material Name

The OXYGEN placard was observed on 11 vehicles and is included with the Division 2.2 placard count. The HOT placard was observed on 32 vehicles and the DANGEROUS placard on 9 vehicles. The HOT and DANGEROUS placards are included in the Class 9 placard count. In addition, some vehicles displayed placards without UN numbers so their contents are unknown. Detailed study information is included in the Excel spreadsheet (see Appendix). Vehicles with 2 placards are highlighted in yellow and vehicles with 3 or more placards are highlighted in red.

The USDOT “Guidance for Conducting Hazardous Materials Flow Surveys”, January 1995 found that hazard classes/divisions shipped from 1982-93 by decreasing volume (tons) and (ton-mile) were:

Tons	Ton-mile
Class 3	Class 3
Division 6.1	Division 6.1
Division 2.3	Division 4.1
Division 2.1	Class 8
Division 4.1	

Table 7 USDOT Hazard Class/Division 1982-93

Our study found that the majority of hazardous material shipments in Eastern South Dakota (61%) are Class 3 (flammable liquids). This is consistent with the findings of our 2012 Western South Dakota study (64%) and USDOT figures that 50% of 1982-93 hazardous material shipments were gasoline and petroleum products. Quantities of Division 2.2 (non-flammable gas) are 10% for Eastern and 2% for Western South Dakota. Class 8 (corrosive materials) are 9% for Eastern and 6% for Western South Dakota. Both of these materials are higher for Eastern South Dakota because there is more industrial activity, for example, ethanol plants in the Eastern part of the state. The Division 2.1 (flammable gas) figure for Eastern South Dakota is not as high (8%) as Western (20%) because there are more natural gas pipelines located in Eastern South Dakota. PSI study results are comparable to the hazardous materials classes observed in the 2010 Spink County study:

Class	Spink County	Balance E SD Counties
3	51%	61%
2	24%	18%
9	12%	9%
8	6%	9%
6	2%	2%
1	1%	<1%
5	2%	<1%
4	0%	<1%
7	2%	0%

Table 8 Spink County Study Comparison

C. Placarded Vehicles by Vehicle Type

The Vehicle Types for the 568 vehicles observed in PSI's study included:

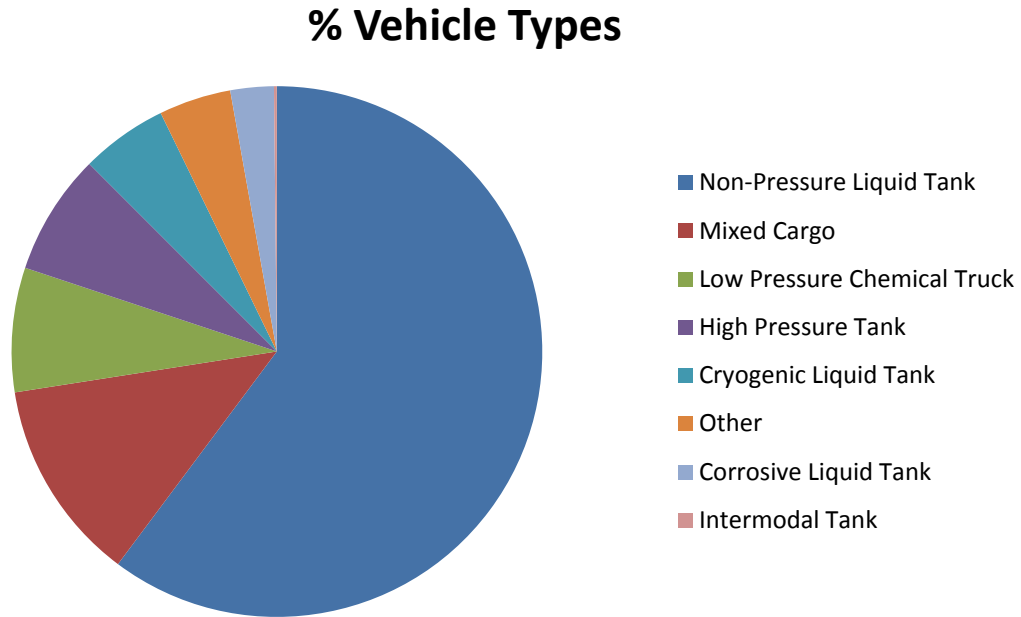


Figure 5 Placarded Vehicle Type

Vehicle Type	Number of Vehicles	% Vehicles
Non-Pressure Liquid Tank	342	60%
Mixed Cargo	70	12%
Low Pressure Chemical Tank	43	8%
High Pressure Tank	42	7%
Cryogenic Liquid Tank	30	5%
Other*	25	4%
Corrosive Liquid Tanks	15	3%
Intermodal Tank	1	<1%

* Includes cylinder delivery truck (9), van/small truck with OXYGEN placard (8), tank on trailer (3), flatbed (3), and Army tanker (2)

Table 9 Placarded Vehicle Type

No placarded Dry Bulk Cargo Trailers, Compressed Gas/Tube Trailers, or Vacuum Loaded Trucks were observed.

These pictures show examples of vehicles observed with placards displayed:



Figure 6 Class 3 – Gasoline (UN 1203) in Non-Pressure Liquid Tank



Figure 7 Division 2.3 – Chlorine (UN 1007) and Corrosive Materials in Mixed Cargo Vehicle



Figure 8 Class 9 – Elevated Temperature Liquid (UN 3257) in Low Pressure Chemical Tank



Figure 9 Division 2.1 – Propane (UN 1075) in High Pressure Tank



Figure 10 Division 2.2 – Nitrogen (UN 1977) in Cryogenic Liquid Tank



Figure 11 Classes 2 and 3 – Cylinder Delivery Truck



Figure 12 Division 2.2 – Van with OXYGEN placard



Figure 13 Class 8 – Sodium Hydroxide (UN 1824) in Corrosive Liquid Tank

D. Locations with Highest Placarded Vehicle Counts

The largest number of placarded vehicles (76) was observed from the Brandon rest area on Interstate 90 near the Minnesota/South Dakota border:

Date	Number of Vehicles and Direction	Total
July 22-23	42 Eastbound (55%)	76
July 24-25	34 Westbound (45%)	

Table 10 I-90 Brandon Traffic Flow

The majority of placarded vehicles (44) traveling on I-90 were transporting flammable liquids – gasoline (37), unknown (6), and ethanol (1). Other materials transported included:

Non-flammable gas	10
Corrosive materials	9
Propane	4
Miscellaneous	4
Explosives	3
Flammable gas	1
Oxidizer	1

Traffic flow was nearly equal eastbound (55%) and westbound (45%). 2012 SDDOT data reports 49% westbound and 51% eastbound.

The second highest location for placarded vehicles (72) was the US281/12 intersection in Aberdeen:

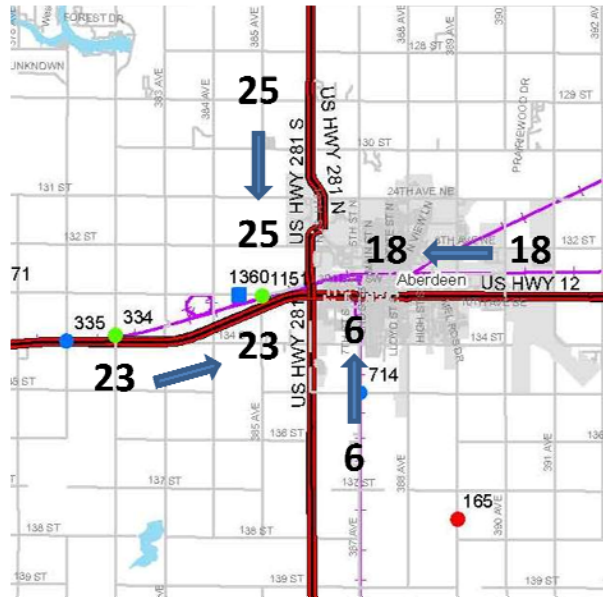


Figure 14 Aberdeen Traffic Flow

The majority of placarded vehicles (53) traveling through Aberdeen were transporting flammable liquids – gasoline (44), unknown (8), and elevated temperature material (1). Other materials transported included:

Miscellaneous (elevated temperature materials)	11
Propane	5
Corrosive	2
Flammable gas	1

Most placarded vehicles (25) were traveling from north to south or west to east (23).

50 placarded vehicles were recorded at the US81/US212 intersection in Watertown:

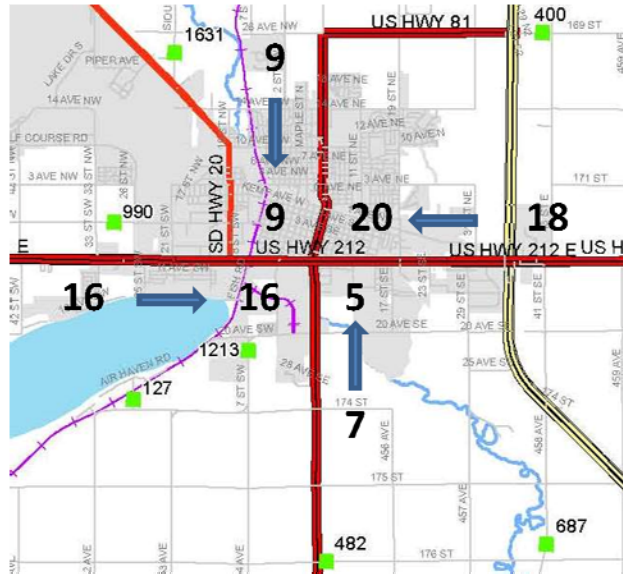


Figure 15 Watertown Traffic Flow

The majority of placarded vehicles (41) traveling through Watertown were transporting flammable liquids – gasoline (34), unknown (5), and elevated temperature materials (2). Other materials transported included:

Propane	4
Corrosive	2
Flammable gas	2
Miscellaneous (elevated temperature material)	1

Most placarded vehicles were traveling from east (18) to west (20) with 16 vehicles traveling west to east.

The field crew observed 46 placarded vehicles at the US14/SD45 intersection in Miller:

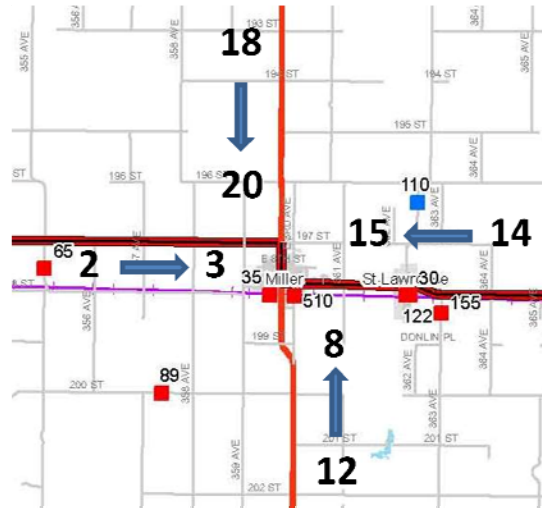


Figure 16 Miller Traffic Flow

The majority of placarded vehicles (40) traveling through Miller were transporting flammable liquids – gasoline (33), unknown (6), and alcohols (1). Other materials being transported included:

Corrosive	2
Propane	1
Poisonous gas	1
Explosives	1
Miscellaneous	1

Most placarded vehicles were traveling from north (18) to south (20) with 14 vehicles traveling from the east and 15 vehicles going west.

46 placarded vehicles were also noted traveling on Interstate 29 at the Iowa/South Dakota Port of Entry northwest of Jefferson:

Date	Number of Vehicles and Direction	Total
June 30-July 1	23 Southbound (50%)	46
July 2-3	23 Northbound (50%)	

Table 11 I-29 Jefferson Traffic Flow

The majority of placarded vehicles (20) traveling on I-29 were transporting a variety of flammable liquids – aviation fuel (8), gasoline (5), alcohols (2), tar (2), unknown (2), and hexane (1). Other materials transported included:

Miscellaneous (elevated temperature materials)	8
Corrosive	7
Non-flammable gas	7
Poison/Poisonous gas	2
Flammable gas	2

I-29 traffic was equally split between southbound and northbound. This is consistent with 2012 SDDOT data that shows 49% northbound and 51% southbound.

DPS personnel conduct 3 levels of Hazardous Materials Inspections – Level 1 Under, Level 2 Walk Around, and Level 3 Paperwork. The DPS does not maintain an inspection database, therefore, PSI could not compare its data to DPS data.

The remaining surveyed locations noted 30 placarded vehicles or less over a 2-day period:

Location	Vehicle Count	Location	Vehicle Count
Vermillion	30	Selby	12
Forestburg	24	Victor	12
Beresford	22	Parker	11
Ethan	21	Sioux Falls	10
Huron	20	Hecla	10
Big Stone City	19	Fairfax	8
Madison	18	Elkton	8
Yankton	14	Winner	5
Reville	13	Olivet	5
Corsica	12	Gettysburg	4

Table 12 Placarded Vehicle Counts 30 or Less

Because portions of Eastern South Dakota continue to experience drought conditions, the greatest threat at any accident location is the ability of emergency responders to act quickly to control fire. Emergency responders in counties that I-29 and I-90 pass through, counties where a larger number of placarded vehicles were observed, and counties where there are large industrial sites, for example, ethanol plants should be prepared to respond to hazardous materials highways accidents:

County	Potential Hazardous Materials Highway Accidents	County	Potential Hazardous Materials Highway Accidents
Aurora	I-90	Hanson	I-90
Beadle	Large # placards Industry	Lake	Large # placards Industry
Bon Homme	Industry	Lincoln	I-29 Industry
Brookings	I-29 Industry	McCook	I-90
Brown	Large # placards Industry	Minnehaha	I-29 I-90 Industry
Brule	I-90	Moody	I-29
Clay	Large # placards	Roberts	I-29 Industry
Codington	I-29 Industry	Sanborn	Large # placards
Davison	I-90 Industry	Spink	Industry
Deuel	I-29	Turner	Industry
Grant	I-29 Industry	Union	I-29
Hamlin	I-29	Yankton	Large # placards
Hand	Large # placards		

Table 13 Potential Hazardous Materials Highway Accidents

Very few placarded vehicles were noted at locations surveyed in the remaining counties. Therefore, emergency responders in those counties are less likely to respond to hazardous materials highway incidents.

Maximum daily vehicle counts and estimated counts are summarized in the following table:

County	Highest Daily Vehicle Count	County	Highest Daily Vehicle Count
Aurora	30* (I-90, US281)	Hughes	11 (US14, US83) (2012)
Beadle	13 (US14, SD37)	Hutchinson	20* (US18, US81, SD25, SD37)
Bon Homme	10* (SD25, SD50)	Hyde	10* (US14, SD47) (2012)
Brookings	40* (I-29, US14, US81)	Jerauld	4* (US281, SD34)
Brown	52 (US12, US281, SD10, SD37)	Kingsbury	19* (US14, US81)
Brule	25* (I-90)	Lake	13 (US81, SD34)
Buffalo	3* (SD34)	Lincoln	63*(I-29, SD11, SD46)
Campbell	18 (US83) (2012)	Marshall	8* (SD10)
Charles Mix	8* (SD44, SD46)	McCook	46*(I-90, US81, SD42)
Clark	9* (US212, SD20, SD28)	McPherson	8* (SD10) 1* (2012)
Clay	29* (SD19, SD46, SD50)	Miner	10* (US81, SD34)
Codington	47* (I-29, US81, US212)	Minnehaha	104*(I-29, I-90, I-229, SD42)
Davison	45*(I-90, SD37, SD42)	Moody	37* (I-29, SD34)
Day	9* (US12)	Potter	2 (US83, US212)
Deuel	27* (I-29, US212, SD15)	Roberts	31* (I-29, S10, SD15, SD109)
Douglas	6 (US281, SD44)	Sanborn	17 (SD34, SD37)
Edmunds	9* (US12)	Spink	14 (US212, US281, (2010) SD20, SD28, SD37)
Faulk	2* (US212, S20)	Sully	1* (US83) (2012)
Gregory	6 (US18, US281)	Tripp	4 (US183, SD44)
Grant	34* (I-29, US12, SD15, SD109)	Turner	8 (SD19, SD44)
Hamlin	22* (I-29, SD28)	Union	50 (I-29, SD11, SD46)
Hand	24 (US14, SD45)	Walworth	8 (US12, US83) 17* (2012)
Hanson	36* (I-90)	Yankton	24* (US81, SD46, SD50)

* Estimated

Table 14 Daily Placarded Vehicle Counts and Estimates

E. Total Vehicle Counts

Field crews were instructed to tabulate total vehicle counts, if possible. The volume of non-placarded vehicles prevented crews from compiling total vehicle counts at several locations (this is noted on the Excel spreadsheet). When compared to SDDOT Average Daily Traffic (ADT) figures, it was apparent that field crew total vehicle counts are not accurate. SDDOT monitors traffic at more than 6,600 locations across the state. Its Automatic Traffic Recorder Data from 77 locations is updated monthly. ADT data from the SDDOT 2012 Traffic Flow Map is used in the following table because it includes total and truck traffic data for all roads. Observed Placarded Vehicles (4-11 hours) were normalized for a 12-hour period (Estimated Daily Placarded Trucks). Estimated % Placarded Trucks was calculated in the 0-12.3% range:

Location	2012 SDDOT Total Traffic (ADT)	2012 SDDOT Truck Traffic (ADT)	Observed Placarded Vehicles	Estimated Daily Placarded Trucks (12 hr)	Estimated % Placarded Trucks
Winner	2129	307	1 (5 hr)	2	0.6%
Winner	2129	307	4 (8.5 hr)	6	1.9%
Fairfax	1052	230	6 (9.5 hr)	8	3.5%
Fairfax	1052	230	2 (7.5 hr)	3	1.3%
Corsica	2128	270	6 (8.5 hr)	8	3.0%
Corsica	2128	270	6 (10.5 hr)	7	2.6%
Olivet	705	73	0 (9 hr)	0	0.0%
Olivet	705	73	5 (7 hr)	9	12.3%
Ethan	3763	531	7 (7.5 hr)	11	2.1%
Ethan	3763	531	14 (9 hr)	19	3.6%
Forestburg	2730	393	17 (9 hr)	23	5.8%
Forestburg	2730	393	7 (9 hr)	9	2.3%
Huron	12,254	527	13 (8 hr)	19	3.6%
Huron	12,254	527	7 (10 hr)	8	1.5%
Miller	4005	637	24 (10 hr)	29	4.5%
Miller	4005	637	22 (8 hr)	33	5.2%
Gettysburg	1998	344	2 (8 hr)	3	0.9%
Gettysburg	1998	344	2 (8 hr)	3	0.9%
Selby	2045	440	8 (10.5 hr)	9	2.0%
Selby	2045	440	4 (8 hr)	6	1.4%
Yankton	13,052	953	2 (8 hr)	3	0.3%
Yankton	13,052	953	12 (10 hr)	14	1.5%
Vermillion	4132	959	17 (9 hr)	23	2.4%
Vermillion	4132	959	13 (8 hr)	19	2.0%

Table 15 Placarded and Total Vehicle Counts

Location	2012 SDDOT Total Traffic (ADT)	2012 SDDOT Truck Traffic (ADT)	Observed Placarded Vehicles	Estimated Daily Placarded Trucks (12 hr)	Estimated % Placarded Trucks
Jefferson SB	6505	1684	3 (4 hr)	9	0.5%
Jefferson SB	6503	1684	20 (8.5 hr)	28	1.7%
Jefferson NB	6247	1618	10 (9 hr)	13	0.8%
Jefferson NB	6247	1618	13 (6 hr)	26	1.6%
Beresford	2103	334	5 (6 hr)	10	3.0%
Beresford	2103	334	17 (11 hr)	18	5.4%
Parker	1208	239	3 (9 hr)	4	1.7%
Parker	1208	239	8 (8 hr)	12	5.0%
Sioux Falls	42,150	2613	3 (8 hr)	4	0.1%
Sioux Falls	42,150	2613	7 (10 hr)	8	0.3%
Madison	5746	718	13 (10 hr)	16	2.2%
Madison	5746	718	5 (8 hr)	7	1.0%
Brandon EB	6539	1177	15 (8 hr)	22	1.9%
Brandon EB	6539	1177	27 (10 hr)	32	2.7%
Brandon WB	6359	1145	18 (10 hr)	22	1.9%
Brandon WB	6359	1145	16 (8 hr)	24	2.1%
Elkton	1374	346	2 (8 hr)	3	0.9%
Elkton	1374	346	6 (8.5 hr)	8	2.3%
Reville	1930	544	6 (8 hr)	9	1.6%
Reville	1930	544	7 (8 hr)	10	1.8%
Big Stone City	3200	352	6 (8 hr)	9	2.6%
Big Stone City	3200	352	13 (10 hr)	16	4.5%
Watertown	16,596	714	29 (10 hr)	35	4.9%
Watertown	16,596	714	21 (8 hr)	31	4.3%
Victor SB	2841	642	2 (8 hr)	3	0.5%
Victor SB	2841	642	3 (8.5 hr)	4	0.6%
Victor NB	2729	617	3 (8.5 hr)	4	0.6%
Victor NB	2729	617	4 (8 hr)	6	0.9%
Hecla	771	214	1 (8 hr)	1	0.5%
Hecla	771	214	9 (11 hr)	10	4.7%
Aberdeen	11,895	607	29 (11 hr)	32	5.3%
Aberdeen	11,895	607	43 (10 hr)	52	8.6%

Table 15 Placarded and Total Vehicle Counts

5. Recommendations

Consistent with the 2012 Western South Dakota study, flammable liquids make up the majority of hazardous materials transported on highways in Eastern South Dakota. Emergency response personnel should:

- Be trained to safely respond to highway accidents involving flammable liquids.
- Have access to personal protective equipment and firefighting equipment, especially a sufficient quantity of foam.
- Be knowledgeable of the design and safety features of Non-Pressure Liquid Tanks (MC 306/DOT 406) and Low Pressure Chemical Tanks (MC 307/DOT 407).
- Know how to access Material Safety Data Sheets to obtain information for chemicals being transported.
- Understand unique material properties, for example, propane is heavier than air and chlorine is a poison gas.
- Have a working knowledge of drainage and storm sewer information to minimize environmental impacts of an accidental release of a hazardous material.

There are more non-flammable gases and corrosive materials shipped by highway in Eastern South Dakota because there is more industrial activity (for example, ethanol plants). Less flammable gases (for example, propane) are transported by highway in Eastern South Dakota because there are more natural gas pipelines.

Lessons learned from the study include:

Working with SDDOT and DPS personnel is essential. SDDOT permits to occupy ROW must be obtained in advance of conducting field work along state highways. SDDOT and DPS personnel responded quickly to our requests and were very cooperative and easy to work with concerning storage of our trailer at SDDOT yards and the Jefferson Port of Entry. In addition, SDDOT personnel suggested the best survey locations and provided area construction information.

Hiring and retaining quality personnel for a summer project. Having a signed contract by mid-May allowed PSI to quickly hire college students to staff the field crews for this study. Crews were scheduled to work 4-days a week every other week to reduce overtime pay costs. An alternate crew person was identified so PSI staff members were not required to fill in when a crew member was not available.

Providing comfortable field crew accommodations is important. Many surveys were conducted at rural locations. A trailer with a canopy provided welcome shade. The crew utilized the air-conditioned trailer for breaks on hot days. Crews stored and prepared food in the kitchen and had restroom facilities available on site.

It is not necessary to survey weekend traffic. Because of the Fourth of July holiday and crew member vacations and college start dates, crews observed traffic on Sundays at 3 locations (Gettysburg, Jefferson SB, and Hecla). The number of placarded vehicles observed on Sunday was much lower than weekday figures at Jefferson and Hecla.

It is not realistic to expect a 2-person field crew to collect additional vehicle information. Last year's report stated that "A 2-person crew can easily record additional vehicle information." based on the fact that our field crew observed 10 or fewer placarded vehicles a day at several Western South Dakota locations. Higher traffic volume in Eastern South Dakota prevented crews from tabulating accurate total vehicle counts in addition to recording placarded vehicle information.

Appendix

Pennington County Data Collection Form (1 page)
Commodity Flow Study Data (12 pages)

Field Survey / Data Collection Form

Collection Site: _____ Date: _____

Military Time: _____

Direction of Travel: _____ Your Name: _____

Trucking/Shipping Name: _____

Type of Vehicle (Circle One):

 DOT406, TC406, SCT-306 Non-pressure Liquid Tank (MC306, TC306) (131)	 MC331, TC331, SCT-331 High Pressure Tank (117)	 DOT407, TC407, SCT-307 Low Pressure Chemical Tank (MC307, TC307) (137)	 DOT412, TC412, SCT-312 Corrosive Liquid Tank (MC312, TC312) (137)
 MC338, TC338, SCT-338 Cryogenic Liquid Tank (TC341, CGA341) (117)	 Mixed Cargo (111)	 Dry Bulk Cargo Trailer (134)	 Compressed Gas/ Tube Trailer (117)
 Intermodal Tank (117)	 DOT407, TC407, DOT412, TC412 Vacuum Loaded Tank (TC350) (137)	Description (if not shown): 	

Hazard Class (Circle One):

 1.4 EXPLOSIVES 1 1.5 EXPLOSIVES 2 1.6 EXPLOSIVES 3 1 1172.20 1172.21 1172.22 1172.23	 OXYGEN 2 NON-FLAMMABLE GAS 3 FLAMMABLE GAS 2 INHALATION HAZARD 2 1172.20 1172.21 1172.22 1172.23	 GASOLINE 3 FLAMMABLE 3 COMBUSTIBLE 3 FUEL OIL 3 1172.20 1172.21 1172.22 1172.23	 HAZARDOUS MATERIALS 4 FLAMMABLE LIQUID 4 DANGEROUS SOLID 4 1172.20 1172.21 1172.22 1172.23	 ORGANIC PEROXIDE 5.2 OXIDIZER 5.1 ENGINE PEROXIDE 5.2 1172.20 1172.21 1172.22 1172.23	 PG III 6 POISON 6 INHALATION HAZARD 6 1172.20 1172.21 1172.22 1172.23
1	2	3	4	5	6
 RADIOACTIVE 7 7	 CORROSIVE 8 8	UN Number (Important!) Should Be 4 Digits: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> 1219</div> <div style="text-align: center;"> 1219</div> </div> Examples 1219 _____ _____ _____ _____			
 9 9	 DANGEROUS 9 Misc				

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Winner	43°23'	100°1'	5/20/2013	Monday	1:15 PM	East	West	Schaffer & Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				541
Winner	43°23'	100°1'	5/21/2013	Tuesday	10:00 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				792
					3:35 PM	North	East		Intermodal Tank	8 Corrosive	UN 3266	Corrosive liquid, basic, inorganic, n.o.s.				
					4:00 PM	East	North		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					5:00 PM	North	East		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
Fairfax	43°0'	98°54'	5/22/2013	Wednesday	12:15 PM	East	West		Other (describe in Comments)	3 Flammable Liquid	UN 1203	Gasoline	Small van			514
					1:40 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:00 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:00 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:00 PM	East	West	Lockwood Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					5:00 PM	South	East		High Pressure Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
Fairfax	43°0'	98°54'	5/23/2013	Thursday	11:35 AM	East	West		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				383
					3:35 PM	North	East		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
Corsica	43°23'	98°24'	5/28/2013	Tuesday	1:30 PM	North	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				Unable to accurately count vehicles
					1:40 PM	East	North	Mike	High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
					2:05 PM	East	West		Non-Pressure Liquid Tank	4.3 Dangerous When Wet	UN 2257	Potassium				
					3:05 PM	North	West	TEX	High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
					3:20 PM	East	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:00 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Corsica	43°23'	98°24'	5/29/2013	Wednesday	9:40 AM	West	North	Stern	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				Unable to accurately count vehicles
					10:30 AM	East	West		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					11:10 AM	East	West	Stern	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:20 PM	East	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:30 PM	East	North	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:00 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Olivet	43°14'	97°43'	5/30/2013	Thursday	10:30 AM	South	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				209
Olivet	43°14'	97°43'	5/31/2013	Friday	10:30 AM	South	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				255
					11:00 AM	South	West	Scotland Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:15 AM	West	South	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid				
					12:15 PM	South	West	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid				
					12:30 PM	South	East	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid				
Ethan	43°32'	98°0'	6/3/2013	Monday	1:00 PM	West	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		1287	54	1341
					1:30 PM	South	North		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
					2:00 PM	South	North		Other (describe in Comments)	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.	Tank on trailer			
					2:30 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:00 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:00 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					5:00 PM	East	South	Cenex	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
Ethan	43°32'	98°0'	6/4/2013	Tuesday	10:00 AM	North	South	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid		2123	154	2277
					10:30 AM	South	North	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid				
					11:00 AM	North	South	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:30 AM	West	South	Dairy	Mixed Cargo	8 Corrosive	None	None				
					12:00 PM	East	South	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:30 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:00 PM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:30 PM	South	North		Other (describe in Comments)	3 Flammable Liquid	None	None	Small truck with OXYGEN placard			
									2.2 Non-Flammable Gas	None	None					
					2:00 PM	North	South		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
					2:30 PM	North	South		Other (describe in Comments)	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine	Army tanker			
					3:00 PM	North	South		Other (describe in Comments)	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine	Army tanker			
					3:30 PM	West	South	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:00 PM	South	North		Mixed Cargo	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
									2.1 Flammable Gas	None	None					
					5:00 PM	North	South	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid				

Site	Latitude (° & min)	Longitude (° & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles					
Forestburg	44°0'	98°1'	6/5/2013	Wednesday	9:00 AM	East	South		Mixed Cargo	8 Corrosive	None	None		1522	289	1811					
					9:20 AM	East	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:30 AM	West	East	Henan Farmers Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:45 AM	West	East	Henan Farmers Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					10:40 AM	South	North	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					11:40 AM	North	West	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					12:05 PM	West	East		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid									
					12:10 PM	East	South	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					12:55 PM	East	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					1:20 PM	North	West	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid									
					2:00 PM	South	West		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous									
					2:00 PM	East	South	Exide	Mixed Cargo	8 Corrosive	None	None									
					2:50 PM	West	East		Other (describe in Comments)	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas	Cylinder delivery truck								
					2:55 PM	West	South	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					4:20 PM	East	South		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous									
					4:20 PM	East	South	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid									
					5:00 PM	West	East		Mixed Cargo	8 Corrosive	None	None									
					Forestburg	44°0'	98°1'	6/6/2013	Thursday	8:20 AM	North	West	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		1336	242	1578
8:30 AM	North	West	Harms Oil	Non-Pressure Liquid Tank						3 Flammable Liquid	UN 1203	Gasoline									
9:10 AM	North	West	CHS	High Pressure Tank						2.1 Flammable Gas	UN 1075	Liquefied petroleum gas									
9:50 AM	East	West		Other (describe in Comments)						3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine	Tank mounted on flatbed								
10:10 AM	East	South		Non-Pressure Liquid Tank						3 Flammable Liquid	UN 1203	Gasoline									
1:10 PM	South	East	Farmers Elevator Co	Non-Pressure Liquid Tank						3 Flammable Liquid	UN 1203	Gasoline									
2:40 PM	West	South	Farmers Elevator Co	Non-Pressure Liquid Tank						3 Flammable Liquid	UN 1203	Gasoline									
Huron	44°22'	98°13'	6/10/2013	Monday	2:50 PM	West	East		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint		5125	293	5418					
					2:50 PM	West	East	Cavour Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					3:00 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline	With pup								
					3:05 PM	West	East	Raymond Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					3:10 PM	West	East	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline	With pup								
					3:20 PM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					3:30 PM	East	South		Mixed Cargo	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine									
					4:00 PM	East	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline	With pup								
					4:00 PM	East	West		Mixed Cargo	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine									
					4:15 PM	East	South	Raymond Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					4:20 PM	East	West	Fitch Trucking	Cryogenic Liquid Tank	3 Flammable Liquid	UN 2187	Carbon dioxide, refrigerated liquid									
					4:40 PM	East	West	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					5:40 PM	East	West	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					Huron	44°22'	98°13'	6/11/2013	Tuesday	10:00 AM	West	East	Mattheson	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1073	Oxygen, refrigerated liquid (cryogenic liquid)		8218	477	8695
10:30 AM	West	South	Xtra Lease	Mixed Cargo						3 Flammable Liquid	None	None									
11:10 AM	North	West	Airgas	Mixed Cargo						2.1 Flammable Gas	None	None									
1:05 PM	West	South	Fedex	Mixed Cargo						3 Flammable Liquid	None	None									
2:00 AM	East	North		Non-Pressure Liquid Tank						3 Flammable Liquid	UN 1203	Gasoline									
2:20 PM	East	West	Cavour Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline														
5:40 PM	East	West	Cavour Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline														

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles					
Miller	44°32'	98°59'	6/12/2013	Wednesday	9:45 AM	East	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		2261	248	2509					
					9:45 AM	East	South	Don's Sinclair	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:55 AM	East	South	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					10:10 AM	East	South	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				With pup					
					10:25 AM	West	East		Other (describe in Comments)	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				Pickup with trailer					
					10:45 AM	South	West		Mixed Cargo	9 Miscellaneous	UN 3062	Organic peroxide				UN 3062 no longer in use; UN 3101-3120, 5.2 Organic Peroxide Oxidizer					
					11:15 AM	North	West		Other (describe in Comments)	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				Truck with trailer					
					11:30 AM	East	South		Other (describe in Comments)	2.3 Poison Gas	UN 1079	Sulfur dioxide				Flatbed semi truck					
					11:30 AM	South	East	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					11:40 AM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					11:45 AM	North	West	Don's Sinclair	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					12:15 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					12:15 PM	South	North	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline					With pup				
					1:15 PM	South	North	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					1:25 PM	North	West	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					3:40 PM	South	North	Don's Sinclair	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					3:40 PM	North	West	Transport Inc.	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					4:00 PM	South	North	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline					With pup				
					4:30 PM	North	West	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
													3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.						
										5:15 PM	North	West	Don's Sinclair	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
										6:00 PM	East	South	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
										6:30 PM	North	South		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
										6:50 PM	East	South	Transport Inc.	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					7:00 PM	West	East	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
									3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.										
Miller	44°32'	98°59'	6/13/2013	Thursday	8:00 AM	North	West	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		1617	246	1863					
					8:00 AM	North	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					8:15 AM	North	West	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					8:30 AM	East	South	Transport Inc.	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					8:35 AM	North	West	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:15 AM	East	South	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:20 AM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.									
					9:20 AM	East	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:45 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					9:45 AM	South	West	Magnum	Mixed Cargo	8 Corrosive	None	None									
					9:45 AM	East	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					10:10 AM	North	South	Rude	Mixed Cargo	1.4 Explosives	None	None									
					10:10 AM	North	South	Heartland Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					10:10 AM	East	South	Magnum	Mixed Cargo	8 Corrosive	None	None									
					10:30 AM	North	West	Transport Inc.	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					10:35 AM	North	South	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					11:20 AM	North	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					12:45 PM	East	South	Transport Inc.	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					1:30 PM	East	South	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					1:45 PM	South	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					1:55 PM	South	North	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					1:55 PM	South	North	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					Gettysburg	45°1'	100°5'	6/16/2013	Sunday	5:25 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		483	2	485
										6:20 PM	West	East	Brick Transport	Non-Pressure Liquid Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
Gettysburg	45°1'	100°5'	6/17/2013	Monday	11:40 AM	West	North		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous		935	2	937					
					1:30 PM	North	East	Hern Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
Selby	45°31'	100°9'	6/18/2013	Tuesday	12:00 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				966					
					2:40 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					3:15 PM	East	West		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint									
					3:50 PM	West	East	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint									
					5:00 PM	East	West	Brick Transport	Non-Pressure Liquid Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas									
					5:10 PM	West	East	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint				HOT placard					
					5:55 PM	West	East	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint									
					6:05 PM	East	North	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									
					Selby	45°31'	100°9'	6/19/2013	Wednesday	9:50 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				656
										9:50 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
9:55 AM	North	East	Cenex	Non-Pressure Liquid Tank						3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.									
					10:00 AM	North	West	Farmers Elevator Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline									

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Yankton	43°5'	97°24'	6/24/2013	Monday	3:45 PM	North	South		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard	1497	155	1652
					4:40 PM	West	South	Barzol	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
Yankton	43°5'	97°24'	6/25/2013	Tuesday	8:35 AM	North	South	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		2177	335	2512
					9:10 AM	North	South	West Central Inc	Mixed Cargo	6.1 Poison	UN 3017	Organophosphorus pesticides, liquid, toxic, flammable, flash point not less than 23	degrees C			
					9:35 AM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1999	Tars, liquid including road oils and cutback bitumens				
					10:50 AM	East	West	Safety Kleen Systems	Non-Pressure Liquid Tank	3 Flammable Liquid	None					
					12:30 PM	South	North	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:45 PM	North	West	Hawkins	Mixed Cargo	2.3 Poison Gas	UN 1017	Chlorine				
									8 Corrosive	UN 1791	Hypochlorite solutions					
									8 Corrosive	UN 1830	Sulfuric acid with more than 51 percent acid					
					1:05 PM	South	North	Dyna Gro	Mixed Cargo	9 Miscellaneous	UN 3082	Environmentally hazardous substances, liquid, n.o.s.				
					2:00 PM	East	West	Jerry's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:00 PM	South	North	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:35 PM	East	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1999	Tars, liquid including road oils and cutback bitumens				
					4:30 PM	North	South		Mixed Cargo	8 Corrosive	None					
					4:45 PM	North	South	Winnipeg Motor Express	Mixed Cargo	8 Corrosive	None					
Vermillion	42°48'	96°57'	6/26/2013	Wednesday	9:45 AM	South	North	Jerry's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.		2281	459	2740
					9:55 AM	East	West		Corrosive Liquid Tank	8 Corrosive	UN 1824	Sodium hydroxide solution				
					10:15 AM	West	East	Stern Oil Co	High Pressure Tank	UN 1075	Liquefied petroleum gas					
					10:40 AM	East	West	ITL	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:20 AM	East	West		Non-Pressure Liquid Tank	2.1 Flammable Gas	None					
									2.2 Non-Flammable Gas	None						
					12:00 PM	East	West		Other (describe in Comments)	2.2 Non-Flammable Gas	None		Van with OXYGEN placard			
					12:10 PM	East	West	Fedex	Mixed Cargo	3 Flammable Liquid	None					
					1:05 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1999	Tars, liquid including road oils and cutback bitumens				
					1:25 PM	South	West	Stern Oil Co	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					1:35 PM	South	West		Non-Pressure Liquid Tank	5.1 Oxidizer	UN 1942	Ammonium nitrate				
					2:00 PM	West	East		Mixed Cargo	9 Miscellaneous	UN 2071	Ammonium nitrate based fertilizer				
					2:45 PM	East	North	Stern Oil Co	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					3:00 PM	North	South	Stewart Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:15 PM	South	North	Stewart Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:05 PM	West	South		Other (describe in Comments)	2.1 Flammable Gas	None		Cylinder delivery truck			
									2.2 Non-Flammable Gas	None						
					4:30 PM	West	South	Jerry's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.				
Vermillion	42°48'	96°57'	6/27/2013	Thursday	4:35 PM	North	South	Stewart Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					8:15 AM	East	West		Other (describe in Comments)	2.2 Non-Flammable Gas	None		Cylinder delivery truck	2046	407	2453
					8:35 AM	North	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:10 AM	West	East	Stewart Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:20 AM	West	East		Other (describe in Comments)	2.2 Non-Flammable Gas	None		Cylinder delivery truck			
					10:05 AM	East	East	Jerry's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.				
					10:20 AM	North	South	West Central Inc	Mixed Cargo	6.1 Poison	UN 2783	Organophosphorus pesticides, solid, toxic				
					12:10 PM	West	East		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1977	Nitrogen, refrigerated liquid cryogenic liquid				
					12:45 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:00 PM	West	East		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1073	Oxygen, refrigerated liquid (cryogenic liquid)				
					1:20 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:00 PM	West	East		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	None		OXYGEN placard			
					2:40 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1267	Petroleum crude oil				
					3:00 PM	East	West	ITL	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Jefferson SB	42°37'	96°36'	6/30/2013	Sunday	4:00 PM	North	South		Mixed Cargo	3 Flammable Liquid	UN 2985	Chlorosilanes, flammable, corrosive, n.o.s.		Unable to accurately count vehicles		
					4:15 PM	North	South	Casey's General Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					6:00 PM	North	South	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Jefferson SB	42°37'	96°36'	7/1/2013	Monday	10:25 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		Unable to accurately count vehicles		
					11:00 AM	North	South	APRIA Healthcare	Other (describe in Comments)	2.2 Non-Flammable Gas	None		Van with OXYGEN placard			
					11:05 AM	North	South		Non-Pressure Liquid Tank	2.3 Poison Gas	UN 1017	Chlorine				
					11:40 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					11:55 AM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					12:00 PM	North	South		Corrosive Liquid Tank	8 Corrosive	UN 1824	Sodium hydroxide solution				
					12:05 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:05 PM	North	South	Jerry's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.				
					1:15 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					1:20 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					1:35 PM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					1:45 PM	North	South	Loves	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:50 PM	North	South	Dupont	Cryogenic Liquid Tank	2.1 Flammable Gas	UN 1038	Ethylene, refrigerated liquid (cryogenic liquid)				
					2:00 PM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					3:05 PM	North	South	Barto	Mixed Cargo	8 Corrosive	UN 1903	Disinfectants, liquid, corrosive, n.o.s.				
					3:05 PM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					3:10 PM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1863	Fuel, aviation, turbine engine				
					3:25 PM	North	South	Airgas	Other (describe in Comments)	2.1 Flammable Gas	None		Cylinder delivery truck			
									2.2 Non-Flammable Gas	None						
					4:00 PM	North	South	Jerry's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.				
					4:30 PM	North	South		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Jefferson NB	42°37'	96°36'	7/2/2013	Tuesday	11:05 AM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1999	Tars, liquid including road oils and cutback bitumens		Unable to accurately count vehicles		
					11:35 AM	South	North		Corrosive Liquid Tank	2.2 Non-Flammable Gas	UN 1977	Nitrogen, refrigerated liquid cryogenic liquid				
					11:50 AM	South	North	Tex Express Inc	High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
					12:00 PM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					12:15 PM	South	North		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1951	Argon, refrigerated liquid (cryogenic liquid)				
					12:20 PM	South	North	Barto	Corrosive Liquid Tank	8 Corrosive	UN 1824	Sodium hydroxide solution				
					5:00 PM	South	North		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1977	Nitrogen, refrigerated liquid cryogenic liquid				
					5:00 PM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					5:05 PM	South	North		Low Pressure Chemical Tank	6.1 Poison	UN 1887	Bromochloromethane				
					5:15 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1208	Hexanes				
Jefferson NB	42°37'	96°36'	7/3/2013	Wednesday	8:40 AM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard	Unable to accurately count vehicles		
					8:50 AM	South	North	Sherwin-Williams Paint	Non-Pressure Liquid Tank	3 Flammable Liquid	None	None				
					9:55 AM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					10:20 AM	South	North		Mixed Cargo	8 Corrosive	UN 1830	Sulfuric acid with more than 51 percent acid				
					10:45 AM	South	North		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid				
					10:55 AM	South	North	Tex Express Inc	Mixed Cargo	8 Corrosive	UN 1830	Sulfuric acid with more than 51 percent acid				
					11:50 AM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1999	Tars, liquid including road oils and cutback bitumens				
					1:00 PM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					1:05 PM	South	North		Corrosive Liquid Tank	8 Corrosive	UN 3267	Corrosive liquid, basic, organic, n.o.s.				
					1:30 PM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
Beresford	45°5'	96°38'	7/8/2013	Monday	2:25 PM	South	North		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard	878	136	1014
					2:35 PM	East	West	JD Donovan Inc	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					2:55 PM	West	East		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					4:00 PM	West	East	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:10 PM	East	West		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					9:30 AM	South	North	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:10 AM	East	West	Hawkins Water Treatment Gro	Mixed Cargo	2.3 Poison Gas	UN 1017	Chlorine				
										8 Corrosive	UN 1789	Hydrochloric acid				
										8 Corrosive	UN 1791	Hypochlorite solutions				
										8 Corrosive	UN 2693	Bisulfites, aqueous solutions, n.o.s.				
Beresford	45°5'	96°38'	7/9/2013	Tuesday	11:15 AM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		1055	326	1381
					11:30 AM	West	East	JD Donovan Inc	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard			
					11:30 AM	North	South	MME	Mixed Cargo	3 Flammable Liquid	None	None				
					12:00 PM	West	East	Brenn Tag	Mixed Cargo	3 Flammable Liquid	UN 1170	Ethanol				
										8 Corrosive	UN 2789	Acetic acid solution, with more than 80 percent acid, by mass				
										9 Miscellaneous	None	None				
					12:00 PM	South	North	Hawkins Water Treatment Gro	Mixed Cargo	2.3 Poison Gas	UN 1017	Chlorine				
										8 Corrosive	UN 1791	Hypochlorite solutions				
										8 Corrosive	UN 2693	Bisulfites, aqueous solutions, n.o.s.				
										8 Corrosive	None	None				
Parker	43°24'	97°7'	7/10/2013	Wednesday	10:50 AM	East	East		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas		1570	280	1850
					3:25 PM	West	East		Other (describe in Comments)	2.2 Non-Flammable Gas	None	None	Van with OXYGEN placard			
					4:35 PM	North	South	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					8:45 AM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:15 AM	West	East	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:05 AM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:15 AM	East	West	Airgas	Mixed Cargo	2.1 Flammable Gas	None	None				
										2.2 Non-Flammable Gas	None	None				
					10:50 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:55 AM	West	East	Country Pride	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Parker	43°24'	97°7'	7/11/2013	Thursday	11:25 AM	East	West	Stern Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline	1178	275	1453	
					1:35 PM	North	West	Country Pride	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				

Site	Latitude (° & min)	Longitude (° & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Sioux Falls	43°38'	98°45'	7/15/2013	Monday	5:05 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		1194	39	1233
					5:15 PM	South	North		Other (describe in Comments)	2.2 Non-Flammable Gas	None	None	Van with OXYGEN placard			
					5:20 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Sioux Falls	43°38'	98°45'	7/16/2013	Tuesday	8:40 AM	South	North	Midwest Livestock Systems	Mixed Cargo	8 Corrosive	None	None		1626	131	1757
					9:25 AM	South	North		Other (describe in Comments)	2.2 Non-Flammable Gas	None	None	Van with OXYGEN placard			
					9:40 AM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:00 PM	North	South	A-OK Welding Supply	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1977	Nitrogen, refrigerated liquid cryogenic liquid				
					12:20 PM	North	South	Tread Corp	Non-Pressure Liquid Tank	3.1 Oxidizer	UN 1942	Ammonium nitrate				
												3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.		
												1.5 Explosives	None	None		
				3:50 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline					
				4:50 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline					
Madison	44°0'	97°8'	7/17/2013	Wednesday	10:40 AM	West	East	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		3807	325	4132
					10:50 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:15 AM	West	East	Cole's Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:45 AM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:55 AM	East	West	Cole's Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:00 PM	West	North		Other (describe in Comments)	2.2 Non-Flammable Gas	None	None	Van with OXYGEN placard			
					12:55 PM	West	East	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:15 PM	South	North		Mixed Cargo	8 Corrosive	None	None				
					3:00 PM	West	East	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:05 PM	North	South	Airgas	Mixed Cargo	2.1 Flammable Gas	None	None				
												2.2 Non-Flammable Gas	None	None		
									3:15 PM	West	East	Cenex	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas
				3:50 PM	North	West	F & M Coop	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas					
				4:20 PM	East	South	Cole's Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.					
Madison	44°0'	97°8'	7/18/2013	Thursday	11:30 AM	West	South	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		2828	291	3119
					12:05 PM	North	West	West Central Inc	Mixed Cargo	8 Corrosive	UN 1760	Corrosive liquids, n.o.s.				
					2:05 PM	North	South	Cole's Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:45 PM	East	North	F & M Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:55 PM	West	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles			
Brandon EB	43°37'	96°28'	7/22/2013	Monday	1:45 PM	West	East	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid		2671	359	3030			
					1:55 PM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					1:55 PM	West	East	Airgas	Mixed Cargo	2.1 Flammable Gas	None	None							
													2.2 Non-Flammable Gas				None	None	
					2:05 PM	West	East	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					2:40 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					2:40 PM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					2:55 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					3:00 PM	West	East	Ferrellgas	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas							
					3:30 PM	West	East	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					4:15 PM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.							
					4:30 PM	West	East	Clean Harbors	Mixed Cargo	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.							
					6:45 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					7:30 PM	West	East	Heartland Transport	Mixed Cargo	8 Corrosive	None	None							
					7:35 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					8:05 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
													3 Flammable Liquid				UN 1993	Flammable liquids, n.o.s.	
Brandon EB	43°37'	96°28'	7/23/2013	Tuesday	7:45 AM	West	East	Brenn Tag	Mixed Cargo	3 Flammable Liquid	UN 1170	Ethanol		2970	618	3588			
					7:45 AM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					7:45 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					8:15 AM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					8:25 AM	West	East	Wess Inc	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:05 AM	West	East	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:15 AM	West	East	Casey's General Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:25 AM	West	East		Mixed Cargo	2.2 Non-Flammable Gas	None	None							
					9:45 AM	West	East	LME	Mixed Cargo	8 Corrosive	None	None							
					9:45 AM	West	East	LME	Mixed Cargo	9 Miscellaneous	None	None	DANGEROUS placard						
					9:50 AM	West	East	Central States Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.							
					10:40 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.							
					10:55 AM	West	East	MOL	Other (describe in Comments)	1.3 Explosives	None	None	Flatbed with shipping containers						
					11:15 AM	West	East		Mixed Cargo	8 Corrosive	None	None							
					11:45 AM	West	East	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid							
					12:00 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					12:25 PM	West	East		Mixed Cargo	1 Explosives	None	None							
					1:30 PM	West	East	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid							
					1:30 PM	West	East	Reliable Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					1:30 PM	West	East	Astle Ford	Mixed Cargo	9 Miscellaneous	None	None	DANGEROUS placard						
					1:35 PM	West	East	Solar Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					2:05 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					2:35 PM	West	East	Ferrellgas	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas							
2:50 PM	West	East	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline												
3:00 PM	West	East	Wess Inc	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline												
3:00 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline												
3:25 PM	West	East	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline												

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles			
Brandon WB	43°37'	96°28'	7/24/2013	Wednesday	8:00 AM	East	West	Conway Freight	Mixed Cargo	3 Flammable Liquid	None	None	With pup	3585	480	4065			
					8:35 AM	East	West	TLI	Mixed Cargo	9 Miscellaneous	None	None	DANGEROUS placard						
					8:50 AM	East	West	West Coop Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:20 AM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:25 AM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:40 AM	East	West	A-OK Welding Supply	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid							
					9:55 AM	East	West	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid							
					9:55 AM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					10:10 AM	East	West	Popke's Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					10:20 AM	East	West	Dave Peterson	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					10:35 AM	East	West	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid							
					11:00 AM	East	West	Tex Express Inc	High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous							
					11:45 AM	East	West	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					12:05 PM	East	West	Casey's General Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					12:15 PM	East	West	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					2:35 PM	East	West	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
3:05 PM	East	West	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid												
4:10 PM	East	West		Non-Pressure Liquid Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas												
Brandon WB	43°37'	96°28'	7/25/2013	Thursday	7:45 AM	East	West	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		2955	401	3356			
					7:45 AM	East	West	LME	Mixed Cargo	8 Corrosive	None	None							
													9 Miscellaneous	None	None	DANGEROUS placard			
					8:30 AM	East	West	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:40 AM	East	West	Casey's General Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					9:55 AM	East	West	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 1824	Sodium hydroxide solution							
					10:40 AM	East	West	Poet	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid							
					10:40 AM	East	West	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 1824	Sodium hydroxide solution							
					12:30 PM	East	West	Staples Oil Co	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					12:55 PM	East	West	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 1781	Hexadecyltrichlorosilane							
					1:10 PM	East	West	Dave's Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.							
					1:25 PM	East	West	USF	Mixed Cargo	8 Corrosive	None	None	DANGEROUS placard						
					1:25 PM	East	West	AAT Carrier	Mixed Cargo	1.4 Explosives	None	None							
					1:50 PM	East	West	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or below its flashpoint	DANGEROUS placard						
					2:20 PM	East	West	TL Jansma	Mixed Cargo	8 Corrosive	UN 1789	Hydrochloric acid							
													8 Corrosive	UN 1819	Sodium aluminate, solution				
								8 Corrosive	UN 2582	Ferric chloride, solution									
								8 Corrosive	UN 2672	Ammonia solutions with more than 10% but not more than 35% ammonia									
								8 Corrosive	UN 2693	Bisulfites, aqueous solutions, n.o.s.									
					2:55 PM	East	West	CHS	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas							
					3:15 PM	East	West	MCT WSE	Mixed Cargo	5.1 Oxidizer	None	None	DANGEROUS placard						
Elkton	44°16'	96°29'	7/29/2013	Monday	5:10 PM	West	North	Cenex	Non-Pressure Liquid Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas			549				
					5:25 PM	North	West	Cenex	Non-Pressure Liquid Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas							
Elkton	44°16'	96°29'	7/30/2013	Tuesday	10:20 AM	South	North	BioAg Energy Services	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline	Small truck		1026				
					11:00 AM	North	South		Corrosive Liquid Tank	8 Corrosive	UN 3266	Corrosive liquid, basic, inorganic, n.o.s.							
					11:25 AM	North	South	BioAg Energy Services	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					11:25 AM	South	North	Kane	Low Pressure Chemical Tank	3 Flammable Liquid	UN 3256	Elevated temperature liquid, n.o.s., with flashpoint above 60° C, at or above its flashpoint							
					12:50 PM	North	South	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint							
Revillo	44°56'	96°38'	7/31/2013	Wednesday	2:35 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1133	Adhesives, containing a flammable liquid							
					10:45 AM	North	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline			1497				
					11:00 AM	North	East	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 2705	1-pentol							
					11:20 AM	East	West	Industrial Builders	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.	Small truck						
					11:45 AM	East	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					3:40 PM	West	East		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard						
Revillo	44°56'	96°38'	8/1/2013	Thursday	5:25 PM	West	East	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 2790	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass							
					9:30 AM	East	North	Fedex	Mixed Cargo	3 Flammable Liquid	None	None			1464				
					10:10 AM	East	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
					12:10 AM	North	East	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint	HOT placard						
					12:15 PM	East	West		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous							
					12:35 PM	West	North	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline							
													3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
12:55 PM	East	West	Praxair	Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 1977	Nitrogen, refrigerated liquid cryogenic liquid												
3:20 PM	East	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline												

Commodity Flow Study Data 2013

Site	Latitude (° & min)	Longitude (° & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles									
Big Stone City	45°17'	96°28'	8/6/2013	Monday	4:50 PM	South	North	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.		901	79	980									
					4:55 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
					5:05 PM	West	East	Cenex	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas													
					6:00 PM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
					6:30 PM	North	South	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
					7:30 PM	West	East		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or													
Big Stone City	45°17'	96°28'	8/7/2013	Tuesday	10:15 AM	North	South	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 1830	Sulfuric acid with more than 51 percent acid	HOT placard	1113	388	1501									
					10:25 AM	North	South	Farstad	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.													
					11:10 AM	East	West	Farstad	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
					12:10 PM	North	South	Farstad	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.													
					1:00 PM	East	West	Farstad	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
					1:05 PM	West	East	Dooky's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
					2:00 PM	North	South	Farstad	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.													
					2:30 PM	East	West	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline													
										2:45 PM	North	South	Farstad				Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.					
										2:50 PM	East	West	Farstad				Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.					
										3:30 PM	North	South	Cenex				Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.					
										3:50 PM	North	South	Farstad				Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1987	Alcohols, n.o.s.					
					4:10 PM	North	South	Aitom	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1992	Flammable liquids, toxic, n.o.s.													
									6 Poison	None	None														

Commodity Flow Study Data 2013

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Watertown	44°53'	97°7'	8/8/2013	Wednesday	7:30 AM	West	East	Diamond Vogel	Mixed Cargo	8 Corrosive	None	None		2477	88	2565
					9:35 AM	East	West	Kane	Low Pressure Chemical Tank	3 Flammable Liquid	UN 3256	Elevated temperature liquid, n.o.s., with	HOT placard	Unable to accurately count vehicles		
					9:45 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		1-hour vehicle count		
					9:45 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:50 AM	East	West	Harms Oil	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					10:05 AM	South	West	A-OK Welding Supply	Other (describe in Comments)	3 Flammable Liquid	None	None	Cylinder delivery truck			
					10:05 AM	South	South	Blue Rhino	Mixed Cargo	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					10:15 AM	North	South	Diamond Vogel	Mixed Cargo	3 Flammable Liquid	None	None				
					10:30 AM	South	North	Matheson Tri Gas	Other (describe in Comments)	2.2 Non-Flammable Gas	None	None	Cylinder delivery truck			
										3 Flammable Liquid	None	None	OXYGEN placard			
					10:40 AM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:45 AM	East	West	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:55 AM	West	East	Cenex Sioux Valley Co	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					11:00 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:15 AM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:35 AM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:50 AM	South	West	Airgas	Mixed Cargo	2.1 Flammable Gas	None	None				
										2.2 Non-Flammable Gas	None	None				
					12:15 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:15 PM	West	East	Kane	Low Pressure Chemical Tank	3 Flammable Liquid	UN 3256	Elevated temperature liquid, n.o.s., with flashpoint above 60° C, at or above its flashpoint				
					12:45 PM	South	North	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:45 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:50 PM	West	East	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:00 PM	South	North	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:05 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:15 PM	East	West	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:40 PM	East	West	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:25 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:45 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:00 PM	South	North	Cenex Sioux Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					5:30 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Watertown	44°53'	97°7'	8/9/2013	Thursday	7:20 AM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline			436	
					8:05 AM	East	West	Cenex Sioux Valley Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		Unable to accurately count vehicles		
					8:25 AM	West	East	Cenex Sioux Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:45 AM	East	West	Transport Inc.	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:55 AM	East	West		Mixed Cargo	3 Flammable Liquid	None	None	DANGEROUS placard			
					9:55 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:55 AM	West	East	Cole's Petroleum	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:25 AM	West	East	Heritage Inc.	Mixed Cargo	3 Flammable Liquid	None	None	DANGEROUS placard			
					10:30 AM	North	South	Cenex Sioux Valley Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:45 AM	South	North	Cenex Sioux Valley Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:55 AM	West	East	Cenex Sioux Valley Coop	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					10:55 AM	East	West	Cenex Sioux Valley Coop	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					11:05 AM	West	East	Cenex Sioux Valley Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:45 AM	West	East	Wayne Transport	Corrosive Liquid Tank	8 Corrosive	UN 1830	Sulfuric acid with more than 51 percent acid				
					11:50 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:00 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:25 PM	East	West	Casey's General Store	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:00 PM	North	South		Other (describe in Comments)	2.1 Flammable Gas	None	None	Cylinder delivery truck			
													OXYGEN placard			
					1:00 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:05 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:30 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Victor SB	45°54'	96°52'	8/12/2013	Monday	6:00 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		Unable to accurately count vehicles		
					7:00 PM	North	South		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous				
Victor SB	45°54'	96°52'	8/13/2013	Tuesday	10:25 AM	North	South		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous		Unable to accurately count vehicles		
					12:05 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					5:40 PM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
Victor NB	45°54'	96°52'	8/14/2013	Wednesday	11:30 AM	South	North		Low Pressure Chemical Tank	3 Flammable Liquid	UN 3256	Elevated temperature liquid, n.o.s., with flashpoint above 60° C, at or above its flashpoint	Unable to accurately count vehicles			
					2:15 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					5:20 PM	South	North	Service Company	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
Victor NB	45°54'	96°52'	8/15/2013	Thursday	10:10 AM	South	North		High Pressure Tank	2.2 Non-Flammable Gas	UN 1005	Ammonia, anhydrous		Unable to accurately count vehicles		
					10:50 AM	South	North	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:25 AM	South	North	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:45 AM	South	North	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Hecla	45°47'	98°9'	8/18/2013	Sunday	5:40 PM	South	North	CHS	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas		166	10	176
Hecla	45°47'	98°9'	8/19/2013	Monday	12:55 PM	East	West		Cryogenic Liquid Tank	2.2 Non-Flammable Gas	UN 2187	Carbon dioxide, refrigerated liquid		399	118	517
					2:25 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:35 PM	West	East	Farmland Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:00 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:15 PM	West	East		High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					3:25 PM	West	East		Mixed Cargo	2.2 Non-Flammable Gas	None	None	OXYGEN placard			
					3:35 PM	West	East	Fort	Corrosive Liquid Tank	8 Corrosive	UN 1760	Corrosive liquids, n.o.s.				
					3:45 PM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					5:15 PM	South	North	Evergreen	Mixed Cargo	2.1 Flammable Gas	None	None				
										2.2 Non-Flammable Gas	None	None				
Aberdeen	45°28'	98°31'	8/20/2013	Tuesday	8:25 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline	Unable to accurately count vehicles			
					9:00 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					10:30 AM	East	West	Kane	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					10:45 AM	West	East		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					10:50 AM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:00 AM	North	South		Corrosive Liquid Tank	8 Corrosive	UN 1824	Sodium hydroxide solution				
					11:05 AM	East	West		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					11:10 AM	North	South	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
										3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					11:15 AM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:20 AM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					11:25 AM	East	West	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					11:30 AM	West	East	Jacobsen Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					11:35 AM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:45 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:50 PM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:10 PM	South	North	Kane	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					1:40 PM	East	West	Xtra Lease	Mixed Cargo	8 Corrosive	UN 1760	Corrosive liquids, n.o.s.				
										8 Corrosive	UN 2693	Bisulfites, aqueous solutions, n.o.s.				
					1:50 PM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
										3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					1:50 PM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:00 PM	West	East	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:05 PM	North	South	Wayne Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint				
					2:15 PM	West	East	BGC	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:30 PM	West	East	Farmer's	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:40 PM	East	West		Other (describe in Comments)	2.1 Flammable Gas	None	None	Cylinder delivery truck			
					3:00 PM	South	North		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
										3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					3:10 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					3:45 PM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:20 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					4:25 PM	West	East	Kane	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or above 100° C and below its flashpoint				

Site	Latitude (* & min)	Longitude (* & min)	Date	Day of the Week	Time	Direction of Travel (From)	Direction of Travel (To)	Company Name	Vehicle Type	Hazard Class/Division	UN No.	Hazardous Material Name	Comments	Total Cars/Pickups	Total Trucks	Total Vehicles
Aberdeen	45°28'	98°31'	8/21/2013	Wednesday	7:50 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline		Unable to accurately count vehicles		
					8:00 AM	West	East		Mixed Cargo	3 Flammable Liquid	None					
					8:05 AM	East	West		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					8:10 AM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					8:10 AM	East	West		Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					8:25 AM	South	North	Jacobsen Transport	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					8:45 AM	North	South	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
									3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.					
					8:45 AM	North	South	Cenex	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					8:50 AM	East	West	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					8:55 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					9:10 AM	West	East	Farmer's Elevator	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:15 AM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:20 AM	North	South	BNSF	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:30 AM	West	East	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:35 AM	West	East	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:40 AM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					9:45 AM	East	West	Magnum	Mixed Cargo	3 Flammable Liquid	None	None				
					9:55 AM	North	South	Kane	Low Pressure Chemical Tank	3 Flammable Liquid	UN 3256	Elevated temperature liquid, n.o.s., with flashpoint above 60° C, at or above its flashpoint				
					10:00 AM	East	West	Kane	Low Pressure Chemical Tank	9 Miscellaneous	UN 3257	Elevated temperature liquid, n.o.s., at or	HOT placard			
					10:00 AM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:10 AM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:25 AM	North	South	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:25 AM	North	South	Wayne Transport	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1993	Flammable liquids, n.o.s.				
					10:35 AM	South	North	North Star	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					10:40 AM	South	North	CHS	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					10:40 AM	West	East		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:00 AM	West	East	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:15 AM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:20 AM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:40 AM	North	South		Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:40 AM	North	South	Cenex	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					11:45 AM	East	West	Western Coop	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					11:55 AM	East	West	North Star	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					12:00 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:15 PM	South	North		Mixed Cargo	3 Flammable Liquid	None	None				
					12:30 PM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:35 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					12:45 PM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:25 PM	East	West	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					1:40 PM	North	South	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:15 PM	North	South	Performance Oil	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				
					2:50 PM	West	East	Harms Oil	Non-Pressure Liquid Tank	3 Flammable Liquid	UN 1203	Gasoline				
					2:35 PM	North	South	Brick Transport	High Pressure Tank	2.1 Flammable Gas	UN 1075	Liquefied petroleum gas				